NATURA SOMOGYIENSIS 41.

Válogatott tanulmányok XXV.

Miscellanea XXV.

Kaposvár, 2023

A megjelent kötetek pdf-ben is elérhetők:
http://www.smmi.hu/termtud/ns/ns.htm

Published volumes are available online in pdf format:
http://www.smmi.hu/termtud/ns/ns.htm

Technikai szerkesztő - *Technical editor*
Ábrahám Levente, Schmidt Péter

A technikai szerkesztő munkatársa - *The technical editor's assistants*
Horváth Péter

ISSN 2560-1040
ISSN 1587-1908 (Print)
ISSN 2062-9990 (Online)

Kiadja - *Published by:*
Rippl-Rónai Megyei Hatókörű Városi Múzeum - *Rippl-Rónai Town Museum with county's rights*
Felelős kiadó - *Responsible publisher*:
Dr. Ábrahám Levente megyei múzeumigazgató - *director*
Nyomdai munkák - *Printed by*:
Pethő & Társa Nyomdaipari Kft. Kaposvár

Tartalom - *Contents*

Natura Somogyiensis 41: 5-20. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.5
Submitted: 06.06, 2023; Accepted: 03.07, 2023; Published: 01.08, 2023 www.smmi.hu/termtud/ns/ns.htm

To the knowledge of owlfly and antlion fauna of Cape Verde (Neuroptera: Myrmeleontidae)

Eyjolf Aistleitner[1] & Levente Ábrahám[2]

[1]Entomologisches Forschungsmuseum, EFMEA, Kapfstr. 99b, 6800 Feldkirch, Austria
email: eyjaist@yahoo.de
[2]Rippl-Rónai Museum, H-7400 Kaposvár, Fő street 10., Hungary,
e-mail: labraham@smmi.hu, https://orcid.org/0000-0002-8007-7117

Aistleitner, E. & Ábrahám, L.: *To the knowledge of owlfly and antlion fauna of Cape Verde (Neuroptera: Myrmeleontidae).*
Abstract: The authors publish new faunistic surveys carried out in Cape Verde. An annotated checklist of the Myrmeleontidae fauna was compiled. The general and local distribution of the species is described. *Creoleon cinerascens* (Navás, 1912) is a new species in the fauna of Cape Verde (Maio). *Cueta divisa* (Navás, 1912), *Myrmeleon hyalinus caboverdicus* Hölzel, 1987, *Neuroleon modestus* (Navás, 1912) from Brava were found for the first time from the local fauna. The endemic *Myrmeleon amicus* Hölzel & Ohm, 1983 is a new record for the fauna of Maio and Brava. The owlfly fauna 1 and the antlion fauna includes 12 species. The current investigations provide new faunistic data of 201 specimens for the distribution of 8 species.

Keywords: Ascalaphidae, Myrmeleontidae, faunistic, new record, distribution

Introduction

Cape Verde is located in the Macaronesia ecoregion, an archipelago formed by volcanic activity on the ridge of the Atlantic Ocean, along with the Azores, the Canary Islands, Madeira, and the Savage Isles. These islands lie between 600 and 850 kilometers west of Cap-Vert, the westernmost point of continental Africa. It consists of 10 larger and 8 smaller islets, are arranged in a horseshoe shape. The members of the northern archipelago are the Barlavento Islands (windward islands): Santo Antão, São Vicente, Santa Luzia, São Nicolau, Sal, Boa Vista; members of the southern archipelago are the Sotavento Islands (leeward): Maio, Santiago, Fogo, Brava. Although the archipelago is basically in an arid climate area, the climate of the islands varies depending on their location in the ocean and the height of the islands to moderately arid, semiarid, subhumid, and humid areas (Aistleitner 2013).

The first publication on the endemic neuropteran fauna of the archipelago (*Apertochrysa nigra* (McLachlan, 1869)) was published in the 19th century. By the middle of the 20th century, Navás (1932) and Tjeder (1957) added two new Myrmeleontidae (*Creoleon giganteus* Navás, 1932, *Creoleon cecconinus* Navás, 1932) and two new Coniopterygidae species (*Coniocompsa fimbriata* Tjeder, 1957, *Coniopteryx lindbergi* Tjeder, 1957) increasing the number of the endemic fauna. However, the more thorough exploration of the Neuroptera fauna began relatively late in the second half of the 20th century. German

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

(Peter Ohm) and Austrian (Herbert Hölzel) researchers excelled in this and intensively investigated the fauna of Chrysopidae and Myrmeleontidae, with special regard to the zoogeographic conditions of the Macaronesia ecoregion (OHM & HÖLZEL 1982, 1984). Two new endemic taxa from the Chrysopidae (HÖLZEL & OHM, 1982 - *Apertochrysa teiresias* (Hölzel & Ohm, 1982), *Chrysemosa piresi* (Hölzel & Ohm, 1982)) and Myrmeleontidae fauna were also studied by HÖLZEL (1986 - *Myrmeleon hyalinus caboverdicus* Hölzel, 1987), and HÖLZEL & OHM (1983) - *Myrmeleon amicus* Hölzel & Ohm, 1983).

The relative obscurity of the Neuroptera fauna of the area, in comparison with the islands of the Macaronesia ecoregion closer to the continent, also resulted from its location. For researchers, the archipelago of Cape Verde proved to be particularly remarkable from a zoogeographic point of view (OHM & HÖLZEL 1982, 1984).

Around the turn of the millennium, the exploration of the Neuroptera fauna gained a new momentum because the first author of the paper regularly visited the archipelago for two decades and collected a wide range of insects with his published co-authors in different groups (eg. AISTLEITNER 2013, 2017, AISTLEITNER et al. 2008). The material of Chrysopidae and Myrmeleontidae collected between 1998 and 2007, which was placed in his private collection (**E**ntomologisches **F**orschungs**m**useum **E**jyolf **A**istleitner–EFMEA), has partly been published. It enriched the fauna of the individual islands with many new faunal data (AISTLEITNER & HÖLZEL 2012). He did not stop researching the insect fauna after that and collected additional Myrmeleontidae material, in the determination of which Axel Gruppe and, from 2022, the second author also took part.

In this publication, we publish the new faunistic data and with it a compiled and annotated checklist of the myrmeleontid fauna of Cape Verde, and give brief remarks of the distribution on the species.

Material and methods

The first author of this publication has spent longer and shorter periods in Cape Verde since December 1998. For more than twenty years, he regularly collected insects during the day and at night, using a 20-watt UV light tube and a 250-watt mercury vapor lamp. Although he did not collect antlion larvae.

The samplings covered all the islands of Cape Verde. From the point of view of antlions, the drier southern archipelago is more important, especially the lower places with sandy structure soil. Some of the larvae do not construct pits (e.g. *Creoleon* sp.). and/or hide under the surface of the soil in places protected from rain, wind, and direct sunlight, If even, then (e.g. *Myrmeleon alternans*) many specimens aggregate during the daytime in shady places provided by the rocks.

The faunistic data are given in the usual way by listing the collecting sites, altitude, date, and name of the collector. After the determination, each specimen was labelled with so-called det-labels separately (the species name, author, date, determiner and year). Most of the voucher specimens can be found in the EFMEA collection. In addition, some specimens were also donated to the collections of Axel Gruppe (Germany) and SCMK Entomological Collection (Rippl-Rónai Museum, Kaposvár, Hungary). These have been marked in the list.

The first author has already published faunistic data on the islands between 1998 and 2007 (AISTLEITNER & HÖLZEL 2012), therefore we are only publishing faunistic data from those specimens that were not included in the previous publication.

The fauna list of the archipelago was compiled using OSVALD's database (2023).

Fig. 1: Westafrika with the middle-atlantic islands

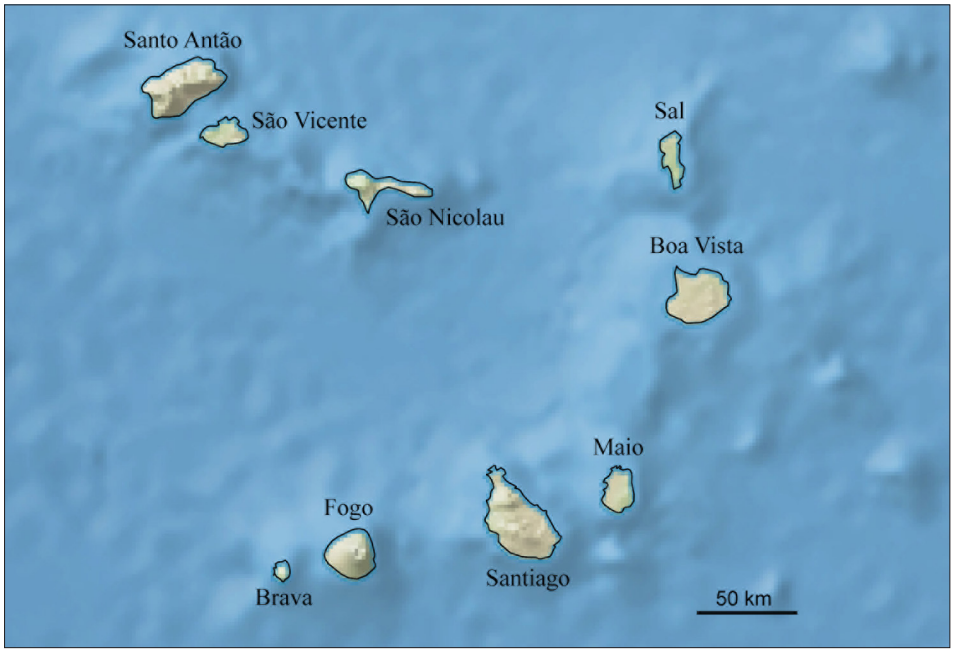


Fig. 2: Cape Verde archipelago

Fig. 3: Boa Vista, Sal Rei, habitat of *Myrmeleon amicus, M. alternans* (Photo: E. AISTLEITNER)

Fig. 4: Brava, Nova Sintra-Santana, habitat of *Myrmeleon* cf. *caliginosus, M. hyalinus caboverdicus, M. amicus* (Photo: E. AISTLEITNER)

Fig. 5: Maio, Punta do Morinho, habitat of *Cueta divisa, Myrmeleon alternans, M. amicus* (Photo: E. Aistleitner)

Collecting periods in the recent paper: 27.12.1998; 28.11.2000–29.11.2000; 06.01.2001–05.10.2001; 27.01.2002–30.12.2002; 09.01.2003–23.11.2003; 31.01.2004 –08.12.2004; 25.10.2005–20.12.2005; 03.01.2011–03.08.2011; 16.10.2012–23.10.2012; 25.11.2013; 25.12.2019.

Result and discussion

The lacewing fauna of Cape Verde is relatively well-known thanks to research carried out in the last hundred years. This is especially true for the Myrmeleontidae fauna.

The checklist of flora and fauna of the archipelago was recently compiled by Monserrat & Martín (2005). In this, 27 taxa of the Neuroptera fauna became known, and the Myrmeleontidae fauna is represented by 13 taxa.

Based on previous research, we compiled a checklist supplemented with an annotated bibliography. In addition, we published new faunal data of the species found in the archipelago from the fauna research period between 1999 and the present day.This survey is based on altogether 201 specimens of 8 species.

Annotated checklist of the antlion fauna of Cape Verde

Abbreviations: Dist – Distribution, Zoogeo – Zoogeography, Chlist – Checklist, Faun – Faunistic.

Ascalaphus festivus (Rambur, 1842)

Ascalaphus festivus (Rambur, 1842) – Ohm & Hölzel 1982 (Dist, Zoogeo), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun), Aistleitner & Ábrahám 2023.(Faun).

Remarks: It has a wide distribution area in arid Africa, the Middle East (Israel - ASPÖCK et al. 2001, Jordan - MONERRAT & ÁBRAHÁM 2021), and the Arabian Peninsula (HÖLZEL 2004). Its area in Europe also extends to Sardinia (PANTALEONI et al. 2013). OHM & HÖLZEL (1982) mentioned its occurrence in the Cape Verde archipelago (Santiago, Fogo). There is only one specimen in the collection, also from the island of Santiago (AISTLEITNER & HÖLZEL 2012).

Local distribution: Maio, Santiago, Fogo.

Centroclisis punctulata Navás, 1912

Centroclisis punctulata Navás, 1912 – Ohm & Hölzel 1982 (Dist, Zoogeo), Hölzel & Ohm 1990 (List), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist).

Remarks: The species from the Cape Verde archipelago was mentioned by OHM & HÖLZEL 1982, since then its new faunistic data has not become known. The species is also widespread in the Sahara region (PROST 1998). ASPÖCK et al. (2001) cited from northern Africa (Algeria and Tunisia). It was not found in Cape Verde during the current survey.

Local distribution: Santiago, Fogo.

Syngenes debilis (Gerstäcker, 1888)

Syngenes sp. - Ohm & Hölzel, 1982 (Dist).

Syngenes debilis (Gerstäcker, 1888) – Hölzel & Ohm 1990 (List), Prost 1998 (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Mansell 2018 (Dist).

Remarks: MANSELL (2018) revised the genus *Syngenes* Kolbe, 1897, which is mostly distributed in Africa. Based on its previous collection sites (PROST 1998), its main distribution area is the sub-Saharan and savanna region of West Africa. It was not found during the current survey.

Local distribution: Sal, Santiago.

Myrmecaelurus reinhardi Hölzel & Ohm, 1991

Myrmecaelurus sp. – Hölzel & Ohm 1990 (List).

Myrmecaelurus reinhardi Hölzel & Ohm, 1991a – (Odescr), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist).

Remarks: OHM & HÖLZEL (1982) even mentioned the occurrence of the genus *Myrmecaelurus* as a missing taxon in the zoogeographic evaluation of the fauna of the archipelago. Later, HÖLZEL & OHM (1990) published information on the occurrence of a species of *Myrmecaelurus* sp. that is new but undescribed species from Cape Verde. The new species was described the following year by HÖLZEL & OHM (1991a). The holotype is from Senegal, the paratypes were collected from Sudan and Cape Verde (Fogo). No new specimens were found during the survey carried out in the Cape Verde archipelago.

Local distribution: Fogo.

Cueta divisa (Navás, 1912)

Cueta klugi Hölzel, 1982 – Hölzel & Ohm 1990 (List), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

Cueta variegata (Klug in Ehrenberg, 1834) – Ohm & Hölzel 1982 (Dist, Zoogeo), Stange 2004 (Mon).

Material examined: **Sal**, Pedra Lume, 1 m, 29.11.2000., 1 ex. leg. Aistleitner; **Sal**, Espargos, 45 m, 28.11.2000., 10 ex. leg. Aistleitner; **Maio**, Morrinho, Dünen, 5 m, 16.10.2012., 1 ex. leg. Aistleitner; **Santiago**, Ribeira Brava, Mangue de Sete Ribeiras, 20 m, 6.9.2001., 9 ex. leg. Aistleitner; **Santiago**, Cidade Velha (Ribeira Grande), 3-20 m, 5.10.2001., 28 ex. leg. Aistleitner; **Santiago**, Praia, Plato, 3-8 m, 30.9.2001., 6 ex. leg. Aistleitner; **Santiago**, Assomada, Fundura, 13.9.2001., 1 ex. leg. Aistleitner; **Santiago**, Ribeira Porto Formoso, 2-20 m, 16.9.2001., 23 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 7.11.2004., 1 ex. leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Santana, 490 m, 25.10.2005., 2 ex. leg. Aistleitner det. Gruppe; **Brava**, Nova Sintra, Santana, 490 m, 3.8.2011., 6 ex. leg. Aistleitner; **Brava**, Nova Sintra, Lem/Covada, 3.12.2002., 3 ex. leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 4.12.2002., 2 ex. leg. Aistleitner.

Remarks: There have been many nomenclature changes in the name of the species (Ábrahám & Giacomino 2020). It is a common and widespread species, especially in the southern part of the Sahara (Oswald 2023). Its area also covers the Arabian Peninsula and the island of Socotra (Kimmins 1960).) The larva builds a trip on the sand soil structure. Adults emerge in the second half of the year (Hölzel & Ohm 1990). It has already been found on all the islands of the Cape Verde archipelago. It is considered a common species as well as on the African continent.

Local distribution: Santo Antão, São Vicente, Santa Luzia, São Nicolau, Sal, Maio, Santiago, Fogo, Brava.

Fig. 6: *Cueta divisa* (Navás, 1912), scale: 10 mm

Myrmeleon alternans Brullé, 1839

Myrmeleon alternans Brullé, 1839 – (Odescr), Hölzel & Ohm 1990 (List), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

Material examined: **São Vicente**, Baia das Gatas, 27.12.1998., 1 ex. leg. Aistleitner; **Sal**, Espargos, 45 m, 30.10.2004., 1 ex. leg. Aistleitner; **Boa Vista**, Sal Rei, Dünen, 3 m, 25.11.2013., 2 ex. leg. Aistleitner; **Santiago**, Praia, Plato, 30.9.2001., 1 ex. leg. Aistleitner; **Santiago**, Ribeira Porto Formoso, 3 m, 16.9.2001., 10 ex. leg. Aistleitner; **Santiago**, Ribeira Principal, 150 m, 6.9.2001., 1 ex. leg. Aistleitner; **Santiago**, Assomada, Cha de Tanque, Ribeira do Mato Sanchez, 200-230 m, 14.9.2001., 24 ex. Aistleitner; **Santiago**, Assomada, Cha de Tanque, Ribeira do Mato Sanchez, 200-230 m, 5.9.2001., 1 ex. leg. Aistleitner, det. Gruppe; **Santiago**, Assomada W Chä de Tanque, 230 m, 5.9.2001., 4 ex. leg. Aistleitner (coll. in SCMK); **Santiago**, Assomada W Chä de Tanque, Sanchez, 200 m, 17.9.2001., 2 ex. leg. Aistleitner (coll. in SCMK); **Santiago**, Assomada W Chä de Tanque, Ribeira do Mato Sanchez, 200 m, 17.9.2001., 5 ex. leg. Aistleitner (coll. in SCMK), 3 ex (in coll Gruppe); **Brava**, Cachaco, 600 m, 3.8.2001., 2 ex. leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 13.12.2002., 2 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 3.11.2004., 2 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 25.10.2005., 1 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 5.11.2005., 1 ex. leg. Aistleitner, 2 ex (in coll Gruppe); **Brava**, Nova Sintra, Santana, 490 m, 23.10.2012., 1 ex. leg. Aistleitner.

Remarks: A widespread species in the archipelago of the Atlantic Ocean (Cape Verde, Azores). Its distribution does not extend to the African continent. There, it is replaced by the similar species *Myrmeleon fasciatus* (Navás, 1912), which is widespread throughout the Sahara region and the Arabian Peninsula. Earlier, it was also mentioned from Socotra

Fig. 7: ***Myrmeleon alternans*** **Brullé, 1839, scale: 10 mm**

(Yemen), but there is an endemic species (*Myrmeleon saldaitisi* Ábrahám, 2010). According to Hölzel & Ohm (1991b), the species spread from the mainland to the archipelago and became darker in colour due to the humid climate. A widespread species in the archipelago of the Atlantic Ocean (Cape Verde, Azores), its distribution does not extend to the African continent. Based on the collecting experiences of the first author, we know that it rests in larger quantities during the day on the dark rocks of volcanic origin, so its colouring may be an evolutionary advantage for it in this environment.

Local distribution: Santo Antão, São Vicente, São Nicolau, Sal, Santiago, Fogo, Brava.

Myrmeleon amicus Hölzel & Ohm, 1983

Myrmeleon (*Morter*) sp. – Ohm & Hölzel, 1982 (Dist, Zoogeo).

Myrmeleon amicus Hölzel & Ohm, 1983 – (Odescr), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

Material examined: **Boa Vista**, Sal Rei, Dünen, 3 m, 25.11.2013., 2 ex. leg. Aistleitner, det. Gruppe; **Maio**, Morrinho, 5 m, 16.10.2012., 3 ex. leg. Aistleitner, det. Gruppe; **Brava**, Nova Sintra, Santana, 490 m, 22.2.2004., 1 ex. leg. Aistleitner, det. Gruppe.

Remarks: Endemic species, known almost from all islands.

Local distribution: Santo Antão, São Vicente, São Nicolau, Sal, Boa Vista, Maio, Santiago, Fogo, Brava.

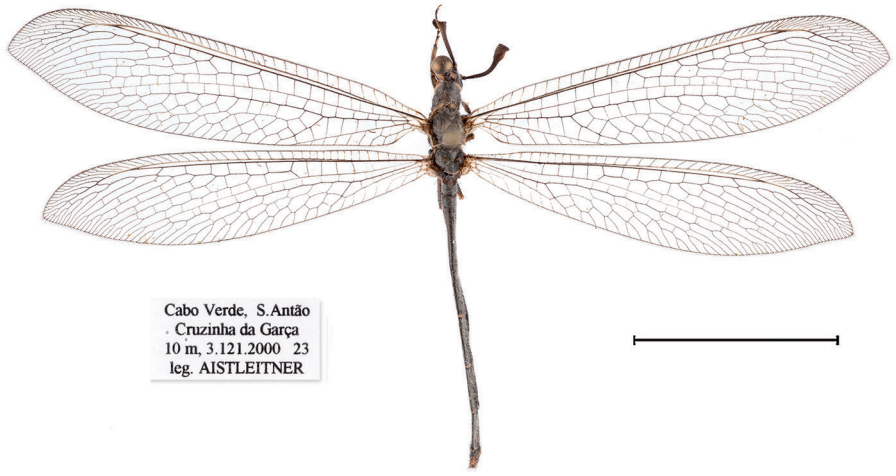


Fig. 8: ***Myrmeleon amicus*** **Hölzel & Ohm, 1983, scale: 10 mm**

Myrmeleon cf. ***caliginosus*** Hölzel & Ohm, 1983

Myrmeleon sp. – Ohm & Hölzel, 1982 (Dist, Zoogeo).

Myrmeleon caliginosus Hölzel & Ohm, 1983 – (Odescr), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

Material examined: **Boa Vista**, Ribeira do Rabil, 30 m, 6.1.2001., 1 ex. leg. Aistleitner; **Santiago**, Cidade Velha (Ribeira Grande), 5 m, 5.10.2001., 1 ex. leg. Aistleitner; **Santiago**, Ribeira Brava, Mangue de Sete Ribeiras, 6.9.2001., 1 ex. leg. Aistleitner; **Santiago**, Calheta, 4.9.2001., 10 ex. leg. Aistleitner; *Brava*, Nova Sintra, Santana, 490 m, 3.3.2003., 1 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 23.11.2003., 1 ex leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 31.1.2004., 2 ex leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 5.9.2004., 8 ex leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 8.12.2004., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Santana, 490 m, 20.12.2005., 1 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 25.10.2005., 6 ex leg. Aistleitner; **Brava**, Fajã d'Agua, 10.12.2002., 6 ex leg. Aistleitner; **Brava**, Nova Sintra, Sorno, 50 m, 30.12.2002., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Lem/Covada, 475 m, 5.12.2002., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Lem/Covada, 475 m, 25.12.2002., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Lem/Covada, 475 m, 9.1.2003., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Lem/Covada, 4 m, 9.1.2003., 3 ex leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 13.12.2002., 2 ex leg. Aistleitner; **Brava**, Nova Sintra, San Pedro, 3.3.2002., 1 ex. leg. Aistleitner.

Fig. 9: *Myrmeleon* cf. *caliginosus* Hölzel & Ohm, 1983, scale: 10 mm

Remarks: The type specimens of the species come from Cape Verde, but specimens from East Africa and the Arabian Peninsula were also found in the Sahara region (HÖLZEL & OHM 1983) when the species was described. Presumably, the taxon is widespread in most of Africa (BADANO 2020). The species needs revision from a taxonomic point of view because several *Myrmeleon* species (eg. *Myrmeleon simplicissimus* Gerstaecker, 1885, *Myrmeleon stigmalis* Navás, 1912) have been described from Africa before .

Local distribution: Santo Antão, São Vicente, Santa Luzia, São Nicolau, Sal, Boa Vista, Santiago, Fogo, Brava.

Myrmeleon hyalinus caboverdicus Hölzel, 1987

Myrmeleon hyalinus Olivier: – Ohm & Hölzel, 1982 (Dist, Zoogeo).
Myrmeleon hyalinus caboverdicus Hölzel, 1987 – (Odescr), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Aistleitner & Hölzel 2012 (Faun).
Myrmeleon hyalinus Olivier, 1811 ssp. *caboverdicus* Hölzel, 1987 – Monserrat & Martín 2005 (Chlist).

Material examined: **Brava**, Nova Sintra, Santana, 490 m, 8.12.2004., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Santana, 490 m, 25.12.2019., 1 ex leg. Aistleitner.

Remarks: The holotype is from São Vicente. It is generally one of the most common *Myrmeleon* species on the continent, in contrast to the local population, which appears to be less widespread in the archipelago and has a small population size. The specimens of the local population in the archipelago are also strongly coloured, in this respect they differ significantly from the *M. hyalinus* populations found in dry environments on the continent. The explanation of variation in colour and its subspecies status can be explained similarly to the one described for the species *Myrmeleon alternans*.
Local distribution: São Vicente, Santiago, Brava.

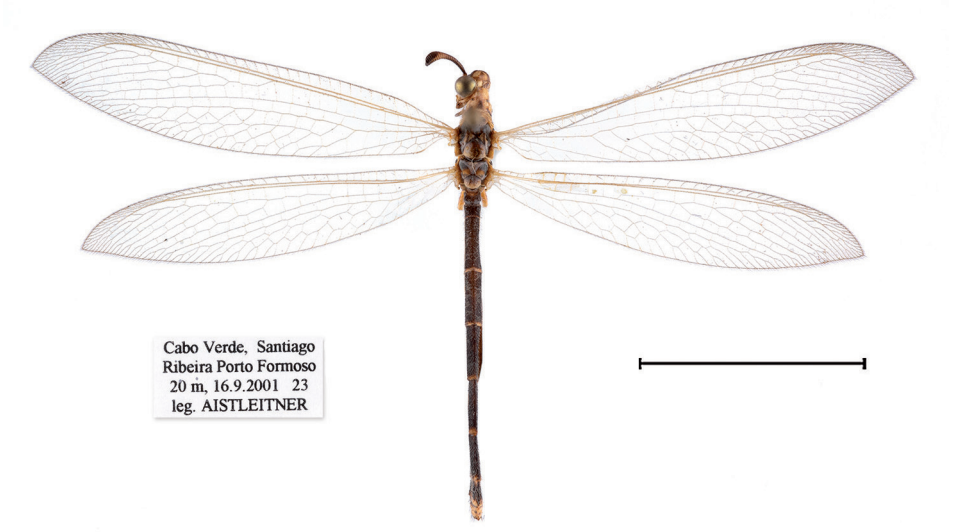


Fig. 10: *Myrmeleon hyalinus caboverdicus* Hölzel, 1987, scale: 10 mm

Creoleon cecconinus Navás, 1932

Creoleon griseus cecconinus Navás, 1932 – (Odescr), Ohm & Hölzel 1982 (Dist, Zoogeo), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist).
Creoleon griseus (Klug, 1834) ssp. *cecconinus* Navás, 1932 – Monserrat & Martín 2005 (Chlist).
Creoleon cecconinus Navás, 1932 – Stange 2004 (Mon), Aistleitner & Hölzel 2012 (Faun).

Material examined: **Santiago**, Assomada, Fundura, 13.9.2001., 2 ex. leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 13.12.2002., 1 ex. leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 4.12.2002., 1 ex. leg. Aistleitner; **Brava**, Cachaco, 6-800 m, 9.11.2003., 1 ex. leg. Aistleitner (coll. in SCMK).

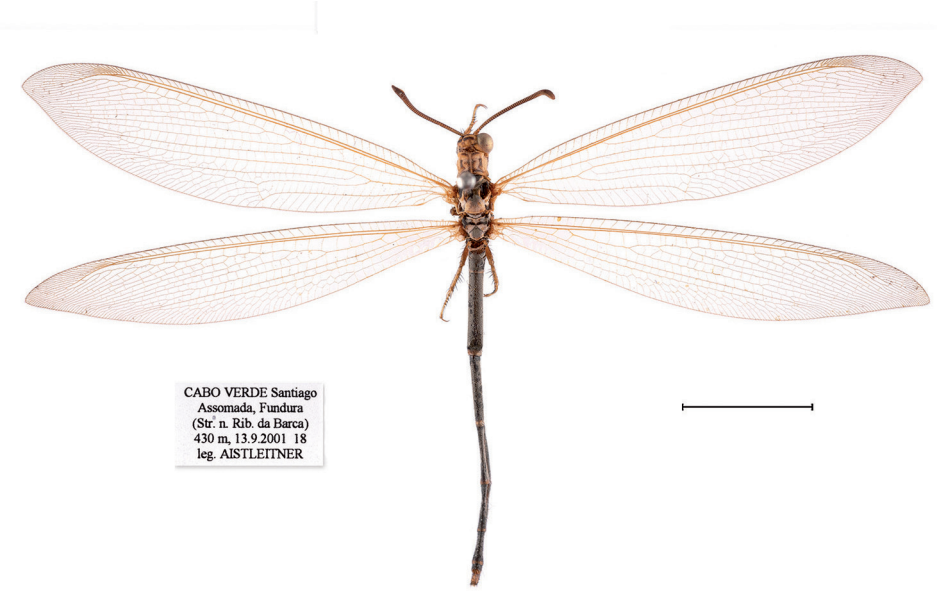


Fig. 11: ***Creoleon cecconinus*** **Navás, 1932, scale: 10 mm**

Remarks: Previously it was considered an endemic subspecies (HÖLZEL & OHM 1990), and nowadays it is moved to the species level (Oswald 2023). Its morpho-taxonomic examination requires further research. It seems to be a widespread species in the Cape Verde archipelago. since it has already been found on all the islands.

Local distribution: Santo Antão, São Vicente, São Nicolau, Boavista Maio Santiago, Fogo, Brava.

Creoleon cinerascens (Navás, 1912)

Material examined: **Maio**, Vila do Maio 20 m 27.1.2002., 1 ex. leg. Aistleitner.

Remarks: It is a widespread species in the Sahara region of Africa and the Arabian Peninsula. It can be especially common in sandy coastal regions. Its occurrence in Cape Verde is not special. A new species in the local fauna.

Local distribution: Maio.

Creoleon giganteus Navás, 1932

Creoleon giganteus Navás, 1932 – (Odescr), Ohm & Hölzel 1982 (Dist, Zoogeo), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

Remarks: Endemic species. It was not found in Cape Verde during the current survey.

Local distribution: Santo Antão, São Vicente, São Nicolau, Sal, Boa Vista Maio, Santiago.

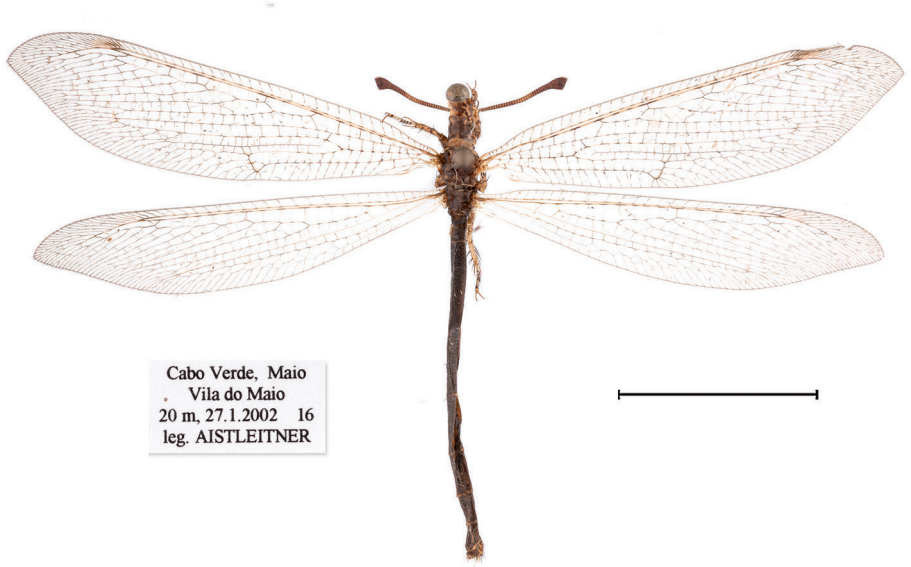


Fig. 12: ***Creoleon cinerascens*** **(Navás, 1912), scale: 10 mm**

Neuroleon modestus (Navás, 1912)

Neuroleon sp. – Ohm & Hölzel 1982 (Dist, Zoogeo).

Neuroleon sociorum Hölzel & Ohm, 1983 – (Odescr), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Faun), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun), Mansell 2018 (Dist).

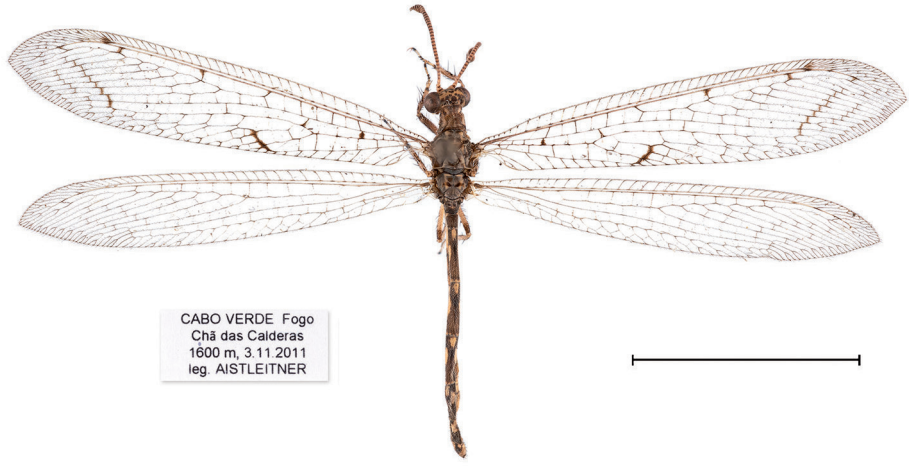


Fig. 13: ***Neuroleon modestus*** (Navás, 1912)**, scale: 10 mm**

Material examined: **Fogo**, Cha das Caldeiras, 1600 m, 03.1.2011., 1 ex. leg. Aistleitner; **Brava**, Faja d'Agua, Ribeira, 50 m, 10.12.2002., 1 ex. leg. Aistleitner, (in coll. Gruppe).

Remarks: It is described from Cape Verde by HÖLZEL & OHM (1983) as a new species and later found to be conspecific with the morphological variable species *Neuroleon modestus* (Navás, 1912). It has a very wide distribution in the Saharan and sub-Saharan region (MICHEL & AKOUDJIN 2012 and PROST & POPOV 2021), and its area extends to the Arabian Peninsula (LETARDI et al. 2020) and Socotra (ÁBRAHÁM 2010).

Local distribution: Sal, Maio, Santiago, Fogo, Brava.

The current survey documented the occurrence of a new species (*Creoleon cinerascens* (Navás, 1912)) in the local fauna. It has a wide distribution in Africa, especially in coastal sandy areas. Thus, the occurrence of Cape Verde is not surprising.

The characteristic of the local antlion fauna is that, far from the African continent, a specific fauna development emerges between the species of the genus *Myrmeleon* (4 sp.) and *Creoleon* (3 sp.). Out of the 12 known species, 4 endemic taxa (*Myrmeleon amicus*, *Myrmeleon hyalinus caboverdicus, Creoleon cecconinus, Creoleon giganteus*) can be found in the archipelago. Of these, *Myrmeleon hyalinus caboverdicus* was detected in only a few islands (OHM & HÖLZEL 1984, MONSERRAT & MARTÍN 2005). The other endemic species in the archipelago were found in the majority of the islands. *Myrmeleon alternans* is a typical species with a wide distribution in the Macaronesia ecoregion (OHM & HÖLZEL 1982, 1984). The size of the M alternans in the Canary Islands is significantly larger than that of the Cape Verdean specimens, suggesting further taxonomic separation. On the African continent it is replaced by its sister species *Myrmeleon fasciatus* (Navás, 1912). *Syngenes debilis* is a characteristic species of the Western Sahara region (PROST 1998).

Centroclisis punctulata, Myrmecaelurus reinhardi, Cueta divisa, and *Creoleon cinerascens* have a wide distribution in the eremial zone in the Saharan region (STANGE 2004). *Myrmeleon* cf. *caliginosus* and the area of *Neuroleon modestus* extend the whole of Africa. The continental species with a wide distribution populated the majority of the archipelago. They will probably become known from the entire archipelago during further research.

Among the factors endangering fauna, tourism should be singled out. Because of global tourism, those islands with sandy beaches suitable for swimming are at risk. They lie at a low altitude above sea level and usually do not contain fresh water. Due to the packaging materials of the food transported to these islands and the lack of waste collection, the islands are heavily polluted with garbage, which leads to the impoverishment of terrestrial and marine life.

Acknowledgment

After 2008, Axel Gruppe (Germany) also determined specimens from the collections, this is indicated separately in the compiled list. The authors appreciate his work.

The authors express their sincere thanks to Bálint Csernák for taking the illustrative habitus photos.

References

Aistleitner, E. 2013: Flora und Vegetation des kaboverdianischen Archipels - ein kleiner Überblick. – Sauteria 20: 207-221.

Aistleitner, E. 2017: Tagfalter des kapverdischen Archipels sowie Topographie, Geologie, Klima und Vegetation. Checkliste, Gesamtverbreitung und faunistisch-phänologische Daten (Lepidoptera: Hesperioidea, Papilionoidea). – Nachrichten des Entomologischen Vereins Apollo, Frankfurt am Main, N.F. 38 (2/3): 65.78.

Aistleitner, E. Barkemeyer, W., Lehmann, G., Martens, A. 2008: A checklist of the Odonata of the Cape Verde Islands. – Mitteilungen des Internationalen Entomologischen Vereins 33: 45 - 57.

Aistleitner, E.; Hölzel, H. 2012: Zur Kenntnis der Schmetterlingshafte, Florfliegen und Ameisenjungfern (Neuropterida: Ascalaphidae, Chrysopidae, Myrmeleonidae) der Kapverden (Cape Verde). – Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen 64:119-124.

Ábrahám, L.; Giacomino, M. 2020: A little known and synonym ant-lions 2 (Neuroptera: Myrmeleontidae). – Natura Somogyiensis 34:21-72.
https://doi.org/10.24394/NatSom.2020.34.21

Ábrahám, L. 2010: Short report on the fauna of ant-lion and owl-fly (Neuroptera) from Socotra Archipelago. – Natura Somogyiensis 17:177-191.
https://doi.org/10.24394/NatSom.2010.17.177

Badano, D. 2020: Larval morphology of three Afrotropical pit-building antlions of the genus Myrmeleon Linnaeus (Neuroptera, Myrmeleontidae). – Israel Journal of Ecology and Evolution 2020:63-72.

Badano, D.; Makris, C.; John, E.; Hadjiconstantis, M.; Sparrow, D.; Sparrow, R.; Thomas, B.; Devetak, D. 2018: The antlions of Cyprus: review and new reports (Neuroptera: Myrmeleontidae). Fragmenta Entomologica, Roma 50:95-102.
https://doi.org/10.13133/2284-4880/307

Hölzel, H. 1986: Myrmeleon hyalinus Olivier -- eine chorologisch-taxonomische Analyse (Neuropteroidea: Planipennia: Myrmeleonidae). – Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen 38:78-88.

Hölzel, H.; Ohm, P. 1983: Drei neue Myrmeleoniden-Spezies von den Kapverdischen Inseln (Neuropteroidea, Planipennia). – Entomofauna 4:237-252.

Hölzel, H.; Ohm, P. 1990: Verbreitung und Phänologie kapverdischer Neuropteren (Insecta: Planipennia). – Courier Forschungsinstitut Senckenberg 129:139-145.

Hölzel, H.; Ohm, P. 1991a: Drei neue Myrmeleonidae-Species aus dem nördlichen Afrika (Neuropteroidea: Planipennia). – Entomologische Zeitschrift mit Insektenbörse 101:127-132, 133-135.

Hölzel, H.; Ohm, P. 1991b. Die Neuropteren der Mittelatlantischen Inseln. 2. Myrmeleonidae. – Neuroptera International 6:167-190.

Hölzel, H.; Ohm, P.; Duelli, P. 1999: Contribution to the knowledge of the Neuroptera of Ethiopia. – Entomofauna 20:345-369.

Kimmins, D. E. 1960: The Odonata and Neuroptera of the Island of Socotra. – Annals and Magazine of Natural History (13)3:385-392.
https://doi.org/10.1080/00222936008651033

Letardi, A.; Abdel-Dayem, M. S.; Al Dhafer, H. M. 2020: New faunal data on lacewings (Insecta, Neuroptera) collected from Saudi Arabia. – ZooKeys 936:111-148.
https://doi.org/10.3897/zookeys.936.49962

Mansell, M. W. 2018: Antlions of southern Africa: Syngenes Kolbe, 1897, with descriptions of two new species and comments on extra-limital taxa (Neuroptera: Myrmeleontidae: Acanthaclisini). – Zootaxa 4497:346-380.
https://doi.org/10.11646/zootaxa.4497.3.2

McLachlan, R. 1869: New species, &c., of Hemerobiina; with synonymic notes (first series). – Entomologist's Monthly Magazine 6:21-27.

Michel, B.; Akoudjin, M. 2012: Review of Neuroleon Navás of west Africa with descriptions of four new species (Neuroptera, Myrmeleontidae). – Zootaxa 3519:32-52.
https://doi.org/10.11646/zootaxa.3519.1.2

Monnerat, C.; Ábrahám, L. 2020: Owflies from Jordan (Neuroptera, Ascalaphidae). – Alpine Entomology 4:139-150.
https://doi.org/10.3897/alpento.4.50696

MONSERRAT, V. J.; MARTÍN, E. 2005: Orden/Ordem Plannipennia [sic]. Pp. 77–78. In: ARECHAVALETA, M.; ZURITA, N.; MARRERO, M. C.; MARTÍN, J. L. (editors). Lista preliminar de especies silvestres de Cape Verde: hongos, plantas y animales terrestres 2005. – Consejería de Medio Ambiente y Ordenación Territorial, Gobierno de Canarias, Santa Cruz de Tenerife. 155 + [4] pp.

NAVÁS, L. 1932: Alcuni insetti del Museo di Zoologia della R. Universit... di Torino. – Bollettino dei Musei di Zoologia e di Anatomia Comparata della R. Università di Torino (3)42(26):1-38.

OHM, P.; HÖLZEL, H. 1982: Tiergeographische und ökologische Aspekte der Neuropterenfauna der Kapverden. – Courier Forschungsinstitut Senckenberg 52:159-165.

OHM, P.; HÖLZEL, H. 1984: Zur Zoogeographie der Neuropteren auf den Mittelatlantischen Inseln eine erste übersicht (Insecta: Planipennia). – Courier Forschungsinstitut Senckenberg 71:79-86.

OSWALD, J. D. Bibliography of the Neuropterida. Lacewing Digital Library, Research Publication No. 2. http://lacewing.tamu.edu/Biblio/Main. Last accessed: 22.06.2023.

PANTALEONI R. A., BADANO D., ASPÖCK U. & ASPÖCK H., 2013: – Ascalaphus festivus (Rambur, 1842) in Sardinia, a new genus of Ascalaphidae for Europe (Neuroptera). – Biodiversity Journal, 4(1): 179-182.

PROST, A. 1998: Les Acanthaclisinae d'Afrique occidentale et centrale [Neuroptera, Myrmeleontidae]. – Revue Française d'Entomologie (N.S.)20:157-173.

PROST, A.; POPOV, A. 2021: A first comprehensive inventory of Ascalaphidae, Palparidae, and Myrmeleontidae (Insecta: Neuroptera) of Northeastern Nigeria with description of two new species and an overview of genus Bankisus Navás. – Historia Naturalis Bulgarica 43(5):51-77. https://doi.org/10.48027/hnb.43.051

STANGE, L. A. 2004: A systematic catalog, bibliography and classification of the world antlions (Insecta: Neuroptera: Myrmeleontidae). – Memoirs of the American Entomological Institute 74, iv+ 1-565.

TJEDER, B. 1957: Neuroptera from the Cape Verde Islands. 1. Fam. Coniopterygidae. – Commentationes Biologicae, Societas Scientiarum Fennica 16(8):1-11.

Natura Somogyiensis 41: 21-30. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.21
Submitted: 24.07, 2023; Accepted: 30.07, 2023; Published: 04.08, 2023 www.smmi.hu/termtud/ns/ns.htm

Andrena (*Chlorandrena*) *harisi*, a new bee species from Libya (Hymenoptera: Anthophila, Andrenidae)

Hans Richard Schwenninger

Kompetenzzentrum Wildbienen gGmbH, Erfurter Str. 77. Neustadt an der Weinstraße, Germany
email: H.u.K.Schwenninger@t-online.de

Schwenninger, H. R.: *Andrena (Chlorandrena) harisi new species from Libya (Hymenoptera: Anthophila, Andrenidae).*
Abstract: *Andrena* (*Chlorandrena*) *harisi* **n. sp**. from Libya is described and illustrated. Characters for separation of this new species from similar *Andrena* (*Chlorandrena*) *pyrrhula* Pérez, 1895 are provided.

Keywords: New species, taxonomy, Libya, Hymenoptera, Andrenidae

Introduction

Attila Haris (Budapest) collected bees in the subcoastal area of the Cyrenaica at Marsa El Brega (Libya). He sent a number of *Andrena* specimens from this site to the author for identification. Among them were several specimens belonging to an *Andrena* species new to science, which is described below.

Material and methods

In this study specimens of intensively red coloured *Andrena*-species of the subgenus *Chlorandrena* were examined. Beside the specimens collected by Attila Haris, the author also checked other collections, especially the extensive ones of Maximillian Schwarz and the Upper Austrian State Museum Linz. Thomas J. Wood provided a male of the subgenus *Chlorandrena* with intensively red pubescence

Acronyms of depositories

OÖLL	Collection of the Upper Austrian State Museum, Linz, Austria
SCMK	Collection of the Rippl-Rónai Museum, Kaposvár, Hungary
Scer	Collection Erwin Scheuchl, Ergolding, Germany
Scwe	Author's collection, Stuttgart, Germany
Scwz	Collection Maximilian Schwarz, Ansfelden, Austria

The morphological studies were carried out with a stereo microscope SZX16 (Olympus). For the photographs the digital camera SC180 (Olympus) was used. The objects were focused up by several steps beginning at the bottom. The software

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

"Olympus cell" revealed a photo in combining the different shootings that were taken during the up-stacking process. All measurements were done using the SZX16 and the software "Olympus cell".

For morphometric measurements the following characters were chosen (abbreviation and used magnification in brackets):

Body length (BL, 100x) from antennal base to tip of pygidium; head length (HL, 160x) from top of vertex to lower margin of clypeus excluding process of labrum; head width (HW, 160x); wing length (WL, 125x) length of forewing from tip to insertion at thorax; Antenna flagellum and scape (AN and SC, 160x); flagellomeres length (FL1-12, 200x) measured on ventral surfaces of flagellomeres when antenna stretched forward.

