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A new species of the genus *Phradonoma* Jacquelin du Val, 1859 from Ethiopia (Coleoptera: Dermestidae: Megatominae)

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Háva, J.: *A new species of the genus Phradonoma Jacquelin du Val, 1859 from Ethoipia (Coleoptera: Dermestidae: Megatominae).*
Abstract: *Phradonoma hulai* sp. nov. from Ethiopia is described, illustrated and compared with the species *P. zavattari* Háva, 2015 (Ethiopia) belonging to the "*Phradonoma nobile* species group". The new species is characteristic by the structure of antennae, male genitalia and colour of the elytral setation.

Keywords: taxonomy, new species, new records, Coleoptera, Dermestidae, *Phradonoma*, Ethiopia.

Introduction

The genus *Phradonoma* currently contains 46 species distributed in the Palaearctic and Afrotropical Regions. Only one species was introduced into the United States and Australia (Háva 2015, 2019).

During the determination of some Dermestidae material deposited in the National Museum, Prague, the author found a new *Phradonoma* Jacquelin du Val, 1859 species from Ethiopia described below.

Material and methods

The size of the beetles or of their body parts can be useful in species recognition and thus, the following measurements were made:

TL: total length - linear distance from anterior margin of pronotum to apex of elytra.

EW: elytral width - maximum linear transverse distance.

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The type specimens are deposited in the following collections:
NMPC - National Museum, Prague, Czech Republic;
JHAC - Jiří Háva, Private Entomological Laboratory & Collection, Únětice u Prahy, Prague-West, Czech Republic.

Specimens of the described species are provided with red, printed labels with the text as follows: „HOLOTYPE (or PARATYPE, respectively) Phradonoma hulai sp. nov. Jiří Háva det. 2019".

The nomenclature and zoogeography follow HÁVA (2015).

Description

Genus ***Phradonoma*** Jacquelin du Val, 1859
"*Phradonoma nobile* species group"

Phradonoma hulai sp. nov. (Figs. 1-3)

Type material. Holotype (♂): ETHIOPIA, Ginir prov., forest in valley to Sof Omar cave, 1249 m, 16.vi.2011, V. Hula, J. Niedobová & M. Moradmand leg., (NMPC). Paratypes (11 spec.): same data as holotype, (8 NMPC, 3 JHAC).

Description of holotype. Male. Body black and brown, oval. Body measurements (mm): TL 2.8 EW 1.9.

Head coarsely punctuate, with short more or less decumbent white-yellow setae, maxillary palpi darkish brown, eyes large with microsetae, antennae with 11 antennomeres with three antennomered club. Antennomere I is dark brown, antennomeres II-VIII are brown, IX-XI brownish-black (Fig. 4). Forehead with ocellus.

Pronotum entirely dark black, shiny, sparsely and not very coarsely punctate, with intermixed white and yellow erect setae. Lateral margins slightly visible from above.

Scutellum small, black, triangular, without setation or punctures.

Elytra black with brown apical part, sparsely and coarsely punctate, sparsely covered by slightly erect brown and white setation. Each elytron with small isolated white spots arranged in narrow fasciae. The underside of the specimen coarsely and (especially the visible ventrite) more densely punctate than elytra and pronotum, covered with straight and decumbent white-yellowish setae.