Each studied specimen was labelled with a unique identification number and letter sequence (= ID-No.) which is also recorded in the author's database. Each data record includes, as far as available, information about locality, geographic coordinates, date, collector, collection (= depository), and identifier.

Abbreviations:

Morphological terms and abbreviations used in this paper mainly follow MICHENER (1944, 2007).

AN – antenna, BL – body length, coll. – collection, FL – flagellomere(s), HL – head length, HW – head width, L, W – maximum length, respectively width, leg. – legit, N, E – latitude respectively longitude, Pd – puncture diameter, S – metasomal sternum, SC – scape, T – metasomal tergum, WL – length of forewing.

Results

Andrena (***Chlorandrena***) ***harisi*** sp. n.
(Figs. 1-5)

Diagnosis

Based on the typical characters of the females, i.e. a row of spines on the back side of the hind femur and plumose (strongly branched) hairs on the corbiculae (see Fig. 1), the new species belongs to the subgenus *Chlorandrena* Pérez, 1890. The species of this subgenus are heterogeneous and differ in both sexes in several traits. WARNCKE (1968) divided *Chlorandrena* in three parts: the humilis-, taraxaci- and livens -group (named after the most characteristic species). The shape of the facial foveae is the main tool to separate the females of the different taxa-groups within the subgenus *Chlorandrena*. The females of the new species are characterized by elliptical-shaped facial foveae, extending about as half as long as the compound eyes. The terga are without typical crater punctures (see also SCHWENNINGER 2015). Therefore, the new species is assigned to the *Andrena* livens-group.

Holotype (♀): LIBYA: Munizip al-Wahat, Marsa el Brega, 30.424225°N, 19.640458°E: 12.III.2013, leg. A. Haris, coll SCMK (ID-No. 130126scwe062).

Paratypes (7 ♀♀): LIBYA: Munizip al-Wahat, Marsa el Brega, 30.424225°N, 19.640458°E: 8.III.2013 (ID-No. 130126scwe001), 12.III.2013 (ID-No. 130126scwe023), 15.III.2013 (ID-No. 130126scwe004), 17.III.2013 (ID-No. 130126scwe002), 20.III.2013 (ID-No. 130126scwe022), all leg. A. Haris and coll SCMK; 5.III.2013 (ID-No. 130126scwe003), 13.III.2013 (ID-No. 130126scwe005) all leg. A. Haris and coll Scwe.

Description

Female (holotype, BL = 13,87 mm)

Coloration: Integument predominantly red except head and mesosoma black, terga 1 basally darkened except for the middle, T1 and T2 lateral on each side with black spots, T2 in the middle with black spots, T3 and T4 with black bands in the middle of the discs, T5 except the base brownish, T6 brownish and pygidium black (see Fig. 2), sterna 3-6 distally darkened brownish. – Scapus and pedicellus except at the apex black, FL 3-10 at the apex dark striped. – Trochanter, femur and base of tibia brown, distally lightened reddish. Tarsae and tibial spurs red. – Wing membrane hyaline, brownish obfuscated, and pterostigma brown, veins light to dark brown, tegulae transparent red, distally hyaline.

Pubescence: Hairs intensively red except hind margins of sterna T5 and T6 with brown hairs, black bands of T3 and T4 with dark brown hairs. – Hind margins of T1-T4 fimbriate with bands of red hairs, on T3 and T4 covering the entire depressions, T5 and on caudal fimbria with brown hairs; sterna with erected red hairs, shorter on the discs (160 µm), more than twice as long at the depressions (420 µm). – Middle and hindlegs on apex of femur and base of tibia (knees) with dark brown hairs. – Facial fovea on upper side with golden pubescence, downwards whitish yellow; hairs on head faintly plumose as long as FL 2 + 3, on meso- and metasoma hairs shorter, scopa with hairs heavily plumose, longer than length of the hind spur.

Head: transverse, HL = 3.1 mm, HW = 3.7 mm, HL/HW = 0.8. – Facial foveae: distance between fovea and lateral ocellus (175 µm) smaller than the width of the ocellus (239 µm) (space = ¾ of the width) (see Fig. 3), fovea ellipsoid, width 596 µm, length 1,5 mm, extending 220 µm below the insertion of the scapus. – Occiput fine shagreened with moderate dense punctuation (interspaces > 1 Pd), upper side of fovea with fine imbricate punctuation, frons with longitudinal rugulae, looking like longitudinal stripes. – Supraclypeal area with fine dense punctuation, laterally imbricate. – Malar space: linear. – Genal area about as wide as compound eye. – Antennae length: scapus 1 mm, pedicellus 150 µm, FL2 (405 µm) almost as long as FL3+4 (391 µm), FL3-FL10 transverse, gradually longer towards the apex, FL11 square, FL12 about 1.5 times as long as wide [FL4: L = 185 µm, W = 231 µm, FL5: L = 190 µm, W = 231 µm, FL6: L = 222 µm W = 243 µm, FL7: L = 217 µm, W = 243 µm, FL8: L = 222 µm, W = 256 µm, FL9: L = 212 µm, W = 250 µm, FL10 weakly transverse (L = 242 µm, W = 252 µm), FL11 square (L = 256 µm, W = 261 µm), FL12 longer than wide (L = 366 µm, W = 257µm). – Clypeus: slightly convex, with coarse punctures, interpunctural spaces about 1 Pd, towards the apex lateral punctuation increasingly denser; interpunctural spaces glossy. – Labrum: process trapezoid, in the middle weakly emarginate, about ¾ as wide as labrum, glossy (see Fig. 4).

Mesosoma: Pronotum: punctuation more or less scattered (interspaces 1–2 Pd), surface weakly shagreened, shiny. Humeral angle: distally densely punctured (interspaces ½-1 Pd), proximal punctuation more scattered (1-2 Pd), surface shiny, weakly shagreened. – Scutum: punctuation shallow and dense (interspaces <½ Pd), towards the posterior part punctuation more scattered (interspaces 1-2 Pd) towards hind margin more dense (interspaces <½ Pd), surface shiny. – Scutellum and postscutellum: shiny, punctuation in the middle scattered (interspaces 1,5-2 Pd), laterally fine, extremely dense (interspaces <1/2 Pd). – Propodeum: propodeal enclosure indicated by a fine boundary line, anterior margin with wrinkles; lateral area of propodeum with coarse imbricate punctuation, inter-

spaces about 1 Pd; marginal area medially strigulate, laterally finely shagreened, transversely shagreened on the median part, lateral part colliculate. – Mesopleurae: shiny, upper part with fine and dense punctuation, downward with coarse, more scattered punctuation (interspaces < ½ to > 1 Pd). – Wing: nervulus antefurcal, distance from basal vein usually 1 times the width of nervulus. – Legs: Hind femur with a row of 14 dark brown spines, tarsal claws all bidentate (see Fig. 5).

Metasoma: Terga: shiny, predominantly with dense punctuation, becoming increasingly dense from T1 to T4 (interspaces on disc of T1 2-3 Pd, on T4-T5 < 0.5 Pd), fine punctures on T1-T 5 imbricate, depressions especially laterally clearly separated from the discs. – Sterna: weakly shagreened, punctuation towards posterior margin increasingly denser (interspaces 1 to 0,5 Pd), anterior margin of S1-S4 in the middle roughly semicircular impressed. – Pygidium: pygidial plate flat, without raised triangular area or carina, proximally fine shagreened.

The morphometrical data in table 1 show that the body length of the female is about 14 mm. The head is transverse (wider than long), the wing length about 8 mm and the antenna 3,5 mm incl. scape (0,99 mm)

Table 1: Morphometrics of the type series of *Andrena harisi* (in mm)

Specimens ID-No.	BL	HL	HW	HL/HW	WL	AN	SC
130126scwe062 (HT)	13,87	2,89	3,65	0,79	8,17	3,5	1,01
130126scwe001 (PT)	13,71	2,83	3,5	0,81	8,07	3,48	0,97
130126scwe002 (PT)	13,86	2,80	3,65	0,77	8,18	3,47	0,97
130126scwe003 (PT)	13,91	2,99	3,65	0,82	8,18	3,47	0,88
130126scwe004 (PT)	13,72	2,96	3,72	0,80	8,10	3,45	1,01
130126scwe005 (PT)	13,89	2,95	3,65	0,81	8,07	3,43	0,97
130126scwe022 (PT)	13,83	2,98	3,64	0,82	8,35	3,52	0,97
130126scwe023 (PT)	13,77	3,03	3,65	0,83	8,4	3,63	1,13
Ø	**13,82**	**2,93**	**3,64**	**0,81**	**8,19**	**3,49**	**0,99**

The dark coloring of the terga varies within the paratypes. Compared to the holotype, especially terga 2-4 of the paratype (No. 130126scwe005) are more darkly colored.

Male: Unknown.

Comparative notes

Within the subgenus *Chlorandrena*, *Andrena harisi* sp. n. is immediately recognizable by intensively red coloured hairs, the extended red coloured metasoma and antennae, and the predominantly orange-red colouring of all legs. It is probably closely related to *Andrena pyrrhula* Pérez, 1895, and matches with this species in size and appearance, especially the intensively red pubescence and usually red coloured abdomen. But the densely punctuated terga and the more shiny scutum and scutellum allow easy differentiation from *Andrena pyrrhula*, which is far less punctured on the terga and has a dull scutum and scutellum.

Andrena isis Schmiedeknecht, 1900, which also has extensive red-coloured terga, has a significantly shorter body length (8 mm).

The following specimens of *Andrena pyrrhula* were examined and compared to *Andrena harisi* **sp. n.**:

TUNISIA: 20 km N Métlaoui (Gafsa) 3♂, 2♀♀, 17.IV.1994, all leg. M. Schwarz, coll scwz (ID-No. 181212scwe328 -181212scwe333); Zarzis Khaffalah (Medenine) 1♀, 11. III.2008 (ID-No. 090102scwe275), Skhira Sidi Mheddeb (Sfax) 1♂, 25.III, 2010 (ID-No. 111001scwe014) all leg. et coll Scwe; Ksar Halada (Tataouine) 1♂ 4.-5.IV 1998 K. Denes leg. T.J. Wood det, coll OÖLL (ID-No. 170202scwe317).

Etymology

The new species is dedicated to Attila Haris, Hungarian sawfly specialist, who collected the types at the locality Marsa el Brega (Munizip al-Wahat).

Observation of flower visits

So far there are no records of flower visits.

Description of the locus typicus

The habitat is a subcoastal area of Sahara desert, partly covered with semi-desert spiny scrub vegetation (see Fig. 6). The location is close to an industrial area in Marsa el Brega (Munizip al-Wahat) where Attila Haris (the collector) did regular collection trips. between 30.428475° N, 19.640358° E and 30.412167° N, 19.633244° E from January to end of March in 2013.

Andrena harisi is not rare at the locus typicus (pers. comm. A. Haris).

The new species is yet known only from the eastern region of Libya, the Cyrenaica.

Fig. 1: *Andrena harisi* sp. n.: hind femur and tibia

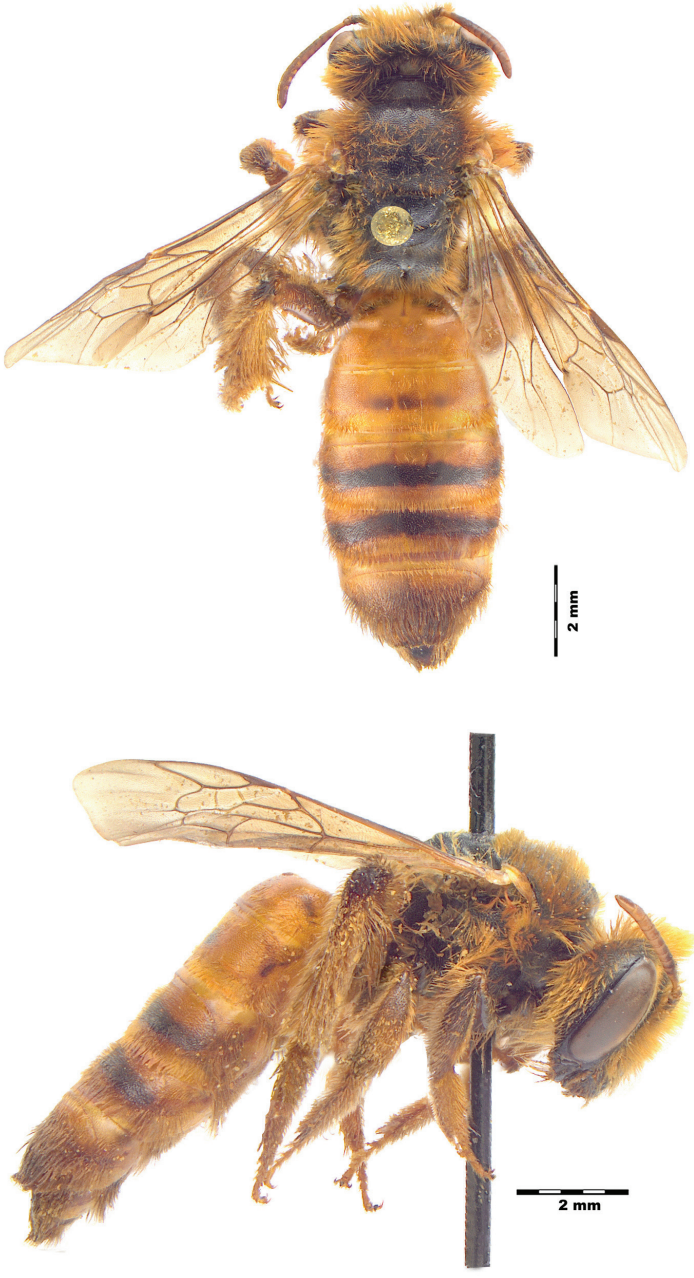


Fig. 2: ***Andrena harisi*** **sp. n. holotype: dorsal and lateral view**

Fig. 3: ***Andrena harisi*** **sp. n. holotype: occiput**

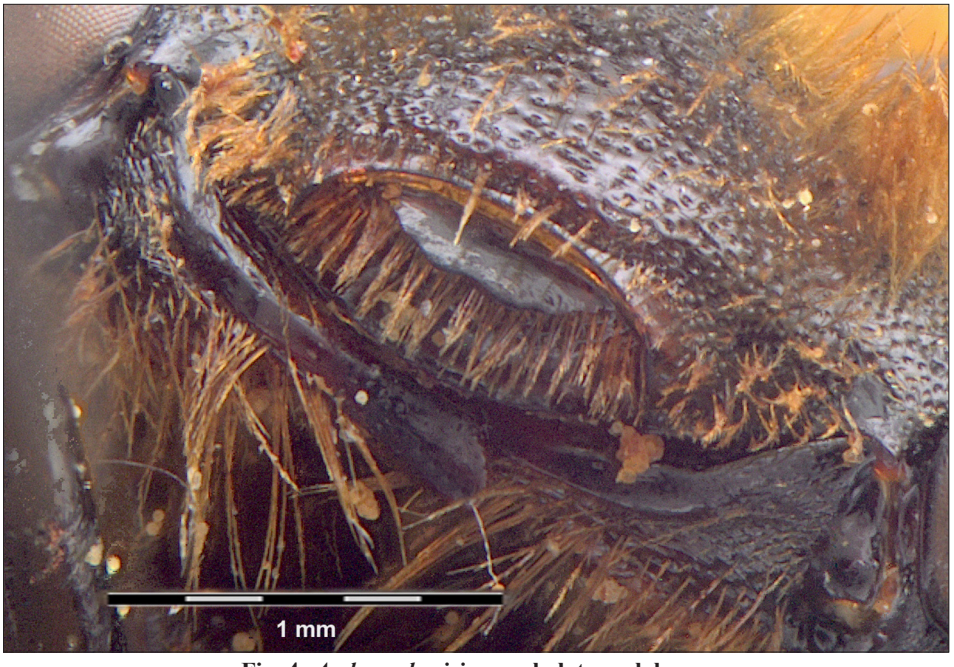


Fig. 4: ***Andrena harisi*** **sp. n. holotype: labrum**

Fig. 5: ***Andrena harisi*** **sp. n. holotype: bidentate claws of hind and middle leg**

Fig. 6: Subcoastal area of the Sahara desert, partly covered with semi-desert spiny scrub vegetation, the locus typicus of ***Andrena harisi*** **n. sp. (Photo: Attila Haris).**

The following bee species have been collected by Attila Haris at the locus typicus of *A. harisi* (30.424225°N, 19.640458°E) also in February and March 2013 and were also identified mainly by the author or by Erwin Scheuchl.

Andrena callida Warncke, 1974
5♀♀: 8.III.2013 (ID-No: 160303scwe579), 8.III.2013 (ID-No: 160303scwe581), 1. III.2013 (ID-No: 160303 scwe580), 20.III.2013 (ID-No.160303scwe421), 22.III.2013 (ID-No: 160303scwe578), all in coll SCMK; 2♀♀: 22.III.2013 (ID-No: 160303scwe422), 13.III.2013 (ID-No: 160303scwe582), in coll Scwe.

Andrena decollata Warncke, 1974
1♀: 3.III.2013 (ID-No 160303scwe418), in coll Scwe.

Andrena isis Schmiedeknecht, 1900
1♀: 3.III.2013 (ID-No 160303scwe420) in coll SCMK; 1♀: 20.III.2013 (ID-No 160303scwe419), in coll Scwe.

Andrena mara Warncke, 1974
4♀♀: 24.II.2013 (ID-No. 170202scwe325), 28.II.2013 (ID-No 170202scwe322), 16. III.2013 (ID-No 170202scwe326), 17.III.2013 (ID-No 160303scwe429), all in coll SCMK; 2♀♀: 23.II.2023 (ID-No 170202scwe324), 28.II.2023 (ID-No 170202scwe327), in coll Scwe; 2♂♂: 24.II.2013 (ID-No 170202scwe321), 20.III.2013 (ID-No 170202scwe323), det Scer, in coll SCMK; 2♂♂: 10.III.2013 (ID-No 160303scwe428), 15.III.2013 (ID-No 160303scwe431), in coll Scwe.

Andrena microcardia Pérez, 1895
1♂: 24.II.2013 (ID-No 160303scwe423), det Scer, in coll Scwe.

Andrena pyrrhula Pérez, 1895
4♀♀: 3.III.2013 (ID-No. 160404scwe584), 15.III.2013 (ID-No. 160404scwe575), 22.III.2013 (ID-No. 160303scwe427), 23.III.2013 (ID-No. 160404scwe576), all in coll SCMK; 2♀♀: 12.III.2013 (ID-No. 160303scwe426), 16.III.2013 (ID-No. 160404scwe577), all in coll Scwe.

Panurgus platymerus Pérez, 1895
3♀♀: 12.III.2013 (ID-No 160303scwe415), 13.III.2013 (ID-No 160303scwe414), 19.III.2013 (ID-No 160303scwe583), all in coll SCMK; 2♀♀: 2.III.2013 (ID-No 160303scwe425), 19.III.2013 (ID-No 160303scwe424), all in coll Scwe.

Acknowledgments

The author is indebted to Attila Haris for the loan of the Libyan material and the possibility to describe a new species. Furthermore, the author is grateful to Fritz Gusenleitner and Esther Ockermüller (Upper Austrian State Museum Linz, Austria) and especially to Maximilian Schwarz (Ansfelden, Austria) for the opportunity to work in their collections and the loan of Chlorandrena specimens. Thanks are also given to Thomas James Wood (Université de Mons, Department of Zoology, Belgium) for assistance in researching and loaning red colored specimen of *Chlorandrena*. Special thanks go to Erwin Scheuchl for identifying some problematic specimens, kindly reading the manuscript and providing valuable improvements. The author expresses his grateful thanks to Dr. Levente Ábrahám (director, Rippl-Rónai Museum, Kaposvár) for editing this paper. Finally, the author thanks his wife Karin Wolf-Schwenninger for critically reading the manuscript.

References

MICHENER, C.D. 1944: Comparative external morphology, phylogeny, and classification of the bees. – Bulletin of the American Museum of Natural History 82: 151–326.

MICHENER, C.D. 2007: The Bees of the World (2nd edition), 992 pp.; Baltimore & London (Johns Hopkins University Press).

SCHWENNINGER, H.R. 2015: Revision of the Western Palaearctic species of the Andrena taraxaci-group with description of four new species (Hymenoptera: Andrenidae). – Stuttgarter Beiträge zur Naturkunde A, Neue Serie 8: 251–270; Stuttgart, 30.IV.2015.

WARNCKE, K. 1968: Die Untergattungen der westpaläarktischen Bienengattung Andrena F. – Memórias e Estudos do Museu Zoológico da Universidade de Coimbra 307: 1–111.

Natura Somogyiensis 41: 31-38. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.31
Submitted: 06.08, 2023; Accepted: 30.08, 2023; Published: 15.09, 2023 www.smmi.hu/termtud/ns/ns.htm

Sawflies (Hymenoptera: Symphyta) from Babaneuri state reserve and Tbilisi, Georgia (Sakartvelo)

George Japoshvili[1,2], Attila Haris[3]

[1]Institute of Entomology, Agricultural University of Georgia, David Aghmashenebeli Alley, #240, Tbilisi, Georgia, e-mail: g.japoshvili@agruni.edu.ge
[2]Invertebrate Research Center, Tetritsklebi, Telavi Municipality – 2200, Telavi, Georgia
[3]H-1076 Budapest, Garay u. 19., Hungary, e.mail: attilaharis@yahoo.com

Japoshvili, G. & Haris, A.: *Sawflies (Hymenoptera: Symphyta) from Babaneuri state reserve and Tbilisi, Georgia (Sakartvelo).*
Abstract: Twenty species of 39 specimens were collected in Tbilisi and Babaneuri reserve, Sakartvelo (Georgia). *Tenthredopsis annuligera* (Eversmann, 1847), *Tenthredopsis festiva* Konow, 1890 and *Pristiphora araratensis* Haris, 2006 are new records for the fauna of the country.

Keywords: Caucasus, Hymenoptera, Symphyta, faunistics, ecology

Introduction

Earliest papers from Georgia contain species descriptions in which the localities are simply written as ″Patria Caucasus″ or ″Transcaucasia″ or ″Rossia: Caucasus″. In these 19th century papers, without precise locality information, it is difficult to decide from which countries were described these species (Eversmann 1847, Mocsáry 1880, 1883, Konow 1899, 1902). Radde (1899) put together the first Georgian checklist. Keys for sawflies and horntails (Symphyta) were compiled by Andguladze (1957) and Dadurian (1962). In plant protection point of view, Archil Supatashvili with several coauthors, published higher number of papers on sawflies like Supatashvili (2006) or Supatashvili & Goginashvili 2012. So far, 105 species of Symphyta are listed in the Georgian Biodiversity Database (Tarkhnishvili & Chaladze 2005-2022). According to our estimation, the actual species richness of Symphyta is probably four times greater. The present paper is part of a series investigating the sawfly fauna of Sakartvelo (Georgia) supported by BMBF-funded project Caucasus Barcode of Life (CaBOL).

Material and methods

During the 2022 season, two different areas were surveyed. One is Babaneuri state reserve, at 520 meters above the sea level. where one Malaise trap worked for 10 days between 30th of June and 9th of July 2022. The other is the Dendrological Park of Agricultural University of Georgia, in Tbilisi Agruni at 450 meters above the sea level.

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

which were investigated from middle of April till early May during the whole flying period of sawflies. The Dendrological Park was established in the 60-ies of past century by Prof. Jason Abashidze. The area of this park is 38 hectare surrounding the university campus. Sixteen genera of 41 Gymnospermae species and 73 genera of 112 Angispermae species were planted here. Babaneuri state reserve was established in the 50-ies of past century and its area is 240 ha. Caucasian Zelkova – *Zelkova carpinifolia* Dippel., Caucasian endemism, is native in this area. This tree survived from the Tertiary Period. It is naturally spread in two locations of Georgia: Ajameti and Babaneuri. Natural forest of Caucasian Zelkova was the reason to create Natural reserve of Babaneuri in Akhmeta districy of Kakheti. At Babaneuri, the sampling strategy was not designed to obtain quantitative data (for example, traps were not installed during the most active periods for Symphyta due to logistic reasons, and also traps were operated for varying lengths of time), but rather to get a snapshot knowledge of the sawfly diversity of the region. In opposite of this, Malaise trap worked during the whole flight period of sawflies at Tbilisi Dendropark. The collected material was initially preserved in ethanol and mounted later.

For identification ZHELOCHOVTSEV's (1988) work on the sawflies of the European part of the former USSR, the handbook of LACOURT (2020) on the identification of the European sawflies, the monograph of BENSON (1968) on the Turkish fauna, Gussakovskij's monographs on the sawflies of the former USSR (GUSSAKOVSKIJ 1935, 1947) were used. We also consulted recent revisions (GYURKOVICS & HARIS 2014; HARIS 2006) to confirm the identifications of particular taxa. The general distribution of species are reported based on ROLLER & HARIS (2008), TAEGER et al. (2006) and SUNDUKOV (2017). The nomenclature used in this paper, follows the latest monograph of European sawflies (LACOURT 2020) with special concern for the subfamily Nematinae to address the conclusions of PROUS et al. (2014). The higher classification of Symphyta, applied in this work, follows the Hymenoptera part of Fauna Europaea (ACHTERBERG 2013). Host plant records are given according to MACEK et al. (2020).

Fig. 1: Habitat of Agruni: Dendropark in Tbilisi

Fig. 2: Habitat of Agruni: Dendropark in Tbilisi

Results

Twenty species of 39 specimens were collected in Tbilisi and Babaneuri reserve, Sakartvelo (Georgia). From Tbilisi 25 specimen of 12 species and from Babaneuri, 14 specimen of 10 species were collected which well confirm the species richness of the Mediterranean regions.

List of species

Argidae

Sterictiphora angelicae (Panzer, 1799): Babaneuri, 30. 06.-09. 07. 2022, 1 female. Frequent, West Palaearctic species. Larva on *Prunus spinosa* and *Rubus* spp.

Arge cyanocrocea (Forster, 1771): Babaneuri, 30. 06.-09. 07. 2022, 1 female. Common, Palaearctic species. Host plant: *Rubus* spp.

Tenthredinidae

Selandrinae

Nesoselandria morio (Fabricius, 1781): Babaneuri, 30. 06.-09. 07. 2022, 1 female. Host plants: *Brachytecium reflexum, Ceratodon purpureus, Chenopodium album, Dicranum scoparium, Fragaria vesca, Hedwigia ciliata, Myosotis arvensis, Plagiomnium cuspidatum, Plagiothecium denticulatum, Polygonum aviculare, Polytrichum commune, Pseudobryum cinclidiodes, Sanionia uncinata, Stellaria media, Veronica chamaedrys and V. officinalis.* Holarctic.

Allantinae

Allantus (*Emphytus*) *cinctus* (Linné, 1758): Agruni: Dendropark, 14-21. 04. 2022, 2 females; Babaneuri, 30. 06.-09. 07. 2022, 1 male. Common. Host plants: *Rosa* and *Fragaria* spp. Holarctic.

Allantus (*Emphytus*) *didymus* (Klug, 1818): Agruni: Dendropark, 21-28. 04. 2022, 1 male. Frequent,West-Palaearctic species. Host plants: *Rosa* and *Fragaria* spp.

Ametastegia (*Protemphytus*) *tenera* (Fallén, 1808): Agruni: Dendropark, 21-28. 04. 2022, 2 femaes, 28. 04.-02. 05. 2022, 1 female. Holarctic. Frequent. Larva on *Rumex* spp.

Athalia cordata Serville, 1823: Agruni: Dendropark, 21-28. 04. 2022, 2 females, 14-21. 04. 2022,1 female; Babaneuri, 30. 06. – 09. 07. 2022, 1 male. Frequent, West Palaearctic species. Host plants: *Ajuga* spp., *Antirrhinum majus*, *Misopates* spp., *Plantago* spp., *Veronica* spp,

Blennocampinae

Halidamia affinis (Fallén, 1807): Babaneuri, 30. 06.-09. 07. 2022, 1 female; University of Agriculture: Dendropark, 21-28. 04. 2022, 3 females, 14-21. 04. 2022, 1 female. Frequent. Host plants: *Galium aparine, G. odoratum* and *G. molugo*. West Palaearctic, introduced to North America.

Monardis plana (Klug, 1817): Agruni: Dendropark, 21-28. 04. 2022, 1 male. Sporadic, West Palaearctic species. Larva on *Rosa* spp.

Tenthredininae

Tenthredopsis annuligera (Eversmann, 1847): Agruni: Dendropark, 21-28. 04. 2022, 1 male (color var. *T. albopunctata* Tischb.). Sporadic, West-Palaearctic species. Host plant unknown.

Tenthredopsis festiva Konow, 1890: Agruni: Dendropark, 21-28. 04. 2022, 1 female, 4 males. Sporadic, Ponto-Caspian species. Host plant unknown.

Tenthredopsis litterata (Geoffroy, 1785): Babaneuri, 30. 06.-09. 07. 2022, 5 females. Frequent. Larva on *Agrostis, Dactylis* and *Calamagrostis* spp. West Palaearctic.

Tenthredopsis nassata (Linné, 1767): Babaneuri, 30. 06.-09. 07. 2022, 1 female. Frequent, Palaearctic species. Larva on Poaceae, like *Dactylis glomerata, Deschampsia cespitosa, Avenella flexuosa* and *Lolium perenne*.

Nematinae

(The nomenclature of this part follows the proposed changes in nomenclature of the last monograph on sawflies written by LACOURT 2020)

Cladius pectinicornis (Geoffroy, 1785): Agruni: Dendropark, 21-28. 04. 2022, 1 male. Holarctic. Common. Host plants: *Alchemilla, Filipendula, Fragaria, Potentilla, Sanguisorba, Rosa* and *Rubus* spp.

Pristiphora araratensis Haris, 2006: Agruni: Dendropark, 14-21. 04. 2022, 1 female. Sporadic, Anatolian-Ponto-Caspian species. Host plant unknown.

Pristiphora armata (Thomson, 1863): Babaneuri, 30. 06.-09. 07. 2022, 1 male. Frequent, Palaearctic species. Larva on *Crataegus* spp.

Pristiphora pallidiventris (Fallén, 1808): Babaneuri, 30. 06.-09. 07. 2022, 1 female. Frequent. Larva on *Geum, Potentilla, Rubus* and *Filipendula* spp. Holarctic.

Cephidae

Calameuta (*Calameuta*) *grombczewskii* (Jakowlew, 1891): Agruni: Dendropark, 21-28. 04. 2022, 1 female. Ponto-Caspian, Central Asian species. Sporadic. Host plant unknown.

Cephus pygmeus (Linné, 1767): Agruni: Dendropark, 21-28. 04. 2022, 1 female. Common. Insect pest of cereals and Gramineae. Palaearctic, introduced to North America.

Cephus spinipes (Panzer, 1800): Agruni: Dendropark, 21-28. 04. 2022, 1 female. Common, Palaearctic species. Host plants: *Dactylis glomerata, Phleum pratense* and other Poaceae.

Table 1: Results of sawfly collection at Agruni: Dendropark in Tbilisi

Date	Specimen collected	Species collected
14-21. 04. 2022	5	4
21-28. 04. 2022	19	11
28. 04.-02. 05. 2022	1	1

Discussion

In zoogeographic point of view, most of the species have wide geographic distribution, i.e. Holarctic, Palaearctic and West Palaearctic; their proportion is 85%. Three species have limited distribution areas: Ponto-Caspian, Anatolian-Ponto-Caspian and Ponto-Caspian-Central Asian. These species are: *Calameuta grombczewskii* (Jakowlew, 1891), *Tenthredopsis festiva* Konow, 1890 and *Pristiphora araratensis* Haris, 2006. Their proportion is 15%. Similar proportions (12-14%) were experienced during our investigations in the different regions of Caucasus (Japoshvili & Haris 2022a, b, c, 2023a, b, c and Supatashvili et al. 2022).

Mediterranean pattern of flight period of sawflies at Tbilisi Dendropark

The Malaise Trap worked at Dendropark site during the whole flight period of sawflies. The dynamics of flight period shows typical Mediterranean pattern, as it was experienced in Sicily (Haris & Józan 2012). The flight period started in the second decade of April and after short and low culmination, collapsed within short time for the first decade of May. We may estimate the total flight period not more than circa 2 weeks. This pattern is similar to the flight period pattern experienced in the Anatolian biogeographic region (Kaplan et al. 2023), although shorter and with lower culmination. See details in Table 1.

Acknowledgment

We express our grateful thank to Dr. Levente Ábrahám for editing our paper. We thank to BMBF-funded project Caucasus Barcode of Life (CaBOL), ref. number: 01DK20014A for the financial support. We also thank to Ms. Sopio Injia for the photo taken.

References

ACHTERBERG, C. 2013: Hymenoptera in Fauna Europaea version 2.6.2. http://www.faunaeur.org. – Last checked: 03. 08. 2023

ANDGULADZE, T. 1957: The key to the Sawflies and Horntails distributed in Georgia. – Academy of Science of GSSR. pp. 57.

BENSON, R. B. 1968: Hymenoptera from Turkey, Symphyta. – Bulletin of the British Museum (Natural History). Entomology series, London 22(4): 111-207. https://doi.org/10.5962/bhl.part.9952

DADURIAN, H. B. 1962: On the Sawflies and the Horntails of Armenian SSR (Insecta - Hymenoptera, Symphyta). – Academy of Science of Armenian SSR Zoology 12: 63-98.

EVERSMANN, E. 1847: Fauna hymenopterologica volgo-uralensis exhibens Hymenopterorum species quas in provinciis Volgam fluvium inter et montes Uralenses sitis observavit et nunc descripsit. – Bulletin de la Société Impériale des Naturalistes de Moscou, Moscou 20(1): 3-68.

GUSSAKOVSKIJ, V. 1935: Insectes Hyménoptéres, Chalastogastra 1. – Fauna SSSR, Moskva, Leningrad, Academie des Sciences de l'URSS, Moscou, Leningrad 2(1): 1-453.

GUSSAKOVSKIJ, V. 1947: Insectes Hyménoptéres, Chalastogastra 2. – Fauna SSSR, Moskva, Leningrad, Academie des Sciences de l'URSS, Moscou, Leningrad 2(2): 1-235.

GYURKOVICS, H. and HARIS, A. 2014: The genus Tenthredopsis Costa, 1859 in Hungary (Hymenoptera: Symphyta). – Natura Somogyiensis24: 99-124. https://doi.org/10.24394/NatSom.2014.24.99

HARIS, A. 2006: Study on the Palaearctic Pristiphora species (Hymenoptera: Tenthredinidae). – Natura Somogyiensis 9: 201-277. https://doi.org/10.24394/NatSom.2006.9.201

HARIS, A. and JÓZAN, ZS. 2018: Data to the Hymenoptera fauna of Sicily (Hymenoptera: Symphyta and Aculeata). – Natura Somogyiensis 31: 63-76. https://doi.org/10.24394/NatSom.2018.31.63

JAPOSHVILI, G. and HARIS, A. 2022a: Sawflies (Hymenoptera: Symphyta) of Kintrishi National Park, south-west Georgia (Sakartvelo). – Annals of Agrarian Science 20: 12-27.

JAPOSHVILI, G. and HARIS, A. 2022b: Sawflies (Hymenoptera: Symphyta) from North-Western Georgia (Sakartvelo). – Caucasiana 1: 41-49. https://doi.org/10.3897/caucasiana.1.e83640

JAPOSHVILI, G. and HARIS, A. 2022c: Sawflies (Hymenoptera: Symphyta) from North-Western Georgia (Sakartvelo) (Part II). – Natura Somogyiensis 39: 35-46. https://doi.org/10.24394/NatSom.2022.39.35

JAPOSHVILI, G. and HARIS, A. 2022d: Sawflies (Hymenoptera: Symphyta) from the high altitudes of Caucasus in Kintrishi Nature Reserve, Georgia (Sakartvelo). – Annals of Agrarian Science 20: 172-179.

JAPOSHVILI, G. and HARIS, A. 2023a: Third contibution to the sawflies (Hymenoptera: Symphyta) of Kintrishi Nature Reserve (Georgia, Sakartvelo). – Annals of Agrarian Science 23: xxx In print

JAPOSHVILI, G. and HARIS, A. 2023b: Sawflies (Hymenoptera: Symphyta) from Racha and Kakheti regions of Georgia (Sakartvelo). – Natura Somogyiensis 40: 119-128. https://doi.org/10.24394/NatSom.2023.40.119

KAPLAN, E., HARIS, A. and KILIÇ, H. 2023: Seasonal flight activity and temporal dynamics of species richness of sawflies (Hymenoptera: Symphyta) in the Anatolian and Pannonian biogeographic regions. – Munis Entomology & Zoology 18(1): 600-608.

KONOW, F. 1899: Einige neue Chalastogastra-Gattungen und Arten. – Entomologische Nachrichten (Herausgegeben von Dr. F. Karsch), Berlin 25(5): 73-79.

KONOW, F. 1902: Novum genus et novae species Chalastogastrorum Rossiae. – Trudy Jaroslavskogo Estestvenno-Istoriceskogo Obscestva, Jaroslavl 1: 1-4.

LACOURT, J. 2020: Sawflies of Europe: Hymenoptera of Europe 2 N. A. P. Editions. – Verriéres-le-Buisson 876 pp.

MACEK, J., ROLLER, L., BENEŠ, K., HOLÝ, K., and HOLUŠA, J. 2020: Blanokřídlí České a Slovenské republiky II. Širopasí. – Academia Praha. 669 pp.

MOCSÁRY, S. 1880: Hymenoptera nova e variis orbis terrarum partibus. [Új hártyaröptűek a Föld különböző részeiből.] – Természetrajzi Füzetek, Budapest 4(4): 267-275.

MOCSÁRY, S. 1883: Hymenoptera nova europaea et exotica. [Európai és másföldi új hártyaröptűek.] – Értekezések a természettudományok köréből, Budapest 13(11): 1-72.

Prous, M., Blank, S. M., Goulet, H., Heibo, E., Liston, A., Malm., T., Nyman, T., Schmidt, S., Smith, D. R., Vårdal, H., Viitasaari, M., Vikberg, V., and Taeger., A. 2014: The genera of Nematinae (Hymenoptera,Tenthredinidae). – Journal of Hymenoptera Research 40: 1-69. https://doi.org/10.3897/JHR.40.7442

Radde, G. 1899: Museum Caucasicum Vol. 1. Zoology. – Die Sammlungen des kaukasischen Museums, im Vereine mit Special-Gelehrten bearbeitet und herausgegeben von Dr. Gustav Radde Band I: Zoologie, 1. 520 pp.

Roller, L, Haris, A. 2008: Sawflies of the Carpathian Basin, History and Current Research. – Natura Somogyiensis 11: 1-261. https://doi.org/10.24394/NatSom.2008.11.2

Sundukov, Y. 2017: Suborder Symphyta – Sawflies and wood wasps. – In: Lelej, A.S. (Ed.). Annotated catalogue of the Hymenoptera of Russia. Volume I. Symphyta and Aculeata. Proceedings of the Zoological Institute RAS. Supplement 6: 20-117. https://doi.org/10.31610/trudyzin/2017.supl.6.5

Supatashvili, A. and Goginashvili, N. 2012: Leaf eating Sawflies (Hymenoptera: Pamphilidae; Tenthredinidae; Argidae; Cimbicidae) in forests of Georgia. – Bulletin Of the Academy of Agricultural Sciences of Georgia. Tbilisi, 30: 57-65.

Supatashvili, A. 2006: Distribution of dendrophile sawflies (Hymenoptera: Tenthredinidae) of Kakheti and Nukha-Zakatala district. – Annals of Agrarian Science 8(2):.84-88.

Supatashvili, A., Japoshvili, G. and Haris, A. 2022: Some important records on sawflies (Hymenoptera: Symphyta) from the Entomological Collection of Agricultural University of Georgia (Sakartvelo) identified by Dr. Ermolenko. – Natura Somogyiensis 39: 47-58. https://doi.org/10.24394/NatSom.2022.39.47

Taeger, A., Blank, S., and Liston, A. 2006: European Sawflies (Hymenoptera: Symphyta) - A Species Checklist for the Countries. 399-504. – In Blank, S. M., Schmift, S. & Taeger, A. (eds) Recent Sawfly Research: Synthesis and Prospects, Goecke & Evers, Kelter. 701 pp.

Tarkhnishvili, D. and Chaladze, G. 2005-2022: Georgian Biodiversity Database http://biodiversity-georgia.net/index.php?taxon=Hymenoptera Last accessed 06. 08. 2023.

Zhelochovtsev, A. 1988: Otryad Hymenoptera – Pereponchatokrylye, Podotryad Symphyta. – Sidyachebryukhie, 7-234. In: Medvedev, K. H. (ed.) Opredelitel nasekomykh evropeiskoi chasti SSSR, Vol. 3 Hymenoptera, Part 6, Nauka, Leningrad. https://doi.org/10.5962/bhl.title.463347

Natura Somogyiensis 41: 39-56. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.39
Submitted: 08.08, 2023; Accepted: 30.08, 2023; Published: 05.10, 2023 www.smmi.hu/termtud/ns/ns.htm

Description of a new *Pseudopalpares* species from southern Africa (Neuroptera: Myrmeleontidae)

Levente Ábrahám

Rippl-Rónai Museum, H-7400 Kaposvár, P.O. Box 70, Hungary
e-mail: labraham@smmi.hu, https://orcid.org/0000-0002-8007-7117

Ábrahám, L.: *Description of a new Pseudopalpares species from southern Africa (Neuroptera: Myrmeleontidae)*.
Abstract: *Pseudopalpares parvopunctatus* sp. n. from Botswana and Namibia is described and compared to *Pseudopalpares sparsus* (McLachlan, 1867), *Pseudopalpares sobrinus* (Navás, 1912) (comb. n.), and *Pseudopalpares nyicanus* (Kolbe, 1897) (comb. n.) which are moved to a new combination. The lectotype of *Pseudopalpares sparsus* (McLachlan, 1867) is designated from male syntype of *Palpares sparsus* McLachlan, 1867 (present designation). The female syntype of *Palpares sparsus* McLachlan, 1867 is conspecific with *Pseudopalpares sobrinus* (Navás, 1912). The type specimen of *Palpares aemulus* Péringuey, 1911 is re-examined and the synonym status of *Pseudopalpares nyicanus* (Kolbe, 1897) is confirmed. A key for species is also given.

Keywords: new species, ant-lion, taxonomy, Palpares, Pseudopalpares, Africa.

Introduction

Stange (2004) listed 18 genera in the tribe of Palparini Banks, 1911. Most species are found in the genus *Palpares* Rambur, 1842. Currently, the number of valid species of the tribe is more than 130 (Stange 2004, Oswald 2023).

From a taxonomic point of view, the genus of *Palpares* is the most species-rich in the tribe of Palparini since it was the earliest described genus. Besides, it was a so-called 'collecting' genus from which more and more genera were separated (Navás 1912, Insom & Carfi 1988, Mansell 1990) in the 20th century. Examining the morphological diversity of the tribe, Insom & Carfi (1988) and Mansell (1990, 1992, 2004) tried to group the species into new genera (*Annulares* Mansell, 2004, *Goniocercus* Insom & Carfi, 1988, *Indopalpares* Insom & Carfi, 1988, *Pamares* Mansell, 1990, *Parapalpares* Insom & Carfi, 1988, *Pseudopalpares* Insom & Carfi, 1988). However, a comprehensive genus-level revision of the tribe has not yet taken place.

Its higher-level classification is also varied. The literature of the 20th century treated them mainly as a subfamily (Aspöck et al. 2001, Stange 2004, Badano et al. 2017) but they are also mentioned as a family (Jones 2019, Prost & Popov 2021). So the higher taxonomy still needs further investigation as well. Recently, Héven et al. (2023) carried out systematics and historical biogeography studies using DNA analysis on Palparini antlions.

The genus *Palpares* and related genera are of Gondwanan origin. They occur in higher species richness in the southern part of Africa (Banks 1913, Hölzel 1986,

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

MANSELL 1990). The distribution of the genus includes the entire territory of Africa and Madagascar as well as the Mediterranean areas in Europe (2 sp.), the southern part of Asia: West Asia (8 sp.), India (10 sp.), and Southeast Asia (2 sp.) based on Lacewing Digital Library (LDL) (OSWALD 2023).

In the less studied areas of Africa and Asia, where the number of species is higher, additional new species may also be found (HÖLZEL 1988, GHOSH 1991, MANSELL 2004, ÁBRAHÁM 2010, 2012, AKOUDJIN & MICHEL 2011, ÁBRAHÁM & VAN HARTEN 2014).

During the digitization of the Rippl-Rónai Museum (Kaposvár, Hungary) collection, The specimens were redetermined and found a new species in the genus *Pseudopalpares* from southern Africa.

Material and methods

Not only the type but also male and female non-type specimens were also used for the morphological examination. Additionally, the literature referencing the species was checked, along with requesting high-quality photos of the type specimen available in various collections.

The habitus photos were taken by Canon EOS 6DM2 digital camera equipped with Canon macro lens 100 mm and a flashlight system (Godox MS 300). Later, the layers of photos were processed with stacking and Adobe Photoshop software.

According to traditional methods, the caudal part of the abdomen was removed, treated with a 10% KOH solution, and heated for 15 minutes. After cooling, it was rinsed in distilled water. For taking photos, the genitalia was placed in glycerine in a Petri dish. Finally, each genitalia was transferred into glycerine in a microvial for preservation.

Abbreviations:
NHMUK – Natural History Museum, London, UK
EFMEA – Entomologisches Forschungsmuseum Eyjolf Aistleitner (private collection), Feldkirch, Austria
HNHM – Hungarian Natural History Museum, Budapest, Hungary
MIZ – Museum and Institute of Zoology, Polish Akademia of Sciences, Warsaw, Poland
MNHN – Muséum National d'Histoire Naturelle, Paris, France
SAMC – The Iziko South African Museum (former South African Museum), Cape Town, RSA
SCMK – Rippl-Rónai Museum, (former Somogy County Museum), Kaposvár, Hungary
JODPC – John O' Dell's private collection Hornsea, UK
USMB – Upper Silesian Museum, Bytom, Poland
ZMHB – Museum für Naturkunde der Humboldt Universitat zu Berlin, Bereich Zoologisches Museum, Berlin, Germany
ZPPC – Zoltán Papp's private collection, Budapest, Hungary

Com – Comment, Comb – New combination; Dist – Distribution; Mon – Monograph; Odescr – Original description; List – Faunal list

FW – Fore wing, HW – Hind wing, C – Costa, Sc – Subcosta, R – Radius, Mp – Media posterior, Mp_1 and Mp_2 – Media posterior 1 and 2, Cua – Cubitus anterior, Cua_1 – Cubitus anterior 1, Cua_2 – Cubitus anterior 2, Cup – Cubitus posterior, A_1, A_2 and A_3 – Anal veins 1, 2 and 3, as – apical streak, mm – medial mark, ep – ectoproct, T8, T9 – tergites 8 and 9, S8, S9 – Sternites 8 and 9, gx – gonocoxites, gx8, gx9, gx11 – gonocoxites 8, 9, and 11, gp – gonophysal plate

Results and discussion

Description

Pseudopalpares parvopunctatus sp. n. (Fig. 1A–E, Fig. 2, Fig. 3A and B).

Material examined:
Holotype: ♂ Namibia, Omaheke Prov. 35 km Epukiro 21°37'S; 19°06'E, 9.3.2022, leg. Jiří Halada. Preserved in the entomological collection of SCMK, Hungary.
Paratypes: 1 ♀ Namibia, Omaheke Prov, 35 km Gobabis, 1480 m, 22°23'S; 18°39'E, 2014. 03. 12. J. Halada leg (in coll. SCMK), 1 ♂ 2 ♀ same as holotype (in coll. ZPPC); 1 ♂ Botswana, Ghanzi Distr. 51 km E Charles Hill, 1150 m, 22°24'S, 20°30'E 1.2. 2023, leg. Jiří Halada (in coll. SCMK); 1 ♂ and 1 ♀ Namibia, Omaheke, 35 km W Gobabis, 1480 m, 11.3.2022, leg. J. Halada; 1 ♀ Namibia, Omaheke, 35 km W Gobabis, 1480 m, 12.03.2014, leg. J. Halada (in coll. EFME); 1 ♀ S.W.A. [Namibia] Tsumeb SAM-NEU-A001084 (in coll. SAMC).

Diagnosis:
A large antlion species. The general colour of the body is yellow with black marks. Frons is completely black. The abdomen is black dorsally with longitudinal yellow bands on both sides. The wings are moderately wide, there are only small spots on the wings and without larger marks, and spots do not form an apical streak on the hind wing. The terminal segment of labial palp is very slightly clavate at the extremity with the drop-shaped sensory opening. Gonarcus are a well-developed, regularly rounded, and hood-shaped bulla.

Head: Vertex vaulted in frontal view and reddish-yellow with wide dull black band above antenna and with wide transversal shiny black band from which a wide black band extends along epicranial suture in dorsal view. Short sparse and black hairs in yellow part at top of vertex. Frons dominantly shinning black (Fig. 1C) just below scapus rather dark brown with short sparse white hairs. Gena, clypeus and labrum shining yellow. Gena hairless. Clypeus with medium long sparse black hairs. Labrum with pale hairs directed to mouth part. Mandible yellow with brown apex. Maxillary and labial palps yellow last segments become brown to black; end of labial palp widening, and distal tip slightly flattened, not pointed (Fig. 1D). Sensory pit drop-shaped. Antenna 9 mm long. Scape shiny black with sparse black hairs in ventral side; pedicel black with narrow yellow ring distally, hairless. Flagellar segments and club black with short black setae.
Thorax: Pronotum (Fig. 1B) shorter than wide, rhomboid-shaped in dorsal view, yellow with lateral and median wide dull black band. Both margins of pronotum flexed upward, and with long, dense, upstanding, white and black hairs. Mesonotum and metanotum yellow with widened dull black median band and lateral narrow stripes, and with dense long and white hairs. Median band widened and narrowed in some places. Metascutum with reddish-brown velvety spots. Sides dull black, with long very dense and white hairs.
Legs: strong. Coxae and trochanters dull black. Femora dominantly yellow with stiff white and black bristles. Tibiae somewhat shorter than femora, almost completely yellow but distal parts black, and with stiff black bristles. Indistinct black half-ring-shaped mark on dorsal side. Tibial spurs reddish-brown, and slightly longer than tarsal segments 1-2 combined. Tarsal segments completely shiny black and with short stiff black bristles. Segments 1-4 equal, segment 5 as long as segments 1-4 combined. Claws shinning reddish-brown slightly longer than tibial spurs.

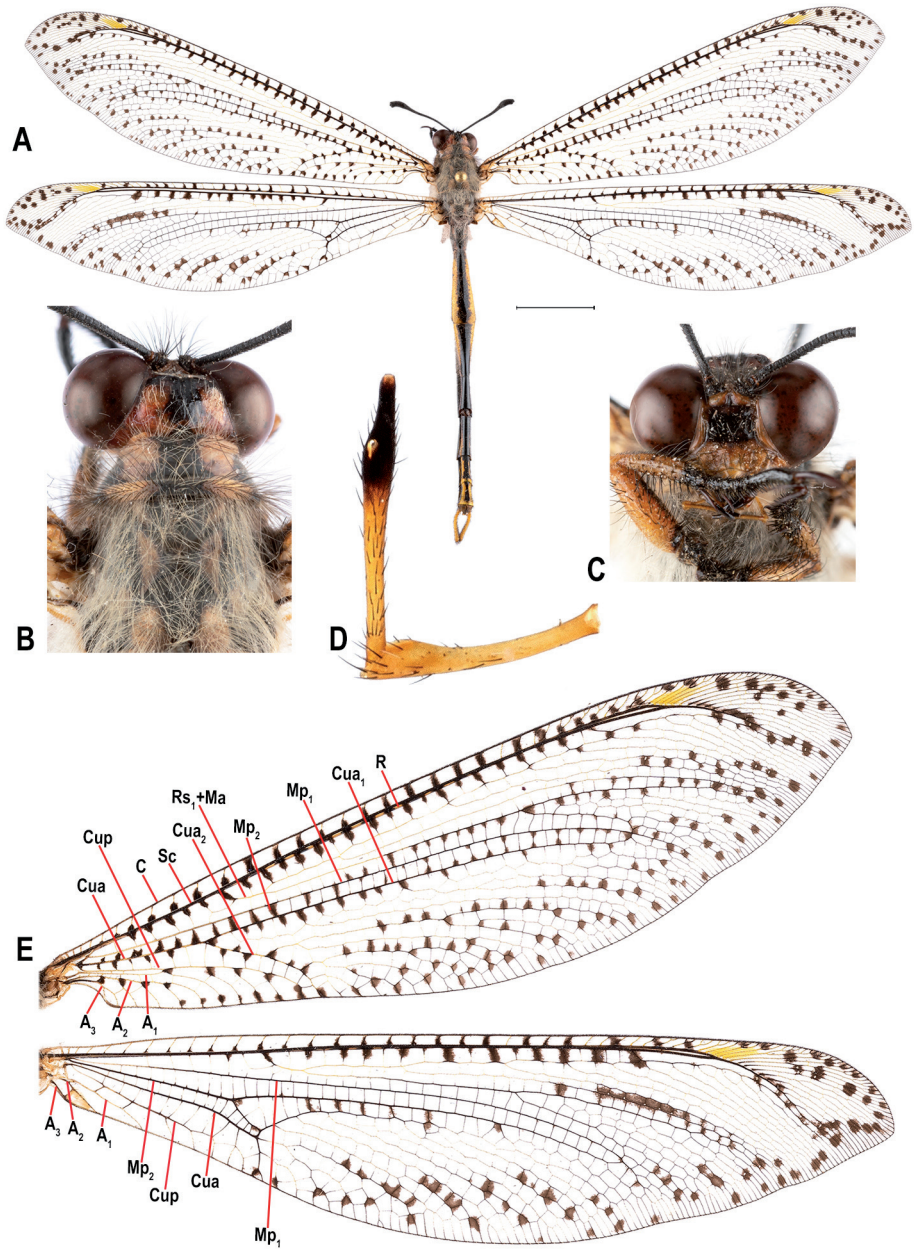


Fig. 1: Holotype of *Pseudopalpares parvopunctatus* sp. n., A – habitus in dorsal view, scale bar: 10 mm; B – vertex and notum in dorsal view; C – head in frontal view; D – labial palp; E – wing venation, in different scales

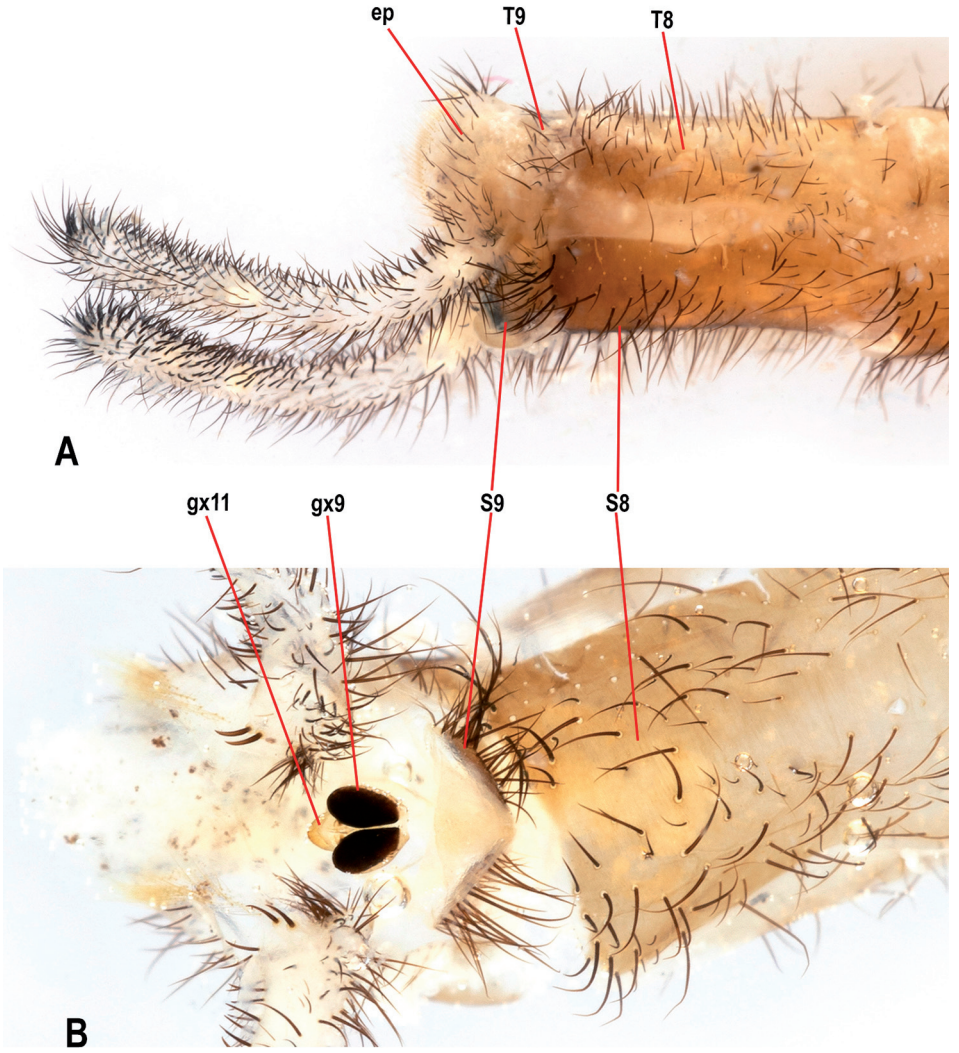


Fig. 2: ***Pseudopalpares parvopunctatus*** **sp. n., A – male terminalia and genitalia in lateral view; B – male genitalia in caudal view**

Wings: Fore wing 55 mm long, 15 mm wide. Membrane transparent with many small dark brown spots and dots along cross-veins but without larger marks. Punctation as in Fig. 1E. C yellow. Sc yellow, interrupted with brown sections at cross-veins. Cross-veins with brown shadow on both sides in coastal area. Pterostigma distinct bright yellow with 5 cross-veins. R dark brown. Anterior part of Mp yellow, Mp_1 yellow, interrupted with brown sections at cross-veins then turning completely brown. Mp_2 brown with wide brow shadow on both sides. Cua yellow interrupted with brown sections at cross-veins, and Cua_1 and Cua_2 yellow interrupted with brown sections at cross-veins. Cup yellow basally then alternated with brown sections. A_1 and A_2 yellow. A_3 brown basally and yellow distally.

Hind wing: 55 mm long, 14 mm wide. Membrane transparent with many small dark brown spots and dots. Before cubital fork no spots and dots on base and the middle part of hind wing. Only small, separate spots in the apical area. Pterostigma distinct yellow with 4-5 cross-veins. C yellow, Sc yellow, interrupted with brown sections at cross-veins. Mp_1 yellow basally and black distally. Cua Cua_1 and Cua_2 completely brown. Cup yellow basally and brown distally. A_1, A_2, and A_3 dominantly yellow.

Abdomen: 42 mm long together with processus of ectoproct. Tergites black with two longitudinal yellow stripes laterally. Intersegmental membrane yellow. Sternites completely black. Hairs on segments 1-4 long dense and white, other segments with short and sparse white.

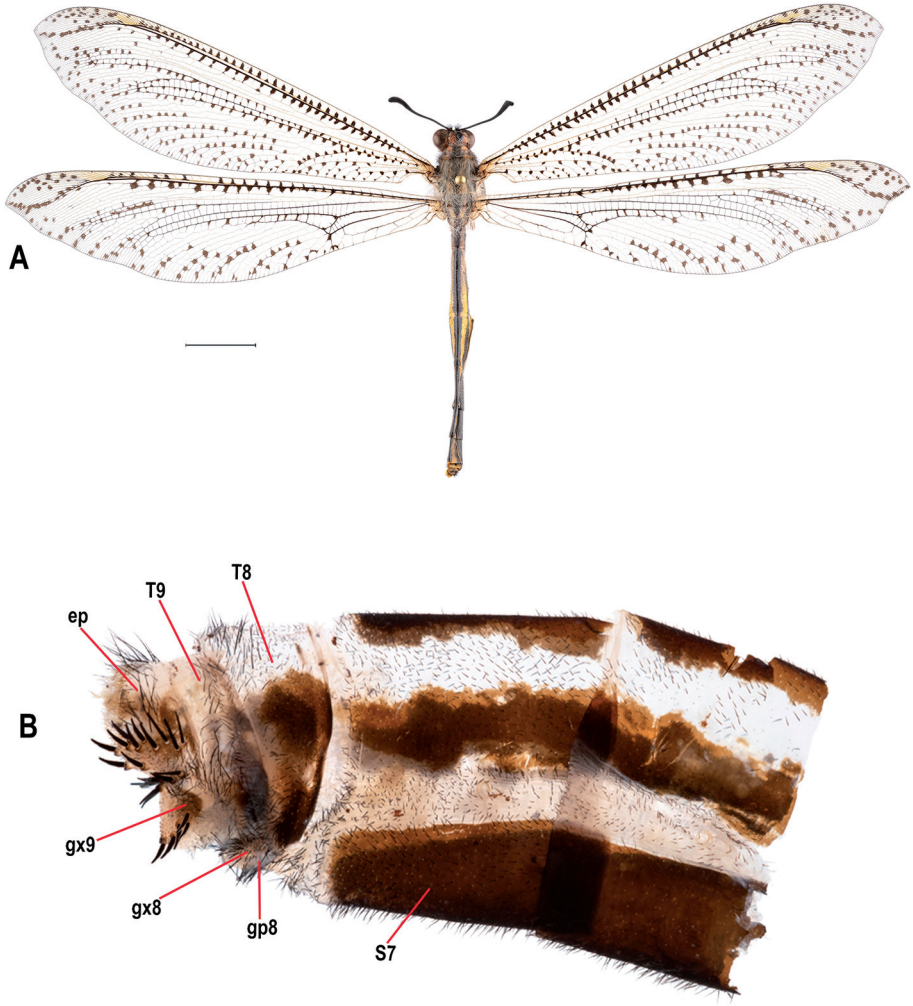


Fig. 3: Paratype female *Pseudopalpares parvopunctatus* sp. n., A – habitus in dorsal view, scale bar: 10 mm; B – terminalia and genitalia in lateral view, magnified

Terminalia and genitalia: Ectoproct oval plate with curved processus which as long as length of segment 8. Ectoproct yellow with black oval spot at base of processus and with short strong black setae. Gonocoxites 11 without setae in caudal view.
Paratype female: Female terminalia as in Fig. 3B in lateral view.

Diagnostic characters:
The new species shows a high degree of similarity with *Pseudopalpares sobrinus* (Péringuey, 1911) comb. n., *Pseudopalpares sparsus* (McLachlan, 1867), and *Pseudopalpares nyicanus* (Kolbe, 1897) comb. n. which occur in the southern African area. However, the new species can be easily distinguished from them based on the longitudinal black stripe running along the dorsal surface of the tergites, the absence of larger spots and apical streak on the hindwing. The origin of Rs is after cubital fork. A large black spot on frons is also characteristic of the new species. No stetae on gonocoxites 11 in caudal view.

Etymology:
The name of the new species refers to the small spots of the wings.

Distribution: Botswana and Namibia.

Annotated checklist and distribution of the genus *Pseudopalpares* and related species

Pseudopalpares sparsus (McLachlan, 1867) (Fig. 4A and B).
Palpares sparsus McLachlan, 1867: 240 (partim male syntype) – (Odescr), Stitz 1912 (Dist), Esben-Petersen 2016 (Com), 1928 (Dist, Com male syntype), Navás 1919 (Dist), 1925b (Dist), 1928 (Dist).
Palpares sparsus jeanneli Navás, 1914: 12 – (Odescr), Stange 2004 (Syn, Mon).
Palpares sparsus marginalis Navás, 1923: 143 – (Odescr), Stange 2004 (Syn, Mon).
Palpares nudatus Navás 1912: 221 – (Odescr), Esben-Petersen 1916 (List), 1920 (Syn).

Type material examined:
In coll. NHMUK: 1 ♂ // Daka R[iver]. Zambesi (Valley). / March 1863 / myrmeleo T. Baines // McLachlan coll. / B.M. 1938-674 // Palpares / sparsus McL. / (Type) // NHMUK010288091 //.

Additional material examined:
In coll. MIZ: 1 female D.[eutsch] Ost-Afrika [Tanzania], Salala, Mai 1908, Hammerstein S.; Mus. Zool. Polonicum 12/45; Palpares sparsus McL. Krivokhatsky det.
In coll. HNHM Iringa D,[eutsch]O.[st]A.[frica] [Tanzania] Palpares sparsus McL., H. Hölzel det. 1970.
In coll. PZPC: 1 ♂ RSA, KwaZulu-Natal, Mhlopeni N.R. h, 875 m, 18-21.II.2018. leg. Udovichenko P.

Differencial characters: Frons dark brown to black. Membrane with many small spots on both wings. Apical streaks more or less visible on wings. No spots between area of R_1 and R_2 on both wings. Tergites with longitudinal yellow band dorsally and with brown bands laterally.

Distribution: Democratic Republic Congo (Navás 1923), Kenya (Navás 1914), Republic South Africa (McLachlan 1868), Zimbabwe (Stange 2004). New record for the fauna of Tanzania.

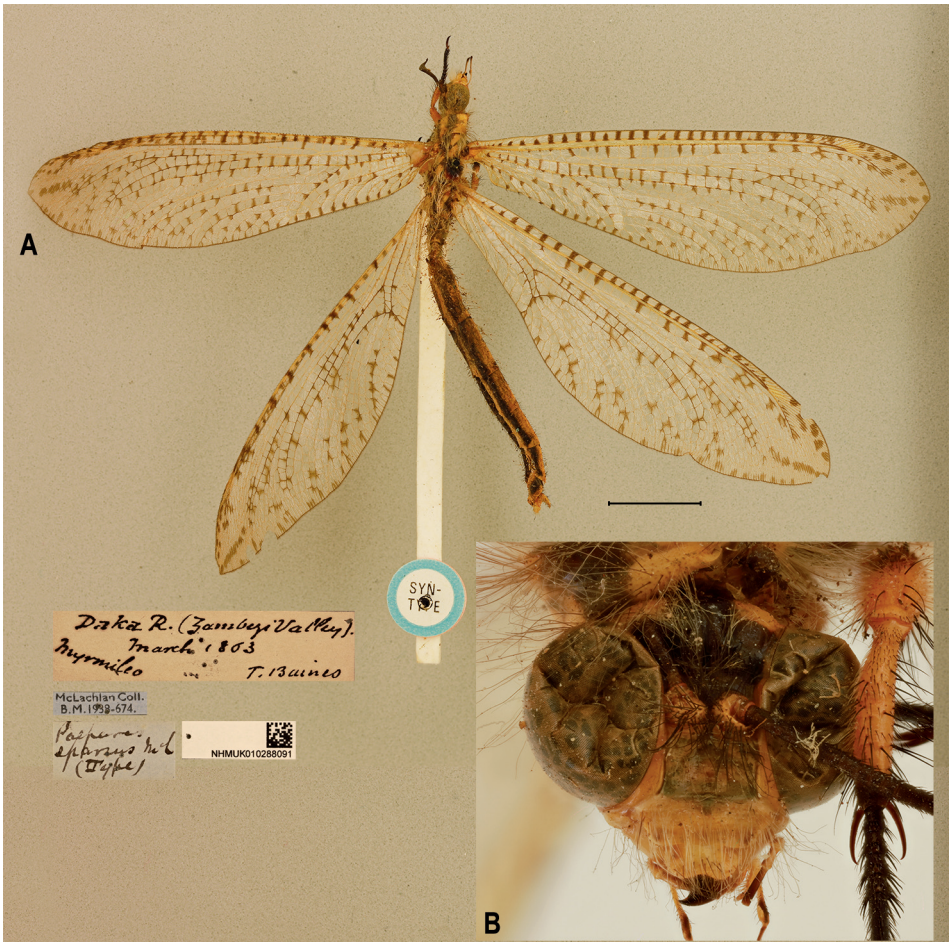


Fig. 4: Male syntype of *Pseudopalpares sparsus* (McLachlan, 1867)
A – habitus in dorsal view; B – head in frontal view, magnified

Remarks: The lectotype of *Pseudopalpares sparsus* (McLachlan, 1867) is designated from male syntype of *Palpares sparsus* McLachlan, 1867 (present designation).

Pseudopalpares sobrinus (Péringuey, 1911) comb. n. (Fig. 5A and B).

Palpares sparsus McLachlan, 1867: 240 – (Odescr, partim female syntype). (Fig. 6A and B).
Palpares sobrinus Péringuey, 1911: 33 – (Odescr), Calvert 1899 (Dist as Palpares sp.), Banks 1913 (List), Esben-Petersen 1916 (List), 1928 (Dist), Navás 1919 (Dist), 1927 (Dist), 1935 (Dist), Mansell & Aspöck 1990 (Dist), Whittington 2002 (Dist), Stange 2004 (Mon).
Palpares carpentieri Navás, 1925a: 182 – (Odescr), Monserrat 1985 (Type list), Stange 2004 (Syn).
Palpares campanai Navás, 1915: 9 – (Odescr), Esben-Petersen 1928 (Syn), Monserrat 1985 (Type list), Mansell & Aspöck 1990 (Dist), Mansell 2000 (Dist).

Type material examined:
In coll. SAMC: 1 ♀ // Type // Palpares / sobrinus P. // Cap Col // Dunbrody / A. J. O'Neil. // SAM-NEU-A001078 //

Additional material examined:
In coll. SCMK: 1 ♂ Botswana SE 10 km E Thamaga 9.8.2019. Leg: S. Prepsl (NeuMyr8592); 1 ♂ Namibia 60 km from Windhoek 10.03.2006. Leg: Dr. Vas János (NeuMyr120); 1 ♂ Namibia F. Etosha Pan 27-28.01.2002 Leg: Werner (NeuMyr121); 2 ♀ RSA Transvaal near Thabazimbi 15-16.01.1999. Leg: Werner (NeuMyr117); 3 ♀ RSA Transvaal near Tshipise 19.01.1999 Leg: Werner (NeuMyr118); 2 ♂ 1 ♀ RSA Transvaal H. Merensky Nature Reserve 20.I.1999 Leg: Werner (NeuMyr119); 1 ♂ RSA Transvaal near Louis Trichardt Zontp. 17-19.01.1999. Leg: Werner (NeuMyr122); 1 ♂ Namibia Prov. Erongo 30 km W Omaruru 1130m 22.3.2017 Leg: J. Halada (NeuMyr2403); 1 ♀ Namibia Prov. Khomas 30 km SE Windhoek 1870m 22°34'44"S 17°20'12"E 21.3.2017 Leg: J. Halada (NeuMyr2212)
In coll. PZPC 1 ♂ Namibia prov. Khomas, 30km SE Windhoek, 22°34'44″S17°20'12″E, 1870m, 21. III. 2017, leg. J. Halada; 1 ♂ Namibia NE, Kalahari desert, Dordabis region 70km S.E. Windhoek, 1490 m, 18-21 II. 2018, leg. Dementiev S.; 1 ♂ Namibia NE, Katima Mulilo Protea Hotel 31. I. 2020, leg. Vladimir Major; 2 ♂, 1 ♀ Namibia NE, Okakarara Hamakari, Camo, 25°58'S 17°03'E, 1310m 2-5. II. 2020, leg. Vladimir Major; 1 ♀ Namibi, Mondilla Safari camp. S 19°34' E15°34' 24-26.1.2020. leg. Vladimir Major.

Differencial characters: Frons with large black spot. Forewing membrane with many small and brown spots and apical spots not unit into streaks on both wings. On hindwing, medial mark large, usually transversally divided. Membrane with spots or short streaks between area of R_1 and R_2 on both wings. Tergites with longitudinal yellow band dorsally and with brown bands laterally.

Distribution: Angola (Navás 1915), Botswana (Navás 1919), Namibia (Esben-Petersen 1928), and Republic South Africa (Péringuey 1911).

Fig. 5: ***Pseudopalpares sobrinus*** **(Péringuey, 1911) A – habitus of the type; B – head in frontal view, magnified**

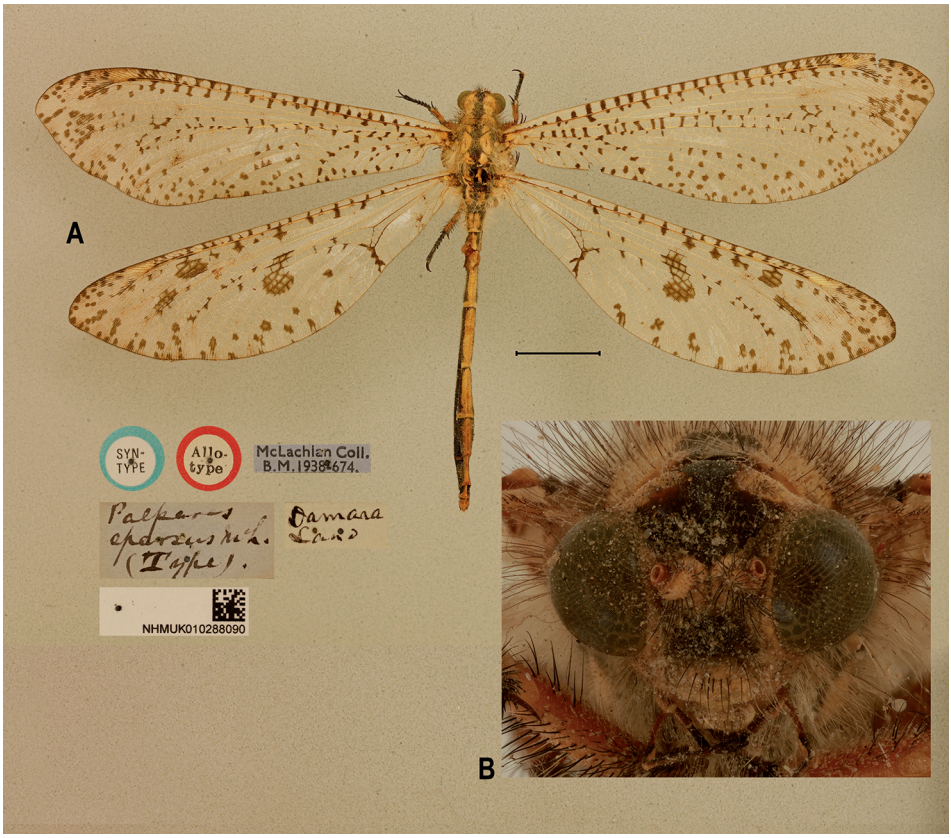


Fig. 6: Female syntype *Palpares sparsus* McLachlan, 1867 conspecific with *Pseudopalpares sobrinus* (Péringuey, 1911) A – habitus of the type; B – head in frontal view, magnified

Remarks: When *Palpares sparsus* was described by MCLACHLAN (1868), he was uncertain whether the type specimens (1 male and 1 female) belonged to the same species, and sexual dimorphism was also suspected. Re-checking of the type specimens clearly showed that his doubts were true, as the male and female (allotype) are not conspecific.

Pseudopalpares nyicanus (Kolbe, 1897) comb. n. (Fig. 7A–C).

Palpares nyicanus Kolbe, 1897: 11 – (Odescr), Navás 1912 (Dist), Banks 1913 (Chlist, Key), Esben-Petersen 1916 (Syn), Stange 2004 (Mon).

Palpares aemulus Péringuey, 1911: 31 – (Odescr), Banks 1913 (Syn), Esben-Petersen 1916 (Syn). (Fig. 8A and B).

Type material examined:

In coll. NHMUK: 1 ♀ // Syn / Type // Allotype // Damara / Land // McLachlan coll. / B.M. 1938-674 // Palpares / sparsus McL. / (Type). // NHMUK010288090 //. In coll. ZMHB: 1 ♂ // Type // Farhani Usa- / gara / 27.V.[18]90. / Stuhlmann F. // Palpares / nyicanus / n. sp. / Kolbe // 1229 // http://coll.-mfn-berlin.de/u a14ea1 //. In coll. SAMC: 1 ♂ // M fongosi / Zulu L / W E Jones / April 1911 // Palpares / aemulus ♂ Per / type // SAM-NEU- / A001056 //

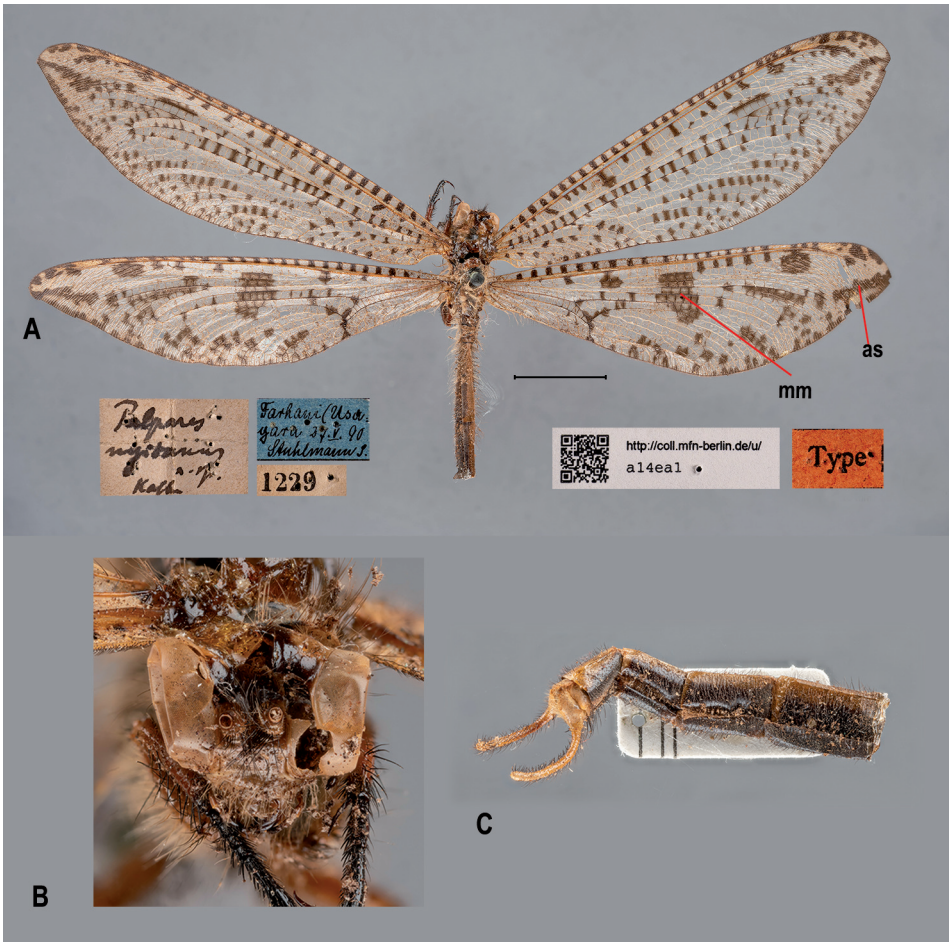


Fig. 7: *Pseudopalpares nyicanus* (Kolbe, 1897) A – habitus of the type in dorsal view; B – head in frontal view; C – male abdomen and terminalia in dorsal view, magnified

Additional material examined:
In coll. SCMK: 1 ♂ South Africa KwaZulu-Natal Province 15 km NE of Pietermaritzburg, Cumberland Nature Reserve 29°30'49.65"S, 30°30'16.88"E, 25-28.II.2019 Leg: S. A. Knyazev (NeuMyr2335); 1 ♂ RSA Duiwelskloof 2004.04.10-14. Leg: Vas János (NeuMyr123).
In coll. JODPC: 1 ♀ RSA Kwazulu-Natal, Weenen Game Res.[erve], 28°50'43"S, 29°59'13"E 13.1.2011, A. Suchinco leg.

Differencial characters: Frons yellow. Forewing membrane with many small spots, hindwing membrane also with many small spots and with larger not divided medial mark. Apical streaks on both wings clearly visible. Tergites with longitudinal yellow band dorsally and with brown bands laterally.

Distribution: Namibia, Republic South Africa (McLachlan 1868), and Tanzania (Kolbe 1897).

Fig. 8: Type of *Palpares aemulus* Péringuey, 1911
A – habitus in dorsal view; B – head in frontal view, magnified

Palpares abyssinicus Kolbe, 1898 (Fig. 9A–C).
Palpares abyssinicus Kolbe, 1898: 233 – (Odescr), Banks 1913 (Tax), 1920 (Dist), Esben-Petersen 1916 (Dist), Prost 2010: 260 (Dist).

Additional material examined:
In coll. MIZ: 1 ♀ Eritrea Adua [Adwa] Kristensen S. Nov[ember]. 08., Mus. Zool. Polonicum 12/45, Palp abyssinicus Kolb; 1 ♀ the same, Palpares abyssinicus Kolbe Krivokhatsky det.

Differencial characters: Frons completely black. Forewing membrane dominantly with small reddish-brown spots except brown spotted costal area on both sides of cross-veins. Hindwing membrane also with many small reddish-brown spots, apical streak and medial large mark missing. Tergites unicolour, yellowish-brown.

Distribution: Eritrea (ESBEN-PETERSEN 1916), Ethiopia (KOLBE 1898), and Democratic Republic Congo (BANKS 1920).

Remarks: Type deposition is unknown. The species is morphologically close to the *Pseudopalpares* species. In the future, it is worth investigating the classification of the genus with the help of DNA analysis

Lachlathetes furfuraceus (Rambur, 1842) (Fig. 10A and B).
Myrmeleon furfuraceus Rambur, 1842 – Walker 1853: 304 (Redescr, Comb), Handschin & Markl 1955: 74 (List).
Palpares furfuraceus (Rambur, 1842): 373 (Odescr), Hagen 1866: 456 (Tax), McLachlan 1868: 275 (Comb), 1873: 130 (Com),, Banks 1913: 178 (Redescr), Kimmins 1945: 99 (Morph), Navás 1919: 293, 1924: 376 (Dist),

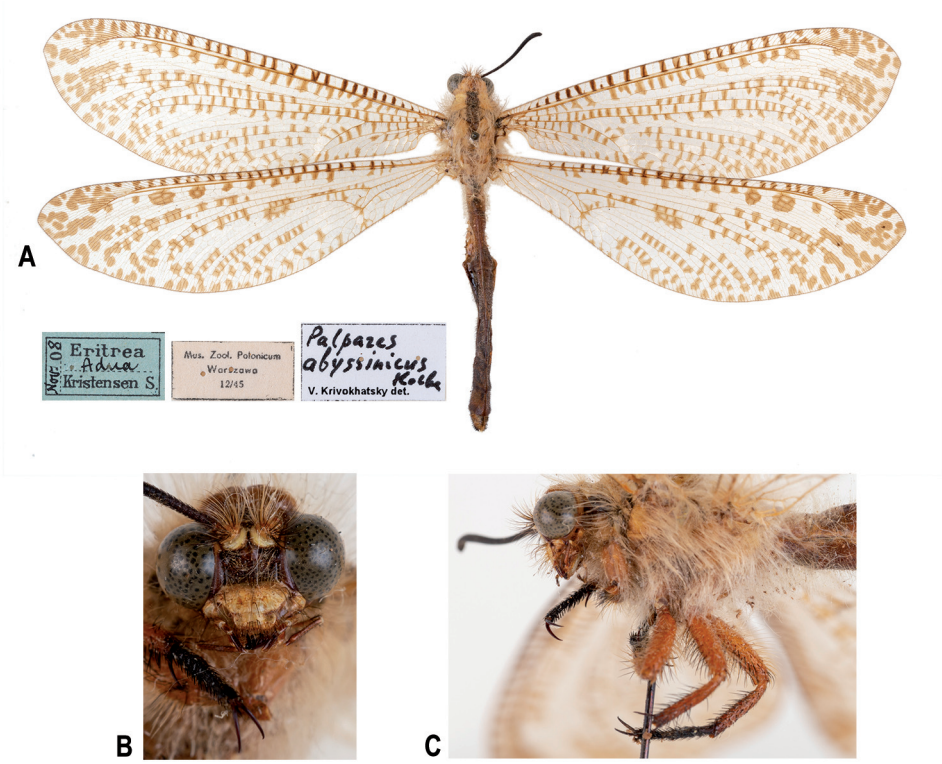


Fig. 9: *Palpares abyssinicus* Kolbe, 1898
A – habitus in dorsal view; B – head in frontal view, magnified

1932: 4 (Dist), 1933: 204 (Dist), Navás 1936: 334 (Dist), Prost 1995: 86 Dist), Whittington 2002: 385 (Dist).
Palpares equestris Navás 1912: 55 (Odescr), Stitz 1912: 113 (Dist), Banks 1913: 178 (Syn), Stange 2004: 41 (Syn).
Lachlathetes furfuraceus (Rambur, 1842): Stange 2004: 41 (Mon), Prost 2010: 258 (Dist), Prost & Popov 2021: 55 (Dist), Prost et al. 2022: 46 (Dist).

Additional material examined:
1 ♂ Burkina Faso, Boromo region 09. 2008. Leg: A. Rautenstrauch (NeuMyr34); 1 ♀ Ghana, Upper East Region, Nakpanduri Gambaga Escarpment 10-16.11.2009. Leg: Sáfián, Sz., Yevu, S. (NeuMyr351); 4 ♂ Mali, Koulikoro Region, Ouronina (20km SW of Bankoumana) 410m N12°06'15,0" W008°24'32,7".09.09-10.03.2015, Leg: Gergely Petrányi (NeuMyr36/1-4); 1 ♂ 1 ♀ Mali, Bamako, Oct. 2012. Leg: Szilárd Kiss (NeuMyr2077/1-2); 1 ♀ Mali, Mopti region, Bandiogara 14°20'N 3°25'W 27.09.2017. Leg: Gergely Petrányi (NeuMyr2309); 1 ♀ Mali, Mopti region, Bandiagara, auto-trap 20.02.2017. light trap (NeuMyr2614); 1 ♂ Mali, Koulikoro Region, Ouronina (20km SW of Bankoumana) 414m N 12°06'16,4" W 008°24'32,9" 10.29-11.15.2016. Leg: Gergely Petrányi light trap (NeuMyr4629); 11 ♀ Mali, Koulikoro Region, Ouronina (20km SW of Bankoumana) 414m N12°06'16,4" W008°24'32,9" 10.29-11.15.2016.Leg: Gergely Petrányi light trap (NeuMyr4617- NeuMyr4628);

Differencial characters: Frons yellow to light brown. Forewing membrane with fused network of small reddish-brown spots and with larger marks in apical area. Hindwing membrane mainly decorated with large reddish-brown marks. Tergites dark brown with yellow distal margins.

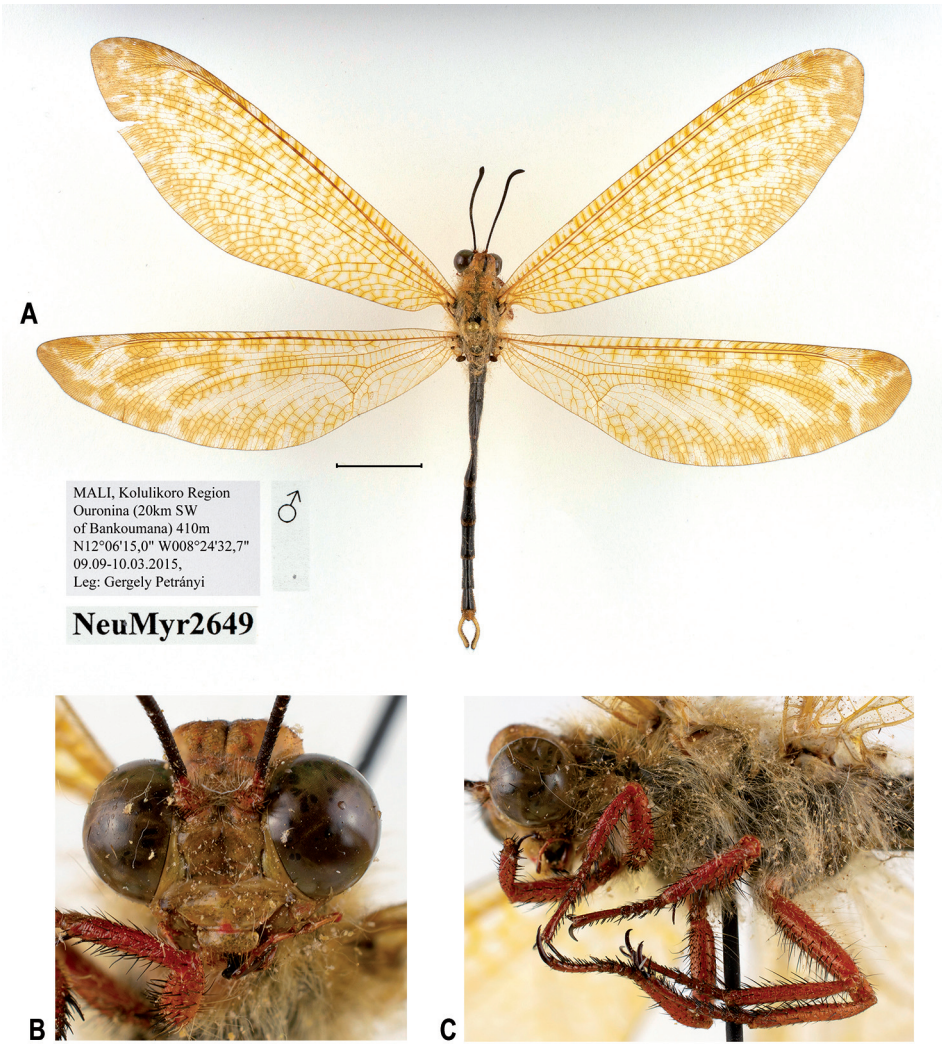


Fig. 10: *Lachlathetes furfuraceus* (Rambur, 1842)
A – habitus of the type; B – head in frontal view, C – side and legs in lateral view, magnified

Distribution: Benin (PROST et al. 2022), Burkina Faso (PROST 1995), Ghana, Niger (STANGE 2004), Democratic Republic Congo (NAVÁS 1932), Mali (MICHEL 1999), Nigeria (NAVÁS 1912 as *Palpares equestris*), Senegal (RAMBUR 1842), Togo (STITZ 1912)

Remarks: The type specimen is not checked, preserved in MNHN (STANGE 2004). Based on its known area, it is a species with a typical West African distribution, its occurrence in Sudan, Konlikoro is unlikely, since the cited locality (Navás 1924) can be found in Mali. It vicariates with the previous species in West Africa. The generic status, *Lachlathetes* is uncertain. It differs significantly from the genotype species (*Lachlathetes moestus* (Hagen, 1853)) morphologically (labial palp, habitus, male genitalia, etc.).

Key for the species

1. Smaller and larger spots on membrane of both wings predominantly reddish-brown... .....**2**
- Spots on both wings brown to dark brown ……**3**
2. Every 2nd or occasionally 3th cross-vein in costal area of both wings dark brown, otherwise cross-veins in wings reddish-brown, in HW without conspicuous large spots (Fig. 9) …….....***P. abyssinicus***
- Cross-veins in costal area of both wings yellow or light reddish-brown, in HW with larger reddish-brown marks (Fig. 10) …….....……***L. furfuraceus***
3. Dorsal surface of tergites with longitudinal dark brown to black stripe, and with two longitudinal yellow stripes laterally (Fig. 1–3) .....…***P. parvopunctatus*** sp. n.
- Dorsal surface of tergites with longitudinal yellow stripe, and with two longitudinal brown stripes laterally…...…….....……**4**
4. Frons with black spot……..……**5**
- Frons yellow, in HW smaller spots merge into apical streak, medial mark large (Fig. 7).…….....……***P. nyicanus***
5. In radial area below Rs_1+Ma not spotted, spots mostly form apical streak, medial mark not visible in HW (Fig. 4).....***P. sparsus***
- In radial area below Rs_1+Ma with spots, apical streaks not visible only separated small spots, large medial mark often divided in HW (Fig. 5).....….....…… ***P. sobrinus***

Acknowledgements

The author is sincerely grateful to the curators and their assistants at the museums for providing the photos of the type specimens and information on the collection material, namely Simon van Noort, Mujahid Hector (SAMC, Cape Town, RSA), Roland Dobosz (USMB Bytom, Poland), Ben Price and Dan Hall (BMNH, London, UK), Stefanie Krause (ZMHB, Berlin, Germany), and György Sziráki (HNHM, Budapest, Hungary).

The author would like to express their thanks for the examination of the material of three very important private collections (EFMEA, Feldkirch, Austria, ZPPC, Budapest, Hungary), in which specimens of the new species were also found.

Many thanks to Bálint Csernák (Hungary) for taking the excellent photos.

References

AKOUDJIN, M.; MICHEL, B. 2011: A new species of Palpares Rambur (Neuroptera: Myrmeleontidae) with an identification key to the species of West Africa. - Zootaxa 2792:33-40.

ASPÖCK, H.; HÖLZEL, H.; ASPÖCK, U. 2001: Kommentierter Katalog der Neuropterida (Insecta: Raphidioptera, Megaloptera, Neuroptera) der Westpaläarktis. - Denisia 2:1-606.

ÁBRAHÁM, L. 2010: Description of a new Palpares species from Middle East Asia (Neuroptera: Myrmeleontidae). - Acta Phytopathologica et Entomologica Hungarica 45(2): 367-371.

ÁBRAHÁM, L. 2012. "On the other hand, what is this Eastern aeschnoides?" (Morton 1926) – an undescribed Palpares species from the Eastern Mediterranean (Neuroptera: Myrmeleontidae). - Natura Somogyiensis 22: 65-102.