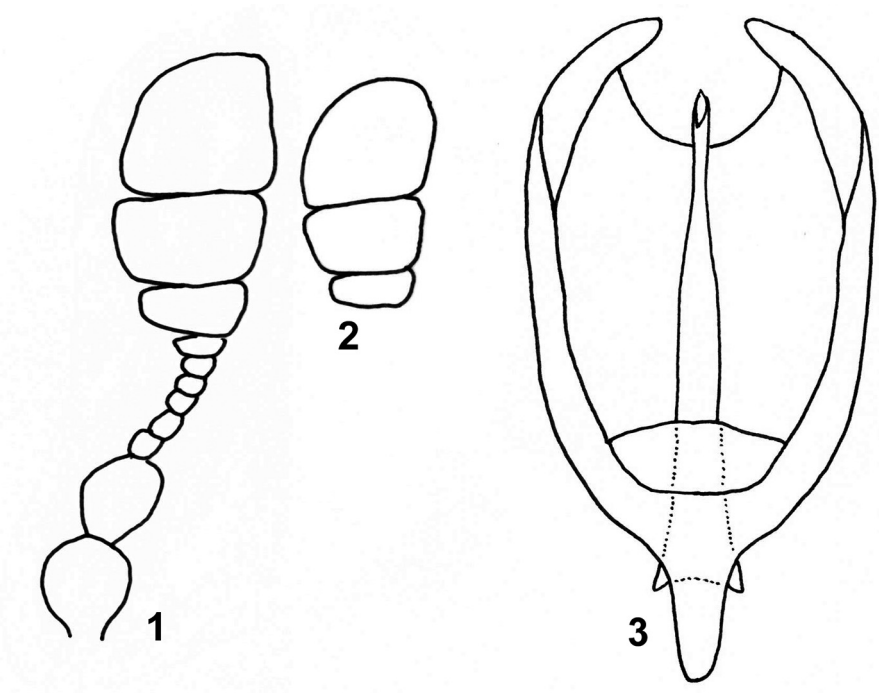
Tibiae and tarsi brown, femora anteriorly darkened and sparsely covered with fine brown hairs, anterior tibiae with dark brown thorns. Male genitalia as in Fig. 3.

Female. Externally very similar to male, but the antenna is a little bit shorter with a slightly smaller club (Fig. 2).

Variability. Body very dark brown to black with brown apical part; measurements (mm): TL 1.9-3.3. The apical brown area varies in size.

Differential diagnosis. The new species belongs to the "*Phradonoma nobile* species group" as defined by HÁVA et al. (2013). The new species very similar to *P. zavattari* Háva, 2015 (Ethiopia) but differs from it and other known Afrotropical species belonging to the species group by the structure of antennae and male genitalia.

Etymology. Patronymic, dedicated to the collector of the new species and my friend Vladimír Hula (Brno, Czech Republic).



Figs. 1-3. *Phradonoma hulai* sp. nov.: 1- male antenna; 2- female antennal club; 3- male genitalia

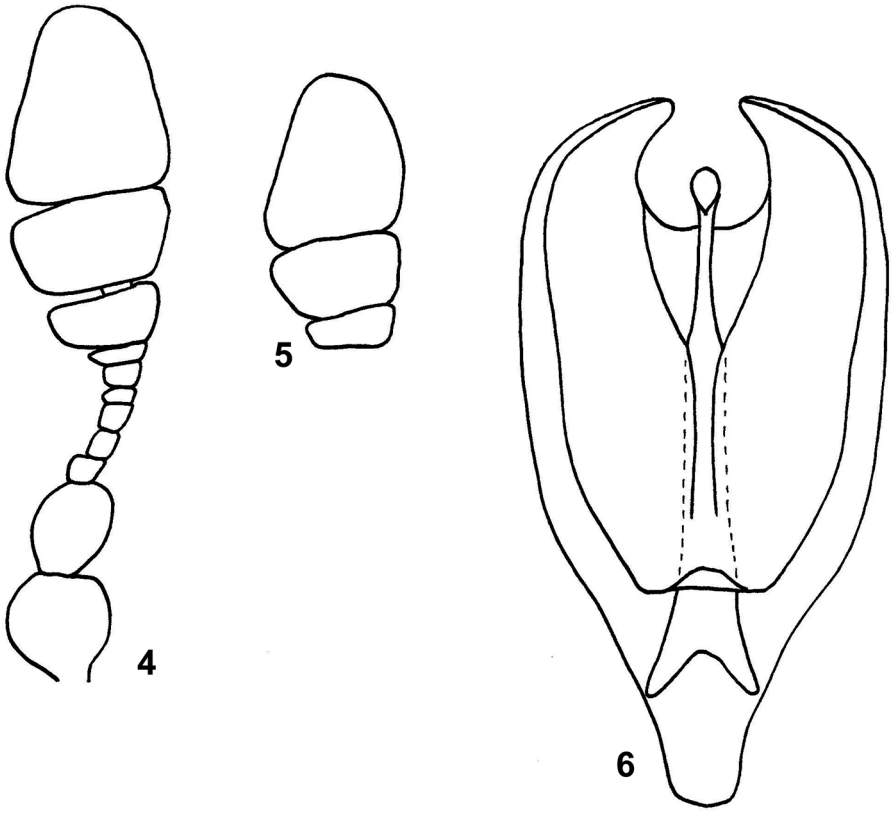
Phradnonoma zavattari Háva, 2015
(Figs. 4-6)