ÁBRAHÁM, L. & A. VAN HARTEN 2014: Order Neuroptera, family Myrmeleontidae Arthropod fauna of the United Arab Emirate 5: 299-333.

BADANO, D.; ASPÖCK, U.; ASPÖCK, H.; CERRETTI, P. 2017: Phylogeny of Myrmeleontiformia based on larval morphology (Neuropterida: Neuroptera). - Systematic Entomology 42:94-117

BANKS, N. 1913: The neuropterous genus Palpares. - Annals of the Entomological Society of America 6:171-[195].

BANKS, N. 1920: Neuroptera, Panorpata, and Trichoptera collected by the American Museum Congo Expedition, with lists of the species known from the Belgian Congo. - Bulletin of the American Museum of Natural History 43:21-33.

CALVERT, P. P. 1899: Neuropterous insects collected by Dr. A. Donaldson Smith in northeastern Africa. - Proceedings of the Academy of Natural Sciences of Philadelphia 51:228-244.

ESBEN-PETERSEN, P. 1916: Notes concerning African Myrmeleonidae I. - Arkiv för Zoologi 10(15):1-22.

ESBEN-PETERSEN, P. 1920: Revision of some of the type-specimens of Myrmeleonidae, described by Navas and placed in the Vienna Museum. - Annales de la Société Entomologique de Belgique 60:190-196.

ESBEN-PETERSEN, P. 1928: Neuroptera Planipennia. Pp. 203-221. - In: MICHAELSEN, J. W. (editor). Beiträge zur Kenntnis der Land- und Süsswasserfauna Deutsch-Südwestafrikas, Ergebnisse der Hamburger Deutsch-Südwestafrikanischen Studienreise 1911. Vol. 2. Friederichsen and Co., Hamburg.

GHOSH, S. K. 1991: On a new species of the genus Palpares (Neuroptera: Myrmeleontidae) from India. - Records of the Zoological Survey of India 88:71-73.

JONES, J. R. 2019: Total-evidence phylogeny of the owlflies (Neuroptera, Ascalaphidae) supports a new higher-level classification. Zoologica Scripta 48: 761-782.

HAGEN, H. A. 1866: Hemerobidarum Synopsis synonymica. - Stettiner Entomologische Zeitung 27:369-462.

HANDSCHIN, E.; MARKL, W. 1955: Neuropteren aus Angola. Companhia de Diamantes de Angola, Publicaçoes Culturais, - Lisboa 27:65-82.

HÉVIN, N. M.-C.; KERGOAT, G. J.; CLAMENS, A.-L.; LE RU, B.; MANSELL, M. W.; MICHEL, B. 2023: Evolution, systematics and historical biogeography of Palparini and Palparidiini antlions (Neuroptera: Myrmeleontidae): old origin and in situ diversification in Southern Africa. - Systematic Entomology 48(4): 600-614.

HÖLZEL, H. 1998: Zoogeographical features of Neuroptera of the Arabian peninsula. in Panelius, S. P. (ed.). Neuropterology 1997. Proceedings of the Sixth International Symposium on Neuropterology (13-16 July 1997, Helsinki, Finland). - Acta Zoologica Fennica 209: 129-140.

HÖLZEL, H. 1986: Biogeography of Palearctic Myrmeleonidae (Neuropteroidea: Planipennia). Pp. 53-70. In: GEPP, J.; ASPÖCK, H.; HÖLZEL, H. (editors). - Recent Research in Neuropterology. Proceedings of the 2nd International Symposium on Neuropterology. Meeting: 21-23 August 1984, Hamburg, Germany. Privately printed, Graz, Austria. 176 pp.

HÖLZEL, H. 1988: Neuroptera of Arabia: Fam. Sisyridae, Hemerobiidae, Chrysopidae (Part 2) and Myrmeleonidae (Part 3). - Fauna of Saudi Arabia 9:52-67.

INSOM, E.; CARFÌ, S. 1988. Taxonomic studies on Palparini (sensu Markl, 1954). I: The genus Palpares Rambur, 1842 partim (Neuroptera: Myrmeleontidae) with the proposal of its division and description of new genera. - Neuroptera International 5:57-78.

KIMMINS, D. E. 1945: A note on some specialized hairs in the Palparinae (Neuroptera, Myrmeleonidae). - Entomologist 78:97-99.

KOLBE, H. J. 1897. Neuropteren. Die Netzflügler. MÖBIUS, K. A. (editor). Die Thierwelt [Deutsch-]Ost-Afrikas und der Nachbargebiete. Band IV (Wirbellose Thiere). - Dietrich Reimer, Berlin. [i] + 42 pp.

KOLBE, H. J. 1898. Neue Neuropteren aus der Myrmeleontidengattung Palpares. - Stettiner Entomologische Zeitung 59:229-235.

Mansell, M. W. 1990. The Myrmeleontidae of southern Africa: tribe Palparini. Introduction and description of Pamares gen. nov., with four new species (Insecta: Neuroptera). - Journal of the Entomological Society of Southern Africa 53:165-189.

Mansell, M. W. 1992. Key characters in the phylogeny and classification of Palparini (Insecta: Neuroptera: Myrmeleontidae). Pp. 243–254. In: Canard, M.; Aspöck, H.; Mansell, M. W. (editors). - Current Research in Neuropterology. Proceedings of the Fourth International Symposium on Neuropterology. Meeting: 24-27 June 1991, Bagnères-de-Luchon, Haute-Garonne, France. Privately printed, Toulouse, France. 414 pp.

Mansell, M. W. 2000. Neuroptera (Insecta). in Kirk-Spriggs, A. H.; Marais, M. (eds.). Dâures-biodiversity of the Brandenberg Massif, Namibia. - Cimbebasia Memoir 9:163-176.

Mansell, M. W. 2004. Antlions of southern Africa: Annulares nov. gen. (Neuroptera, Myrmeleontidae, Palparini) including two new species, with comments on the tribe Palparini. Aspöck, U. (science editor). Entomologie und Parasitologie. Festschrift zum 65. Geburtstag von Horst Aspöck. - Denisia 13:201-208.

Mansell, M. W.; Aspöck, H. 1990: Post-symposium neuropterological excursions. Pp. 287–298. - In: Mansell, M. W.; Aspöck, H. (editors). Advances in Neuropterology. Proceedings of the Third International Symposium on Neuropterology. Meeting: 3-4 February 1988, Berg en Dal, Kruger National Park, South Africa. South African Department of Agricultural Development, Pretoria. vi + 298 pp.

McLachlan, R. 1868. New genera and species, &c., of neuropterous insects; and a revision of Mr. F. Walker's British Museum Catalogue of Neuroptera, part ii. (1853), as far as the end of the genus Myrmeleon. - Journal of the Linnean Society of London, Zoology 9:230-281 [Errata: 9:281].

Michel, B. 1999: Biodiversité et écologie des Palparinae du sud du Mali (Neuroptera, Myrmeleontidae). - Bulletin de la Société Entomologique de France 104:45-52.

Monserrat, V. J. 1985: Lista de los tipos de Mecoptera y Neuroptera (Insecta) de la colección L. Navás, depositados en el Museo de Zoología de Barcelona. - Miscellània Zoològica 9:233-243.

Navás, L. 1912: Myrméléonides (Ins. Névr.) nouveaux ou peu connus. - Annales de la Société Scientifique de Bruxelles 36(pt. 2):203-248.

Navás, L. 1914: Voyage de Ch. Alluaud et R. Jeannel en Afrique Orientale (1911-1912). - Résultats scientifiques. Insectes Névroptères. I. Planipennia et Mecoptera. Paris. 52 pp.

Navás, L. 1915: Neuroptera nova africana. IV Series. - Memorie dell'Accademia Pontifica dei Nuovi Lincei, Rome (2)1:9-19.

Navás, L. 1919: Comunicaciones entomológicas. 3. Insectos exóticos. - Revista de la [Real] Academia de Ciencias Exactas Fisico-Quimicas y Naturales de Zaragoza (1)4:287-306.

Navás, L. 1923: Quelques Myrméléonides (Ins. Névr.) d'Afrique. - Annales de la Société Scientifique de Bruxelles 43(pt. 1):143-147.

Navás, L. 1925a: Insectos exóticos nuevos o poco conocidos. Segunda [II] serie. - Memorias de la Real Academia de Ciencias y Artes de Barcelona (3)19:181-200.

Navás, L. 1925b: Insectes du Congo Belge. Série I. - Revue de Zoologie Africaines, Bruxelles 13:123-132.

Navás, L. 1927: Comunicaciones entomológicas. 10 [sic; =9]. Mis excursiones científicas en 1927. - Revista de la [Real] Academia de Ciencias Exactas Fisico-Quimicas y Naturales de Zaragoza (1)11:79-137.

Navás, L. 1928: Insectos del Museo de Estocolmo. - Revista de la Real Academia de Ciencias Exactas Fisicas y Naturales de Madrid 24:28-39.

Navás, L. 1932: Alcuni insetti del Museo di Zoologia della R. Universit... di Torino. - Bollettino dei Musei di Zoologia e di Anatomia Comparata della R. Università di Torino (3)42(26):1-38.

Navás, L. 1933: Neurópteros exóticos [1.a serie]. - Memorias de la Real Academia de Ciencias y Artes de Barcelona (3)23:203-216.

Navás, L. 1935: Neurópteros exóticos. 2.a serie. Memorias de la Real Academia de Ciencias y Artes de Barcelona (3)25:37-59.

Navás, L. 1936: Insectes du Congo Belge. Série IX. - Revue de Zoologie et de Botanique Africaines 28:333-368.

Oswald, J. D. 2023: Neuropterida Species of the World. - Lacewing Digital Library, Research Publication No. 1. Available from: http://lacewing.tamu.edu/SpeciesCatalog/Main (accessed 01. Augustus 2023)

Péringuey, L. 1911: Descriptions of four new species of South African Hemerobiidae (Order Neuroptera). - Annals of the South African Museum 10:31-37.

Rambur, [J.] P. 1842: Histoire naturelle des insectes, névroptères. - Librairie encyclopédique de Roret. Fain et Thunot, Paris. [xviii] + 534 pp.

Prost, A. 1995: Révision des Palparinae d'Afrique de l'Ouest (Neuroptera, Myrmeleontidae). - Bulletin de la Société Entomologique de France 100:79-107.

Prost, A. 2010: Patterns of distribution of the Palparini (Neuroptera: Myrmeleontidae: Palparinae) in the northern half of Africa: faunal transitions and regional overlaps. - Pp. 257–266. In: DEVETAK, D.; LIPOVŠEK, S.; ARNETT, A. E. (editors). Proceedings of the 10th International Symposium on Neuropterology. Meeting: 22-25 June 2008, Piran, Slovenia. University of Maribor, Maribor, Slovenia. 307 pp.

PROST, A.; POPOV, A. 2021: A first comprehensive inventory of Ascalaphidae, Palparidae, and Myrmeleontidae (Insecta: Neuroptera) of Northeastern Nigeria with description of two new species and an overview of genus Bankisus Navás. - Historia Naturalis Bulgarica 43(5):51-77.

STANGE, L. A. 2004: A systematic catalog, bibliography and classification of the world antlions (Insecta: Neuroptera: Myrmeleontidae). - Memoirs of the American Entomological Institute 74, iv+ 1-565.

STITZ, H. 1912: Palpares aus der Sammlung des Berliner Museums. - Mitteilungen aus dem Zoologischen Museum in Berlin 6:103-116.

WALKER, F. 1853. List of the specimens of neuropterous insects in the collection of the British Museum. Part II (Sialidae--Nemopterides). - British Museum, London. [iii] + 193-476 pp.

WHITTINGTON, A. E. 2002: Resources in Scottish Neuropterology. SZIRÁKI, GY. (editor). Neuropterology 2000. - Proceedings of the Seventh International Symposium on Neuropterology. Meeting: 6-9 August 2000, Budapest, Hungary. Acta Zoologica Academiae Scientiarum Hungaricae 48(Suppl. 2):371-387.

Natura Somogyiensis 41: 57-66. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.57
Submitted: 04.09, 2023; Accepted: 03.10, 2023; Published: 05.10, 2023 www.smmi.hu/termtud/ns/ns.htm

New data to Hungarian slime molds (Protozoa: Myxomycetes)

Dredor Dominik & Szmatona-Túri Tünde

Északi ASzC Mátra Forestry Technical, Vocational School and Collage, Mátrafüred
H-3232 Mátrafüred, Erdész utca 11., Hungary, e-mail: dredor.dominik@gmail.com

Dredor, D. & Szmatona-Túri T.: *New data to Hungarian slime molds (Protozoa: Myxomycetes).*
Abstract: The authors publish occurrence data from 2011 to 2023 of slime mold (Myxomycetes) species from Hungary. In addition to the collected data, the present paper contains data from citizen science platforms. A total of 253 occurrence data of 41 slime mold species and 2 varietas are given, among them, 5 species are new records for Hungary. Contrary to previous studies, two species, that were found on a real mushroom (Fungi) substrate are identified. By the data published on the distribution and substrate of the species, the current paper significantly expands the knowledge of Hungarian slime molds.

Keywords: slime mold, Myxomycetes, new record, new data, Hungary

Introduction

Slime molds (Myxomycetes) are less known or researched organisms in Hungary. Several mycologists published data on slime molds (Hollós 1913, Moesz 1926, Bánhegyi 1943, Tóth 1954, Vass 1961) from Hungary in the 20th century but the latest works were already published 15 years ago. Révay (2008) summarized the slime mold species found in the country, and Rudolf et al. (2008) reported three species from Cserehát. Because the research on slime molds has recently declined, it is important to carry on studying them, also publish new information and distributional data. According to Bodonyi & Tóth (2004), further research probably unveil undetected species. Since then, one new species has been reported, new to the Hungarian slime molds (Dredor & Szmatona-Túri 2023). However, citizen science is getting more and more important in collecting new species and data (Papp 2023). Thanks to this, many data on slime molds are available on professional forums. The purpose of this paper is to publish the collected data during fieldwork and also from citizen science platforms, and additionally provide ecological evaluations of slime molds.

Material and methods

We recorded slime mold data from 2011 to 2023 by our fieldworks, also biologist colleagues, amateur researchers, and with the help of citizen science. In the enumeration, the collection time, the location, and the substrate of the species are given. The substrate

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

species refers to the wood, if the slime mold appeared on another part of the plant, it is indicated separately. In some cases (if the rotting of the substrate progressed) the substrate species identification was not possible. The abbreviations of the names of the collectors were given. During the community data collection, only the clearly identifiable data were included in the species list. The samples were identified by the works of BÁNHEGYI et al. (1985), LEONTYEV & FEFELOV (2009), MARTIN & ALEXOPOULOS (2021), and GLIME (2019). The valid scientific names of the species are given based on the GBIF. The species new to Hungary are marked with a star sign.

Abbreviations: BÁ = Bencze Ágnes, BFA = Balog-Farkas András, BV = Balogi Virág, BVA = Bihari-Varju Adrienn, CT = Czimbalmos Tamás, CSEK = Császárné Erdélyi Katalin, CSG = Csapó Gergely, CSLL = Csepesz Lilla Laura, DD&SzTT = Dredor Dominik and Szmatona-Túri Tünde, DG = Dudás Gábor, DM = Dömös Márk, DNÁ = D-Nagy Ágnes, FH = Fehér Henrietta, FR = Fiedler Rita, FT = Frigyer Tamás, GB = Gucsik Bence, HN = Hege Norbert, HOJ = Horváthné Ottlecz Judit, HP = Honesz Péter, HPÁ = Halmainé Péczeli Ágnes, KG = Kurszán Gál, KGá= Kovács Gábor, KKJ = Kiss Károly József, KL = Kaposvári László, KM = Kardos Mária, KSZ = Kis Szabolcs, KTJ = Kőszeginé Tóth Judit, MB = Magyar Beatrix, MBK = Molnár-Bánffy Katalin, MBZS = Molnár-Bánffy Zsolt, MG = Magyar Gábor, ML = Molnár László, MR = Molnár Renátó, NS = Nagy Sándor NF = Németh Ferenc, NVA = Nádor-Virág Anikó, PD = Pejkó Dávid, PI = Potyó Imre, Polgár Marianna = PM, RE = Rajna Edit, RH = Rosenberg Hajnalka, RSZA = Ruppert Szilvia Alexandra, RV = Répási Viktória, SÉ = Salacz Éva, SFÁ = Skribanekné Frojimovics Ágnes, SI = Sárközi István, s = substrate, SZA = Szajkó Attila, SZOL = Szilágyi-Ormos Lehel, SZT = Székely Tímea, SZZS = Szentkirályi Zsolt, TÁ = Torma Ágnes, TA = Tüdős Andrea, TF = Takács Ferenc TK = Tóbiás Krisztián, TOZS = Tarnóczy-Orosz Zsanett, UL = Urbán László, UZ = Ugi Zoltán, VáL = Váradi László, VGY = Vidra Gyula, VJ = Vikár József, VL = Vajda László, VN = Vízi Nóra, VTD = Vona-Túri Diána, WM = Wabrosch Márk, ZB = Zalai Béla, ZSJ = Zsarnóczai Júlia

Enumeration

1. *Arcyria affinis* Rostaf., 1875: 02. 05. 2023. Budakeszi, wildlife park, s: rotten wood, KGá.

2. *Arcyria cinerea* (Bull.) Pers., 1801: 13. 05. 2014. Sukoró, s: rotten wood, KGá. - 08. 07. 2017. Nagyesztergár, Gaja-creek, s: rotten wood, KGá. - 14. 06. 2021. Budapest, Vaskapu, s: rotten wood, KGá. - 28. 05. 2023. Pilisszentlászló, s: rotten wood, KGá. - 21. 07. 2023. Resznek-Golicamajor, s: rotten wood, GB.

3. *Arcyria denudata* (L.) Wettst., 1886: 08. 10. 2021. Bükkzsérc, s: rotten wood, SZA. - 28. 08.2022. Budapest, Hűvös-valley, s: rotten wood, KGá. - 25. 11. 2022. Budapest, Széchenyi-hill, s: rotten wood, KGá. - 28. 05. 2023. Verőce-Magyarkút, s: rotten wood, CSEK. - 30. 05. 2023. Jági learning trail, s: rotten wood, SZT.

4. *Arcyria ferruginea* Saut., 1841: 25. 11. 2021. Sukoró, s: *Pinus nigra* J. F. Arnold, 1785, HN. - 05. 12. 2020. Budapest, Hűvös-valley, s: rotten wood, KGá.

5. *Arcyria incarnata* (Pers. ex J.F. Gmel.) Pers., 1796: 26. 05. 2023. Törökbálint, s: rotten wood, KGá.

6. *Arcyria obvelata* (Oeder) Onsberg, 1979: 14. 08. 2019. Kismaros-Börzsönyliget, Nacsagromi-ditch, s: *Salix alba* L., 1753, CSEK. - 17. 05. 2022. Zengővárkony, s: rotten wood, FT. - 25. 06. 2023. Gyöngyös-Sástó, Szajla-flow, s: *Quercus petraea* (Matt.) Liebl., 1784, DD&SzTT. - 01. 07. 2023. Gyöngyössolymos-Szalajkaház, s: *Picea abies* (L.) H.Karst., 1881, DD&SzTT.

7. *Arcyria pomiformis* (Leers) Rostaf., 1875: 03. 11. 2018. Kismaros-Börzsönyliget, Nacsagromi-ditch, s: rotten wood, CSEK.

Fig. 1: *Stemonitis fusca* Roth, 1787 on the subrate of *Mycena renati* Quél., 1886 (Photo: Kőszeginé Tóth Judit)

8. *Badhamia foliicola* Lister, 1897: 02. 05. 2023. Budakeszi, wildlife park, s: rotten leaf, KGá.

9. Badhamia macrocarpa (Ces.) Rostaf., 1874: 21. 01. 2023. Gyöngyös, Orczy-garden, s: *Elaeagnus angustifolia* L., 1753, DD&SzTT. - 06. 02. 2023. Gyöngyös, Orczy-garden, s: *E. angustifolia*, DD&SzTT.

10. *Badhamia utricularis* (Bull.) Berk., 1852: 20. 11. 2013. Sukoró, s: rotten wood, KGá. - 21. 06. 2016. Tatabánya-Csákánypuszta, s: rotten wood, KGá. - 13. 05. 2022. Bölcske, Várrévi-forest, s: *Hypnum cupressiforme* Hedvig, 1801, FT. - 28. 11. 2022. Nagymaros, Törökmező, s: *Quercus petraea*, CSEK. - 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Quercus cerris* L., 1753, DD&SzTT.

11. *Brefeldia maxima* (Fr.) Rostaf., 1873: 26.10. 2015. Sukoró, s: rotten wood, KGá. - 07. 06. 2023. Sukoró, s: *Pinus nigra*, HN. – 10. 06. 2023. Gyöngyösoroszi-Károlytáró, hump-yard, s: *Betula pendula* Roth, 1788, DD&SzTT.

12. *Ceratiomyxa fruticulosa* (O.F.Müll.) T.Macbr., 1899: 21. 05. 2019. Kistarcsa, s: *Pinus sylvestris* L., 1753 cone, MG. - 02. 06. 2019. Nagymaros, Törökmező, s: rotten wood, CSEK. - 30. 07. 2019. Sopron, s: rotten wood, GB. - 09. 06. 2020. Szalafő, s: *Fagus sylvatica*, SZA. - 20. 08. 2020. Somoskő, *Fagus sylvatica* L., 1753, SI. - 27. 05. 2021. Póstelek-Gyula, s: rotten wood, SZA. - 12. 06. 2021. Majk, s: rotten wood, VL. - 23. 08. 2021. Salgóbánya, s: *Picea abies* cone, SI. - 25. 04. 2023. Budapest, Kamaraerdő,

s: rotten wood, KGá. - 19. 05. 2023. Budakeszi, s: rotten wood, KGá. - 24. 05. 2023. Páty, s: rotten wood, MR. - 28. 05. 2023. Verőce-Magyarkút, s: rotten wood, CSEK. - 30. 05. 2023. Börzsönyliget, s: rotten wood, TÁ. - 04. 06. 2023. Tar, s: *Picea abies*, DD&SzTT. - 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Betula pendula, Quercus petraea*, DD&SzTT. - 25. 06. 2023. Gyöngyös-Sástó, Szajla-flow, s: *Quercus petraea*, DD&SzTT. - 25. 06. 2023. Mátraháza, Nagy-Hidas-creek, s: *Quercus petraea*, DD&SzTT. - 27. 06. 2023. Mátrafüred, s: *Pinus nigra*, DD&SzTT. - 01. 07. 2023. Gyöngyössolymos-Szalajkaház, s: *Fagus sylvatica*, DD&SzTT.

13. *Cerateomyxa fruticulosa* var. *aurea* (Link) Y. Yamam., 1998: 10. 06. 2019. Törökbálint, s: P. sylvestris, KGá. - 17. 06. 2020. Budakeszi, s: *Pinus sylvestris*, KGá.

14. *Ceratiomyxa porioides* (Alb. & Schwein.) J.Schröt., 1889 : 31. 05. 2016. Sukoró, s: rotten wood, KGá. - 21. 06. 2016. Vértes, Csákánypuszta, s: rotten wood, KGá. - 28. 05. 2017. Sukoró, s: rotten wood, KGá. - 18. 07. 2017. Kismaros-Börzsönyliget, Nacsagromi-ditch, s: rotten wood, CSEK. - 29. 05. 2018. Budakeszi, s: rotten wood, KGá. - 06. 06. 2020. Debrecen, Nagyerdő, s: rotten wood, SZA. - 12. 07. 2020. Mátraháza, Görgő-bikki út, sz: *Quercus petraea*, DD&SzTT. - 2020. 08. 16. Pilisszentlászló, Bükkös-creek, s: rotten wood, KGá. 12. 06. 2021. Majk, s: rotten wood, VL. - 06. 10. 2022. Budapest, Hűvös-valley, s: rotten wood, KGá.

15. *Comatricha ellae* Härk, 1978*: 27. 01. 2023. Gyöngyös, Orczy-garden, s: *Pinus nigra* and *Pinus sylvestris*, DD&SzTT. - 26. 02. 2023. Gyöngyös, Orczy-garden, sz: *Pinus nigra* and *Pinus sylvestris*, DD&SzTT.

16. *Comatricha nigra* (Pers. ex J.F.Gmel.) J.Schröt., 1885: 26. 07. 2011. Fülöpháza, s: rotten wood, ML. - 18. 01. 2021. Szokolya, Királyrét, s: rotten wood, PI.

17. *Craterium minutum* (Leers) Fr., 1829: 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Quercus cerris* leaf, DD&SzTT.

18. *Diachea leucopodia* (Bull.) Rostaf., 1874: 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Quercus petraea, Carpinus betulus*, DD&SzTT.

19. *Dictydiaethalium plumbeum* (Schumach.) Rostaf., 1894: 29. 05. 2021. Fenyőfő, s: P. sylvestris, CSEK. - 12. 02. 2022. Budai-mountains, Vaskapu, s: rotten wood, KGá.

20. *Diderma donkii* Nann.-Bremek., 1973*: 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Quercus petraea* leaf, DD&SzTT. - 16. 06. 2023. Köveskál, s: *Quercus cerris* leaf, KGá.

21. *Fuligo candida* Pers., 1796 : 01. 07. 2015. Sukoró, s: rotten wood, KGá. - 08. 08. 2015. Sukoró, s: rotten wood, KGá. - 26. 06. 2017. Sukoró, s: rotten wood, KGá. - 30. 06. 2022. Mátraháza, s: *Quercus petraea*, DD&SzTT.

22. *Fuligo cinerea* (Schwein.) Morgan, 1896: 01. 11. 2013. Sukoró, s: rotten wood, KGá. - 20. 08. 2016. Csévharaszt, s: rotten wood, KGá. - 03. 06. 2019. Tiszanána, s: *Galium aparine* L., 1753, RE. - 02. 07. 2020. Virágos, s: *Fragaria* × *ananassa* (Weston) Rozier 1785, TK. - 22. 05. 2023. Alsónémedi, s: pine mulch, soil, SÉ. - 08. 06. 2023. Bölcske-Szentandráspuszta, P. nigra, FT. - 27. 06. 2023. Mátrafüred, s: *Pinus nigra*, DD&SzTT.

23. *Fuligo septica* (L.) F.H.Wigg., 1780 : 13. 06. 2016. Göcsej, Szilvágyi forest, s: *Quercus rubra* L., 1753, NF. - 23. 06. 2019. Kaszó, s: *Quercus cerris*, HOJ. - 28. 06. 2019. Érd, Regéci street, s: soil, KG. - 15. 09. 2019. Domony, s: *Pinus sylvestris*, MG. - 16. 01. 2020. Becskeháza, s: *Quercus cerris*, CSLL. - 06.19. 2020. Bükkzsérc, s: *Fagus sylvatica* rotten leaf, SZA. - 02. 07. 2020. Csepel, s: *Tilia cordata* Mill., 1768 leaf and pine mulch, CT. - 04. 07. 2020. Magyarkút, s: *Quercus petraea*, DM. - 07.18. 2020. Tatárszentgyörgy, s: *Pinus nigra*, SI. - 26. 07. 2020. Mátraháza, Görgő-bikki road, s: *Quercus cerris*, DD&SzTT. - 21. 07. 2021. Bölcske, s: dunghill, FT. - 08. 10. 2021. Bükkzsérc, s: *Carpinus betulus* L., 1753, SZA. - 02. 07. 2022. Sukoró, s: rotten wood,

Fig. 2: *Trichia varia* (Pers. ex J. F. Gmel.) Pers., 1794 on subrate of: *Carpinus betulus* and *Pluteus cervinus* (Schaeff.)

HN. - 15. 05. 2023. Madocsa, s: *Betula pendula* leaf, FT. - 24. 05. 2023. Magyaregres-Somogyaszaló, road 67, s: *Quercus cerris*, VáL. - 24. 05. 2023. Zalacséb, s: straw bale, FH. - 25. 05. 2023. Zirc, s: *Quercus petraea*, KKJ. - 05. 05. 2023. Vécs-Feldebrő, s: *Quercus petraea* leaf, VTD. - 26. 05. 2023. Nyíregyháza, s: *Picea abies* leaf, TOZS. - 30. 05. 2023. Parád, Várhegy, s: *Carpinus betulus*, SZOL. - 03. 06. 2023. Padragkút - Kab-hill, s: *Quercus petraea*, VGY. - 04. 06. 2023. Pesthidegkút, Kálvária-hill, s: rotten wood, SFÁ. - 07. 06. 2023. Pilis, s: Poaceae sp., BVA. - 09. 06. 2023. Alsónémedi, s: *Campanula* sp., SÉ. - 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Betula pendula*, *Quercus petraea*, DD&SzTT. - 16. 06. 2023. Magyaregres, s: rotten wood, VáL. - 18. 06. 2023. Budapest, Kis Hárs-hill, s: Q. petraea leaf, SFÁ. - 05. 06. 2023. Sukoró, s: *Quercus petraea*, HN.

24. *Fuligo septica* var. *flava* (Pers.) Morgan, 1895: 21. 07. 2019. Budakeszi, s: P. sylvestris, KGá.

25. *Hemitrichia calyculata* (Speg.) M.L. Farr, 1974: 23. 03. 2023. Csepel-island, s: rotten wood, KGá. - 24. 03. 2023. Budapest, Virág-valley, s: rotten wood, KGá.

26. *Hemitrichia serpula* (Scop.) Rostaf. ex Lister, 1894 : 07. 02. 2021. Tata, s: rotten wood, VL.

27. *Leocarpus fragilis* (Dicks.) Rostaf., 1874 : 01. 11. 2020. Szalafő, s: *Pinus sylvestris*, CSEK. - 30. 10. 2022. Pusztamiske, s: *Artemisia vulgaris* L., 1753, HOJ.

28. *Lycogala epidendrum* (L.) Fr., 1829: 22. 05. 2014. Nagymaros, Törökmező, s: rot-

ten wood, KM. - 14. 06. 2014. Budapest, Szép-valley, s: *Pinus sylvestris*, KM. - 26. 09. 2014. Lillafüred, Sebesvíz-valley, s: rotten wood, KL. - 20. 07. 2016. Lillafüred, Sebesvíz-valley, s: rotten wood, KL. - 17. 10. 2017. Miskolc, Dolka-top, s: rotten wood, KL. - 11. 10. 2018. Miskolc, Forrás-valley, s: rotten wood, KL. - 15. 06. 2020. Pomáz, Kőhegy, s: *Pinus sylvestris*, BV. - 28. 05. 2021. Vác, s: rotten wood, DM. - 05. 06. 2021. Érd, Duna-bank, s: *Salix alba*, MB. - 16. 06. 2021. Budapest, Hárshegy, s: *Quercus petraea*, ZSJ. - 20. 06. 2021. Bölcske-Szentandráspuszta, s: *Pinus sylvestris*, FT. - 17. 07. 2021. Velemér, s: *Pinus sylvestris*, FT. - 25. 05. 2022. Bölcske-Szentandráspuszta, s: *Pinus sylvestris*, FT. - 08. 06. 2022. Bölcske-Szentandráspuszta, s: rotten wood, FT. - 11. 06. 2022. Nádasd, s: *Pinus sylvestris*, KSZ. - 18. 06. 2022. Németkér, s: *Pinus sylvestris*, FT. - 21. 06. 2022. Bölcske, s: *Pinus sylvestris*, FT. - 04. 07. 2022. Bölcske-Szentandráspuszta, s: rotten wood, FT. - 20. 10. 2022. Debrecen, Nagyerdő, s: rotten wood, VN. - 06. 05. 2023. Várgesztes, s: *Quercus petraea*, MBZS. - 08. 05. 2023. Solymár, s: *Quercus petraea*, PD. - 21. 05. 2023. Jósvafő, s: *Quercus cerris*, TA. - 21. 05. 2023. Gánt, Haraszti learning trail, s: *Pinus nigra*, BÁ. - 21. 05. 2023. Mecsek, Rotary-promenade, s: *Fagus sylvatica*, BFÁ. - 22. 05. 2023. Sástó, Eremény-roof, s: *Carpinus betulus*, SZZS. - 23. 05. 2023. Tahitótfalu, s: *Salix alba*, PD. - 01. 06. 2023. Bölcske-Szentandráspuszta, s: *Pinus sylvestris*, FT. - 08. 06. 2023. Bölcske-Szentandráspuszta, s: *Pinus nigra*, FT. - 09. 06. 2023. Leányvár, s: rotten wood, MBK. - 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Quercus petraea* and *Quercus cerris*, DD&SzTT. - 25. 06. 2023. Gyöngyös-Sástó, Szajla-flow, s: *Quercus petraea*, DD&SzTT. - 27. 06. 2023. Mátrafüred, s: *Pinus nigra*, DD&SzTT. - 01. 07. 2023. Gyöngyössolymos-Szalajkaház, s: *Picea abies*, DD&SzTT.

29. *Lycogala flavofuscum* (Ehrenb.) Rostaf., 1873: 05. 03. 2014. Sukoró, s: rotten wood, KGá. - 12. 06. 2021. Homokkomárom, s: *Fagus sylvatica*, ZB. - 27. 04. 2023. Gödöllő, s: rotten wood, KGá.

30. *Metatrichia vesparia* (Batsch) Nann. -Bremek. ex G.W.Martin & Alexop., 1969: 29. 01. 2015. Budakeszi, s: rotten wood, KGá. - 11. 02. 2015. Budakeszi, s: rotten wood, KGá. - 11. 02.2017. Budakeszi, Virág-valley, s: rotten wood, KGá. - 27. 02. 2017. Budakeszi, Mária-ditch, s: rotten wood, KGá. - 16. 04. 2017. Nagykovácsi, Ördög-ditch, s: rotten wood, KGá. - 27. 12. 2018. Sárosfő, s: *Salix alba*, HOJ. - 15. 02. 2019. Törökbálint, s: rotten wood, NS. - 09. 03. 2019. Zalaegerszeg park-forest, s: *Alnus glutinosa* (L.) Gaertn., 1790, VJ. - 07. 02. 2020. Budapest, Vaskapu, s: rotten wood, KGá. - 09. 02. 2020. Budakeszi, Mária-ditch, s: rotten wood, KGá. - 30. 11. 2022. Kóspallag, s: *Carpinus betulus*, CSEK. - 04. 03. 2023. Kóspallag, fishing pond, s: *Alnus glutinosa*, CSEK. - 05. 03. 2023. Pilisszentlászló, Bükkös-creek, s: rotten wood, KGá.

31. *Mucilago crustacea* P. Micheli ex F. H. Wigg., 1780: 22. 09. 2012. Sukoró, s: rotten wood, KGá. - 03. 06. 2013. Sukoró, s: rotten wood, KGá. - 01. 11. 2013. Sukoró, s: rotten wood, KGá. - 17. 06. 2016. Budajenő, s: rotten wood, KGá. - 04. 11. 2022. Zalabér, s: Poaceae sp., VJ. - 20. 10. 2022. Budapest, Fenyőgyöngye, s: *Pinus sylvestris*, KGá. - 19. 05. 2023. Budakeszi, s: rotten wood, KGá.

32. *Physarum polycephalum* Schwein., 1822: 26. 05. 2014. Sukoró, s: rotten wood and leaf, KGá. - 25. 08. 2016. Börzsöny, Kisinóc, s: rotten wood, KGá. - 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Corylus avellana* L., 1753, *Quercus petraea* and *Carpinus betulus* rotten leaf, DD&SzTT.

33. *Reticularia lycoperdon* Bull., 1790: 08. 04. 2014. Pilisszentkereszt, Dera-gorge, s: rotten wood, KM. - 29. 04. 2014. Sukoró, s: rotten wood, KGá. - 09. 11. 2014. Sukoró, s: rotten wood, KGá. - 07. 04. 2016. Sukoró, s: rotten wood, KGá. - 25. 04. 2018. Sukoró, s: rotten wood, KGá. - 22. 09. 2019. Táborfalva, Betyár-domb, s: rotten wood, KGá. - 19. 10. 2019. Galyatető, s: rotten wood, KGá. - 17. 01. 2022. Budapest, Vaskapu,

Fig. 3: *Physarum polycephalum* Schwein., 1822 on the trunk of *Corylus avellana* L., 1753

s: rotten wood, KGá. - 27. 05. 2022. Szokolya, s: *Pinus sylvestris*, CSEK. - 15. 07. 2022. Harka, Bögre-spring, s: *Cerasus avium* (L.) Moench, 1794, GB. - 15. 10. 2022. Harka, Nap-hill, s: rotten wood, GB. - 18. 04. 2023. Budapest, Mocsáros-dűlő, s: S. alba, KGá. - 29. 06. 2023. Gödöllő, s: *Quercus petraea*, DD&SzTT.

34. *Stemonitis flavogenita* E. Jahn, 1904: 04. 06. 2023. Tar, Tuzson János Arboretum, s: *Quercus rubra*, DD&SzTT. - 09. 06. 2023. Balatonszepezd, s: rotten wood, KGá.

35. *Stemonitis fusca* Roth, 1787 : 28. 05. 2014. Nagymaros, Törökmező, s: rotten wood, KM. - 24. 06. 2016. Kárász, s: *Mycena renati* Quél., 1886, KTJ. - 29. 08. 2019. Szokolya, Királyrét, s: *Quercus petraea*, HP. - 24. 08. 2020. Galyatető, s: rotten wood, HP. - 12. 06. 2021. Majk, s: rotten wood, VL. - 13. 06. 2021. Mátrakeresztes, Csörgő-creek, s: *Quercus petraea*, PM. - 24. 07. 2021. Sukoró, s: *Quercus petraea*, HPÁ. - 25. 07. 2021. Pilismarót, Malom-creek, s: *Fagus sylvatica*, MG. - 21. 09. 2021. Parádsasvár, Köszörű-creek, s: rotten wood, HP. - 17. 05. 2022. Zengővárkony, s: rotten wood, FT. - 06. 06. 2022. Bölcske, Parongi-forest, s: *Populus nigra* L., 1753, FT. - 30. 06. 2022. Tatabánya, Koldusszállás, s: rotten wood, MBK. - 04. 05. 2023. Felsőtold, s: *Quercus petraea*, PD. - 14. 05. 2023. Pilisszentlászló, s: *H. cupressiforme*, WB. - 19. 05. 2023. Jági learning trail, s: rotten wood, SZT. - 25. 05. 2023. Rád, Cseke-dűlő, s: *Pinus sylvestris*, DG. - 26. 05. 2023. Lőrinc, s: rotten wood, NVA. - 27. 05. 2023. Érd, s: *Betula pendula*, UZ. - 28. 05. 2023. Verőce-Magyarkút, rotten wood, CSEK. - 04. 06. 2023.

Bölcske, Duna-bank, s: *Pinus nigra*, FT. - 04. 06. 2023. Tar, s: *Carpinus betulus*, DD&SzTT. - 27. 06. 2023. Mátrafüred, s: *Pinus nigra*, DD&SzTT. - 01. 07. 2023. Gyöngyössolymos, s: *Quercus petraea*, DD&SzTT. - 01. 07. 2023. Gyöngyössolymos-Szalajkaház, s: *Picea abies*, DD&SzTT. - 04. 07. 2023. Gyöngyössolymos, Mérges-creek, s: *Carpinus betulus*, DD&SzTT. - 19. 07. 2023. Mátraszentimre, s: *Fagus sylvatica*, DD&SzTT.

36. *Stemonitopsis typhina* (F.H.Wigg.) Nann. -Bremek., 1975: 07. 08. 2022. Szokolya, Török-creek, s: rotten wood, CSEK. - 08. 03. 2023. Zalaistvánd, s: *Fraxinus* sp. VJ. - 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Quercus petraea*, DD&SzTT. - 25. 06. 2023. Mátraháza, Nagy-Hidas-creek, s: *Quercus petraea*, DD&SzTT.

37. *Trichia decipiens* (Pers.) T.Macbr., 1899: 01. 11. 2021. Permise, Két-valley, s: rotten wood, CSEK. 07. 04. 2016. Sukoró, s: rotten wood, KGá. - 12. 04. 2023. Solymár, s: rotten wood, KGá. - 19. 05. 2023. Budakeszi, s: rotten wood, KGá. - 24. 05. 2023. Budakeszi, s: rotten wood, KGá. - 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Betula pendula*, DD&SzTT.

38. *Trichia favoginea* (Batsch) Pers., 1794*: 20. 01. 2015. Budakeszi, s: rotten wood, KGá.

39. *Trichia scabra* Rostaf., 1875 : 09. 02. 2022. Budakeszi, Virág-valley, s: rotten wood, KGá. - 29. 01. 2023. Budapest, Remete-gorge, s: rotten wood, KGá. - 05. 03. 2023. Pilisszentlászló, Bükkös-creek, s: rotten wood, KGá.

40. *Trichia varia* (Pers. ex J. F. Gmel.) Pers., 1794: 18. 10. 2014. Szentendre, Lajos-spring, s: *Carpinus betulus* and *Pluteus cervinus* (Schaeff.) P. Kumm., 1871, KM. - 03. 01. 2021. Nagyatád, s: rotten wood, VL. - 13. 06. 2023. Pilisszántó, s: *Quercus petraea* leaf, PD. - 10. 06. 2023. Gyöngyösoroszi-Károlytáró, s: *Alnus glutinosa, Quercus petraea*, DD&SzTT.

41. *Tubifera applanata* (D.V. Leontyev & K.A. Fefelov) D.V. Leontyev & K.A. Fefelov, 2012*: 09. 05. 2018. Csákányospuszta, s: rotten wood, KGá.

42. *Tubifera ferruginosa* (Batsch) J.F.Gmel., 1792 : 22. 05. 2014. Nagymaros, Törökmező, s: rotten wood, KM. - 18. 05. 2019. Domony, s: *Pinus nigra*, MG. - 19. 05. 2019. Domony, s: *Pinus sylvestris*, MG. - 27. 05. 2019. Csemő, Putrisarki park forest, s: rotten wood, RSZA. - 07. 06. 2020. Dég, Festetics castle park, s: *Salix alba*, CSG. - 18. 06. 2020. Szalafő, s: rotten wood, SZA. - 10. 06. 2021. Tököl, park forest, s: rotten wood, FR. - 12. 06. 2021. Majk, s: rotten wood, VL. - 19. 06. 2021. Galyatető, Gyökerestető, s: rotten wood, SI. - 15. 05. 2022. Háromhuta, s: rotten *Abies alba* Mill., 1768 leaf, KTJ. - 05. 07. 2022. Bölcske, s: rotten wood, FT. - 11. 08. 2022. Paks, Cseresznyéspuszta, s: *Salix alba*, FT. - 06. 01. 2023. Gyöngyössolymos, Kis-hill, s: *Pinus sylvestris*, DD&SzTT. - 24. 05. 2023. Solymár, s: *Quercus petraea*, PD. - 26. 05. 2023. Adony, s: rotten wood, RH. - 27. 05. 2023. Jávorkút primeval pinest, s: *Picea abies*, RV. - 28. 05. 2023. Kincsesbánya, Felsőkincsesi-hill, s: rotten wood, TF. - 28. 05. 2023. Hatvan-Nagygombos, s: *Quercus robur* L., 1953, UL. - 29. 05. 2023. Szeged, s: rotten wood, DNÁ. - 13. 06. 2023. Pilisszántó, s: *Quercus petraea*, PD. - 14. 06. 2023. Kisgyónbánya, Hamuház, s: *Pinus sylvestris*, TF. - 18. 06. 2023. Sukoró, s: *Quercus petraea*, HN.

43. *Tubulifera arachnoidea* Jacq., 1778*: 28. 09. 2019. Sukoró, s: rotten wood , KGá.

Discussion

The current paper publishes 253 occurrence data of 43 slime mold taxa (41 species, 2 varieties). Among them, five of these species are new to the Hungarian slime molds. With these, the number of Hungarian slime mold species increased to 169. Most slime molds are organisms that live on rotten plants (Bodonyi 1995) but some species have a parasitic biology (S. K. 1917), and some behave as facultative parasites (Tóth et al. 1992). Among the reported species, two used fungi as their substrate. Urai (1964) reports a parasite fungus on slime mold but previously slime mold, which uses fungi as a substrate has not been found in Hungary. Based on the substrates, in most cases, it can be seen that the slime molds live on the rotting wood of some plant species. This supports and amplifies the importance of the presence of dead wood and the role of rotten wood in biodiversity (Ódor 2018). There is no official red list of Hungarian fungi, but a plan has been prepared (Rimóczi et al 1999), which does not include slime molds (due to their problematic taxonomic position). However, based on the published Hungarian data, most species would probably belong to the ”Data Deficient” category. So, further studies are important to expand the knowledge species that occur in Hungary. Based on the German red list (Schnittler et al 2011), *A. ferruginea, B. maxima, D. plumbeum* and *L. flavofuscum* belong to the ”Threat of Unknown Extent” category. The other species are in ”Not Threatened” category or data are missing.

In summary, slime molds are important organisms due to their decomposing role in the ecosystem. To explore the ecological and taxonomic situation of slime molds, further researches are necessary to know the occurrence and the used substrate of them.

Acknowledgement

We express our gratitude to every collector who uploaded or provided data. Especially to the amateur researcher Gábor Kovács, for help in publishing the first data of three species for Hungary, and also István Sárközi for identifying the fungi substrates.

References

BÁNHEGYI, J. 1943: Adatok Magyarország nyálkagombáinak ismeretéhez. - Botanikai Közlemények, 15: 91-95.

BÁNHEGYI, J., TÓTH, S., UBRIZSY G., VÖRÖS, J. 1985: Magyarország mikroszkopikus gombáinak határozókönyve 1-3. kötet. Akadémiai Kiadó, Budapest, pp. 1316.

BODONYI, N., 1995: Rövid ismertető a nyálkagombákról. Mikológiai Közlemények 34(1): 37-46.

BODONYI, N., TÓTH, S. 2004: Myxomycetes data from the Őrség National Park and environs of Budapest (Hungary). Mikológiai Közlemények, Clusiana 43(1-3): 9-14.

DREDOR, D., SZMATONA-TÚRI, T. 2023: Új nyálkagombafaj, a Comatricha ellae Härk. 1978 előfordulása Magyarországon. - In: SZIVÁK, I., TAKÁCS, P. (szerk.) 8. Szünzoológiai Szimpózium, Tihany, 2023. március 31. – április 1., Program és összefoglalók, 8.

GLIME, J. M. 2019: Slime Molds: Ecology and Habitats – Bark and Logs. Chapt. 3-3. - In: Glime, J. M. Bryophyte Ecology. 3-3-1 Volume 2. Bryological Interaction. Ebook sponsored by Michigan Technological University and the International Association of Bryologists. https://digitalcommons.mtu.edu/cgi/viewcontent.cgi?article=1219&context=bryo-ecol-subchapters. Letöltés: 2023. 06. 26.

HOLLÓS, L. 1913: Kecskemét vidékének gombái. - In: MÉHELY L. (szerk.): Mathematikai és Természettudományi Közlemények, Magyar Tudományos Akadémia, Budapest, 179.

LEONTYEV, D. V., FEFELOV, K. A. 2009: Tubulifera applanata. A new Myxomycete species from eastern Europe and northern Asia. - Boletín de la Sociedad Micológica de Madrid 33: 115-127.

MARTIN, G. W., ALEXOPOULOS C. 2021: Taxonomic Keys and Plates from The Myxomycetes, 159. https://www.myxotropic.org/wp-content/uploads/2021/04/MyxoKeys.pdf Letöltés: 2023. 06. 18.

MOESZ, G. 1926: Fungi Hungarie I. Myxomycetes. - Folia Cryptogamica, 1(3): 111-200.

ÓDOR, P. 2018: Az álló és fekvő holtfa. - In: Szmorad Ferenc (szerk.), Frank T., Korda M. (szerk.): Erdőgazdálkodás és erdőkezelés Natura 2000 területeken: Natura 2000 kézikönyv erdőgazdálkodóknak. Budapest, Magyarország, Duna-Ipoly Nemzeti Park Igazgatóság, 137-155.

PAPP, V. 2023: Egy új farontó taplógomba városi fákon: a Rigidoporus ulmarius (Polyporales, Basidiomycota) első hazai előfordulása. - In: HALTRICH ATTILA (szerk.) 69. Növényvédelmi Tudományos Napok, Budapest, Magyarország: Magyar Növényvédelmi Társaság, 73.

RÉVAY, Á. 2008: Review of the Myxomycetes of Hungary. - In: PAPP B. (szerk.): Studia Botanica Hungarica 39: 5-20.

RIMÓCZI, I., SILLER, I., VASAS, G., ALBERT, L., VETTER, J., BRATEK, Z. 1999: Magyarország nagygombáinak javasolt vörös listája. - Mikológiai Közlemények 40(1-3): 107-132.

RUDOLF, K., PÁL-FÁM, F., MORSCHHAUSER, T. 2008: A Cserehát nagygombái. - Mikológiai Közlemények, Clusiana 47(1): 45-74.

S. K. 1917: Védekezés a káposzta gyökérgolyvái ellen. - A kert (7): 211.

SCHNITTLER, M.; KUMMER, V.; KUHNT, A.; KRIEGLSTEINER, L.; FLATAU, L.; MÜLLER, H., TÄGLICH, U. 2011: Rote Liste und Gesamtartenliste der Schleimpilze (Myxomycetes) Deutschlands. - In: LUDWIG, G., MATZKE-HAJEK, G. (Bearb.): Rote Liste der gefährdeten Tiere, Pflanzen und Pilze Deutschlands. Band 6: Pilze (Teil 2) – Flechten und Myxomyzeten. - Bonn (Bundesamt für Naturschutz). – Naturschutz und Biologische Vielfalt 70 (6): 125-234.

TÓTH, E., KÖVICS, GY., TÓTH, O. 1992: A Diachea leucopodia /Bulliard/ Rosiafinski nyálkagomba kártétele szamócában. - Növényvédelmi Tudományos Napok összefoglalói, 110.

TÓTH, S. 1954: Adatok Magyarország mikroszkopikus gombáinak ismeretéhez. I. - Botanikai Közlemények 45: 241-246.

URAI, P. 1964: Gombán élő gombák. - Mikológiai Közlemények 2(2): 91–96.

VASS, A. 1961: Mikroszkopikus gombák Dél-Baranyából. - Janus Pannonius Múzeum Évkönyve 5: 69-73.

Natura Somogyiensis 41: 67-78. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.67
Submitted: 18.10, 2022; Accepted: 25.10, 2023; Published: 31.10, 2023 www.smmi.hu/termtud/ns/ns.htm

Adatok a Dunántúl közösségi jelentőségű bogarainak ismeretéhez II. – Cincérek (Coleoptera: Cerambycidae)

Lőkkös Andor[1] & Rozner György[2]

[1,2]Balaton-felvidéki National Park Directorate, H-8772 Csopak, Kossuth utca 16., Hungary
email: a.lokkos@gmail.com; roznergyuri@gmail.com

Lőkkös, A & Rozner, Gy.: *Investigations on beetles of European conservation importance in Transdanubia, Hungary II. – longhorn beetles (Coleoptera: Cerambycidae).*
Abstract: Between 2011 and 2021, surveys of the longhorn beetle fauna in 80 Natura 2000 sites in Transdanubia were carried out. Previously, a significant part of the sites was poorly mapped
226 faunistic data of *Cerambyx cerdo* Linnaeus, 1758) was documented. The species was found in large numbers in the areas of Inner Somogy and South Zala but it was also recorded in many other sampling locations, however, it turned out to be much rarer in these locations.
Morimus asper funereus Mulsant, 1863 was found at 30 sampling points. The species was found in previously known places, such as Bakony Mts., Mecsek Mts., and Zselic hills. The species was previously unknown from South Zala and North Somogy.
147 data of *Rosalia alpina* (Linnaeus, 1758) were recorded. The occurrence of the species was not previously known from North Somogy and North Zala..

Keywords: Natura 2000 network, saproxylic beetle, protected species

Bevezetés

Az erdők diverzitása Európa szerte egyre csökkenő tendenciát mutat. Ezt felismerve az Európai Unió jelentős számú erdei társulást és erdőkhöz kötődő fajt emelt a közösségi jelentőségű társulások és fajok közé, amelyek között számos szaproxilofág bogarat találunk.

A közösségi jelentőségű bogarakról három cikk keretében számolunk be, melynek jelen közlemény a második része (Rozner & Lőkkös 2018). Ezen közleményünkben a közösségi jelentőségű bogárfajok közül a cincérek adatait közöljük. A cincérek családjának (Cerambycidae) négy közösségi jelentőségű faját ismerjük Magyarországon, a nagy hőscincért (*Cerambyx cerdo* Linnaeus, 1758), gyászcincért (*Morimus asper funereus* Mulsant, 1863) a havasi cincért (*Rosalia alpina* (Linnaeus, 1758)) és az atracélcincért (*Pilemia tigrina* (Mulsant, 1863)). Az atracélcincér nem került elő jelen vizsgálatok során.

A nagy hőscincér előfordul egész Európában. Keleten Nyugat-Ukrajnáig ismert, a Nyugat-Európából már csaknem kipusztult. Magyarországon néhány évtizede még általánosan elterjedt és gyakori volt, napjainkban azonban az idős faállományok fogyatkozásával párhuzamosan egyedszáma mindenhol csökkenő tendenciát mutat. Annak ellenére, hogy tölgyes erdeink legtöbbjében még előfordul, az állomány csökkenése miatt aktuálisan veszélyeztetettnek tekintjük (Rozner et al. 2016).

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

A gyászcincér délkelet-európai elterjedésű faj, nyugat-európai adatai bizonytalanok, valószínűleg behurcolt egyedeken alapulnak. Nyugat-Európában a *Morinus asper asper* váltja. Észak-nyugati elterjedési határa Ausztriában és Csehországban van. Hazánkban a Dunántúli-középhegységben, a Zselicben, a Villányi-hegységben és a Mecsekben elterjedt, az Északi-középhegységben és a Nyugat-Dunántúlon csupán szórványosan fordul elő (ROZNER et al. 2016). A nevezéktant tekintve az újabb munkák a *Morimus funereus* fajt a *M. asper* alfajának tekintik (SAMA & LÖBL 2010, SOLANO et al. 2013).

A havasi cincér előfordul Európa nagy részén, Kis-Ázsiában és a Kaukázusban is. Magyarországon a Dunántúli- és az Északi-középhegységben, a Mecsekben és a dombvidéki Zselicben, a Dráva-völgy magasabb területein lévő idős bükkösökben számos helyről kimutatták már, helyenként kimondottan gyakori (ROZNER et al. 2016).

E fajokról számos munka született, melyeket HEGYESSY & MERKL (2014 a,b,c) összegzett.

Anyag és módszer

A közösségi jelentőségű cincérfajok mintavételezése rajzási idejükben, az imágó egyedek jelenlét/hiány kimutatása jelentette. A nagy hőscincér esetén a jellegzetes kirepülőnyílások számbavételével is történtek adatgyűjtések, ezek észlelése jóval eredményesebb, mint az imágóké, hiszen a nagy hőscincér rajzó egyedeit legtöbbször alkonyatkor, vagy sötétedés után lehet megfigyelni.

A többé-kevésbé egyenletes mintavételezés és a megfelelő adatsűrűség érdekében a mintavételezés alapját a 2,5 x 2,5 km-es UTM háló adta, az egyes négyzeteken belül az alkalmasnak tűnő élőhelyeken kerestük a célzott fajokat. A vizsgálatok célja a Natura 2000 hálózathoz tartozó területek felmérése volt, ezért az adatok döntő többsége is ezekről származik.

A mintavételezés során a pontos lelőhely és GPS koordináta mellett rögzítettük az élőhely jellemzőit, az előfordulási állapotot, valamint a fafajt is.

Eredmények

A mintavételi helyek felsorolásánál a fajnév után a közigazgatási hovatartozás, majd a közelebbi lelőhely szerepel. Ezt követi a dátum, a gyűjtő személye rövidítve (amennyiben az nem a szerzők egyike), más rövidítések és zárójelben az EOV koordináta. A lelőhelyek jegyzéke 2011.05.14. és 2021. 07.22. közötti adatokat tartalmaz.

Rövidítések:
mar – maradványok, elhullott példányok; rny – kirepülőnyílás, rágásnyom
KI – Kenéz István; MM – Magyari Máté; MG – Merkei Gábor; LA – Lelkes András

Cerambyx cerdo Linnaeus, 1758

Baranya vármegye
Bisse, Tenkes, 2014.07.21. (EOV: 587996, 61165); 2014.07.21., (EOV: ,589064,60695); Hobol, Felső-liget, 2014.07.23., (EOV: 553922, 73648); 2014.07.23., (EOV: 553955, 73653); Homorúd, Kis-legelő-erdő, 2018.07.28., rny, (EOV: 628959, 66284); Kisdobsza, 2014.07.23., (EOV: 542612, 75657); Kölked, ártér,

2018.10.14., rny, (EOV: 625499, 66399); Béda-erdő, 2018.07.29., rny, (EOV: 625254, 63548); Magyarlukafa, Vitorág, 2013.07.08., rny, MG, (EOV: 549480, 96970); Vitorági-erdő, MG, 2014.06.08., (EOV: 548618, 99354); 2014.07.05., mar, MG, (EOV: 548618, 99354); MG, 2014.07.26., (EOV: 548618, 99354); Nagydobsza, 2014.07.23., (EOV: 544850, 77435); Szentegát, Alsó-liget, 2014.07.23., (EOV: 555365, 68930).

Somogy vármegye

Balatonberény, 2013.06.17., rny, mar, (EOV: 518607, 150608); Balatonendréd, 2013.07.04., rny, (EOV: 569164, 167997); 2013.07.04., rny, (EOV: 569146, 167980); 2013.07.04., rny, (EOV: 568906, 167811); 2014.07.28., rny, (EOV: 569150, 167983); Balatonendréd, Szénégető, 2016.06.08., KI, (EOV: 163234, 570850); 2016.06.08., KI, (EOV: 163858, 568543); Balatonőszöd, Öszödi berek, 2016.06.08., KI, (EOV: 164724, 555406); Balatonszentgyörgy, 2014.03.27., rny, (EOV: 518571, 148837); Barcs, Borókás, 2014.07.20., (EOV: 534462, 72157); 2014.07.20., (EOV: 534436, 72245); 2014.07.20., (EOV: 534438, 72278); Barcs, Kis-Bók, 2014.07.19., (EOV: 530718, 68921); 2014.07.19., (EOV: 530693, 68943); Bárdudvarnok, 2013.07.07., rny, MG, (EOV: 543073, 106433); Bélavár, Komoricai-erdő, 2013.07.15., (EOV: 511829, 90256); 2013.07.15., rny, (EOV: 511792, 90179); Bolhás, Mogyorós-hegy, 2013.07.18., mar, rny, (EOV: 510942, 103396); 2013.07.18., mar, rny, (EOV: 510600, 101883); Böhönye, Dávod-puszta, 2017.07.15., rny, (EOV: 526682, 121407); Böhönye, Trangolion, 2013.07.17., rny, (EOV: 526684, 121406); 2013.07.17., rny, (EOV: 526713, 121415); Bőszénfa, 2015.06.14., MG, (EOV: 551157, 99211); Bőszénfa, Kislaki-erdő, 2013.07.12., MG, (EOV: 552897, 104926); 2013.07.12., mar, MG, (EOV: 553304, 103344); Bőszénfa, Lencsés, 2013.07.08., rny, MG, (EOV: 552857, 98516); 2013.07.08., rny, MG, (EOV: 553686, 98029); Bőszénfa, Ropoly-puszta, 2013.06.23., rny, MG, (EOV: 553627, 102500); Csoknyavisonta, fáslegelő, 2013.07.15., rny, (EOV: 526793, 79838); 2013.07.15., rny, (EOV: 526766, 79888); 2013.07.15., mar, (EOV: 526508, 79468); 2013.07.15., rny, (EOV: 526655, 79541); 2013.07.15., rny, (EOV: 526681, 79535); 2013.07.15., rny, (EOV: 527071, 78287); 2011.05.14, (EOV: 526498, 78988); Darány, Borókás, 2011.05.14., (EOV: 534891, 71368); Gyékényes, 2013.07.15., rny, (EOV: 493161, 103928); Hosszúvíz, Cserfekvés, 2013.07.12., rny, (EOV: 528685, 128991); Iharos, 2013.07.07., rny, (EOV: 505654, 113268); 2013.07.07., rny, (EOV: 504310, 111188); Inke, Inkei-legelő erdő, 2013.07.18., mar, (EOV: 510062, 115618); 2013.07.18., rny, (EOV: 510017, 115038); Kapoly, Kapoly-puszta, 2013.07.10., rny, (EOV: 566237, 152535); Kaposgyarmat, Tábor-völgyi-erdő, 2013.07.06., rny, MG, (EOV: 560974, 104736); Kaposkeresztúr, Nyíresi-tető, 2013.07.08., rny, MG, (EOV: 564033, 107355); Karád, Karádi-erdő, 2016.06.28., KI, (EOV: 153293, 555915); Kaszó, 2013.07.07., rny, (EOV: 512247, 107270); 2013.07.07., rny, (EOV: 509919, 109285); 2013.07.07., rny, (EOV: 506691, 111813); 2013.07.07., rny, (EOV: 505823, 109719); Kéthely, Vadaskerti erdő, 2016.07.30., (EOV: 519982, 144172); Kőröshegy, 2014.03.13., rny, (EOV: 564153, 167627); Kőröshegy, Nagyasszomyi-erdő, 2013.07.11., rny, (EOV: 561232, 164062); Kutas, Gyótai-erdő, 2013.07.14., rny, (EOV: 528805, 113387); 2013.07.14., rny, (EOV: 528834, 113380); Marcali, Gyótai-erdő, 2013.07.12., rny, (EOV: 528573, 133009); 2013.07.12., rny, (EOV: 528576, 133007); Marcali, Nagy-Gyótai erdő, 2013.07.12., rny, (EOV: 527847, 134356); 2013.07.12., rny, (EOV: 528637, 135071); 2013.07.12., rny, (EOV: 528225, 135612); Marcali, Vadaskerti-erdő, 2013.07.12., rny, (EOV: 530374, 131079); Mesztegnyő, Alsójárás, 2013.07.17., rny, (EOV: 526936, 126269); 2013.07.17., rny, (EOV: 527412, 126129); Mesztegnyő, Kak-puszta, 2017.01.28., rny, (EOV: 532351, 126753); Nágocs, 2013.07.10., rny, (EOV: 565907, 149818); Nagybajom, 2017.07.15., rny, (EOV: 528632, 116558); Nagybajom, Lencsen-erdő, 2013.07.17., rny, (EOV: 531577, 121529); Nagyberény, Fáslegelő, 2014.07.29., rny, (EOV: 581822, 159131); Nagycsepely, Lajtorjás-erdő, 2013.06.19., KI, (EOV: 557625, 154854); Nagykorpád, Nagy-erdő, 2013.07.14., rny, (EOV: 530053, 106700); Őrtilos, Látó-hegy, 2013.07.15., rny, (EOV: 483685, 108626); Ötvöskónyi, 2013.07.14., rny, (EOV: 521988, 107490); 2013.07.14., (EOV: 522109, 106863); Péterhida, Fáslegelő, 2014.07.19., (EOV: 518550, 73967); 2014.07.19., (EOV: 517847, 73880); 2014.07.19., (EOV: 517959, 73740); Porrogszentkirály, 2013.07.15., rny, (EOV: 493196, 103861); Ságvár, Bögöcse, 2014.02.26., rny, (EOV: 573864, 165723); Ságvár, Börevár, 2013.06.27., KI, (EOV: 574465, 162827); 2013.06.27., KI, (EOV: 573819, 163851); Siófok, Cinegei-erdő, 2013.06.17., KI, (EOV: 572211, 166245); Somogyacsa, Bükk-kúti erdő, 2013.06.21., rny, (EOV: 568295, 137917); Somogyfajsz, 2013.08.05., mar, (EOV: 535000, 128143); 2013.08.05., mar, (EOV: 534967, 128132); Somogytúr, Tardi-erdő, 2013.07.08., mar, rny, (EOV: 549874, 150063); Somogytúr, Tuskós, 2013.07.08., mar, rny, (EOV: 550445, 147176); Somogyudvarhely, Kerék-hegy, 2015.04.13., (EOV: 508339, 90962); Somogyudvarhely, Nagy-erdő, 2013.07.15., rny, (EOV: 509212, 95218); Somogyvár, Mária-puszta, 2014.08.12., mar, (EOV: 539904, 137678); 2014.08.12., mar, (EOV: 540033, 137958); Somogyvár,Vityai-erdő,2013.07.09,rny,,(EOV: ,547144, 139951,); 2013.07.09., rny, (EOV: 547255, 140742); 2013.07.09., rny, (EOV: 547322, 141566); Szántód, Csikászó, 2015.06.22., rny, (EOV: 566011,

167836); 2015.06.22., mar, (EOV: 565728, 168800); 2016.06.06., KI, (EOV: 168562, 563859); Szegerdő, Sósi-erdő, 2019.07.05., rny, (EOV: 515628,144622); Szenna, Denna, 2013.06.29., rny, MG, (EOV: 546726, 99307); Szenna, Denna-erdő, 2013.06.29., rny, MG, (EOV: ,544770, 103619,); 2013.06.29., rny, MG, (EOV: 545666, 103080); 2013.07.14., mar, MG, (EOV: 545315, 100819); Szenta, 2013.07.07., rny, (EOV: 509678, 109677); 2013.07.07., rny, (EOV: 508384, 110260); 2013.07.07., rny, (EOV: 508384, 110218); 2013.07.07., rny, (EOV: 508381, 110377); 2013.07.07., rny, (EOV: 508268, 110410); 2013.07.07., rny, (EOV: 506847, 104539); Szólád, Nezdei-erdő, 2013.05.29., KI, (EOV: 559721, 159339); 2013.05.29., KI, (EOV: 559991, 159437); 2013.05.29., KI, (EOV: ,559970, 159014); Tarany, Negy-erdő, 2013.07.18., rny, (EOV: 510699, 97315); Tengőd, Tengődi erdő, 2013.07.13., rny, (EOV: 575918, 153204); 2013.07.13., rny, (EOV: 575904, 153207); Törökkoppány, Polgári-erdő, 2013.07.13., rny, (EOV: 573130, 135860); Zselickisfalud, 2014.06.08., MG, (EOV: 550046, 103124); 2014.07.26., mar, MG, (EOV: 550027, 103111); 2015.06.14., mar, MG, (EOV: 550045, 103127); 2015.06.14., mar, MG, (EOV: 548705, 99333); 2015.06.14., mar, MG, (EOV: 548633, 99396); 2015.07.03., mar, MG, (EOV: 548684, 99359); Zselickisfalud, Kardosfa-puszta, 2013.06.29., MG, (EOV: 550364, 100622); Zselickisfalud, Magdalaki-erdő, 2013.07.08., rny, MG, (EOV: 552526, 97866); Zselickisfalud, Vadkert, 2013.06.23., rny, (EOV: 549087, 99283); 2013.06.29., rny, MG, (EOV: 548634, 99374); Zselicszentpál, 2013.07.01., rny, MG, (EOV: 555244, 107540); 2013.07.01., rny, MG, (EOV: 555866, 106798).

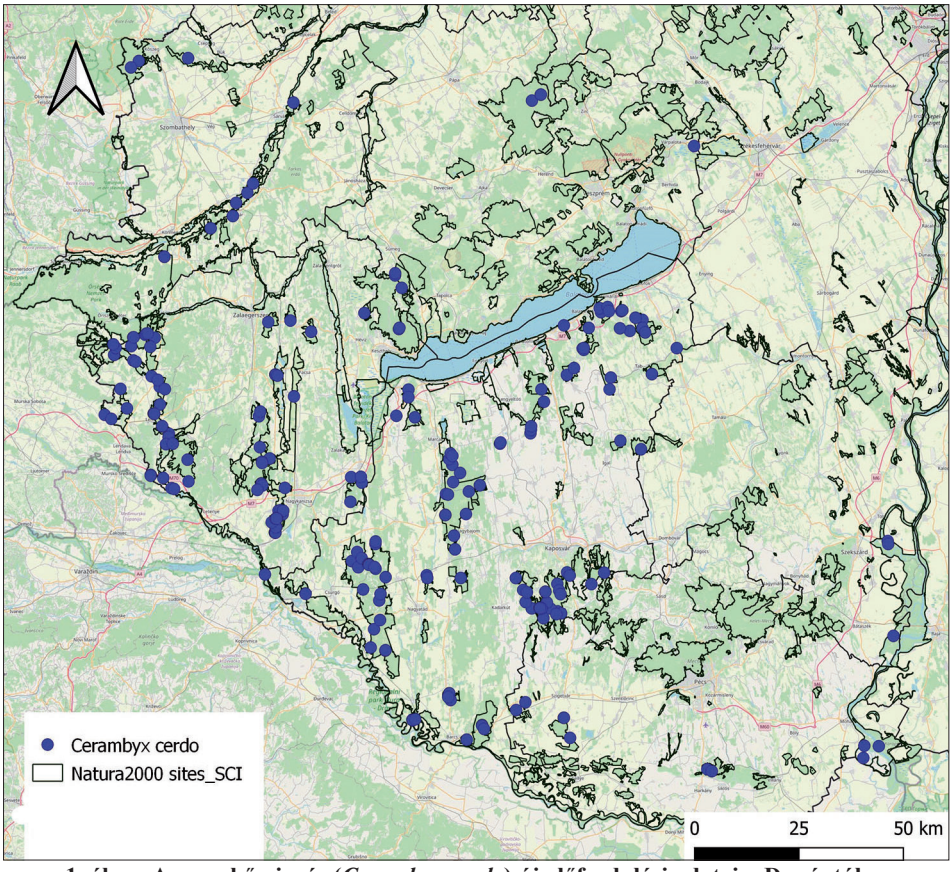
Tolna vármegye
Báta, Hosszú-ág, 2019.06.29., rny, (EOV: 632518, 92046); Bogyiszló, Góga, 2019.08.20., rny, (EOV: 631234, 114113); 2019.08.20., rny, (EOV: 631335, 113431).

Vas vármegye
Cák, 2014.07.24., rny, (EOV: 457671, 227716); Daraboshegy, 2017.08.05., mar, (EOV: 462183, 182713); 2017.08.05., rny, (EOV: 462195, 182759); Döbörhegy, 2014.07.16., mar, rny, (EOV: 473225, 188938); Rum, 2014.07.26., rny, (EOV: 483401, 198913); 2014.07.26., rny, (EOV: 482017, 196822); Sárvár, Sitkei-erdő, 2014.07.07., rny, (EOV: 493312, 217184); Szatta, 2018.07.12., rny, (EOV: 454263, 164429); Tömörd, 2014.07.24., rny, (EOV: 469130, 228015); Vasvár, 2014.07.26., rny, (EOV: 479319, 194591); Vasvár, Szentkúti-erdő, 2014.08.05., rny, (EOV: 478462, 191626); 2014.08.05., rny, (EOV: 478477, 191605); Velem, 2014.07.24., rny, (EOV: 455796, 226308).

Veszprém vármegye
Bakonyszücs, Gerence-völgy, 2017.07.17., rny, (EOV: 548791, 216408); Bakonyszücs, Medve-kő, 2017.07.17., rny, (EOV: 550875, 217741); 2017.07.17., mar, (EOV: 550890, 217748); Sümeg, Sarvaly-erdő, 2017.07.11., rny, (EOV: 516052, 176995); 2017.07.11., rny, (EOV: 516097, 177480); Uzsa, 2017.07.07., nőstény, (EOV: 517552, 174086); Várpalota, Inota, 2021.07.06., (EOV: 586400, 205500).

Zala vármegye
Alsószenterzsébet, Úrbéri-erdő, 2013.07.03., mar, LA, (EOV: 454138, 159111); 2015.06.28., mar, LA, (EOV: 454682, 158809); Bödeháza, Bödemonai-rétek, 2015.06.26., mar, LA, (EOV: 446990, 146788); Bucsuta, Kövecs-hegy, 2013.07.17., rny, (EOV: 483295, 138176); Csörnyeföld, Hegy-erdő, 2014.07.02., mar, rny, (EOV: 466172, 135777); Csörnyeföld, Vertácsa, 2015.07.04., LA, (EOV: 466250, 130739); Eszteregnye, Kerekvár-domb, 2018.07.25., rny, (EOV: 483654, 129278); 2018.07.25., mar, (EOV: 483457, 129681); 2018.07.25., rny, (EOV: 483410, 129775); 2018.07.25., mar, (EOV: 483405, 129768); Felsőrajk, Várhely-puszta, 2013.06.24., rny, (EOV: 491637, 149685); Felsőszenterzsébet, Haraszti-erdő, 2019.08.11., mar, (EOV: 449673, 160551); 2019.08.11., rny, (EOV: 449676, 160548); Fityeház, Cerinai-erdő, 2013.10.30., rny, (EOV: 486303, 118338); 2014.07.15., mar, (EOV: 486272, 118296); 2015.06.06., (EOV: 486426, 118249); 2015.06.09., mar, (EOV: 486426, 118249); Gáborjánháza, Fogott-rét, 2015.06.26., LA, (EOV: 448523, 145792); Galambok, Hársas-erdő, 2015.09.12., (EOV: 504628, 130687); Gyenesdiás, Szik-tető, 2017.03.04., rny, (EOV: 516675, 164629); Hahót, Sinkei-erdő, 2013.04.10., mar, (EOV: 487452, 154815); 2013.04.10., mar, (EOV: 487382, 154843); Nagy-Kő-hegy, 2018.10.17., rny, (EOV: 483277, 145326); Iklódbördőce, Berki-dűlő, 2014.07.26., LA, (EOV: 461982, 141907); Iklódbördőce, egykori fás legelő, 2015.06.13., LA, (EOV: 461958, 140813); 2013.08.12., LA, (EOV: 461864, 141143); Kerkabarabás, Cupi-patak, 2015.07.10., mar, LA, (EOV: 460137, 152868); Kerkafalva, Barátos, 2013.07.10., rny, (EOV: 457389, 165185); 2018.07.12., rny, (EOV: 457124, 164943); Kerkafalva, fás legelő, 2013.06.25., mar, LA, (EOV: 453756, 162444); 2013.06.25.,

LA, (EOV: 453763, 162433); Sütő-tanya, 2018.07.12., rny, (EOV: 454397, 164445); Kerkakutas, Méhesi-erdő, 2013.06.26., rny, (EOV: 459336, 164186); Pankar-erdő, 2018.07.10., rny, (EOV: 458224, 162122); Kerkaszentkirály, Laska, egykori fás legelő, 2015.06.06., LA, (EOV: 460311, 131720); Lendvajakabfa, Paragos-patak, 2015.06.21., LA, (EOV: 450902, 152651); Lenti, Bárhelyi-erdő, 2013.08.15., mar, LA, (EOV: 460082, 148735); Sárhida, 2013.07.01., LA, (EOV: 458513, 146700); 2014.07.19., mar, LA, (EOV: 458552, 146721); 2015.06.13., mar, LA, (EOV: 458662, 146619); Cserfás, 2013.07.01., mar, LA, (EOV: 460414, 143648); 2015.07.12., mar, LA, (EOV: 460434, 143728); Magyarföld, Alsó-berek, 2013.06.25., mar, LA, (EOV: 450077, 162196); 2015.06.14., LA, (EOV: 450105, 162156); Tó-Közi-rétek, 2014.06.26., mar, LA, (EOV: 449563, 162973); Magyarszerdahely, Borsostanya, 2019.03.13., rny, (EOV: 485469, 135443); 2019.03.13., rny, (EOV: 485544, 135492); Miháld, Vincédi-erdő, 2019.10.09., rny, (EOV: 504336, 124959); Muraszemenye, Csernec, 2013.08.08., mar, LA, (EOV: 462200, 129302); Muraszemenye, Csernec, egykori fás legelő, 2015.06.06., mar, LA, (EOV: 462795, 129103); Nagykanizsa, Alsó-Nyíresi-erdő, 2021.01.28, rny, (EOV: 487271, 123342); 2021.01.28., rny, (EOV: 487850, 123450); 2021.07.22., mar, (EOV: 488238, 122461); 2021.01.27., rny, (EOV: 488391, 123319); 2021.01.27., rny, (EOV: 488391, 123296); 2013.07.02., rny, (EOV: 486719, 119605); Nagykanizsa, Cerinai-erdő, 2013.07.02., rny, (EOV: 486719, 119605); Hidegkúti-erdő, 2021.07.12., rny, (EOV: 486863, 121507); Hordási-rétek, 2013.06.13., rny, (EOV: 488945, 128586); Nagykapornak, Nagykapornaki erdő, 2013.07.15., mar, (EOV: 491273, 167198); Nagykapornak, Remetekert, 2013.05.13., rny, (EOV: 496070, 164499); Oltárc, Vár-domb, 2018.08.06., mar, (EOV: 483725, 134508); 2018.08.06., mar, (EOV: 483682, 134771); Pölöske, Sinkei-erdő, 2020.06.02., rny, (EOV: 487901, 154588);Resznek, Kása-rét, 2015.06.21., LA, (EOV: 452275, 148105); Rezi, Hárságy, fás legelő, 2017.03.25., rny, (EOV: 508654, 168495); Rigyác, fás legelő, 2015.07.03., mar, LA, (EOV: 482446, 128301); Söjtör, Nagy-



1. ábra: A nagy hőscincér (*Cerambyx cerdo*) új előfordulási adatai a Dunántúlon

Kő-hegy, 2018.08.10., mar, (EOV: 483631, 146403); Szécsisziget, Bubota, 2015.06.07., LA, (EOV: 461208, 139525); Nagy-hegy, 2013.08.05., mar, LA, (EOV: 462816, 139572); Szepetnek, Cerinai-erdő, 2020.06.15., mar, (EOV: 486518, 119640); 2020.06.15., mar, (EOV: 486559, 119519); 2013.07.02., (EOV: 486515, 119640); 2013.07.02., rny, (EOV: 486443, 119659); Szepetnek, Hidegkúti-erdő, 2013.07.02., rny, (EOV: 485602, 120687); 2021.02.17., mar, (EOV: 486587, 121531); 2021.07.12., rny, (EOV: 486768, 121513); Tornyiszentmiklós, Mura erdő, 2013.08.01., LA, (EOV: 457389, 132479); 2014.08.02., mar, LA, (EOV: 457376, 132520); Mura erdő, egykori fás legelő, 2015.06.05., LA, (EOV: 457364, 132340); Vállus, Szik-tető, 2017.03.04., rny, (EOV: 516812, 164907); Zalabaksa, Berta-úti-dűlő, 2013.08.01., mar, LA, (EOV: 461349, 152253); Malom-dűlő, 2014.07.02., mar, LA, (EOV: 458297, 155328); Medesi-patak, 2015.06.28., LA, (EOV: 459728, 154440); Zalaegerszeg, Csácsi erdő, 2013.07.03., rny, (EOV: 486073, 167004); Zalakomár, Nyert-erdő, 2014.04.01., rny, (EOV: 507127, 129346); Nyugati-mező, 2014.07.28., rny, (EOV: 506946, 130698); Zalalövő, Pap-temetői-oldal, 2018.07.12., rny, (EOV: 457719, 165221).

Morimus asper funereus Mulsant, 1862

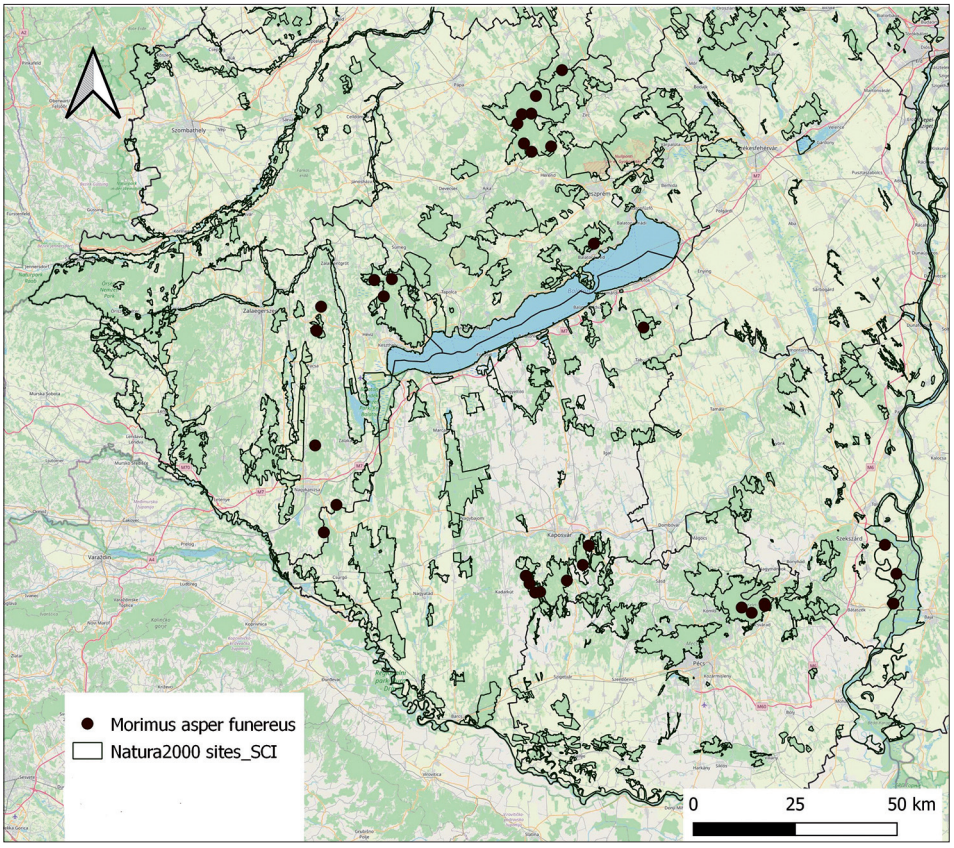
Baranya vármegye
Cserénfa, Tótfalupuszta, 2011.07.09., (EOV: 558581, 105861); Hosszúhetény, Püspökszentlászló, 2011.07.01., (EOV: 597094, 95077); Mecseknádasd, Réka völgy, 2011.07.01., (EOV: 602660, 95965); Pécsvárad, Zengővár, 2011.07.01., (EOV: 599505, 93771); Zengővárkony, Zengővár, 2011.07.01., (EOV: 602741, 95425).

Somogy vármegye
Ságvár, Börevár, 2013.06.12., KI, (EOV: 574045, 162832); Sántos, 2013.06.23., (EOV: 560104, 110505); Szenna, Denna-erdő, 2013.06.23., (EOV: 544698, 103450); 2013.06.23., (EOV: 545578, 101547); 2013.06.23., (EOV: 548122, 99467); 2013.06.29., MG, (EOV: 544828, 103422); 2013.06.29., mar, MG, (EOV: 546888, 99360); Zselicszentpál, Kislaki-erdő, 2013.06.23., MG, (EOV: 554665, 102140).

Tolna vármegye
Decs, Szomfova-erdő, 2019.04.20., (EOV: 634755, 103041); Pörböly, Nagy-rezét, 2019.06.29., mar, (EOV: 634024, 95813); Szekszárd, Ózsákpuszta, 2019.08.20., mar, (EOV: 631982, 110048).

Veszprém vármegye
Bakonyjákó, Rókahegy, 2017.07.10., (EOV: 544605, 211970); Bakonyszentlászló, Szentlászlói-erdő, 2018.05.10., (EOV: 555447, 224492); Bakonyszücs, Katona-vágás, 2017.07.17., (EOV: 549129, 218459); Balatonfüred, Koloska-völgy, 2019.06.19., mar, (EOV: 562433, 183039); Csehbánya, 2017.07.10., (EOV: 547878, 205223); Hárskút, Középső-Hajag, 2017.07.19., (EOV: 552562, 206407); Szentgál, Kis-Takács, 2017.07.10., mar, (EOV: 546080, 207220); 2017.07.10., (EOV: 546082, 207216); Ugod, 2018.05.18., (EOV: 547956, 214278); Ugod, Királykapu, 2017.07.17., (EOV: 545705, 214169); Uzsa, Istvándi-erdő, 2016.07.02., (EOV: 518530, 174716); 2016.07.02., (EOV: 518564, 174661).

Zala vármegye
Liszó, Sági-erdő, 2016.07.06., (EOV: 495925, 115013); Nagybakónak, Hordós, 2020.04.17., (EOV: 494347, 136038); Nagykanizsa, Nagyfakos, 2018.04.24., (EOV: 499136, 121571); Nagykapornak, Remete-kert, Bánfai-erdő, 2013.07.09., (EOV: 495443, 163536); 2013.07.14., (EOV: 495443, 163536); 2014.04.14., (EOV: 495337, 163678); 2015.07.15., MM, (EOV: 495475, 163560); Padár, Felső-erdő, 2020.07.01., (EOV: 496657, 169315); Rezi, Rezi-erdő, 2017.07.11., (EOV: 511755, 171392); 2017.07.11., (EOV: 511769, 171400); Zalaszántó, Kovácsi-erdő, 2017.07.04., (EOV: 509584, 175395); 2017.07.04, (EOV: 509586, 175359); Zalaszántó, Tátika, 2016.07.11., (EOV: 513804, 175493); 2016.07.21., (EOV: ,13796, 175501); 2016.07.11., (EOV: 513804, 175493); 2016.07.21., (EOV: 513796, 175501).



2. ábra: A gyászcincér (*Morimus asper funereus*) új előfordulási adatai a Dunántúlon

Rosalia alpina (Linnaeus, 1758)

Baranya vármegye

Abaliget, Lófej, 2011.07.09., (EOV: 576012, 86930); Felsőegerszeg, Káptalan-rét, 2021.07.03., (EOV: 579351, 99447); 2021.07.03., imágó, rny, (EOV: 579494, 99466); 2021.07.03., (EOV: 579815, 99909); Gödre, Vadászházi-rész, 2020.06.27., (EOV: ,564630,105954,); Kővágótöttös, Sás-völgy, 2011.07.09., (EOV: 576010, 86237); Magyaregregy, Völgységi-patak mente,2021.07.03, , ,(EOV: ,592660,98503,); 2021.07.03, (EOV: 592704, 98535); 2021.07.03, (EOV: 592735, 98543); Magyarlukafa, Vitorági-erdő, 2012.06.24., (EOV: 547824, 99174); 2014.07.05., MG, (EOV: 548679, 99303); 2014.07.26., MG, (EOV: 548718, 99260); Pécsvárad, Zengővár, 2011.07.01., (EOV: 599505, 93771); Tormás, Alsókövesd, 2011.07.09., (EOV: 566858, 95315); Tormás, Nagy Maté-puszta, 2011.07.09., (EOV: 567260, 93045); Zengővárkony, Zengővár, 2011.07.01., (EOV: 602741, 95425); Zselickisfalud, Kardosfa-puszta, 2011.07.09., (EOV: 550535, 101010); Zselickisfalud, Vadkert, 2013.06.29., MG, (EOV: 548629, 99377); 2015.07.03., MG, (EOV: 548746, 99330); Zselicszentpál, 2013.07.01., MG, (EOV: 555733, 107018); 2013.07.01., rny, MG, (EOV: 555281, 107588).

Győr-Moson-Sopron vármegye

Bakonyszentlászló, Cuha-völgy, 2017.07.28., (EOV: 558245, 223493); 2017.07.28., (EOV: 558248, 223501); Bakonyszentlászló, Hárskúti-erdő, 2017.07.28., (EOV: 554886, 221106); 2017.07.28., (EOV: 554868, 221109); Fenyőfő, Hárskúti-erdő, 2017.07.17., (EOV: 553650, 220772).

Somogy vármegye
Andocs, Nagy-erdő, 2013.07.22., (EOV: 558487, 144654); Babócsa, 2021.07.06., (EOV: 516491, 75477); Bárdudvarnok, 2013.07.07., rny, MG, (EOV: 542027, 107322); Bőszénfa, 2013.07.12., MG, (EOV: 552897, 104926); 2013.07.12., mar, rny, MG, (EOV: 553304, 103344); 2013.07.12., rny, MG, (EOV: 551840, 106535); 2014.07.06., MG, (EOV: 551634, 105682); Bőszénfa, Lencsés, 2013.07.08., MG, (EOV: 552857, 98516); 2013.07.08., MG, (EOV: 553686, 98029); Bőszénfa, Ropoly-puszta, 2013.06.23., MG, (EOV: 553595, 102543); Cserénfa, 2013.07.06., MG, (EOV: 558292, 108011); 2013.07.06., rny, MG, (EOV: 558028, 108842); Cserénfa, Tábor-völgy, 2011.07.09., (EOV: 561811, 106391); 2011.07.09., (EOV: 561560, 106275); Cserénfa, Tábor-völgyi-erdő, 2013.07.08., rny, MG, (EOV: 561748, 107104); Cserénfa, Tótfalupuszta, 2011.07.09., (EOV: 558581, 105861); Fiad, Vadas, 2013.06.21., (EOV: 555046, 143606); Hajmás, Ivánka, 2013.07.11., rny, MG, (EOV: 562451, 102537); Hajmás, Vadászházi-rész, 2020.06.27., (EOV: 564571, 105844); Kapoly, 2019.07.25., mar, (EOV: 564757, 153105); 2019.07.25., (EOV: 564774, 153130); Kaposgyarmat, Tábor-völgyi-erdő, 2013.07.06., rny, MG, (EOV: 561283, 104900); Karád, Karádi erdő, 2013.07.04., rny, (EOV: 555356, 152434); 2013.07.04., (EOV: 555390, 152422); 2018.07.09., (EOV: 555185, 152380); 2018.07.09., (EOV: 555473, 153558); 2018.07.09., (EOV: 556211, 153287); 2018.07.09., (EOV: 556306, 153297); 2018.07.10., (EOV: 556877, 152752); Kisbárapáti, Lucai-erdő, 2013.07.13., (EOV: 559254, 138953); 2013.07.13., (EOV: 559232, 138953); 2013.07.13., (EOV: 559214, 138957); 2013.07.13., mar, (EOV: 559227, 138954); Kisbárapáti, Sandella, 2013.07.13., (EOV: 561377, 137925); Nagyberény, 2015.08.27., KI, (EOV: 584917, 161249); Nagycsepely, Lajtorjás-erdő, 2018.07.13., (EOV: 556867, 155057); 2018.07.16., mar, (EOV: 556328, 154834); Patca, Mosa-erdő, 2013.07.01., rny, MG, (EOV: 547010, 106285); Ságvár, Jaba-völgy, 2019.06.21., (EOV: 572682, 163512); 2019.06.21., (EOV: 572695, 163497); 2019.06.21., (EOV: 572704, 163508,); Ságvár, 2015.06.17., KI, (EOV: 573106, 163988); Sántos, Nádasdi-erdő, 2013.07.06., MG, (EOV: 558289, 112195); Somogytúr, Tardi-erdő, 2013.07.08., (EOV: 550697, 149411); 2015.07.16., (EOV: 550957, 149363); Szegerdő, Sósi-erdő, 2019.07.11., (EOV: 515650, 144628); Szenna, 2015.07.04., MG, (EOV: 545501, 100994); Szenna, Denna, 2012.06.24., (EOV: 546957, 99214); 2012.06.24., (EOV: 547459, 99578); 2012.06.24., (EOV: 547569, 99740); 2013.06.29., MG, (EOV: 546851, 99321); Szenna, Denna-erdő, 2013.06.27., MG, (EOV: 544735, 103458); 2013.06.29., MG, (EOV: 544872, 103771); 2013.07.14., mar, MG, (EOV: 545315, 100819); 2014.07.05., mar, MG, (EOV: 545450, 100924); Szentbalázs, 2013.07.11., rny, MG, (EOV: 561647, 107826); 2013.07.11., rny, MG, (EOV: 560946, 111339); Szilvásszentmárton, Denna-erdő, 2013.06.29., MG, (EOV: 545617, 103251); Törökkoppány, Polgári-erdő, 2013.07.13., mar, (EOV: 575428, 137674); Zselickisfalud, Kardosfa-puszta, 2011.07.09., (EOV: 550535, 101010).

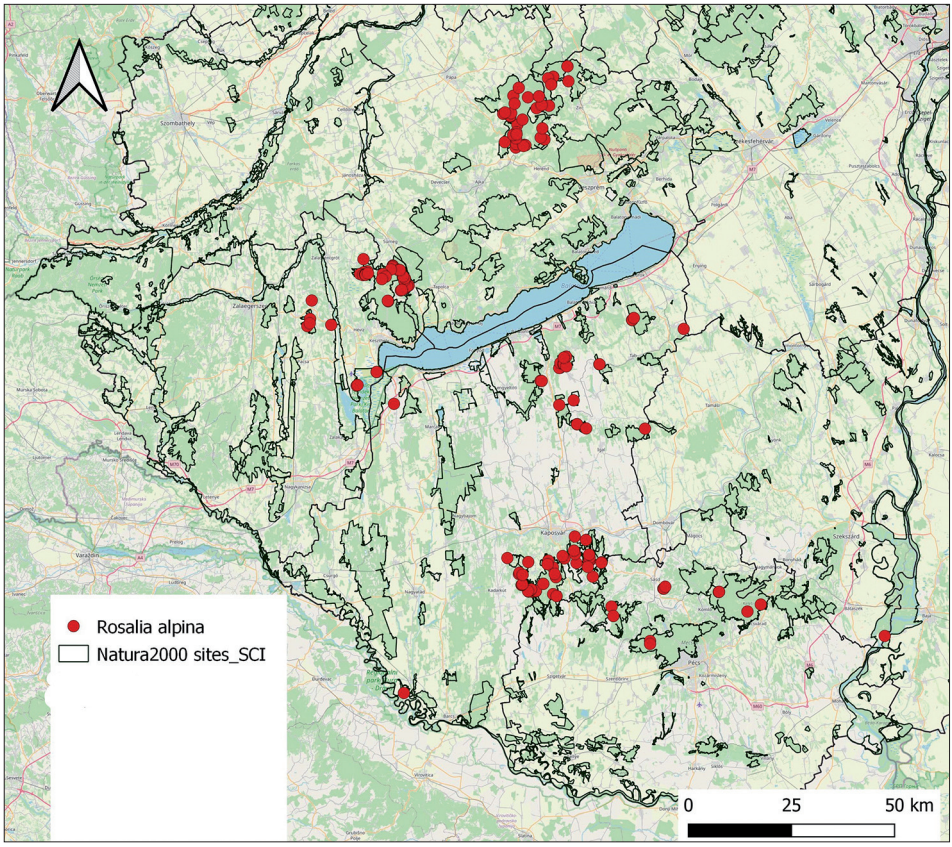
Tolna vármegye
Báta, Révház, 2019.06.29., (EOV: 632497, 87713).

Veszprém vármegye
Bakonybél, Kopasz-hegy, 2017.07.17., (EOV: 550814, 213803); Bakonybél, Mély-árok, 2017.07.19., (EOV: 553761, 214322); Bakonybél, Száraz-Gerence, 2017.07.17., (EOV: 552024, 214499); Bakonyjákó, 2017.07.10., (EOV: 543358, 212922); 2017.07.10., (EOV: 545947, 208239); Bakonyjákó, Pápavár-hegy, 2017.07.10., (EOV: 546228, 210017); 2017.07.17., (EOV: 547454, 211184); Bakonyjákó, Róka-hegy, 2017.07.10., (EOV: 544442, 212481); 2017.07.10., (EOV: 544603, 211967); 2017.07.10., (EOV: 544456, 212331); 2017.07.10. (EOV: 544580, 212107); 2017.07.10., (EOV: 542917, 212614); 2017.07.17., (EOV: 544831, 212742); Bakonyszücs, Gerence-völgy, 2017.07.17., (EOV: 548831, 216391); Bakonyszücs, Parajos-tető, 2017.07.17., (EOV: 551451, 216558); 2017.07.17., (EOV: 551435, 216586); Bakonyszücs, Száraz-Gerence, 2017.07.17., (EOV: 552017, 214529); Bazsi, Karikás-tető, 2016.07.02., (EOV: 514238, 176551); 2016.07.02., (EOV: 514287, 176595); Csehbánya, 2017.07.10., (EOV: 547832, 205244); 2017.07.10., (EOV: 548051, 205137); 2017.07.10., (EOV: 547583, 204974); Csehbánya, Bakics-hát, 2017.07.10., (EOV: 545910, 205448); 2017.07.10., (EOV: 545762, 204632); 2017.07.10., (EOV: 545864, 206826); Csehbánya, Kis-Takács, 2017.07.10., (EOV: 545332, 207465); 2017.07.10., (EOV: 545384, 207282); 2017.07.10., (EOV: 545411, 207125); 2017.07.10., (EOV: 545985, 205151); 2017.07.10., (EOV: 545412, 207224); 2017.07.10., (EOV: 545530, 206824); Csesznek, Cseszneki-erdő, 2017.07.28., (EOV: 558416, 220002); Hárskút, 2017.07.19., (EOV: 552568, 206413); 2017.07.19., (EOV: 551676, 206887); 2017.07.19., (EOV: 552105, 209051); Kislőd, 2017.07.10., (EOV: 543188, 205960); Lesenceistvánd, 2017.07.07., (EOV: 519022, 172063); Németbánya, Kis-Takács, 2017.07.10., (EOV: 545217, 207629); 2017.07.10., (EOV: 545220, 207619); Porva, Ménesjárás-

puszta, 2017.07.17., (EOV: 554353, 219284); Sümeg, Sarvaly-erdő, 2016.07.02., (EOV: 517312, 176439); 2017.07.11., (EOV: 516108, 177408); 2017.07.11., (EOV: 516113, 177257); 2017.07.11., (EOV: 516030, 177022); Szentgál, Szénégető, 2017.07.10., (EOV: 546005, 207748); Ugod, 2017.07.17., (EOV: 546711, 218666); 2017.07.17., (EOV: 545659, 214955); Ugod, Hubertlak, 2017.07.17., (EOV: 545407, 216823); Uzsa, Sarvaly-erdő, 2016.07.02., (EOV: 517364, 176320); 2016.07.02., (EOV: 517767, 176304); Babos Paragi-rét, 2017.07.07., (EOV: 519431, 172438); 2017.07.07., (EOV: 519373, 172373); 2017.07.07., (EOV: 519757, 172572); 2017.07.07., (EOV: 519406, 172455); 2017.07.07., mar, (EOV: 519418, 172442); Uzsa, Boc-hegy, 2017.07.07., (EOV: 518745, 173790); 2017.07.07., (EOV: 518893, 174347); Uzsa, Istvándi-erdő, 2016.07.02., (EOV: 518523, 174757).

Zala vármegye

Keszthely, Fenékpuszta, 2019.06.12., Fejes Éva, (EOV: 511694, 152287); 2020.06.22., Nagy Kornél, (EOV: 511694, 152287); 2021.06.15., (EOV: 511694, 152287); Nagykapornak, Kapornaki erdő, 2015.07.15., MM, (EOV: 495475, 163560); Nagykapornak, Kaposkadt-oldal, 2019.06.27., (EOV: 496179, 165242); Vencei-erdő, 2019.06.27., (EOV: 496070, 164223); Padár, Felső-erdő, 2020.07.01., (EOV: 496682, 169595); Sümegcsehi, Köz-erdő, 2016.07.02., (EOV: 509192, 179066); Várvölgy, Csetényi-erdő, 2017.07.07., (EOV: 514824, 168964); 2017.07.07., (EOV: 514726, 169100); Várvölgy, Fertős-hegy, 2017.07.07., mar, rny, (EOV: 517899, 171484); 2017.07.07., (EOV: 518123, 171598); Várvölgy, Sarvaly-erdő, 2017.07.11., (EOV: 515635, 176474); Zalacsány, farakodó, 2019.06.25., (EOV: 501163, 163706); Zalaszántó, Kovácsi-erdő, 2017.07.04., (EOV: 509539, 175427); 2017.07.04., (EOV: 510048, 176172); 2017.07.04., (EOV: 510067, 176162); 2017.07.04., (EOV: 509167, 175926); 2017.07.04., mar, (EOV: 509175, 175944); 2017.07.04., (EOV: 508287, 175579);



3. ábra: A havasi cincér (*Rosalia alpina*) új előfordulási adatai a Dunántúlon

2017.07.04., (EOV: 509001, 175309); 2017.07.04., (EOV: 509542, 175364); 2017.07.04., (EOV: 509539, 175388); 2017.07.04., (EOV: 509545, 175442); 2017.07.04., (EOV: 509544, 175452); 2017.07.04., (EOV: 509548, 175471); 2017.07.04., (EOV: 509557, 175447); 2017.07.04., (EOV: 509571, 175452); 2017.07.04., (EOV: 509569, 175431); 2017.07.04., (EOV: 509582, 175381); 2017.07.04., (EOV: 509590, 175374); 2017.07.04., (EOV: 509590, 175353); 2017.07.04., (EOV: 510192, 175690); Zalaszántó, Tátika, 2017.07.11., (EOV: 514375, 174812); 2017.07.11., (EOV: 513457, 174252); 2019.06.28., (EOV: 513726, 175452); Zalavár, Lebuj, 2021.06.28., (EOV: 506883, 149159); 2021.06.28., (EOV: 507082, 149288).

Értékelés

Jelen munkában a Dunántúlon végzett közösségi jelentőségű cincér fajokra irányuló adatgyűjtések eredményeit közöljük. A cincérek családjának (Cerambycidae) négy közösségi jelentőségű faja közül a nagy hőscincér, gyászcincér és a havasi cincér került elő a jelen vizsgálatok során.

A nagy hőscincér 226 mintavételi helyen találtuk meg. A faj a vizsgált Natura 2000 területek többségén előfordult, ahol számára alkalmas élőhelyet találtunk. Leggyakrabban idős tölgyesekben, fás legelőkön, hagyásfákon került elő.

A gyászcincér 30 mintavétel ponton vált ismertté. A faj előkerült a már korábban lelőhelyekről, ilyen a Bakony, Mecsek, Zselic. A faj korábban nem volt ismert Dél-Zalából (Nagykanizsa, Liszó), Észak-Somogyból (Ságvár). A gyászcincér a Ságvári-dombok és Remetekert Natura 2000 területéről vált ismertté.

A havasi cincér 147 adatát rögzítettük. A faj előfordulása Észak-Somogyból, Gemencről és a Zalai-dombvidéken nem volt korábban ismert. A havasi cincér előfordulása a Kopasz-dombi erdő, Mocsoládi-erdő, Somogytúri-erdők, Gemenc és Remetekert Natura 2000 területekről új fajként vált ismertté. A havasi cincér expanziója valószínűsíthető a Dél-Dunántúlon, ezt támasztja alá a 2018-as Dráva menti, Barcs melletti előfordulása is (PURGER 2018).

Köszönetnyilvánítás

Köszönetet mondunk áldozatos munkájukért a mintavételezésben részt vevő kutatóknak és kollégáknak, Merkei Gábornak, Scherer Zoltánnak, Kenéz Istvánnak, Lelkes Andrásnak, Magyari Máténak és Vig Károlynak. Továbbiakban szeretnénk megköszönni a Svájci-Magyar Hozzájárulás program (SH/4/12), valamint az érintett Őrségi-, Duna-Dráva- és Balaton-felvidéki Nemzeti Park Igazgatóságok kutatásra nyújtott támogatását.

Irodalom

Hegyessy G. & Merkl O. 2014a: Nagy hőscincér Cerambyx cerdo (Linnaeus, 1758). In: Haraszthy L. (szerk.): Natura 2000 fajok és élőhelyek Magyarországon. – Pro Vértes Közalapítvány, Csákvár: 260-264.

Hegyessy G. & Merkl O. 2014b: Havasi cincér Rosalia alpina (Linnaeus,1758) In: Haraszthy L. (szerk.): Natura 2000 fajok és élőhelyek Magyarországon. – Pro Vértes Közalapítvány, Csákvár: 265-269.

Hegyessy G. & Merkl O. 2014c: Gyászcincér Morimus funereus Mulasant,1862 In: Haraszthy L. (szerk.): Natura 2000 fajok és élőhelyek Magyarországon. – Pro Vértes Közalapítvány, Csákvár: 270-273.

Purger, J. J. 2018: First occurrence of Rosalia longicorn Rosalia alpina (Linnaeus, 1758) in the valley of the Drava River (Hungary). – Natura Somogyiensis 31: 41-44.
https://doi.org/10.24394/NatSom.2018.31.41

Rozner Gy. & Lőkkös A. 2018: Adatok a Dunántúl közösségi jelentőségű bogarainak ismeretéhez I. – Natura Somogyiensis 32: 165-182.
https://doi.org/10.24394/NatSom.2018.32.165

Rozner Gy., Lőkkös A., Merkei G., Scherer Z., Kenéz I., Lelkes A. & Vig K. 2016a: Nagy hőscincér Cerambyx cerdo (Linnaeus, 1758). In: Haraszthy L. & Sáfián Sz. (szerk.): Védett állatfajok elterjedési atlasza Vas, Zala és Somogy vármegye Natura 2000 területein. – Somogy Természetvédelmi Szervezet, Somogyfajsz: 54-55.

Rozner Gy., Lőkkös A., Merkei G., Scherer Z., Kenéz I., Lelkes A. & Vig K. 2016b: Havasi cincér Rosalia alpina (Linnaeus,1758) In: Haraszthy L. & Sáfián Sz. (szerk.): Védett állatfajok elterjedési atlasza Vas, Zala és Somogy vármegye Natura 2000 területein. – Somogy Természetvédelmi Szervezet, Somogyfajsz: 56-57.

Rozner Gy., Lőkkös A., Merkei G., Scherer Z., Kenéz I., Lelkes A. & Vig K. 2016c: Gyászcincér Morimus funereus Mulasant,1862. In: Haraszthy L. & Sáfián Sz. (szerk.): Védett állatfajok elterjedési atlasza Vas, Zala és Somogy vármegye Natura 2000 területein. – Somogy Természetvédelmi Szervezet, Somogyfajsz: 58-59.

Sama G. & Löbl I. 2010: Cerambycidae, Western Palaearctic taxa, eastward to Afghanistan, excluding Oman and Yemen and the countries of the former Soviet Union. In: Löbl I. & Smetana A. (eds): Catalogue of Palaearctic Coleoptera, vol 6: Chrysomeloidea. Apollo Books, Stenstrup, pp 84–334.

Solano E., Mancini E., Ciucci P., Mason F., Audisio P., Antonini G. 2013: The EU protected taxon Morimus funereus Mulsant, 1862 (Coleoptera: Cerambycidae) and its western Palaearctic allies: systematics and conservation outcomes. Conservation Genetics 14: 683-694.
https://doi.org/10.1007/s10592-013-0461-3

Natura Somogyiensis 41: 79-84. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.79
Submitted: 11.10, 2022; Accepted: 06.11, 2023; Published: 21.11, 2023 www.smmi.hu/termtud/ns/ns.htm

First report of the jumping spider *Epeus daiqini* (Patoleta, Gardzińska & Żabka, 2020) (Araneae: Salticidae) from India

Konnoth Kuttappan Sibi[1], Poulose Gigi[2] & Ambalaparambil Vasu Sudhikumar[1]*

[1]Centre for Animal Taxonomy and Ecology, Department of Zoology, Christ College (Autonomous), Irinjalakuda, Kerala-680125, India

[2]Department of Zoology, St. Joseph's College, (Autonomous), (Affiliated to University of Calicut), Irinjalakuda, Kerala-680121, India

email: kksibi61@gmail.com; gigijmj@gmail.com; *Corresponding author: spidersudhi@gmail.com

Sibi, K. K., Gigi, P. & Sudhikumar, A. V.: *First report of the jumping spider Epeus daiqini (Patoleta, Gardzińska & Żabka, 2020) (Araneae: Salticidae) from India.*
Abstract: *Epeus* Peckham & Peckham, 1886 is a genus from family Salticidae. So far, the species *Epeus daiqini* (Patoleta, Gardzińska & Żabka, 2020) only reported from Thailand. This paper reports and describe both sexes of *E. daiqini* for the first time from India.

Keywords: Taxonomy, Faunistic, India, Kerala

Introduction

Epeus Peckham & Peckham, 1886 is a little-known genus from family Salticidae and currently comprises 19 valid species, of which the majority have been reported from south and southeast Asia. Of the 19 described species, four have been recorded from India (World Spider Catalog 2023): *Epeus albus* Prószyński, 1992, *E. chilapataensis* (Biswas & Biswas, 1992), *E. indicus* Prószyński, 1992, *E. triangulopalpis* Malamel, Nafin, Sudhikumar & Sebastian, 2019. The genus *Epeus* described based on the characters like, male carapace usually with protruding and upward bristles; length of ocular is shorter than half of carapace. Legs covered with dense hair and numerous spines (Peng, & Li 2002). The cymbium of male palp flattened and elongated, with a basal apophysis retrolaterally, pointing postero-ventrally; tegulum with a tongue-like process; filiform embolus; and epigyne with several loops and long copulatory ducts (Meng et al. 2015).

Epeus daiqini described by Patoleta et al. (2020) from Thailand. The species *E. daiqini* closely related to *E. tener* and mainly distinguished by the absence of embolic serration, the presence of a small outgrowth on the retrolateral cymbial apophysis, orientation of copulatory openings and copulatory ducts do not reach epigastric fold (Patoleta et al. 2020). This paper documents the first report of the jumping spider *E. daiqini* from India based on specimens collected from Pathanamthitta, Kerala.

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

Material and methods

All specimens were collected by hand picking method and preserved in 70% ethanol and were studied, photographed and measured using a Leica M205C stereomicroscope, a Leica DFC450 Camera, and LAS software (Ver.4.13). Epigyne was dissected and internal genitalia were cleared in 10% potassium hydroxide (KOH) solution. Male palp was separated and photographed. Ocular measurements were taken after placing the specimen dorsally. Leg measurements are shown as: total length (femur, patella, tibia, metatarsus, tarsus). All measurements are given in millimetres (mm).

Abbreviations: AER = anterior eye row, AG = accessory gland, ALE = anterior lateral eye, AME = anterior median eye, CY = cymbium , CA = cymbial apophysis, CATE = Centre for Animal Taxonomy and Ecology, Department of Zoology, Christ College (Autonomous), Irinjalakuda, Kerala, India, CD = copulatory duct, CO = copulatory opening, EM = embolus, FD = fertilization duct, PLE = posterior lateral eye, PME = posterior median eye, PSL = proximal spermathecal loop, RTA= retrolateral tegular apophysis, SD = seminal duct,. TL = tegular lobe, TB = tegular bump

Results

Family: Salticidae Blackwall, 1841
Genus: *Epeus* Peckham & Peckham, 1886
Type species: *Epeus daiqini* Patoleta, Gardzińska & Żabka, 2020

Material examined: 3♂ 3♀ (CATE), Pathanamthitta, Kerala (9°15'38.7"N 76°47'56.9"E) K.K. Sibi, 28. September, 2022.

Diagnosis: Male differ from other related species by absence of embolic serration and presence of a small outgrowth on the retrolateral cymbial apophysis (Fig. 1D). Copulatory opening of *E. daiqini* more diagonal. Copulatory ducts do not reach epigastric fold, and proximal spermathecal loop less distinctive than in other species. The accessory glands clearly visible (Fig. 2D-E) (PATOLETA et al. 2020).

Redescription male: Total body length 7.4-7.8, relatively bigger than female. Cephalothorax 3.05 long, 2.67 wide and height 1.95. Carapace dark orange in colour till end of the eye rows, after that sky orange in colour with cephalic crest. They covered with scale like light hairs. Eye diameters: AME-0.81, ALE-0.24, PME-0.11, PLE-0.28. Eye interdistances: AME-AME 0.04, AME-ALE 0.34, PME-PME 1.62, ALE-ALE 1.63, PME-PLE 0.23, PLE-PLE 1.42, AME-PME 0.38. AME surrounded by brown colour and other eyes are surrounded by black colour. Clypeus height 0.96, dark brown in colour. Chelicerae dark reddish brown with two pro marginal teeth and one retro marginal tooth. Sternum length 1.44, width 1.23, oval shaped and yellowish with darker margin. Labium 0.33 long, 0.48 wide. Endites and labium dark orange with paler tips. Abdomen length 4.26, width 1.95 and height 1.52, yellowish with some brown shades. Spinneret's orange, anal tubercle with dark base and light tip. Leg measurements: Leg I 10.22 [2.65, 1.32,

Fig. 1: ***Epeus daiqini*** **male. Fig. 1A. Habitus dorsal view, Fig. 1B. ventral view, Fig. 1C. frontal view, Fig. 1D-F. Palp: Fig. 1D. ventral view, Fig. 1E. prolateral view, Fig. 1F. retrolateral view (Scale bars: 1-2 = 1 mm, 3 = 0.5 mm, 4-6 = 0.3 mm)**

2.67, 2.39, 1.19], Leg II 8.87 [2.82, 1.34, 2.70, 1.33, 0.68], Leg III 9.51 [3.18, 1.26, 2.48, 1.81, 0.78] Leg IV 7.31 [1.83, 0.93, 2.41, 1.64, 0.50]. Leg formula: 1324. Legs light brown, the first pair darker and stronger than the others, with a fringe of brown setae on ventral patella, tibia and metatarsus. Spines numerous on all legs. Spination of leg I: tibia ventral 2–2–2–2, retrolateral 1–1–0–1, metatarsus ventral 2–2, pro and retrolateral 1–1. Cymbium apically slightly curved, absence of embolic serration, retrolateral cymbial apophysis with a short outgrowth. Embolus very long and thin. Tegulum with a small bump and with a distinctive, posterior finger-like tegular lobe. Retrolateral tibial apophysis single (fig. 1, D-F).

Redescription female: Total body length 6.2-6.5. Cephalothorax 2.71 long, 2.10 wide and height 1.41. Carapace pale yellowish, eye field paler, with translucent guanine deposits. Eye diameters: AME-0.64, ALE-0.26, PME-0.08, PLE-0.15. Eye interdistances: AME-AME 0.03, AME-ALE 0.13, PME-PME 1.34, ALE-ALE 1.35, PME-PLE 0.47, PLE-PLE 1.27, AME-PME 0.27. AME surrounded by brown in colour and other eyes are surrounded by black. Clypeus height 0.79, pale brown in colour and densely covered with whitish scale like hairs.

Chelicerae and endites are yellow. Labium pale yellow, 0.39 long and 0.37 wide. Sternum length 1.11, width 0.95, oval shaped with whitish. Abdomen length 3.86, width 1.62 and height 1.52, pale yellowish with mosaic type guanine deposits. Spinnerets pale yellowish. Leg measurements: Leg I 6.31 [1.85, 1.05, 1.85, 0.65], Leg II 6.12 [1.98, 0.99, 1.60, 0.87, 0.68], Leg III 6.14 [1.98, 0.88, 1.52, 1.06, 0.70], Leg IV 6.66 [1.99, 0.78, 1.70, 1.37, 0.82]. Leg formula 2431. Legs yellow, long and spiny, palps yellowish with darker tarsi. Spination of leg I: tibia ventral 2–2–2–2, metatarsus ventral 2–2. Epigynal plate rather round, atrium ovoid, copulatory openings with joined posterior margins, oriented antero-diagonally. The area between openings strongly sclerotized. Pockets absent. Copulatory ducts relatively short and do not reach the epigastric fold area. Accessory glands visible (Fig. 2 D-E).

Natural History: Usually found the mature individuals and juveniles between September-November. They are most active on morning 07:00 to 11:00 and evening between 16:00 to 18:30. This varies by season. They are frequently spotted in shrub lands and plantation.

Distribution: Thailand (World Spider Catalog 2023) and new to India

Discussion

In India the jumping spider genus *Epeus* currently consists of 4 valid species. However, 3 out of 4 *Epeus* species remain known from a single sex only. After *E. triangulopalpis* this is the second species described from both sexes. The genus *Epeus* is closely related to *Plexippoides* Prószyński, 1984, sharing morphological similarities in male genitalia, especially in the form of the cymbial apophysis, tegular lobe and embolus (PRÓSZYŃSKI et al. 2012). Male *E. daiqini* differ from similar or related species *E. tener* Simon, 1877, *E. furcatus* Zhang, Song & Li, 2003, and *E. bicuspidatus* SONG, GU & CHEN, 1988 as missing embolic serration, and the presence of a small outgrowth on the retrolateral cymbial apophysis. In *E. alboguttatus* Thorell, 1887 the female copulatory openings more widely eparated from each other. But less distant in *E. pallidus* and *E. szirakii* (PATOLETA et al. 2020). Females differ from

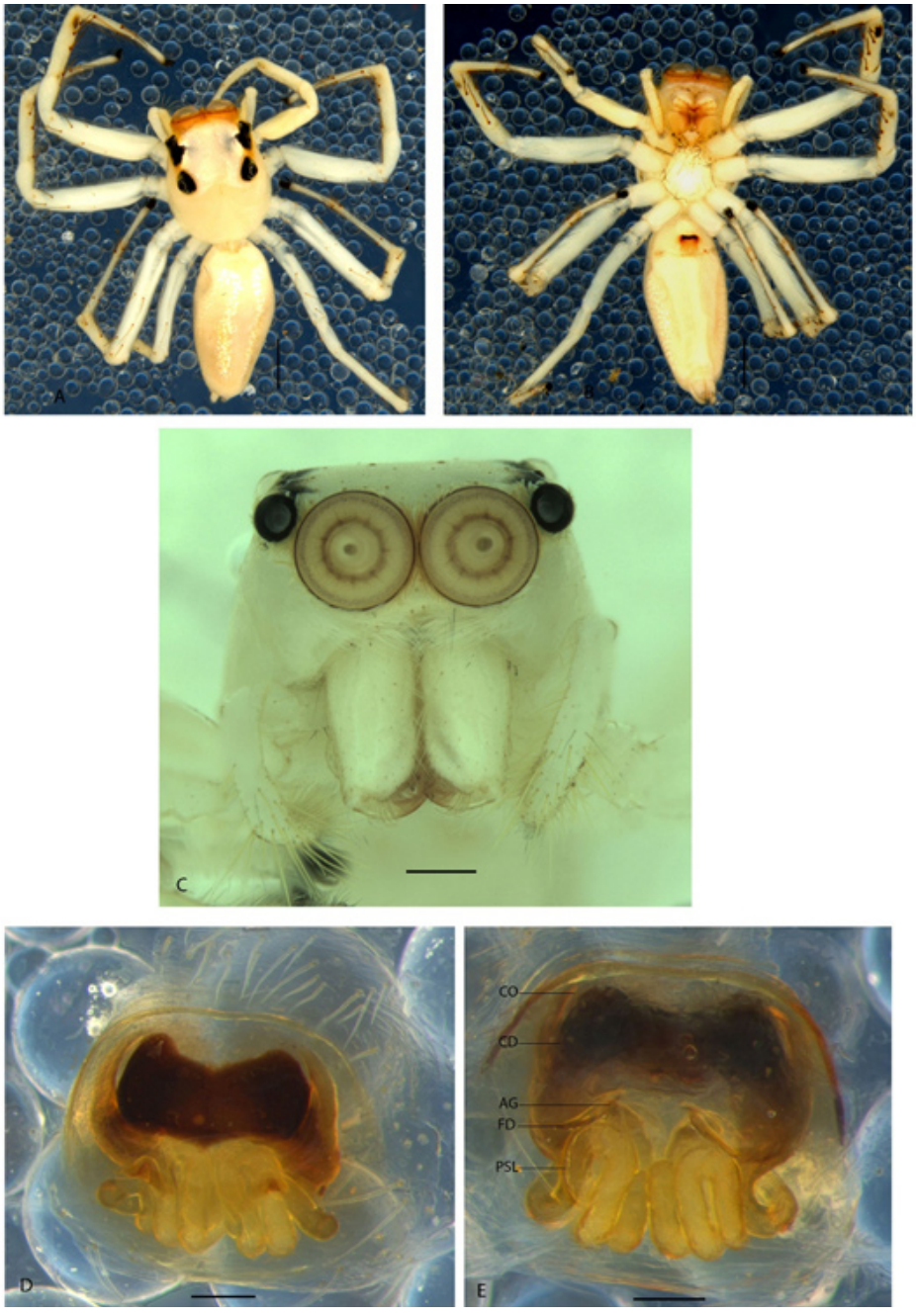


Fig. 2. *Epeus daiqini* female. Fig 2A. Habitus dorsal view, Fig. 2B. ventral view, Fig. 2C. frontal view, D-E epigyne, Fig. 2D. ventral view, Fig. 2E. dorsal view, (Scale bars: 7-8 = 1 mm, 9 = 0.5 mm, 10-11 = 0.1 mm)

E. tener by the orientation of copulatory openings, it is more diagonal in *E. daiqini*. Copulatory ducts do not reach epigastric fold, and proximal spermathecal loop (PSL) less distinctive than in other species. Accessory glands visible. These characteristic features made clear that our specimens belong to the species *E. daiqini*.

Acknowledgments

We are grateful to Rev. Fr. Dr. Jolly Andrews CMI, Principal, Christ College (Autonomous), Irinjalakuda, Kerala, India for allowing us to use their research facilities. First author is grateful to UGC-NFSC National Fellowship for Scheduled Caste Students (No. F. 82-44/2020 (SA-III) for financial assistance to conduct this study. Authors also acknowledge the funding rendered by DST-SERB Major Research Project EEQ/2021/000453, for the facilities used in the study. We are grateful to all co-researchers in CATE lab for their moral support.

References

MENG, X. W., ZHANG, Z. S. & SHI, A. M. 2015: Description of two unknown females of Epeus Peckham & Peckham from China (Araneae: Salticidae). - Zootaxa 3955: 147-150.

PATOLETA, B. M., GARDZIŃSKA, J. & ŻABKA, M. 2020: Salticidae (Arachnida, Araneae) of Thailand: new species and records of Epeus Peckham & Peckham, 1886 and Ptocasius Simon, 1885. - PeerJ, 8: e9352.

PENG, X. J. & LI, S. Q. 2002: A review of the genus Epeus Peckham & Peckham (Araneae: Salticidae) from China. - Oriental Insects 36: 385-392.

PRÓSZYŃSKI J, DEELEMAN-REINHOLD CL. 2012: Description of some Salticidae (Aranei) from the Malay Archipelago. II. Salticidae of Java and Sumatra, with comments on related species. - Arthropoda Selecta 21: 29–60.

World spider catalog 2023: World Spider Catalog. Version 24.5. Natural History Museum Bern: online at http://wsc.nmbe.ch, accessed on November 2023

Natura Somogyiensis 41: 85-92. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.85
Submitted: 11.11, 2022; Accepted: 17.11, 2023; Published: 21.11, 2023 www.smmi.hu/termtud/ns/ns.htm

Prodidomus Hentz, 1847 and *Zimiris* Simon, 1882 on Ascension Island (Araneae: Prodidomidae)

Danniella Sherwood[1,2,3,*], Virginie Gringet[4], Yuri M. Marusik[5,6,7] & Adam Sharp[3,8]

[1]Arachnology Research Association, 124 City Road, London, EC1V 2NX, UK.
orcid.org/0000-0001-8170-9529
[2]Fundación Ariguanabo, San Antonio de los Baños, Cuba.
[3]IUCN Species Survival Commission, Mid-Atlantic Islands Invertebrate Specialist Group, Sailsbury, UK.
[4]Royal Museum for Central Africa, Tervuren, Belgium.
[5]Institute for Biological Problems of the North, Portovaya Street 18, Magadan 685000, Russia.
orcid.org/0000-0002-4499-5148
[6]Altai State University, Lenina Pr., 61, Barnaul, 656049, Russia.
[7]Department of Zoology & Entomology, University of the Free State, Bloemfontein, South Africa.
[8]Conservation & Fisheries Directorate, Ascension Island Government, Georgetown, Ascension Island.
orcid.org/0009-0002-8484-4536
[*]Corresponding author: danni.sherwood@hotmail.com

Sherwood, D., Gringet, V., Marusik, Y. M. & Sharp A.: *Prodidomus Hentz, 1847 and Zimiris Simon, 1882 on Ascension Island (Araneae: Prodidomidae).*
Abstract: A review of type material and newly collected material of the family Prodidomidae Simon, 1884 from Ascension Island is presented. *Prodidomus clarki* Cooke, 1964 is proposed as a junior synonym of *Prodidomus rufus* Hentz, 1847 **syn. nov.**, and *Prodidomus duffeyi* Cooke, 1964 is deemed as a valid species but known only from a single bleached specimen, further material is needed to fully clarify its identity, The third prodidomid species on the island is confirmed as *Zimiris doriae* Simon, 1882.

Keywords: taxonomy, synonymy, morphology, United Kingdom Overseas Territories, ground spider

Introduction

Prodidomus Hentz, 1847 currently contains 55 species (WSC 2023) of which two are endemic to Ascension Island and described based on only the female sex: *P. clarki* Cooke, 1964 and *P. duffeyi* Cooke, 1964. Cooke (1964), in his revision of the Prodidomidae Simon, 1884, placed *P. clarki*, with some reservations, in "Group 4" of *Prodidomus* (also inclusive of, amongst others, the type species *P. rufus* Hentz, 1847), but does not assign *P. duffeyi* to a specific group. These two endemic taxa have hitherto not been re-examined since their original description nearly sixty years ago.

In this work, based on examination of the holotypes deposited in the Natural History Museum, London, we illustrate and discuss the types of *Prodidomus* described from Ascension Island, resulting in one new synonymy. Through opportunistic examination

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

of material of another prodidomid genus found on the island, *Zimiris* Simon, 1882, we confirm represented on the island thus far only from the widespread non-native *Zimiris doriae* Simon, 1882.

Material and methods

Specimens were examined under a Leica MZ12.5 stereomicroscope. Images were made by DS using a Canon EOS 6D Mark II attached to the same microscope, with images stacked using Helicon Focus software. Drawings were made by VG, in a style similar to those of COOKE (1964) but with structures more accurately depicted.

Abbreviations: ASC = Ascension Island Conservation Directorate collection, Georgetown, Ascension Island (it is intended in the future that the ASC invertebrate collection will be donated and moved to the Saint Helena National Trust, Jamestown, Saint Helena); BMNH = Natural History Museum, London; imm. = immature.

Taxonomy

Prodidomus rufus Hentz, 1847

Prodidomus rufus Hentz, 1847: 467, pl. 30, fig. 4;
Prodidomus rufus: Hentz (1867): 108, pl. 18, fig. 9; Banks (1892): 259, fig. 12; Bryant (1935): 164, fig. 1; Bryant (1949): 22, fig. 1; Cooke (1964): 266, figs. 15, 29–30; Platnick (1976): 38, figs. 4–5; Hu & Wang (1981): 51, figs. 1–8; Song (1987): 342, fig. 296; Platnick & Baehr (2006): 13, figs. 24–28; Kamura (2009): 500, figs. 1–4; Yin et al. (2012): 1150, figs. 612a–i; Zhang & Wang (2017): 576, fig. 4; Al-Yacoub & Najim (2022): 240, figs. 2A–D, 3A–D.
Miltia gulosa Simon, 1884: 141.
Prodidomus gulosus: Simon, 1893: 333, figs. 296–299; Dalmas (1919): 318, fig. 26.
Prodidomus imaidzumii Kishida, 1914: 324, fig. 1.
Prodidomus hispanicus Dalmas, 1919: 318. **syn. nov.**
Prodidomus hispanicus: Hadjissarantos (1940): 84, fig. 30; Pérez & Blasco (1986): 156, figs. 7–9.
Hyltonia scottae Birabén, 1954: 13, figs. 1–7.
Prodidomus clarki Cooke, 1964: 284, fig. 19. **syn. nov.**
Prodidomus imaidzumii: Platnick (1976): 38, figs. 1–3; Chen & Zhang (1991): 240, figs. 250.1–5; Song, Zhu & Chen (1999): 432, figs. 14E, 258L–O
Prodidomus cfr. *rufus*: Ferrández & Carrillo (2018): 123, figs. 1–4.

Type material examined: Holotype ♀ *Prodidomus clarki* (BMNH 1961.1.18.1), Ascension Island, under a stone in coconut grove near shore, 18/08/1958, coll. E. A. Duffey; for types of other names/synonyms see COOKE (1964).

Diagnosis: *Prodidomus rufus* can be differentiated from other congeners, except other species of the Rufus Group, by the massive and geniculate chelicerae; *P. rufus* is clearly distinct from two of the other valid species of the Rufus Group, *P. duffeyi* and *P. redikorzevi* by the shape of the copulatory ducts; its diagnosis is less simple from the remaining presently-valid species of this group, as they are known only from females which may prove synonyms (i.e. *P. capensis* Purcell, 1904, *P. revocatus* Cooke, 1964, and *P. rollasoni* Cooke, 1964).

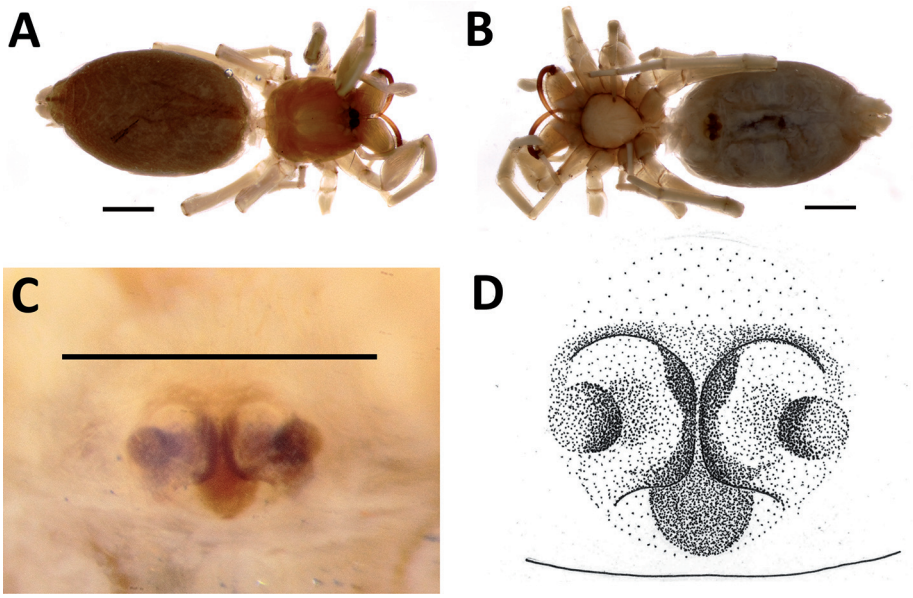


Fig. 1: *Prodidomus rufus* Hentz, 1847 (holotype female of *Prodidomus clarki* Cooke, 1964 syn. nov.). A. habitus, dorsal view. B. habitus, ventral view. C. epigyne, ventral view. D. illustration of epigyne, ventral view. Scale bars = 1mm.

Other material examined: 1 ♀ (ASC 118 2 HC), Green Mountain National Park, Ascension Island (-7.95, -14.35), collected by hand, 25/01/2022, coll. A. Sharp.

Rationale for synonymy: There is a significant concordance between the shape of the epigyne of the holotype of *P. clarki* (Figs. 1C–D) and that of *P. hispanicus* Dalmas, 1919 as illustrated by PÉREZ & BLASCO (1986). Examination against published illustrations of *P. rufus* (see all references in synonymy list) and material from nearby Saint Helena (SHERWOOD et al. in prep.) demonstrates they both lie within an acceptable range for intraspecific epigyne variation in *P. rufus*. Similarly, a more recent specimen of *P. rufus* collected from Ascension Island (see other material examined) also has this same morphology. Therefore, we are propose *P. clarki* **syn. nov**. and *P. hispanicus* **syn. nov**. as junior synonyms of *P. rufus*. The holotype of *P. clarki* is fragile and bleached (Figs. 1A–B), so dissection of the epigyne was avoided to risk further damage to the specimen. The synonymy of the two aforementioned species is not surprising, as PLATNICK & BAEHR (2006: 15) hypothesised several species described by COOKE (1964) and others in what is now the Rufus Group [“Group 4” in COOKE (1964)] may be synonyms of *P. rufus* but did not take any direct taxonomic action. The suspected synonymy of *P. hispanicus* with *P. rufus* was also pondered by ZONSTEIN, MARUSIK & OMELKO (2015: 381).

Remarks: To avoid repetition, we summarise the taxonomic history of *P. rufus* in the synonymy list. As can be seen, species from across the world have been described and subsequently synonymised with *P. rufus*. PLATNICK & BAEHR (2006) state *P. rufus* likely originatres from the Mediterranean more generally and is "probably" widespread in Africa. It is introduced to Argentina, Ascension Island, Chile, China, Cuba, Japan, New

Caledonia, Saint Helena, and United States. Recently, it was tentatively reported from Spain. FERRÁNDEZ & CARRILLO (2018) had great difficulty initially assigning their male to *P. rufus*, considering it shares many characters with other Mediterranean *Prodidomus* species. We therefore suspect that further synonymies of species within the Rufus Group (see diagnosis) may be required in the future, as *P. rufus* has been proven to vary intraspecifically to a great degree. However, in our opinion re-examination of types and sufficient other material of *P. capensis*, *P. revocatus* and *P. rollasoni* is necessary before making any taxonomic decisions.

Interestingly, FERRÁNDEZ & CARRILLO (2018) also note differences in the illustrations of Caribbean specimens in comparison to *P. rufus* from other areas of the world, which should be examined more closely. Molecular analysis of *P. rufus* specimens from across their recorded range would be an interesting avenue for future workers, to ascertain the genetic distances of the known populations and if cryptic species exist.

Prodidomus duffeyi Cooke, 1964
Prodidomus duffeyi Cooke, 1964: 286, fig. 10.

Type material examined: Holotype ♀ *Prodidomus duffeyi* (BMNH 1961.1.18.12), Ascension Island, in kitchen hut, coll. E. A. Duffey, 'tube 8'.

Remarks: The holotype of *P. duffeyi* is bleached, more so than *P. clarki* (Figs. 2A–B). However, the epigyne has a different morphology, with a different course to the copulatory ducts, which can be seen very clearly as the specimen is considerably bleached (Figs. 2C–D). Again, given the fragility of the specimen, dissection was not performed. We have yet to see other specimens of *Prodidomus* with this particular morphology of the copulatory ducts, nor have we seen any depictions in the literature of similar morphology in other known species. Therefore, we consider the species as valid here but there is an urgent need for new material to be collected to more securely elucidate its identity. Recent collecting efforts on the island by AS have not been successful in finding this species.

Zimiris doriae Simon, 1882
Zimiris doriae Simon, 1882: 240, pl. 8, figs. 12–15.
Zimiris doriai: Platnick & Penney, 2004: 8, figs. 1-8, 12–19; Rodrigues & Rheims, 2020: 669, figs. 6F, 10F,L, 11O, 18H, 21K, 23L, 24L, 25L, 28L, 29L.
For full synonymy list see WSC (2023).

Material examined: 1 ♂ (ASC E12 2 PFU), Ascension Island (-7.9, -14.39), from unbaited pitfall trap, 17/02/2022, coll. A. Sharp; 1 ♀ (ASC H12 1 PFF), Ascension Island (-7.9, -14.36), pitfall trap baited with fish, 10/03/2022, coll. A. Sharp; 1 ♀ (ASC 01865), White Horse Hill, Ascension Island (-7.9481, -14.3118), 25/06/2013, coll. L. F. White; 1 ♀ (ASC 01235), [same data except 07/03/2013]; 1 ♀ (ASC 01148), [same data except 07/02/2013]; 1 imm. (ASC 01718), [same data except 27/05/2013, placed in same tube as ASC 01635 which is from another locality]; 1 ♀ (ASC 01635), North East Bay, Ascension Island (-7.9229, -14.3392), 21/05/2013, coll. L. F. White [in same tube as ASC 01718 which is from another locality].

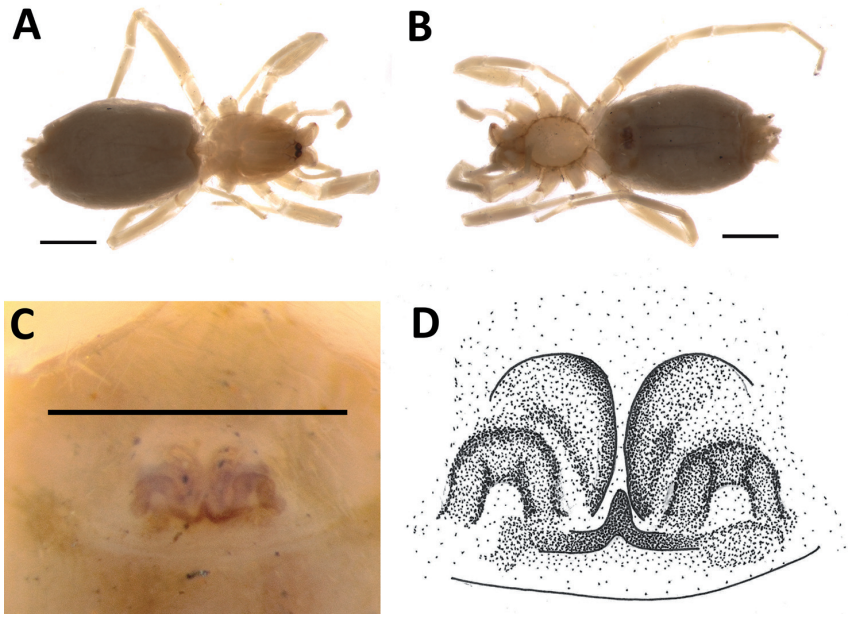


Fig. 2: *Prodidomus duffeyi* Cooke, 1964 holotype female, A. habitus, dorsal view. B. habitus, ventral view. C. epigyne, ventral view. D. illustration of epigyne, ventral view. Scale bars = 1mm.

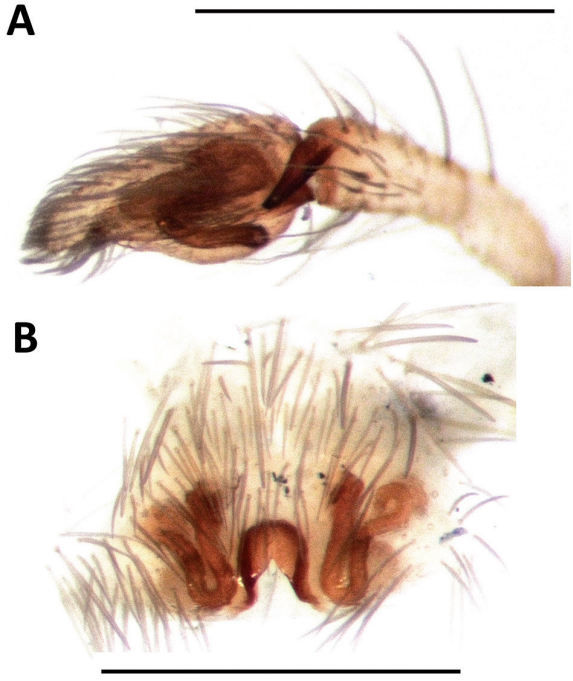


Fig. 3: *Zimiris doriae* Simon, 1882, non-type male (A) and female (B) from Ascension Island. A. palp, retrolateral view. B. epigyne, ventral view. Scale bars = 1mm.

Diagnosis: *Zimiris doriae* is readily differentiated from *Z. diffusa* by the curved retrolateral tibial apophysis (vs. straight) and the comparatively longer and more rounded shape of the epigynal midpiece (vs. shorter and triangular), as outlined by PLATNICK & PENNEY (2004).

Remarks: Given the presence of the closely related *Z. diffusa* Platnick & Penney, 2004 on nearby Saint Helena Island, we closely examined specimens of this genus from Ascension Island (see above). Based on the shape of the retrolateral tibial apophysis (Fig. 3A) and the epigyne (Fig. 3B), it is clear that they belong instead to the more widely distributed *Z. doriae* Simon, 1882 which is the type species of *Zimiris* Simon, 1882 (World Spider Catalog 2023).

Acknowledgements

This work was made possible by funding to the senior author through the Darwin Plus grant DPLUS135: "From pseudoscorpions to crickets: securing Ascension Island's unique invertebrates", funded by the Darwin Plus Initiative, United Kingdom Government, and administered by Ascension Island Government and supported by the Species Recovery Trust.

References

AL-YACOUB, G. A. A.; NAJIM, S. A. 2022: Prodidomus rufus Hentz, 1847 (Arachnida: Araneae), redescription of female and new record of male from south of Iraq. – Commagene Journal of Biology 6(2): 240–241.

BANKS, N. 1892: On Prodidomus rufus Hentz. – Proceedings of the Entomological Society of Washington 2: 259–261.

BIRABÉN, M. 1954: Nuevo genero de la rara familia Prodidomidae. – Neotropica 1: 13–16.

BRYANT, E. B. 1935: A rare spider. – Psyche 42(3): 163–166.

BRYANT, E. B. 1949: The male of Prodidomus rufus Hentz (Prodidomidae, Araneae). – Psyche 56(1): 22–25.

CHEN, Z. F.; ZHANG, Z. H. 1991: Fauna of Zhejiang: Araneida. Zhejiang Science and Technology Publishing House, Hangzhou, 356 pp.

COOKE, J. A. L. 1964: A revisionary study of some spiders of the rare family Prodidomidae. – Proceedings of the Zoological Society of London 142(2): 257–305.

DALMAS, R. DE 1919: Synopsis des araignées de la famille des Prodidomidae. – Annales de la Société Entomologique de France 87: 279–340.

FERRÁNDEZ, M.-Á.; CARRILLO, J. 2018: Prodidomus cfr rufus Hentz, 1847 (Araneae: Prodidomidae), una especie "enigmática". – Revista Ibérica de Aracnología 32: 123–126.

HADJISSARANTOS, H. 1940: Les araignées de l'Attique. Athens, 132 pp.

HENTZ, N. M. 1847: Descriptions and figures of the araneides of the United States. – Boston Journal of Natural History 5: 443–479, pl. 23–24, 30–31.

HENTZ, N. M. 1867: Supplement to the descriptions and figures of the araneides of the United States by Nicholas Marcellus Hentz (edited by S. H. SCUDDER, after death of HENTZ). – Proceedings of the Boston Society of Natural History 11: 103–111.

HU, Y. J.; WANG, J. F. 1981: [Notes on the spider family Prodidomidae (Araneae) new to China]. – Journal of Hunan Normal University (nat. Sci.) 1981(2): 51–52.

KAMURA, T. 2009: Trochanteriidae, Gnaphosidae, Prodidomidae, Corinnidae. In: ONO, H. (ed.) The spiders of Japan with keys to the families and genera and illustrations of the species. Tokai University Press, Kanagawa, pp. 482–500, 551–557.

KISHIDA, K. 1914: Japanese spiders (12). – Kagaku-sekai 8(4): 320–324.

KISHIDA, K. 1959: Aranea. In: Okada, Y. (ed.) An annoted [sic] list of animals of Okinawa Islands. Society for Biological Education in Okinawa, Naha, pp. 367–375.

PÉREZ P., J. A.; BLASCO, A. 1986: Nota sobre los Prodidominae (Araneae: Gnaphosidae) de la Península Ibérica. – Mémoires de la Société Royal Belge d'Entomologie 33: 155–164.

PICKARD-CAMBRIDGE, O. 1873: On the spiders of St Helena. – Proceedings of the Zoological Society of London 41(2): 210–227, pl. 24.

PLATNICK, N. I. 1976: On Asian Prodidomus (Araneae, Gnaphosidae). – Acta Arachnologica 27(1): 37–42.

PLATNICK, N. I.; BAEHR, B. 2006: A revision of the Australasian ground spiders of the family Prodidomidae (Araneae, Gnaphosoidea). – Bulletin of the American Museum of Natural History 298: 1–287.

PLATNICK, N. I.; PENNEY, D. 2004: A revision of the widespread spider genus Zimiris (Araneae, Prodidomidae). – American Museum Novitates 3450: 1–12.

PURCELL, W. F. 1904: Descriptions of new genera and species of South African spiders. –Transactions of the South African Philosophical Society 15: 115–173, pl. 10–11.

RODRIGUES, B. V. B.; RHEIMS, C. A. 2020: Phylogenetic analysis of the subfamily Prodidominae (Arachnida: Araneae: Gnaphosidae). – Zoological Journal of the Linnean Society 190(2): 654–708.

SIMON, E. 1882: Étude sur les arachnides de l'Yemen méridional. In: Viaggio ad Assab nel Mar Rosso, dei signori G. Doria ed O. Beccari con il R. Aviso "Esploratore" dal 16 Novembre 1879 al 26 Febbraio 1880. – Annali del Museo Civico di Storia Naturale di Genova 18: 207–260, pl. 8.

SIMON, E. 1884: Descriptions de quelques arachnides des genres Miltia E. S. et Zimiris E. S. – Annales de la Société Entomologique de Belgique 28(C.R.): 139–142.

SIMON, E. 1893: Histoire naturelle des araignées. Deuxième édition, tome premier. Roret, Paris, pp. 257–488.

SONG, D. X. 1987: Spiders from agricultural regions of China (Arachnida: Araneae). Agriculture Publishing House, Beijing, 376 pp.

SONG, D. X.; ZHU, M. S.; CHEN, J. 1999: The spiders of China. Hebei Science and Technology Publishing House, Shijiazhuang, 640 pp.

World Spider Catalog 2023: World Spider Catalog, version 24.5. Natural History Museum Bern, online at: http://wsc.nmbe.ch

YIN, C. M.; PENG, X. J.; YAN, H. M.; BAO, Y. H.; XU, X.; TANG, G.; ZHOU, Q. S.; LIU, P. 2012: Fauna Hunan: Araneae in Hunan, China. Hunan Science and Technology Press, Changsha, 1590 pp.

ZHANG, Z. S.; WANG, L. Y. 2017: Chinese spiders illustrated. Chongqing University Press, 954 pp.

ZONSTEIN, S. L.; MARUSIK, Y. M.; OMELKO, M. M. 2015: A survey of spider taxa new to Israel (Arachnida: Araneae). – Zoology in the Middle East 61(4): 372–385.

Natura Somogyiensis 41: 93-96. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.93
Submitted: 03.10, 2022; Accepted: 26.11, 2023; Published: 01.12, 2023 www.smmi.hu/termtud/ns/ns.htm

Preliminary list of horse flies (Diptera: Tabanidae) of Lake Kolon Nature Reserve

Sándor Farkas[1] & Máté Zsolt Otártics

[1]Department of Nature Conservation Biology, Institute for Wildlife Management and Nature Conservation, Hungarian University of Agriculture and Life Sciences, Gödöllő, Hungary,
email: farkas.sandor@uni-mate.hu

Farkas, S. & Otártics, M. Zs.: *Preliminary list of horse flies (Diptera: Tabanidae) of Lake Kolon nature reserve.*
Abstract: The first faunistic data of the horse fly (Diptera: Tabanidea) from the Lake Kolon Nature Reserve (Hungary, Kiskunság National Park) are published in this paper. The samples were collected in the summer of 2020, with H-traps, on a pasture of El Bronco Ranch, near Soltszentimre. A total of 1,038 horse flies belonging to 11 species were collected. Eudominant elements were *Haematopota pluvialis, Tabanus maculicornis, Hybomitra ciureai, Chrysops viduatus* and *H. muehfeldi*, while *Tabanus autumnalis* and *T. bovinus* proved to be subrecent.

Keywords: Diptera, horse fly, Tabanidae, H-trap, Tabanus, Haematopota, Great Hungarian Plain, Lake Kolon

Introduction

Lake Kolon Nature Reserve is one of the core areas of the Kiskunság National Park, which is located in the Great Hungarian Plain, between the Danube and Tisza. The swampy, shallow lake and the surrounding habitats are extremely rich in wildlife. Several zoological research projects were carried out in the area (Mahunka 1986, 1987), but they did not cover the horse flies (Tabanidae). In 2020, as part of a doctoral program, we carried out collections for three days near Lake Kolon with H-traps, the faunal results of which are reported in this study.

Material and methods

Samplings took place in one of the horse pastures owned by the El Bronco Ranch, which extended westward from the lake and one km eastward from Soltszentimre village (Fig. 1.). The coordinates of the pasture's centre: N: 46°45'40.31"; E: 19°18'58.37". The 14 traps were placed along two lines parallel to each other. The collections took place on three consecutive days in the summer of 2020, between July 31 and August 2. The traps were emptied every day between 9:00 and 18:00, every 3 hours, a total of 4 times. The collected material was pinned on the spot. A special version of the canopy traps, the so-

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

Fig. 1: Location of the sampling area

Fig. 2: H-traps during operation

called H-trap was used for the collection (Fig. 2.). These traps are already widely used on farms dealing with horses because they are particularly suitable for the collection and reduction of horse flies. The keys of Majer (1987) and Chvála et al. (1972) were used for the species identification. We analyzed the community structure according to Tischler (1949) and Sharova (1981): eudominants (with a degree of dominance over 10%), dominants (5 to 10%), subdominants (2 to 5%), recedents (1 to 2%), subrecedents (< 1%).

Results and discussion

During the collections, individuals of 11 horse fly species were found. The list of species, the number and proportion of collected species is given in Table 1.

Table 1: List of species, the number of collected individuals (n) and proportion (%)

		n	%
1.	*Chrysops viduatus* (Fabricius, 1794)	109	10.5
2.	*Haematopota pluvialis* (Linnaeus, 1758)	190	18.3
3.	*Haematopota subcylindrica* Pandellé, 1883	87	8.4
4.	*Hybomitra bimaculata* (Macquart, 1826)	40	3.9
5.	*Hybomitra ciureai* (Séguy, 1937)	179	17.2
6.	*Hybomitra muehlfeldi* (Brauer, 1880)	108	10.4
7.	*Tabanus autumnalis* Linnaeus, 1761	7	0.7
8.	*Tabanus bovinus* Linnaeus, 1758	4	0.4
9.	*Tabanus bromius* Linnaeus, 1758	102	9.8
10.	*Tabanus maculicornis* Zetterstedt, 1842	185	17.8
11.	*Tabanus sudeticus* Zeller, 1842	27	2.6

Regarding the community structure, five species belonged to the eudominant category (*H. pluvialis, T. maculicornis, Hy. ciureai, C. viduatus* and *Hy. muehfeldi*). The dominant ratio was achieved by two species (*T. bromius, H. subcylindrica*), while the subdominant and subrecedent categories also included two species each (*Hy. bimaculatus, T. sudeticus and T. autumnalis, T. bovinus*).

H. pluvialis is common in Hungary, sometimes in large numbers. It likes the wet and swampy areas. It attacks both humans and various mammals. Its Hungarian name comes from the fact that the time before a storm becomes very violent. It plays a role in the spread of several animal diseases (Majer 1987). *T. bromius* occurs everywhere in Europe and is also extremely common in Hungary. Epidemiologically dangerous, it is also responsible for the spread of many diseases. *T. maculicornis* is a Palearctic species, not rare in Hungary either. Common in swampy areas, swamps along lakes, and in areas with wet soil. It attacks wild and domesticated animals as well as humans. The Palearctic *H. ciureai* can be found in all countries of Europe and also lives in Asia. It is common in Hungary. It also spreads anthrax. *C. viduatus* occurs in almost all European countries and is common in Hungary. It also flies in drier areas. Females attack mammals and humans. *T. muehlfeldi* is also a Palearctic faunal element, it does not live in southern Europe, but it occurs widely in Eurasia. In Hungary, it is also frequent in wet areas.

In addition to those species listed here, it is obvious that several other species of horse flies should also occur in this area. Therefore, collections must be made in other habitats and at other times, such as early summer and autumn.

Acknowledgements

We would like to express our gratitude to the management of El Bronco Ranch, especially István Kurcsics, for providing us with accommodation and food during the research. Thanks also go to the technical staff at the Ranch for the many different kinds of help they have given us. We thank Vilmos Altbäcker for facilitating the implementation of the research with his ideas.

References

CHVÁLA, M., LYNEBORG, L., MOUCHA, J. 1972: The Horse flies of Europe (Diptera, Tabanidae). – Entomological Society of Copenhagen, E. W. Classey Ltd., Hampton pp. 1-499. https://doi.org/10.1163/9789004611917

MAHUNKA S. (ed.)1986: The Fauna of the Kiskunság National Park I. – In: Natural History of the National Parks of Hungary. – Akadémiai Kiadó, Budapest, pp. 491.

MAHUNKA S. (ed.) 1987: The Fauna of the Kiskunság National Park II. – In: Natural History of the National Parks of Hungary. – Akadémiai Kiadó, Budapest, pp. 479.

MAJER, J. 1987: Bögölyök – Tabanidae. - Fauna Hungariae 14(9): 1-57.

SHAROVA, I. 1981: Zhiznenye formyj zhuzhelits (Life forms of Carabids). – Nauka (Science), Moscow, 360 pp. (in Russian).

TISCHLER, W. 1949: Grundzüge der terrestrischen Tierökologie. – Friedrich Vieweg und Sohn, Braunschweig, 219 pp. https://doi.org/10.1007/978-3-663-02549-8

Natura Somogyiensis 41: 97-100. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.97
Submitted: 16.11, 2022; Accepted: 28.11, 2023; Published: 01.12, 2023 www.smmi.hu/termtud/ns/ns.htm

Infurcitinea ignicomella (Heydenreich, 1851) faunára új ruhamolyféle a Kőszegi-hegységben (Lepidoptera, Tineidae)

Szeőke Kálmán

H-8000. Székesfehérvár, Táncsics Mihály u. 4. 1/8.
email: szeokek@gmail.com

Szeőke, K.: *Infurcitinea ignicomella (Heydenreich, 1851) a new tineid moth in the Hungarian fauna from Kőszeg Mountains (Lepidoptera, Tineidae).*
Abstract: *Infurcitinea ignicomella* (Heydenreich, 1851) was collected in the Kőszegi Mountains on June 25, 2001, using lighting (160 W, HmLi). The tineid moth was found for the first time in Hungary.

Keywords: Lepidoptera, Tineidae, Kőszegi Mts, Hungary

Bevezetés

A ruhamolyfélék (Tineidae) családjába tartozó, Meessiinae alcsaládjából Magyarországon eddig négy *Infurcitinea* faj volt ismert. Ezek az *I. roesslerella* (Heyden, 1865), *I. albicomella* (Stainton, 1851), *I. finalis* Gozmány, 1959, *I. argentimaculella* (Stainton, 1849) fajok (Pastorális et al. 2016). Ezek az apró termetű 10-12 mm szárnyfesztávolságú ruhamolyfélék különböző fák, vagy sziklák oldalán fejlődő zuzmókon élnek. Magyarországon a leggyakoribb *Infurcitinea* faj a száraz élőhelyekhez kötött, tölgyfajok (*Quercus* spp.) zuzmóin élő *Infurcitinea albicomella* (Gozmány, 1965). Az *Infurcitinea ignicomella* (Heydenreich, 1851) Gozmány (1965) szerint még nem került elő Magyarországról. A magyarországi lepkefajok legutóbbi fajjegyzékében (Pastorális et al. 2016) sem szerepel.

Anyag és módszer

2001. június 25-én, a Kőszegi-hegységben, Kendig elnevezésű erdőrészén éjszakai lámpázást 160 W-os, HmLi égő fényénél, fehér lepedős módszerrel végeztem.

A Kendig 600-700 m magasan fekvő erdős terület, főként idős luc- és jegenyefenyőből álló erdőrész.

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

Eredmények és diszkusszió

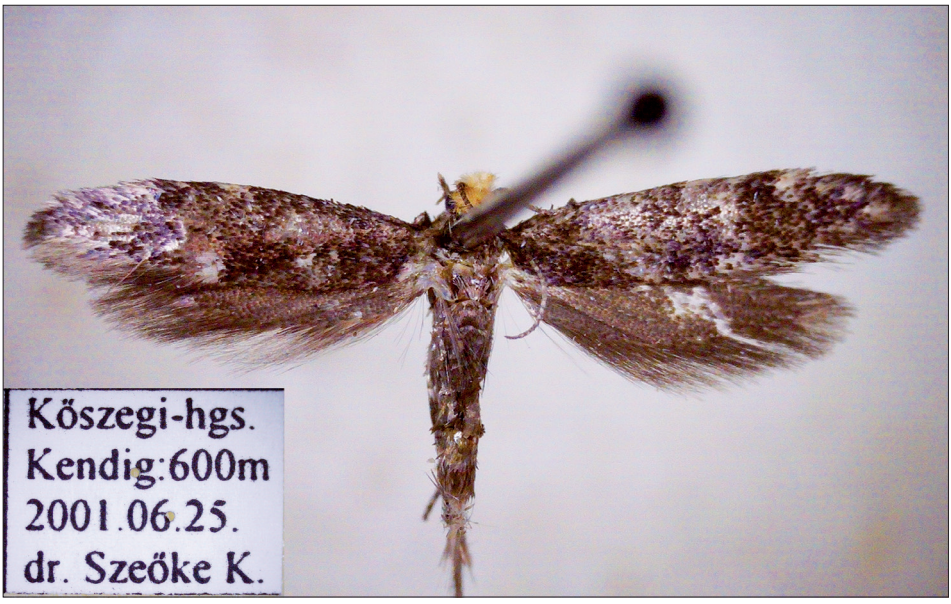
A Kőszegi-hegységből, a Kendig elnevezésű erdőrészén 2001. június 25-én, éjszakai lámpázás alkalmával előkerült *Infurcitinea ignicomella* (Heydenreich, 1851), amely Magyarország faunájára új fajnak bizonyult. Az *Infurcitinea ignicomella* magyar nevének javaslom a „tüzesfejű zuzmómoly" elnevezést.

A faj pontos leírását Gozmány & Szőcs (1965) faunafüzetében olvashatjuk. A leírás szerint „*az elülső szárnya ibolyásan csillogó, sötét szürkésbarna, mintázata világos, de igen elmosódott és foltszerű. Hátulsó szárnya szürke. Feje rozsdasárga, fesztávolsága 11-13 mm*". Ez a leírás jól egybevág Parenti (2000), Gaedike (2015) és Lastuvka et al. (2018) határozókönyvében leírtakkal és színes fotómellékleteivel. A Kőszegi-hegységben gyűjtött példány képét és lelőhelycéduláját mellékelem (1. ábra).

Az *Infurcitinea ignicomella* hernyói fák törzsén (Hannemann 1977, Parenti 2000) de leginkább fenyőfélék törzsén fejlődő zuzmókon élnek (Gozmány & Szőcs 1965). Gaedike (2015) szerint a tápnövényét nem ismerjük. A faj európai előfordulási helyei gyakran 1000 m magasságú fenyvesekben vannak.

A faj Európa nagy részén előfordul (Karsholt & Razowski 1996). Lastuvka et al. (2018) szerint Közép-Európában csak Magyarországon, Szlovéniában és Horvátországban nem található.

A lepkemonitorozás melléktermékeként poloska (felvételezést és gyűjtést is végeztem a Kőszegi-hegységben. A gyűjtött anyag alapján, Kondorosy Előd heteropterológussal két faunára új mezeipoloska-félét (*Orthotylus bilineatus, Cremnocephalus alpestris*) közöltünk a Kőszegi-hegységből, 2004-ben (Kondorosy & Szeőke 2004).



1. ábra: Az *Infurcitinea ignicomella* (Heydenreich, 1851) Tineidae a magyar faunában új faj

Köszönetnyilvánítás

Köszönettel tartozok Avar Kálmán Vas vármegyei rovarász kolégámnak, aki a Kőszegi-hegység Kendig erdőrészére elvezetett, és felhívta a figyelmemet a terület különlegességére.

Irodalom

Gaedike, R. 2015: Tineidae I. (Dryadaulinae, Hapsiferinae, Euplocaminae, Scardiinae, Nemapogoninae and Meessiinae). – Brill, Leiden/Boston pp. 308.

Gozmány, L. & Szőcs, J. 1965: Microlepidoptera I. – Molylepkék I. Magyarország Állatvilága – Fauna Hungariae (6)2: 214.

Hannemann, H.-J. 1977: Federmotten (Pterophoridae) Gespinstmotten (Yponomeutidae) Echte Motten (Tineidae) – Die Tierwelt Deutschlands 63: 273.

Heydenreich, G. H. 1851: Lepidopterorum europaeorum Catalogus methodicus. – Systematisches Vercheiniss der europischen Schmetterlinge. Ditte Ausgabe, Leipzig pp. 1-31.

Karsholt, O. & Razowski, J. 1996: The Lepidoptera of Europe. – Distributional Checklist. Apolló Books pp. 380.

Kondorosy, E. & Szeőke, K. 2004: A magyar faunára új mezeipoloska-félék (Heteroptera, Miridae) a Kőszegi-hegységből. – Folia entomologica hungarica, 65: 242-244.

Lastuvka, A., Lastuvka, Z. & Sumpich, J. 2018: Drobni Motyli I. – Akademia Pracha, pp. 532.

Parenti, U. 2000: A Guide to the Microlepidotera of Europe. – Museo Regionaledi Scienze Naturali. Torino, pp. 426.

Natura Somogyiensis 41: 101-120. Kaposvár, 2023 DOI:10.24394/NatSom.2023.41.101

Submitted: 16.11, 2022; Accepted: 26.11, 2023; Published: 01.12, 2023 www.smmi.hu/termtud/ns/ns.htm

New sawfly (Hymenoptera: Symphyta) data from southern Slovakia

Attila Balázs[1] & Attila Haris[2]

[1]Department of Zoology, Fisheries, Hydrobiology and Apiculture, Mendel University in Brno, CZ-613 00 Brno, Zemědělská 1, Czech Republic, e-mail: balazsaeko@gmail.com

[2]H-1076 Budapest, Garay street 19 2/20, Hungary, e-mail: attilaharis@yahoo.com

Balázs, A. & Haris, A.: *New sawfly (Hymenoptera: Symphyta) data from southern Slovakia.*

Abstract: 75 species of sawflies are reported from Cerová vrchovina Upland (South Slovakia). *Dolerus* (*Poodolerus*) *nigrominutus* Haris, 1998, *Claremontia puncticeps* (Konow, 1886), *Profenusa thomsoni* (Konow, 1886) and *Amauronematus puniceus* (Christ, 1791) are new records for the Slovak fauna. Other biogeographically interesting species are the following: *Pamphilius jucundus* (Eversmann, 1847), *Aprosthema maculatum* (Jurine, 1807), *Dolerus harwoodi* Benson, 1947, *Periclista lenta* Konow, 1903, *Pristiphora bohemica* Macek, 2012 and *Pristiphora fausta* (Hartig, 1837).

Keywords: insects, faunistics, the Carpathians, steppes, oak forests

Introduction

Hereby presented paper is the third paper of a series dealing with the sawfly fauna of Cerová vrchovina Upland (Balázs & Haris 2019, 2020). In the studied area, ongoing research on the entomofauna is consistently carried out during the last several years. However, the research on the sawfly fauna began already in the 19th century. Emil Malesevics, an enthusiastic pedagogue, led the department of natural sciences of the former Hungarian Royal State Main High School in Losoncz (= Lučenec) from 1876. In his paper 'Losoncz faunája' (= the fauna of Lučenec) he documented the presence of the following species: *Cimbex variabilis* Klug, 1820 [= *Cimbex femoratus* (L., 1758)], *Hylotoma rosarum* Klug, 1814 [= *Arge ochropus* (Gmelin, 1790)], *Cladius difformis* Panzer, 1799 [= *Cladius pectinicornis* (Geoffroy, 1785)], *Nematus salicis* L., 1758 [*Euura salicis* (L., 1758)], *N. vesicator* Bremi, 1849 [= *Euura vesicator* (Bremi, 1849)], *N. viminalis* L., 1758 [= *Euura viminalis* (L., 1758)], *Dolerus gonager* (F., 1781), *D. fissus* Hartig, 1837 [= *Dolerus nigratus* (Müller, 1776)], *Emphytus tibialis* Panzer, 1799 [= *Apethymus serotinus* (O. F. Müller, 1776)], *E. pumilus* Klug. [= *Metallus pumilus* (Klug, 1816)], *Emphytus betulae* Zaddach, 1859 [= *Scolioneura betuleti* (Klug, 1816)], *Dineura alni* L., 1767 [= *Hemichroa australis* (Serville, 1823)], *D. rufa* Panzer, 1799 [= *Hemichroa crocea* (Geoffroy, 1785)], *D. opaca* F., 1775 [= *Mesoneura opaca* (F., 1775)] *Selandria melanocephala* F., 1798 [= *Periclista albida* (Klug, 1816)], *S. ovata* L. [= *Eriocampa ovata* (Linnaeus, 1761)], *S. serva* (F. 1793), *Athalia rosae* L., *Allanthus nothus* Klug, 1814 [= *Tenthredo notha* (Klug, 1814)], *Macrophya blanda* (F., 1775), *M. albicincta* (Schrank, 1776), *Tenthredo agilis* Klug, 1817 [= *Ametastegia glabrata*

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)

(Fallén, 1808)], *T. fagi* Panzer, 1798, *T. livida* L., 1758, *T. coryli* Panzer, 1799 [= *Tenthredo solitaria* Scopoli, 1763], *T. bicincta* L. 1763 [= *Tenthredo temula* Scopoli, 1763], *T. instabilis* Klug, 1817 [= *Tenthredopsis nassata* (L., 1767)], *T. ribis* Schrank, 1781 [= *Macrophya ribis* (Schrank, 1781)], *Lida pyri* Schrank, 1802 [= *Neurotoma saltuum* (Linnaeus, 1758)], *L. sylvatica* L., 1758 [= *Pamphilius sylvaticus* (L., 1758)], *Cephus pygmaeus* L. [= *Cephus pygmeus* (L., 1767)] and finally, *Sirex gigas* L. [= *Urocerus gigas* L., 1758)] (MALESEVICS 1892). Many more species were published by ROLLER & HARIS (2008) from the territory of Cerová vrchovina Upland. However, the fauna of sawflies of the studied area is still poorly known given the high species richness present in Slovakia and the well-preserved sites of Cerová vrchovina Upland. Altogether, 152 species of Symphyta is recently confirmed from the Cerová vrchovina Upland until now.

Material and methods

The studied localities are situated in the Cerová vrchovina Protected Landscape Area, located in the south of Central Slovakia. The sites belong the phytogeographical region called Pannonicum. They are composed by unique steppe-like biotopes with sub-mediterranean floral elements. The studied area is mostly covered by Miocene sandstones, while the typical soil type are brown soils (TIMÁR 2010). The climate of the region is moderately continental, characterized by a mean annual temperature ranging from 8,4 °C to 9 °C, and a mean annual precipitation of 640 mm (HORVÁTH & GAÁLOVÁ, 2010). The typical plants occurring in the localities are species such as *Alopecurus pratensis*, *Brachypodium pinnatum*, *Bothriochloa ischaemum*, *Bromus erectus*, *Calamagrostic epigeios*, *Chrysopogon gryllus*, *Festuca pratensis*, *Poa pratensis* and many more. The habitats host several shrub species such as *Crataegus monogyna*, *Prunus spinosa*, *Pyrus pyraster*, *Rosa canina* and *Juniperus communis* (CSIKY et al. 2010). These open biotopes are connected predominantly to thermophilous *Quercus-Carpinus betulus* forests. The studied sites, belonging to the sub-pannonic steppic grasslands biotopes, are included in the Habitats Directive of the Natura 2000 system as priority habitats. The habitats are threatened by overgrowing, overgrazing, invasive plants and by the abandonment of traditional agricultural practices. Furthermore, the locality Hajnáčka (Kerek-dombon) was situated in a managed basiphilous and thermophilous oak forest. The plantation of the commercial forest in Hajnáčka locality is composed by *Quercus cerris*, *Q. petraea, Fagus sylvatica* and *Carpinus betulus*. The stand age of the forest is 95 years old. In 2020, the study site was clear-cutted on an area approximately 120 meters in length and 70 meters in width. The area of the created clearing adjoins the closed-canopy forest where the sampling on its edges and within the forest were conducted.

In Hajnáčka locality, the material was collected in 2021 via flight interception traps. Two of them were installed in the forest edge and one in the interior of the forest approximately 100 meters from the forest edge. The localities studied in 2023 were sampled via Malaise traps combined with plastic pans (measuring 12.5 cm x 15 cm) containing mono propylen glycol) located at the bottom of Malaise traps. The material collected by traps were completed via sweeping by the first author and Jan Bezděk (Mendel University in Brno). The material was conserved in 80% alcohol. The collected sawflies are maintained at the first author's personal collection, some rare species was deposited in Rippl-Rónai Museum, Kaposvár.

For identification, Zhelochovtsev's work on the sawflies of the European part of the former USSR (Zhelochovtsev 1988), the handbook of Lacourt on the identification of the European sawflies (Lacourt 2020) and Macek et al. (2020) work titled "Blanokřídlí České a Slovenské republiky II. Širopasí" were used.

We also consulted recent revisions (Gyurkovics & Haris 2014, Haris 2006, Liston et al. 2022, Macek 2012) to confirm the identifications of particular taxa. The general distribution of species are reported according to Roller & Haris (2008), Taeger et al. (2006) and Macek et al. (2020). The nomenclature follows the latest monograph of European sawflies (Lacourt 2020) with special concern for the subfamily Nematinae to address the conclusions of Prous et al. (2014). The higher classification of Symphyta, applied in this work, follows the Hymenoptera part of Fauna Europaea (Achterberg 2013). Host plant records are given according to Macek et al. (2020).

List of localities

1. Drňa, Bálint-puszta, 48.2566231N, 20.1124081E, 213 m a. s. l., hill densely overgrown by a wide variety of scrubs and trees.

2. Drňa, Bálint-puszta, 48.2598194N, 20.1210447E, 218 m a. s. l. steep hill covered by various species of Poaceae and Juniperus communis (Fig. 1).

3. Drňa, Bálint-puszta, 48.2636014N, 20.1216992E, 195 m a. s. l., intensively grazed pastures by cattle.

4. Gemerské Dechtáre, Nagymál-oldal, 48.2372219N, 20.0498697E, 232 m a. s. l., smaller pastures adjacent to forests.

5. Gemerské Dechtáre, Nagymál-oldal, 48.2422453N, 20.0160094E, 237 m a. s. l., a hill of steppic grassland regularly mowed by tractor.

6. Gemerské Dechtáre, Nagymál-oldal, 48.2437314N, 20.0140783E, 232 m a. s. l., xerothermic steppes with sand exposures and growths of Junniperus communis (Fig. 2).

7. Gemerský Jablonec, Vadókás, 48.1990936N, 19.9937256E, 244 m a. s. l., sand exposures and walls with patchy but diverse vegetation.

8. Hajnáčka, Kerek-dombon, 48.2284492N, 19.9941442E, 310 m a. s. l., forest edge of thermophilous and basiphious oak forest.

9. Hajnáčka, Kerek-dombon, 48.2286306N, 19.9947342E, 309 m a. s. l., forest edge of thermophilous and basiphious oak forest.

10. Hajnáčka, Kerek-dombon, 48.2292589N, 19.9948119E, 311 m a. s. l., interior of the managed thermophilous and basiphilous oak forest.

11. Hodejovec, at agricultural cooperative, 48.2777161N, 20.0127533E, 216 m a. s. l., a smaller patch of ruderal vegetation near the former unified agricultural cooperative, regularly mowed in the end of growing season (Fig. 3).

12. Hodejovec, Mihály-puszta, 48.2758908N, 19.9736214E, 264 m a. s. l., a pasture grazed by cattle, mowed in the end of the growing season (Fig. 4).

13. Hodejovec, Mihály-puszta, 48.2775661N, 19.9811408E, 230 m a. s. l., a pastureland intensively grazed by cattle.

14. Hostice, 48.2390514N, 20.0793311E, 222 m a. s. l., a pastureland intensively grazed by cattle (Fig. 5).

15. Hostice, 48.2422381N, 20.0808008E, 229 m a. s. l., overgrown pastureland.

16. Jesenské, Barta-puszta, 48.2892036N, 20.0614783E, 260 m a. s. l., relatively well-preserved orchard.

17. Jesenské, Barta-puszta, 48.2918875N, 20.0643967E, 212 m a. s. l., a pasture grazed by sheep (Fig. 6).

18. Jestice, Nagy-somos, 48.2131775N, 20.0447950E, 241 m a. s. l., valuable site of sub-pannonic steppic grasslands (Fig. 7).

19. Jestice, Nagy-somos, 48.2167939N, 20.0364172E, 251 m a. s. l., a hill side densely overgrown predominantly by Rosa sp. and Prunus spinosa.

Fig. 1: Drňa, Bálint-puszta. A mosaic of semi-natural dry grasslands with formations of *Juniperus communis*. Photo: A. Balázs

Fig. 2: Gemerské Dechtáre, Nagymál-oldal, xerothermic steppes with sand exposures and growths of *Juniperus communis*. Photo: V. Rízová.

Results

List of species

Pamphiliidae

Pamphilius jucundus (Eversmann, 1847): Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 1 male; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023,1 male. Rare. Hostplant unknown.

Argidae

Aprosthema maculatum (Jurine, 1807): Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 28. 04.–12. 05. 2023, 1 female. Sporadic, host plant unknown.

Arge pagana (Panzer, 1797): Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 08-22. 05. 2021, 1 male. Frequent. Hostplants: *Rosa* spp.

Arge rustica (Linné, 1758): Hajnáčka, Kerek-dombon, 311 m, 48.2292589N, 19.9948119E, 22. 08-22. 05. 2021, 1 male. Sporadic. Hostplant: *Quercus* spp.

Sterictiphora angelicae (Panzer, 1799): Gemerský Jablonec, Vadókás, 244 m, 48.1990936N, 19.9937256E, 16.06. 2023, Bezdek J. lgt., 1 female. Frequent species. Larva on *Prunus*.

Sterictiphora geminata (Gmelin, 1790): Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 28. 04.–12. 05. 2023, 1 female; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 1 female; Jestice, Nagy-somos, 251 m, 8.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 3 males. Larva on *Rosa* spp. and *Sorbus aucuparia*. Sporadic.

Sterictiphora longicornis Chevin, 1982: Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female; Hajnáčka, Kerek-dombon, 311 m, 48.2292589N, 19.9948119E, 22. 08-22. 05. 2021, 1 female. Sporadic. Larva on *Carpinus betulus*.

Diprionidae

Monoctenus juniperi (Linné, 1758): Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023, 1 male; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female. Sporadic. Larva on *Juniperus communis*.

Tenthredinidae

Dolerinae

Dolerus (*Poodolerus*) *asper* Zaddach, 1859: Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 3 males. Sporadic. Hostplants: Graminae and Cyperaceae.

Dolerus (*Poodolerus*) *gonager* (Fabricius, 1781): Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 2 females, 17 males; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 3 females; Hodejovec, Mihály-puszta, 230 m, 48.2775661ºN, 19.9811408ºE, 13. 04.–28. 04. 2023, 1 female; Gemerské Dechtáre, Nagymál-oldal, 1, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 2 males. Common. Larva on Graminae.

Dolerus (*Poodolerus*) *harwoodi* Benson, 1947: Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 1 female, 2 males; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 2 males. Rare. Hostplant unknown.

Fig. 3: Hodejovec, at agricultural cooperative. Photo: V. Rízová.

Fig. 4: Hodejovec, Mihály-puszta. Photo: V. Rízová.

Dolerus (*Poodolerus*) *nigratus* (O.F. Müller, 1776): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 9 males; Jesenské, Barta-puszta, 260 m, control, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 2 females, 9 males; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 28. 04.–12. 05. 2023, 1 male; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 28. 04.–12. 05. 2023, 1 female; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 13 males; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023, 1 female, 1 male; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 13. 04.–28. 04. 2023, 1 female, 1 male; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 13. 04.–28. 04. 2023, 1 female; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 1 male; Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 13. 04.–28. 04. 2023, 1 female, 1 male; Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 28. 04.–12. 05. 2023, 1 female; Hodejovec, Mihály-puszta, 1, 264 m, 48.2758908ºN, 19.9736214ºE, 13. 04.–28. 04. 2023, 1 female. Common. Larva on Gramineae including cereals.

Dolerus (*Poodolerus*) *nigrominutus* Haris, 1998 (not D. coruscans Knw.): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219N, 20.0498697E, 13. 04.–28. 04. 2023, 1 female, 2 males. Sporadic. Hostplant unknown.

Dolerus (*Poodolerus*) *picipes* (Klug, 1818): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 3 females, 17 males; Gemerské Dechtáre, Nagymál-oldal, 237 m, 48.2422453ºN, 20.0160094ºE, 13. 04.–28. 04. 2023, 3 males; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 28. 04.–12. 05. 2023, 1 female; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 13. 04.–28. 04. 2023, 5 females, 1 male; Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 13. 04.–28. 04. 2023, 3 females, 9 males; Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 28. 04.–12. 05. 2023, 1 female, 3 males; Hodejovec, Mihály-puszta, 230 m, 48.2775661ºN, 19.9811408ºE,13. 04.–28. 04. 2023, 1 male; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 13. 04.–28. 04. 2023, 1 male; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 28. 04.–12. 05. 2023, 1 male; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 1 female, 2 males; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 1 female, 1 male; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 28. 04.–12. 05. 2023, 1 female, 1 male; Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 13. 04.–28. 04. 2023, 2 females; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 1 male; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 13. 04.–28. 04. 2023, 1 female. Fre#quent. Larva on Graminae.

Dolerus (*Poodolerus*) *puncticollis* Thomson, 1871: Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023, 1 female; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 28. 04.–12. 05. 2023, 1 female; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 2 males; Hodejovec, Mihály-puszta, 264 m, 48.2758908ºN, 19.9736214ºE, 28. 04.–12. 05. 2023, 1 female; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 1 female, 2 males; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 13. 04.–28. 04. 2023, 1 female; Jesenské, Barta-puszta, 260 m, control, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 2 males; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 1 female; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 13. 04.–28. 04. 2023, 1 male. Common. Larva on Graminae including cereals.

Selandrinae

Aneugmenus coronatus (Klug, 1818): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 05-27. 06. 2021, 1 female. Sporadic. Larva on *Dryopteris filix-mas*, *Aspidium* sp., *Athyrium filix-femina* and *Pteridium aquilinum*.

Birka (*Birka*) *annulitarsis* (Thomson, 1870): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female. Sporadic. Larva on *Pulmonaria angustifolia*.

Allantinae

Allantus (*Emphytus*) *cingulatus* (Scopoli, 1763): Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 2 males; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 1 male. Frequent. Host plants: *Rosa* and *Fragaria* spp.

Allantus (*Emphytus*) *cinctus* (Linné, 1758): Gemerské Dechtáre, Nagymál-oldal, 237 m, 48.2422453ºN, 20.0160094ºE, 28. 04.–12. 05. 2023, 2 females, 1 male; Gemerské Dechtáre, Nagymál-oldal, 237 m, 48.2422453ºN, 20.0160094ºE, 12. 05.–28. 05. 2023, 1 female; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 28. 04.–12. 05. 2023, 6 males; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 28. 04.–12. 05. 2023, 6 males; Hostice, pasture, 222 m, 48.2390514ºN, 20.0793311ºE, 28. 04.–12. 05. 2023, 2 males; Hostice, 222 m, 48.2390514ºN, 20.0793311ºE, 13. 04.–28. 04. 2023, 1 male; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 28. 04.–12. 05. 2023, 5 males; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 13. 04.–28. 04. 2023, 1 male; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 39 males;Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 28. 04.–12. 05. 2023, 1 male; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 28. 04.–12. 05. 2023, 7 males; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 28. 04.–12. 05. 2023, 4 males; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 13. 04.–28. 04. 2023,1male; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023, 2 females, 8 males; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 28. 04.–12. 05. 2023, 3 males, 1 female; Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 28. 04.–12. 05. 2023, 1 female, 1 male; Hodejovec, Mihály-puszta, 230 m, 48.2775661ºN, 19.9811408ºE, 13. 04.–28. 04. 2023, 1 male; Hodejovec, Mihály-puszta, 264 m, 48.2758908ºN, 19.9736214ºE, 28. 04.–12. 05. 2023, 1 male; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 male. Frequent. Host plants: *Rosa* and *Fragaria* spp.

Allantus (*Emphytus*) *rufocinctus* (Retzius, 1783): Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 2 males. Frequent. Larva on *Rosa* spp.

Ametastegia (*Protemphytus*) *tenera* (Fallén, 1808): Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 28. 04.–12. 05. 2023, 1 male; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 05-27. 06. 2021, 1 male. Frequent. Host plant: *Rumex* spp.

Athalia circularis ssp. *circularis* (Klug, 1815): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 05-27. 06. 2021, 1 male; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 22. 05. - 04. 06. 2021, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 22. 05. - 04. 06. 2021, 1 female, 1 male; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female, 1 male; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 09-31. 08. 2021, 1 male. Frequent. Larva on *Glechoma hederacea, Plantago, Melampyrum* and *Veronica* spp.

Fig. 5: Hostice, pastureland of a semi-natural dry grasslands grazed by cattle. Photo: V. Rízová.

Fig. 6: Jesenské, Barta-puszta, pasture with old orchards. Photo: V. Rízová.

Athalia cordata Serville, 1823: Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 28. 04.–12. 05. 2023,1 female; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 28. 04.–12. 05. 2023, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 22. 05. - 04. 06. 2021, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 male; Hajnáčka, Kerek-dombon, 311 m, 48.2292589N, 19.9948119E, 22. 08-22. 05. 2021, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 09-31. 08. 2021, 1 female. Common. Larva on *Misopates orontium, Antirrhinum majus, Ajuga reptans, Teucrium scorodonia* and *Plantago* spp.

Athalia liberta (Klug, 1815): Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 22. 05. - 04. 06. 2021, 1 female; Hajnáčka, Kerek-dombon, 311 m, 48.2292589N, 19.9948119E, 27. 06. - 09. 07. 2021, 1 female. Frequent. Feeding on Alliaria petiolata, Arabidopsis thaliana, Cardamine hirsuta and Sisymbrium officinale.

Athalia rosae (Linné, 1758): Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 08-22. 05. 2021, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 09-31. 08. 2021, 1 female. Common pest. Host plants: *Raphanus sativus, R. raphanistrum, Sinapis arvensis, Sisymbrium officinale, Armoracia rusticana, Barbarea sp., Brassica napus, B. juncea, B. rapa, B. oleracea, Tropaeolum majus, Sinapis arvensis, Alliara petiolata* and *Cardamine* spp.

Athalia rufoscutellata Mocsáry, 1879: Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 13. 04.–28. 04. 2023, 2 females; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 28. 04.–12. 05. 2023, 2 females; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 28. 04.–12. 05. 2023, 2 males. Sporadic. Host plant unknown.

Empria hungarica (Konow, 1895): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 1 male; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023,1 male; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 1 male; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 13. 04.–28. 04. 2023, 1 male. Sporadic. Host plant unknown.

Empria liturata (Gmelin, 1790): Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 28. 04.–12. 05. 2023, 7 males; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 2 females; Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 28. 04.–12. 05. 2023, 1 male; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 28. 04.–12. 05. 2023, 2 females,1 male; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 4 males,1 female; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 28. 04.–12. 05. 2023, 1 female; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 13. 04.–28. 04. 2023, 2 females; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 28. 04.–12. 05. 2023, 1 female; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 1 male, 2 females; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 13. 04.–28. 04. 2023, 2 females; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 28. 04.–12. 05. 2023, 1 female; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 5 males, 2 females; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 28. 04.–12. 05. 2023, 2 males,1 female; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 28. 04.–12. 05. 2023, 1 female; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 13. 04.–28. 04. 2023, 1 male; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 28. 04.–12. 05. 2023, 1 female; Hostice, 222 m, 48.2390514ºN,

Fig. 7: Jestice, Nagy-somos, a mosaic of semi-natural dry grasslands with formations of *Juniperus communis* and sub-pannonic steppic grasslands. Photo: V. Rízová.

20.0793311ºE, 28. 04.–12. 05. 2023, 1 female; Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 28. 04.–12. 05. 2023, 1 male; Hodejovec, Mihály-puszta, 264 m, 48.2758908ºN, 19.9736214ºE, 28. 04.–12. 05. 2023,1 male; estice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 13. 04.–28. 04. 2023, 1 female. Frequent. Host plants: *Fragaria* and *Geum* spp.

Empria sexpunctata (Serville, 1823): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 28. 04.–12. 05. 2023, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female, 2 males; Hajnáčka, Kerek-dombon, 311 m, 48.2292589N, 19.9948119E, 22. 08-22. 05. 2021, 1 male. Frequent. Larva on *Geum* spp.

Empria tridens (Konow, 1896): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female. Frequent. Host plants: *Geum* spp. and *Rubus idaeus*.

Monostegia abdominalis (Fabricius, 1798): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 22. 05. - 04. 06. 2021, 1 female. Frequent. Recorded on *Glaux maritima, Lysimachia numularia* and *L. vulgaris*.

Blennocampinae

Blennocampa phyllocolpa Viitasaari & Vikberg, 1985: Hajnáčka, Kerek-dombon, 311 m, 48.2292589N, 19.9948119E, 22. 08-22. 05. 2021, 1 male. Frequent. Larva rolls the leaves of *Rosa* spp.

Cladardis elongatula (Klug, 1817): Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 28. 04.–12. 05. 2023, 1 female; Hajnáčka, Kerek-dombon, 309 m,

48.2286306N, 19.9947342E, 05-27. 06. 2021, 1 male. Sporadic. Larva bores in shoots of *Rosa* spp.

Claremontia alternipes (Klug, 1816): Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 28. 04.–12. 05. 2023, 1 male; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 08-22. 05. 2021, 1 female. Sporadic. Host plant: *Rubus idaeus*.

Claremontia brevicornis (Brischke, 1883): Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 13. 04.–28. 04. 2023, 2 females; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 13. 04.–28. 04. 2023, 3 females; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 5 females; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 13. 04.–28. 04. 2023, 1 female; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 2 females; Gemerské Dechtáre, Nagymál-oldal, 237 m, 48.2422453ºN, 20.0160094ºE, 13. 04.–28. 04. 2023, 1 female; Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 28. 04.–12. 05. 2023, 1 female; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023, 1 female; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 1 male. Frequent. Host plants: *Fragaria* spp., *Sanguisorba* spp. and *Potentilla reptans*.

Claremontia puncticeps (Konow, 1886): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 1 female. New record for Slovakia. Host plant: *Sanguisorba officinalis*.

Claremontia waldheimii (Gimmerthal, 1847): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female. Frequent. Host plant: *Geum urbanum*.

Monardis plana (Klug, 1817): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 male. Rare. Host plants: roses (*Rosa* spp.) including cultivars; eggs are laid in buds; initially, larvae are feeding inside the buds than they pass through buds and feeding on freshly developed leaves and shoots.

Pareophora pruni (Linné, 1758): Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 28. 04.–12. 05. 2023, 1 female; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 2 males; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 28. 04.–12. 05. 2023, 1 male; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023, 3 males; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 1 female; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 13. 04.–28. 04. 2023, 5 males; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 28. 04.–12. 05. 2023, 2 males; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 28. 04.–12. 05. 2023, 1 female; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 28. 04.–12. 05. 2023, 2 females; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 3 males; Hodejovec, Mihály-puszta, 264 m, 48.2758908ºN, 19.9736214ºE, 13. 04.–28. 04. 2023, 1 male. Frequent. Larva on *Prunus spinosa*.

Periclista (*Periclista*) *albiventris* (Klug, 1816): Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 08-22. 05. 2021, 4 females; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 22. 05. - 04. 06. 2021, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 3 females, 1 male. Sporadic. Host plant unknown.

Periclista (*Periclista*) *lenta* Konow, 1903: Hodejovec, Mihály-puszta, 264 m, 48.2758908ºN, 19.9736214ºE, 13. 04.–28. 04. 2023, 1 female.

Heterarthrinae

Caliroa annulipes (Klug, 1816): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female. Rare in Slovakia. Food plants are various deciduous trees and shrubs, like *Betula, Salix, Quercus, Tilia, Rosa* and also *Vaccinium myrtillus*.

Profenusa thomsoni (Konow, 1886): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 09-31. 08. 2021, 1 female. Rare. New record for Slovakia. Larvae make mines in leaves of *Betula* spp.

Tenthredininae

Aglaostigma (*Astochus*) *aucupariae* (Klug, 1817): Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023.1 female; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023, 1 female. Common. Larva on *Galium mollugo* and *G. boreale*.

Macrophya (*Macrophya*) *albicincta* (Schrank, 1776): Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 13. 04.–28. 04. 2023, 1 female. Common. Host plants: *Sambucus ebulus, S. nigra, S. racemosa, Valeriana officinalis* and *Viburnum opalus*.

Macrophya (*Macrophya*) *alboannulata* Costa, 1859: Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 05-27. 06. 2021, 1 female; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 22. 05. - 04. 06. 2021, 1 female. Common. Host plants: *Sambucus ebulus, S. nigra, S. racemosa*.

Macrophya (*Macrophya*) *annulata* (Geoffroy, 1785): Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 28. 04.–12. 05. 2023, 2 males. Frequent. Larva on *Potentilla reptans, Origanum vulgare, Euphorbia, Rosa, Rubus* and *Sambucus* spp.

Macrophya (*Macrophya*) *montana* ssp. *montana* (Scopoli, 1763): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 05-27. 06. 2021, 1 female; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 05-27. 06. 2021, 1 female. Common. Host plant: *Rubus caesius*.

Macrophya (*Macrophya*) *sanguinolenta* (Gmelin, 1790): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 22. 05. - 04. 06. 2021, 1 female. Frequent. Host plants: *Veronica* spp., *Senecio ovatus, Galeopsis ladanum, Pseudolysimachion* spp. and *Cirsium* spp.

Rhogogaster (*Cytisogaster*) *picta* (Klug, 1817): Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 28. 04.–12. 05. 2023, 3 females; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 08-22. 05. 2021, 1 female. Sporadic. Larva on *Cytisus nigricans, Chamaecytisus ratisbonensis, Genista tinctoria* and *Cytisus scoparius*.

Tenthredo (Tenthredo) zona Klug, 1817: Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 1 female; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 13. 04.–28. 04. 2023, 1 female. Sporadic. Host plant: *Hypericum perforatum*.

Tenthredopsis nassata (Linné, 1767): Hajnáčka, Kerek-dombon, 311 m, 48.2292589N, 19.9948119E, 22. 05. - 04. 06. 2021, 1 female. Earlier frequent, now sporadic. Hostplants: *Dactylis glomerata, Deschampsia caespitosa, D. calmagrostis, Flexuosa* spp., *Holcus* spp., *Lolium perenne, Agropyron* spp., *Carex* spp., *Anthriscus silvestris* and *Artemisia* spp.

Tenthredopsis ornata (Serville, 1823): Hajnáčka, Kerek-dombon, 311 m, 48.2292589N, 19.9948119E, 22. 05. - 04. 06. 2021, 1 female. Frequent. Larva on *Brachypodium sylvaticum*.

Tenthredopsis stigma (Fabricius, 1798): Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 1 male; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 28. 04.–12. 05. 2023, 1 male. Frequent. Hostplant: *Triticum intermedium, Holcus, Festuca, Poa* and *Dactylis* spp.

Tenthredopsis tessellata (Klug, 1817): Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 28. 04.–12. 05. 2023, 1 female; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 28. 04.–12. 05. 2023, 1 male; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 28. 04.–12. 05. 2023,1 male; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 28. 04.–12. 05. 2023, 1 male. Sporadic. Larva on *Deschampsia, Dactylis, Aira* and *Lolium* spp.

Nematinae

Amauronematus puniceus (Christ, 1791): Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 28. 04.–12. 05. 2023, 1 female. Larvae are on *Salix* spp. like *Salix caprea, S. fragilis, S. aurita, S. alba* and *S. cinerea*. New record for Slovakia (Fig. 8).

Cladius (*Cladius*) *pectinicornis* (Geoffroy, 1785): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 1 female; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 1 female; Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 28. 04.–12. 05. 2023, 1 female; Hodejovec, Mihály-puszta, 230 m, 48.2775661ºN, 19.9811408ºE, 13. 04.–28. 04. 2023,1 female; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 28. 04.–12. 05. 2023, 1 female; Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 13. 04.–28. 04. 2023, 1 male; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 05-27. 06. 2021, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 22. 05. - 04. 06. 2021, 2 males; Hajnáčka, Kerek-dombon, 309 m,

Fig. 8: *Amauronematus puniceus* (Christ, 1791), a new record for Slovakia. Photo: A. Haris.

48.2286306N, 19.9947342E, 09-31. 08. 2021, 1 female; Hajnáčka, Kerek-dombon, 311 m, 48.2292589N, 19.9948119E, 05-27. 06. 2021, 1 male. Common. Host plant: *Rubus* spp.

Hoplocampa chrysorrhoea (Klug, 1816): Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 1 male; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 28. 04.–12. 05. 2023, 1 male; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 13. 04.–28. 04. 2023, 1 female; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 28. 04.–12. 05. 2023, 3 males; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023,1 male; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 28. 04.–12. 05. 2023,1 male; Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 28. 04.–12. 05. 2023, 1 male; Hostice, 48.2390514ºN, 20.0793311ºE, 13. 04.–28. 04. 2023, 1 male; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 28. 04.–12. 05. 2023,1 female; Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 2 females; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 08-22. 05. 2021, 1 female. Frequent in Slovakia. Hostplant unknwon, adults on *Prunus spinosa* and *Crataegus* spp.

Hoplocampa crataegi (Klug, 1816): Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 13. 04.–28. 04. 2023, 1 female. Frequent. Larva on Crataegus spp.

Hoplocampa fulvicornis (Panzer, 1801): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 3 females; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 28. 04.–12. 05. 2023, 1 female; Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 13. 04.–28. 04. 2023, 1 female, 2 males; Hodejovec, Mihály-puszta, 230 m, 48.2775661ºN, 19.9811408ºE, 13. 04.–28. 04. 2023, 1 male, 1 female; Hodejovec, Mihály-puszta, 264 m, 48.2758908ºN, 19.9736214ºE, 13. 04.–28. 04. 2023, 1 male; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 1 male. Frequent, larva on *Prunus* spp.

Nematus lucidus (Panzer, 1801): Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 1 male; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 13. 04.–28. 04. 2023, 1 male; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 28. 04.–12. 05. 2023, 1 male; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 13. 04.–28. 04. 2023, 1 male; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023, 3 males; Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 13. 04.–28. 04. 2023; 1 male; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 22. 05. - 04. 06. 2021, 1 male. Frequent. Larva on *Crataegus* and *Prunus spinosa*.

Pachynematus clitellatus (Serville, 1823): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 28. 04.–12. 05. 2023. 1 female; Hodejovec, Mihály-puszta, 230 m, 48.2775661ºN, 19.9811408ºE, 13. 04.–28. 04. 2023, 1 female. Frequent. Larval hosts: Graminae, *Carex* and *Juncus* spp.

Pachynematus fallax (Serville, 1823): Hodejovec, Mihály-puszta, 230 m, 48.2775661ºN, 19.9811408ºE, 13. 04.–28. 04. 2023, 1 male. Frequent. Larva on Poaceae and *Carex* spp.

Pristiphora armata (Thomson, 1863): Gemerské Dechtáre, Nagymál-oldal, 237 m, 48.2422453ºN, 20.0160094ºE, 13. 04.–28. 04. 2023, 1 male. Frequent. Larva on *Crataegus* spp.

Pristiphora biscalis (Förster, 1854): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 08-22. 05. 2021, 1 female. Sporadic. Larva on *Prunus spinosa* and *Prunus domestica*.

Pristiphora bohemica Macek, 2012: Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 1 female; Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 13. 04.–28. 04. 2023, 1 female; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 13. 04.–28. 04. 2023, 1 male; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 28. 04.–12. 05. 2023, 1 male; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 1 male; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 28. 04.–12. 05. 2023, 1 male. Recently described species. Sporadic. Host plant: *Spiraea salicifolia*.

Pristiphora fausta (Hartig, 1837): Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 22. 05. - 04. 06. 2021, 1 female. Rare. Larva on *Quercus* spp.

Pristiphora insularis Rohwer, 1910: Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 28. 04.–12. 05. 2023, 1 female; Gemerské Dechtáre, Nagymál-oldal, 237 m, 48.2422453ºN, 20.0160094ºE, 28. 04.–12. 05. 2023,1 female. Sporadic. Larva on *Amelanchier asiatica, Chaenomeles japonica, Rosa* spp., *Rosa majalis, Rosa pimpinellifolia* and *Rosa onoei*.

Pristiphora monogyniae (Hartig, 1840): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 13. 04.–28. 04. 2023, 1 female; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2372219ºN, 20.04.98697ºE, 28. 04.–12. 05. 2023, 1 male; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 28. 04.–12. 05. 2023, 1 female; Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 13. 04.–28. 04. 2023, male; Drňa, Bálint-puszta, 195 m, 48.2636014ºN, 20.1216992ºE, 13. 04.–28. 04. 2023, 1 female; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 13. 04.–28. 04. 2023, 1 female; Drňa, Bálint-puszta, 213 m, 48.2566231ºN, 20.1124081ºE, 28. 04.–12. 05. 2023, 1 female; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 28. 04.–12. 05. 2023, 1 female; Hostice; 229 m, 48.2422381ºN, 20.0808008ºE, 13. 04.–28. 04. 2023, 1 female; Hostice, 222 m, 48.2390514ºN, 20.0793311ºE, 13. 04.–28. 04. 2023, 1 male; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 13. 04.–28. 04. 2023, 1 male; Jestice, Nagy-somos, 241 m, 48.2131775ºN, 20.04.47950ºE, 28. 04.–12. 05. 2023, 1 male; Jestice, Nagy-somos, 251 m, 48.2167939ºN, 20.0364172ºE, 28. 04.–12. 05. 2023, 1 female; Hodejovec, at agricultural cooperative, 216 m, 48.2777161ºN, 20.0127533ºE, 28. 04.–12. 05. 2023, 1 male. Frequent. Larva on *Prunus spinosa*, occasionally on *P. domestica*.

Pristiphora rufipes Serville, 1823: Drňa, Bálint-puszta, 218 m, 48.2598194ºN, 20.12104.47ºE, 28. 04.–12. 05. 2023, 1 female. Sporadic species. Larva on *Aquilegia* spp.

Pteronidea myosotidis (Fabricius, 1804): Gemerské Dechtáre, Nagymál-oldal, 237 m, 48.2422453ºN, 20.0160094ºE, 12. 05.–28. 05. 2023, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 05-27. 06. 2021, 1 female; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 08-22. 05. 2021, 1 male; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 22. 05. - 04. 06. 2021, 1 female; Hajnáčka, Kerek-dombon, 309 m, 48.2286306N, 19.9947342E, 27. 06. - 09. 07. 2021, 1 female. Common. Larval hosts: *Onobrychis* and *Trifolium* spp.

Orussidae

Orussus abietinus (Scopoli, 1763): Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 08-22. 05. 2021, 1 female; Hajnáčka, Kerek-dombon, 310 m, 48.2284492N, 19.9941442E, 22. 05. - 04. 06. 2021, 1 male. Sporadic. Parasitoid of *Semanotus undulatus* L.

Xiphydriidae

Xiphydria prolongata (Geoffroy, 1785): Gemerské Dechtáre, 17. 06. 2023, Bezdek J. lgt., 1 female. Sporadic. Larva bores in *Betula, Alnus, Quercus, Ulmus, Acer, Populus, Prunus* spp. and in *Fagus sylvatica* and develop in symbiosis with fungi *Daldinia decipiens* and *D. petriniae*.

Cephidae

Calameuta (*Calameuta*) *pallipes* (Klug, 1803): Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 13. 04.–28. 04. 2023, 1 female; Jestice, Nagysomos, 241 m, 48.2131775ºN, 20.04.47950ºE, 28. 04.–12. 05. 2023, 1 female. Frequent on diverse Poaceae.

Cephus nigrinus Thomson, 1871: Jesenské, Barta-puszta, 260 m, 48.2892036ºN, 20.0614783ºE, 28. 04.–12. 05. 2023, 1 female; Jesenské, Barta-puszta, 212 m, 48.2918875ºN, 20.0643967ºE, 28. 04.–12. 05. 2023, 1 female; Gemerské Dechtáre, Nagymál-oldal, 232 m, 48.2437314ºN, 20.0140783ºE, 28. 04.–12. 05. 2023,1 female. Frequent species. Host plants: *Milium effusum* and *Poa pratensis*.

Rare and interesting species

Pamphilius jucundus (Eversmann, 1847): From the Carpathians and Carpathian Basin, the species is reported from Trencsén (Trenčín), Budapest, Nagykovácsi, Kecskemét, Lillafüred, Balatongyörök, Boksánbánya (Bocsa Montana) and the Retezat Mountains. It is widely distributed in Europe.

Aprosthema maculatum (Jurine, 1807): Rare in Slovakia known from Devínska Kobyla, Štúrovo (Párkány), Čajkov pri Leviciach (Csejkő), PR Ostrov Kopáč and Nitra (Nyitra) (Roller & Haris 2008).

Dolerus (*Poodolerus*) *harwoodi* Benson, 1947: Rare. The known localities from the Carpathians are from Kremnica (Körmöcbánya) and Bílé Karpaty PLA: NR Machová (Roller & Haris 2008).

Dolerus (*Poodolerus*) *nigrominutus* Haris, 1998: Sporadic species, described from Hungary. It is known from Budakeszi, Rákospalota, Csepel, Látrány Simontornya, Csévharasztg and Szécsény (Roller & Haris 2008). In separate paper, it is removed from synonymy of the otherwise very different *Dolerus coruscans* Konow, 1890 (Roller in press). New record for Slovakia.

Claremontia puncticeps (Konow, 1886): Widely distributed in the Palaearctic region. New record for Slovakia.

Periclista (*Periclista*) *lenta* Konow, 1903: Rare. Known only from Považský Inovec (PR Kňaží vrch) in Slovakia. Recorded in France, Austria and Turkey.

Profenusa thomsoni (Konow, 1886): Rare, scattered distribution in the eastern part of Central Europe. New record for Slovakia.

Amauronematus puniceus (Christ, 1791): Recently separated from the similar *Amauronematus krausi* Taeger & Blank, 1998. Rare, palearctic species with wide distribution area. In Europe, it is known from Austria, Czech Republic, Estonia, Finland, France, Germany, Italy, Latvia, Norway, Russia and Ukraine. New record for Slovakia.

Pristiphora bohemica Macek, 2012: Recently described species. Recorded only from Czech Republic (Třeboňsko, Táborsko) and Slovakia (Záhorská nížina) (Roller & Olšovský 2012).

Pristiphora fausta (Hartig, 1837): Only 6 specimens were collected from the Carpathians and Carpathian Basin, namely: Nagyjakabfalva (Jakubov): 1 female, 15 May 1994, Malacka (Malacky): 1 female, 15 May 1993, Ihelník: 1 female, 25 Apr.-3 May 1999, Balatongyörök: Bélap-völgy, 19. 04. 2019, 1 female. Pécel: 1 female, 19th c. and Noszvaj: Síkfőkút: 1 female. 13 May 1980. Distribution: Central, West and South Europe.

Acknowledgement

Our sincere thanks go to landowners Roman Vilhan, Gyula Zagyi, István Csank, Dávid Mihály and Csaba Bálint for generously allowing us to conduct our research on their properties. We also extend our gratitude to Martin Matúš, Jakub Melicher, Peter Oravec and Veronika Rízová (Cerová vrchovina Upland Protected Landscape Area Administration) for their invaluable assistance during the research. Many thanks go to Petr Baňař, Antonín Hlaváček and Jan Bezděk for their assistance in the field. We also express our gratitude to Levente Ábrahám (Rippl-Rónai Museum) for editing our manuscript. This study was conducted under the permit OU-BB-OSZP1-2019/022541-12.

References

ACHTERBERG, C. 2013: Hymenoptera in Fauna Europaea version 2.6.2. http://www.faunaeur.org. Last checked: 03. 08. 2023

CSIKY, J., BALÁZS, P., HRIVNÁK, R., RIMÓCZI, I., 2010: Rastlinstvo, in: (KISS, G.) Chránená Krajinná Oblasť Karancs-Medves a Chránená Krajinná Oblasť Cerová Vrchovina. Na Hranici Novohradu a Gemera. Riaditeľstvo národného parku Bükk, Eger, pp. 115–142.

BALÁZS, A., HARIS, A. 2019: Sawflies (Hymenoptera: Symphyta) of Cerová vrchovina Upland (South Slovakia) – Natura Somogyiensis 33: 61-74. https://doi.org/10.24394/NatSom.2019.33.61

BALÁZS, A., HARIS, A. 2020: Further investigation on the sawfly fauna (Hymenoptera: Symphyta) of Cerová vrchovina Upland in Slovakia. Nat. Somogyiensis 35, 71-86. https://doi.org/10.24394/NatSom.2020.35.71

HORVÁTH, G., GAÁLOVÁ, K. 2010: Klimatické pomery, in: (Kiss, G.) Chránená Krajinná Oblasť Karancs-Medves a Chránená Krajinná Oblasť Cerová Vrchovina. Na Hranici Novohradu a Gemera. Riaditeľstvo národného parku Bükk, Eger, pp. 85-86.

GYURKOVICS, H. HARIS A. 2014: The genus Tenthredopsis Costa, 1859 in Hungary (Hymenoptera: Symphyta). – Natura Somogyiensis 24: 99-124. https://doi.org/10.24394/NatSom.2014.24.99

HARIS, A. 2006: Study on the Palaearctic Pristiphora species (Hymenoptera: Tenthredinidae) – Natura Somogyiensis 9: 201-277. https://doi.org/10.24394/NatSom.2006.9.201

HARIS, A. (in press): Dolerus nigrominutus Haris, 1998, new record for Slovakia with description of its female. Submitted.

LACOURT, J. 2020: Sawflies of Europe: Hymenoptera of Europe 2 N. A. P. Editions. Verriéres-le-Buisson 876 pp.

LISTON, A., MUTANEN, M., HEIDEMAA, M., BLANK, S. M., KILJUNEN, N., TAEGER, A., VIITASAARI, M., VIKBERG, V., WUTKE, S., PROUS, M. 2022: Taxonomy and nomenclature of some Fennoscandian sawflies, with descriptions of two new species (Hymenoptera, Symphyta). – Deutsche Entomologische Zeitschrift 69 (2) 2022, 151-218. https://doi.org/10.3897/dez.69.84080

Macek, J. 2012: Pristiphora bohemica sp. nov., a new sawfly species from the Czech Republic (Hymenoptera: Symphyta: Tenthredinidae). – Acta entomologica Musei Nationalis Pragae, Praha 52(1): 267-272.

Macek, J., Roller, L., Beneš, K., Holý, K., Holuša, J. 2020: Blanokřídlí České a Slovenské republiky II. Širopasí. – Academia Praha. 669 pp.

Malesevics, E. 1892: Losoncz faunája vagyis az 1876. év őszétől, az 1891. év végeig talált és meghatározott állatfajok rendszeres felsorolása és a fauna jellemzése. Pp. 3–47. In: Miksa, G. (ed.): A Losonci Magyar Királyi Állami Főgymnasium értesítője. 1891–92. A Kármán-társulat könyvnyomdája, Losonc [= Lučenec].

Prous, M., Blank, S. M., Goulet, H., Heibo, E., Liston, A., Malm., T., Nyman. T., Schmidt, S. Smith, D. R., Vårdal, H., Viitasaari, M., Vikberg, V., Taeger., A. 2014: The genera of Nematinae (Hymenoptera,Tenthredinidae). – Journal of Hymenoptera Research 40:0-69. https://doi.org/10.3897/JHR.40.7442

Roller, L., Haris, A., 2008: Sawflies of the Carpathian Basin, history and current research. – Natura Somogyiensis 11: 1–259. https://doi.org/10.24394/NatSom.2008.11.2

Roller, L., Olšovský, T. 2012: Prvonálezy hrubopásych blanokrídlovcov (Hymenoptera, Symphyta) v slatinných lesoch s tavoľníkom vrbolistým (Spiraea salicifolia) v Borskej nížine. – Entomofauna carpathica, Bratislava 24(1): 15-20.

Taeger, A., Blank, S., Liston, A. 2006: European Sawflies (Hymenoptera: Symphyta) - A species checklist for the countries. 399-504.– In Blank, S. M., Schmift, S. & Taeger, A. (eds) Recent sawfly research: synthesis and rrospects, Goecke & Evers, Kelter. 701 pp.

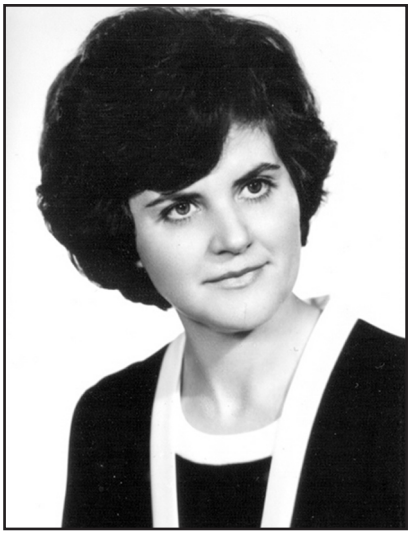
Timár, G. 2010: Pôdne pomery Karanča a Medveša, in: (Kiss, G.) Chránená Krajinná Oblasť Karancs-Medves a Chránená Krajinná Oblasť Cerová Vrchovina. Na Hranici Novohradu a Gemera. Riaditeľstvo národného parku Bükk, Eger, pp. 99-105.

Zhelochovtsev, A. 1988: Otryad Hymenoptera – Pereponchatokrylye, Podotryad Symphyta – Sidyachebryukhie, 7-234. In: Medvedev, K.H. (ed.) Opredelitel nasekomykh evropeiskoi chasti SSSR, Vol. 3 Hymenoptera, Part 6, Nauka, Leningrad. https://doi.org/10.5962/bhl.title.46334

Natura Somogyiensis 41: 121-130. Kaposvár, 2023

Submitted: 13. 09, 2022; Accepted: 19.09, 2023; Published: 01.12, 2023 www.smmi.hu/termtud/ns/ns.htm

Final farewell and commemoration of Sára Nógrádi



She loved, respected, and researched life, and struggled with death for a long time. At the age of 81, Dr. Sára Nógrádi (Dr. Ákosné Uherkovich) (1942-2023), an excellent entomologist, trichopteologist, and natural history museologist of the Janus Pannonius Museum, left us forever.

She was born in Szeged in 1942 and attended her primary and secondary schools there. She completed her university studies between 1961 and 1966 at the József Attila University of Szeged, majoring in biology and chemistry. In her thesis, she dealt with the butterfly fauna of the Tisza River. In 1966, she started her career as a secondary school teacher in Sellye, soon after she became a dormitory director, and then worked as a secondary school teacher in Pécs from 1973 to 1982. From the first of October 1982 to April 2001, until her retirement, she was a zoologist and museologist in the Natural History Department of the Janus Pannonius Museum, in Pécs.

In the last years of her teaching activity - around 1980 - she began to deal more actively with entomological topics.

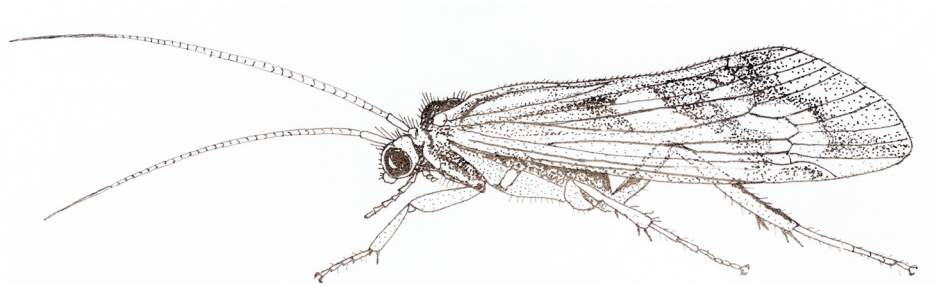
The largest part of her museum professional work was the research of Hungarian and Central European caddisflies (Trichoptera), primarily from a faunistic, ecological and nature conservation point of view. In 1984, she defended her doctorate on this topic at the Kossuth Lajos University in Debrecen. In the course of her research, she visited all the most important regions of Hungary and published her research results from the entire territory of the country.

During the first 20 years of her work, she established the caddisfly collection of the Janus Pannonius Museum in Pécs and also provided important materials to the entomological collection of the Smithsonian Institution in Washington (USA, D.C.) as well as to other collections. Later, she founded the species-rich caddisfly collection of the Rippl-Rónai Museum in Kaposvár and continued to increase it with her materials until her death.

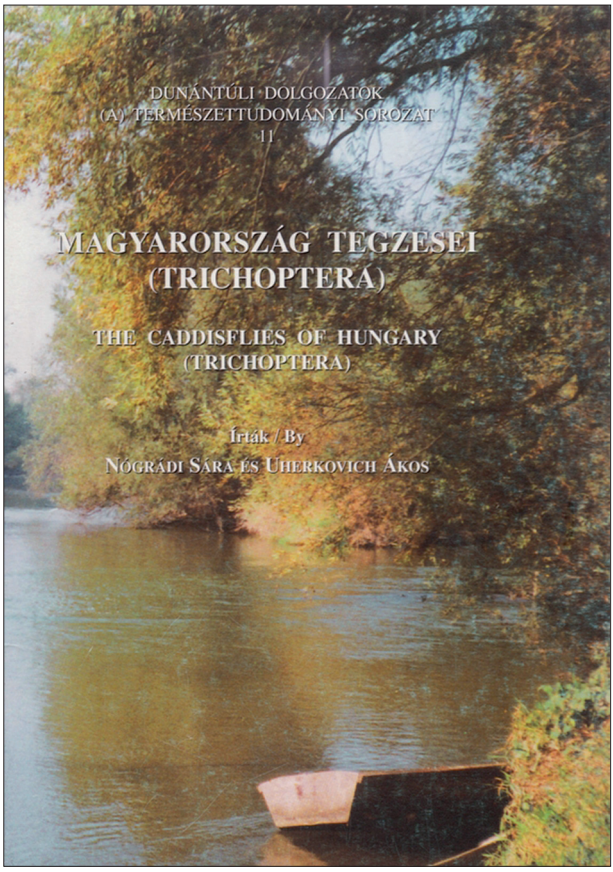
She participated in three international trichopterological symposia (Poland: Łódź–Zakopane 1989, United States: Minneapolis 1995, Thailand: Chiang Mai 1998). In the course of her research work, she published 77 professional papers and one monograph on Hungarian and Central European caddisflies, about 60 of them in English or German, and about 55 papers with co-authors.

The main work and summary of her research activity, titled "The caddisflies of Hungary (Trichoptera)" was published on 386 pages, co-authored with Dr.Ákos Uherkovich. She made the illustrations for this book over several years. Even today, it is an important source of work for all European caddisfly researchers.

ISSN 1587-1908 (Print); ISSN 2062-9990 (Online)



A caddisfly in resting position, drawn by Sára Nógrádi



Among her non-professional works, the high artistic quality of the drawings of more than 300 moth species included in the "A magyarországi csuklyás-, szegfű- és földibaglyok atlasza" (Atlas of Hungarian noctuid moths) written by László Ronkay and Gábor Ronkay.

These two works show that she also left us a huge heritage as a natural history illustrator. Due to her artistic talent, we can mention her name in a worthy way among the excellent female illustrators worldwide.

***Polymixis polymita* (Linnaeus, 1761), drawn by Sára Nógrádi**

In 2003, a Lifetime Achievement Award was shared with dr. Ákos Uherkovich was awarded for her professional activity in the 18th Central European Entomofaunistic Symposium.

Professionally, she remained active even after that for years, examining the composition and changes of the caddisfly assemblages of the larger Hungarian rivers - mainly the Dráva, Mura, and Danube, and small watercourses in the Mecsek Mountains - from the nature conservation point of view.

Lifetime medal of the 18th International Symposium of Central European Entomofaunistics

Das Plenum des
18. Internationalen Symposiums
über Entomofaunistik in Mitteleuropa
in Linz (Oberösterreich) 2003
verleiht auf Vorschlag des
österreichischen Organisationskomitees

Frau Dr. Sára Nógrádi

und

Herrn Dr. Ákos Uherkovich

den Preis für hervorragende Leistungen
in der Entomofaunistik Mitteleuropas
mit diesem Diplom und mit der Ehrenmedaille.

Linz an der Donau, am 22. September 2003

Für das Ständige Komitee der SIEEC: Für das Organisationskomitee:

In addition to her research work, she was also actively involved in the museum's public activities, such as the development and preservation of the collections, the planning and execution of exhibitions, as well as informative lectures and guided tours.

She helped the work of young researchers and university students by passing on her experience and giving ideas and suggestions for their theses.

Her work has always been characterized by thoroughness, precision, diligence, and absolute reliability, as well as an almost excessive modesty. She had good relations with her colleagues.

With her death, one of the important personalities of Hungarian entomological research left us.

Dr. Sára Nógrádi's scientific publications

1984

1. Nógrádi, S. 1984: Six caddisfly species new in the Hungarian Fauna (Trichoptera). – Folia entomologica hungarica 45 (1): 159-165.

2. Nógrádi, S. 1984: The caddisfly fauna of the Valley Nagy-mély-völgy, Mecsek Mountains, Hungary (Trichoptera). – A Janus Pannonius Múzeum Évkönyve (1983) 28: 15-22.

1985

3. Nógrádi, S. 1985: Caddisflies of the Barcs Juniper Woodland, Hungary (Trichoptera). – Dunántúli Dolgozatok Természettudományi Sorozat 5: 117-134.

4. Nógrádi, S. 1985: Further caddisfly species new to the Hungarian fauna (Trichoptera). – Folia entomologica hungarica 46 (1): 129-135.

5. Nógrádi S., Uherkovich Á. 1985: A Bakony hegység és környéke tegzesfaunája I. (Trichoptera). – Folia Musei Historico-naturalis Bakonyiensis (Zirc) 4: 107-128.

6. Nógrádi, S., Ujhelyi, S., Uherkovich, Á. 1985: Fundamental faunistic data on caddisflies (Trichoptera) of South Transdanubia, Hungary. – A Janus Pannonius Múzeum Évkönyve (1984) 29: 37-48.

1986

7. MALICKY, H., KRUŠNIK, C., MORETTI, G., NÓGRÁDI, S. 1986: Ein Beitrag zur Kenntnis der Chaetopteryx rugulosa Kolenati, 1848–Gruppe (Trichoptera, Limnephilidae). – Entomofauna, Zeitschrift für Entomologie (Linz) 7 (1): 1-27.

8. NÓGRÁDI, S. 1986: New data to the caddisfly fauna of Hungary (Trichoptera). – Folia entomologica hungarica 47 (1-2): 135-140.

1987

9. NÓGRÁDI, S. 1987: Caddisflies of the Eastern Mecsek Mountains, Hungary (Trichoptera). – A Janus Pannonius Múzeum Évkönyve (1985-86) 30-31: 11-21.

10. NÓGRÁDI S. 1987: Néhány adat Szőce tegzesfaunájához (Trichoptera). – Praenorica, folia historico-naturalis (Szombathely) 2: 113-118.

11. NÓGRÁDI S., UHERKOVICH Á. 1987: Malicky, Hans: Atlas of European Trichoptera (könyv-ismertetés). – Állattani Közlemények 71: 197.

12. NÓGRÁDI, S., UHERKOVICH, Á. 1987: Supplement to the knowledge of the caddisfly fauna (Trichoptera) of Slovakia. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 12: 53-68.

1988

13. NÓGRÁDI, S. 1988: New data to the caddisfly (Trichoptera) fauna of Hungary, II. – Folia entomologica hungarica 49: 205-210.

14. NÓGRÁDI, S. (1988): Slovakian Trichoptera data from two Hungarian collections. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 13: 91-94.

15. NÓGRÁDI, S., UHERKOVICH, Á. 1988: The caddisfly fauna of the Gyöngyös Stream-system, South Hungary (Trichoptera). – A Janus Pannonius Múzeum Évkönyve (1987) 32: 15-24.

16. NÓGRÁDI, S., UHERKOVICH, Á. 1988: Trichopterological results from the Northern Mountains (Hungary). – Folia historico-naturalia Musei Matraensis (Gyöngyös) 13: 71-90.

17. UHERKOVICH, Á., NÓGRÁDI, S. 1988: The Trichoptera of the Bakony Mountains and environs II. (Hungary). – Folia Musei Historico-naturalis Bakonyiensis (Zirc) 7: 35-48.

1989

18. NÓGRÁDI, S. 1989: The Trichoptera fauna of Szőce and its environs (West Hungary). – A Janus Pannonius Múzeum Évkönyve (1988) 33: 27-33.

19. NÓGRÁDI, S. 1989: Locality data of the Trichoptera collection originating from the Carpathian Basin in the Hungarian Natural History Museum. – Folia entomologica hungarica 50: 147-156.

20. NÓGRÁDI, S. 1989: Trichoptera data of the Hungarian Natural History Museum concerning the Northern Mountains, Hungary. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 14: 87-98.

21. NÓGRÁDI, S. 1989: A Mátra Múzeum tegzes (Trichoptera) gyűjteménye. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 14: 99-106.

22. NÓGRÁDI, S., UHERKOVICH, Á. 1989: On the caddisfly fauna of the Kőszeg Mountains, Hungary (Trichoptera). – A Janus Pannonius Múzeum Évkönyve (1988) 33: 35-42.

23. UHERKOVICH, Á. NÓGRÁDI, S. 1989: Provisional check-list of the Hungarian Trichoptera. – Proceedings of the Sixth International Symposium on Trichoptera, Łódź – Zakopane, 1989, p. 247-253. [1992]

1990

24. Nógrádi, S., Oláh, J., Uherkovich, Á. 1990: On the Caddisflies (Trichoptera) of the Bátorliget nature conservation areas (NE Hungary). – The Bátorliget Nature Reserves – after forty years. Budapest, p. 499-503. [1992]

25. Nógrádi, S., Uherkovich, Á. 1990: The Trichoptera fauna of the Zselic Downs, Hungary. – A Janus Pannonius Múzeum Évkönyve (1989) 34: 15-38.

26. Uherkovich, Á., Nógrádi, S. 1990: The Trichoptera fauna of the Great Hungarian Plain, Hungary. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 15: 43-75.

1991

27. Nógrádi, S., Uherkovich, Á. 1991: Caddisflies of the Eastern Mecsek Mountains, Hungary (Trichoptera), II. – A Janus Pannonius Múzeum Évkönyve (1990) 35: 19-25.

28. Nógrádi, S., Uherkovich, Á. and Andrikovics, S. 1991: Foundation of the caddisfly (Trichoptera) fauna of the Visegrádi Mountains. – Opuscula Zooligica Budapest 24: 143-158. [1992]

29. Uherkovich, Á., Nógrádi, S. 1991: Trichoptera fauna of a typical cultivated region of the Carpathian Basin by light trap examination. – A Janus Pannonius Múzeum Évkönyve (1990) 35: 27-32.

1992

30. Nógrádi, S. 1992: Five Trichoptera species new to the Hungarian fauna. [Öt, magyarországi faunára új tegzes faj.] – Folia entomologica hungarica 52 (1991), 181-185.

31. Nógrádi, S., Uherkovich, Á. 1992: Preliminary report on the Trichoptera fauna of the Chechen-Ingoosh ASSR, Soviet Union. – A Janus Pannonius Múzeum Évkönyve (1991) 36: 31-36.

32. Nógrádi S., Uherkovich Á. 1992: A Béda-Karapancsa Tájvédelmi Körzet tegzesfaunája (Trichoptera). – Dunántúli Dolgozatok Természettudományi Sorozat 6: 155-164.

33. Nógrádi S., Uherkovich Á. 1992: A Boronka-melléki Tájvédelmi Körzet és környéke tegzes (Trichoptera) faunája. – Dunántúli Dolgozatok Természettudományi Sorozat 7: 217-240.

34. Nógrádi S., Uherkovich Á. 1992: Újabb vizsgálatok a Kőszegi-hegység Trichoptera faunáján. – Savaria, a Vas megyei Múzeumok Értesítője 20 (2): 149-157.

35. Uherkovich, Á., Nógrádi, S. 1992: Some data to the Trichoptera fauna of Drava river, Hungary. – Somogyi Múzeumok Közleményei 9: 269-278.

36. Uherkovich, Á., Nógrádi, S. 1992: The Trichoptera fauna of Magyarszombatfa, West Hungary. – A Janus Pannonius Múzeum Évkönyve (1991) 36: 13-30.

1993

37. Nógrádi, S., Uherkovich, Á. 1993: Further examinations of Trichoptera of the Chechen-Ingoosh Republic, Russia. – A Janus Pannonius Múzeum Évkönyve (1991) 37: 19-32.

1994

38. Nógrádi, S. 1994: New data to the caddisfly (Trichoptera) fauna of Hungary, III. – Folia entomologica hungarica 55: 271–280.

39. Nógrádi, S., Kiss, O., Uherkovich, Á. 1994: The Trichopterea fauna of the Bükk National Park. – The fauna of the Bükk National Park, Vol. II, p. 397-403. (Természettudományi Múzeum, Budapest).

40. NÓGRÁDI, S., UHERKOVICH, Á. 1994: The Trichoptera of Balaton and its catchment area. – A Janus Pannonius Múzeum Évkönyve (1993) 38: 27–45.
41. NÓGRÁDI, S., UHERKOVICH, Á. 1994: Protected caddisflies in Hungary. – Braueria (Lunz am See, Austria) 21: 25.
42. UHERKOVICH, Á., NÓGRÁDI, S. 1994: Further studies on caddisfly (Trichoptera) fauna of the Northern Mountains, Hungary. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 19: 77–95.

1995

43. NÓGRÁDI, S. 1995 Hungarian locality data of Ujhelyi's Trichoptera collection in the Hungarian Natural History Museum. – Folia entomologica hungarica 56: 119-131.
44. NÓGRÁDI S., UHERKOVICH Á. (1995): A magyarországi tegzesek (Trichoptera) elterjedése és gyakorisága az utóbbi évtizedben, számítógépes feldolgozás adatai alapján. – A Janus Pannonius Múzeum Évkönyve (1994) 39: 49–67.
45. NÓGRÁDI S., UHERKOVICH Á. 1995: A Dráva magyarországi szakaszának tegzes (Trichoptera) faunája. – Dunántúli Dolgozatok Természettudományi Sorozat 8: 117–137.
46. NÓGRÁDI S., UHERKOVICH Á. 1995: Az Őrség tegzes (Trichoptera) faunája. In: Vig, K. (szerk.): Az Őrségi Tájvédelmi Körzet Természeti Képe I. – Savaria, a Vas megyei Múzeumok Értesítője (Szombathely) (1992-1995) 22 (2): 63-81.
47. UJVÁROSI, L., NÓGRÁDI, S. & UHERKOVICH, Á. 1995 Studies on the Trichoptera fauna of the Ciuc Basin and Harghita Mountains, Romania. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 20: 99-113.

1996

48. NÓGRÁDI, S., UHERKOVICH Á. 1996: Examinations on the Trichoptera along the Hungarian part of the river Fekete–Körös. – A Janus Pannonius Múzeum Évkönyve (1995) 40: 45-52.
49. UHERKOVICH Á., NÓGRÁDI S. 1996: A Kisbalatoni Vízvédelmi Rendszer tegzes (Trichoptera) együtteseinek kialakulása és jelenlegi állapota. – In: Pomogyi P. (szerk.): 2. Kisbalaton Ankét. Összefoglaló értékelés a KBVR 1991-1995 közötti kutatási eredményeiről. p. 329-338. Keszthely, Pannon Agrártudományi Egyetem kiadása, p. 329-338.

1997

50. NÓGRÁDI, S. 1997: How to distinguish the females of the three European Mystacides species. – Braueria (Lunz am See, Austria) 24: 18.
51. UHERKOVICH, Á., NÓGRÁDI, S. 1997: Platyphylax frauenfeldi Brauer, 1857 (Trichoptera, Limnephilidae) in Hungary. – Braueria (Lunz am See, Austria) 24: 13-14.
52. UHERKOVICH, Á., NÓGRÁDI, S. 1997: Studies on caddisflies (Trichoptera) communities of larger rivers in Hungary. In: Holzenthal, R. W. & Flint, O. S., Jr.: Proceedings of the 8th International Symposium on Trichoptera, 1995. Ohio Biological Survey, Columbus, Ohio, p. 459-465.

1998

53. NÓGRÁDI, S. 1998: New data to the caddisfly (Trichoptera) fauna of Hungary, IV. – Folia entomologica hungarica 59: 73-78.
54. NÓGRÁDI S., UHERKOVICH Á. 1998: Újabb eredmények a Duna–Dráva Nemzeti Park Dráva menti területei tegzes (Trichoptera) faunájának kutatásában. – Dunántúli Dolgozatok Természettudományi Sorozat 9: 331-358.

55. Uherkovich, Á., Nógrádi, S. 1998: The caddisfly (Trichoptera) fauna of the Szatmár–Bereg Plain, Northeast Hungary. – A Janus Pannonius Múzeum Évkönyve (1996-1997) 41-42: 49-62.

1999

56. Nógrádi, S., Uherkovich, Á. 1999: Protected and threatened caddisflies (Trichoptera) of Hungary. – Proceedings of the 9th International Symposium on Trichoptera p. 291-297. Faculty of Science, University of Chiang Mai, Thailand.

57. Nógrádi, S., Uherkovich, Á. 1999: Studies on the Trichoptera of the Gemenc Landscape Protection Area (Duna–Dráva National Park), South Hungary. – A Janus Pannonius Múzeum Évkönyve (1998) 43: 65-73.

58. Nógrádi, S., Uherkovich, Á. 1999: Caddisflies (Trichoptera) of the Hungarian section of River Tisa. In: Hamar, J., A. Sárkány-Kiss (eds): The Upper Tisa Valley. Tiscia monograph series. – Szeged, p. 427-437.

59. Nógrádi, S., Uherkovich, Á., Oláh, J. 1999: The caddisflies (Trichoptera) of the Aggtelek National Park, North Hungary. – The fauna of the Aggtelek National Park, p. 383-393.

60. Uherkovich, Á., Nógrádi, S. 1999: Caddisflies (Trichoptera) of artifical water courses in the Bakony Mountains, Central Hungary. – Braueria (Lunz am See, Austria) 26: 21-23.

61. Uherkovich, Á., Nógrádi, S. 1999: The survey of caddisflies (Trichoptera) of the Hungarian catchment area of River Dráva. – Proceedings of the 9th International Symposium on Trichoptera p. 415-423. Faculty of Science, University of Chiang Mai, Thailand

62. Ujvárosi, L., Nógrádi, S. 1999: The female of Potamophylax jungi Mey, 1976 (Trichoptera, Limnephilidae). – Braueria (Lunz am See, Austria) 26: 24.

2000

63. Nógrádi, S. 2000: Caddisflies (Trichoptera) from the Villány Hills, South Hungary. Collection in a range without water courses. – Dunántúli Dolgozatok Természettudományi Sorozat 10: 285-295.

2001

64. Nógrádi, S. 2001: Further data to the caddisflies (Trichoptera) of Hungary. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 25: 83-90.

65. Nógrádi, S., Uherkovich, Á., 2001: Somogy megye tegzeseinek (Trichoptera) jegyzéke. – In: Ábrahám L. (szerk.): Somogy faunakatalógusa. – Natura Somogyiensis (Kaposvár) 1: 295-301.

66. Uherkovich, Á., Nógrádi, S. 2001: The Trichoptera of the Szigetköz, upper Hungarian Danube Region (Northwest Hungary), I. Compendium of the faunistical researches. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 25: 91-110.

2002

67. Nógrádi S., Uherkovich Á. 2002: Magyarország tegzesei (Trichoptera). – Dunántúli Dolgozatok Természettudományi Sorozat 11: 1-386.

68. Nógrádi, S., Uherkovich, Á. 2002: On the caddisflies (Trichoptera) from the catchment area of the rivers Mura and Kerka, Southwest Hungary. – Somogyi Múzeumok Közleményei 15: 129-144.

69. UHERKOVICH Á., NÓGRÁDI, S., 2002: Trichoptera from the Balkans and Asia Minor in Hungarian and a Dutch collections. – A Janus Pannonius Múzeum Évkönyve (1999-2000) 44-45: 33-42.

70. UHERKOVICH, Á., NÓGRÁDI, S. 2002: On the caddisflies (Trichoptera) of the Fertő-Hanság National Park, NW Hungary. – In: Mahunka, S. (ed.): The Fauna of the Fertő-Hanság National Park, p. 321-328.

2003

71. UHERKOVICH, Á., NÓGRÁDI, S. 2003: Trichoptera of Szigetköz, upper Hungarian Danube Region (Northwest Hungary), II. Species composition and its changes in some water bodies. – Folia historico-naturalia Musei Matraensis 27: 237-358.

2004

72. UHERKOVICH, Á., NÓGRÁDI, S. 2004: Trichoptera of the Szigetköz, upper Hungarian Danube Region (Northwest Hungary), III. Species composition in Moson Danube, and its changes. – Folia historico-naturalia Musei Matraensis (Gyöngyös) 28: 171-186.

2005

73. UHERKOVICH, Á., NÓGRÁDI, S. 2005: Caddisflies (Trichoptera) of the Mecsek Mts., a low, isolated mountain range in South Hungary. – Linzer biologisches Beitrag (Verh. XVIII. SIEEC, Linz 2003) 37/1: 153-161.

74. UHERKOVICH, Á., NÓGRÁDI, S. 2005: Middle-term changes in caddisfly (Trichoptera) communities of the Hungarian part of Dráva river during the years 1992-2004. – Natura Somogyiensis (Kaposvár) 7: 49-62.

2006

75. UHERKOVICH, Á., NÓGRÁDI, S. 2006: Caddisflies (Trichoptera) of the Mecsek Mountains, South Hungary. – Natura Somogyiensis (Kaposvár) 9: 289-304.

2010

76. CSÓKA GY., DUDÁS GY., FÖLDESSY M., KOROMPAI T., KOVÁCS T., MELIKA G., NAGY A., NÓGRÁDI S., RÁCZ I. A., SZABÓKY CS., SZMATONA-TÚRI T., TÓTH S., UHERKOVICH Á., VARGA A. 2010: Állatvilág – Gerinctelenek, In: Baráz Cs. (ed.): A Mátrai Tájvédelmi Körzet. Heves és Nógrád határán. A Bükki Nemzeti Park Igazgatóságának monográfiái 4, p. 181-210. – Bükki Nemzeti Park Igazgatóság, Eger.

2018

77. UHERKOVICH Á., NÓGRÁDI S. 2018: A tegzesek (Trichoptera) kutatásának eredményei a Dráva hazai vízgyűjtőjén az elmúlt negyven évben. – Natura Somogyiensis (Kaposvár) 32: 37-92.

Dr. Levente Ábrahám
director of the Rippl-Rónai Múzeum
Kaposvár