Material examined: Ethiopia, Shoa, Debre Zeyt, v. 1989, K. Werner legit., 1 ♂, J. Háva det., (JHAC).

Distribution. The species known from Ethiopia according to the type material, new locality data from Ethiopia.

Phradonoma eximium (Arrow, 1915)
Phradonoma eximium var. ***inhumeralis*** Kalík, unpublished name.

Remarks. In Natural History Museum, London, United Kingdom specimens of *Phradonoma eximium var. inhumeralis* Kalík (S. Africa, Zululand, Lr. Umhlatuzi R. G., 6.vi.1926, R.E. Turner, Brit. Mus. 1926-27) are deposited. The variety is undescribed and differs from the typical specimens by the missing humeral orange fascia. In the author´s collection, there is a specimen the same colour from Tanzania E., Utete, Rufuji riv., 23.12.2006, Snížek lgt. All these specimens are identical with typical specimens in other characters.



Figs. 4-6. *Phradonoma zavattari* Háva, 2015: 4- male antenna; 5- female antennal club; 6- male genitalia

Acknowledgements

I am obliged to Jiří Hájek (NMPC) for the loan of interesting material from Ethiopia and to Miloslav Rakovič (Czech Republic) for linguistic correction.

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New faunistic records and remarks on Dermestidae (Coleoptera) - Part 20.

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Háva, J. & Herrmann, A.: *New faunistic records and remarks on Dermestidae (Coleoptera) - Part 20.*
Abstract: The three species *Globicornis cypriensis* Háva & Herrmann, 2014 **stat. nov**., *Thorictus westwoodi* Wollaston, 1854 **stat. nov**., *Dermestes* (*Dermestes*) *cernyi* Háva, 2009 **stat. nov**. are moved to new status. Two new synonyms are proposed: *Dermestes* (*Dermestes*) *palmi* Sjöberg, 1950 (= *Dermestes hoeltzermanni* Kozminykh, 1998 **syn. nov**.); *Anthrenus* (*Anthrenus*) *bilyi* Háva, 2000 (= *Anthrenus montanus* Zhantiev, 2009 **syn. nov**.). Fauvel. Corrections to Holloway´s paper (2019) on Spanish Dermestidae are provided. 41 taxa are new records for the local fauna all over the World.

Keywords: taxonomy, new state, new synonymy, faunistics, new records, Coleoptera, Dermestidae

Introduction

The knowledge of the distribution of many species within the family Dermestidae is still incomplete. There are a lot of gaps in our understanding of the occurrence of many species. Thus, each paper, which supplements our knowledge in this field, is valuable. In the present paper, 41 species belonging to the family Dermestidae (Coleoptera) are recorded and discussed. The paper is a continuation of a series of previous papers (e. g. Háva & Herrmann 2016, 2018, 2019a,b).

Material and methods

Species are arranged in alphabetical order, the nomenclature and zoogeography follow the catalogue of Háva (2015).

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The following abbreviations refer to the collections, in which the examined materials are deposited:
AHEC: Andreas Herrmann, private collection, Stade, Germany;
BMNH: Natural History Museum, London, United Kingdom [British Museum (Natural History)];
ISNB: Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium;
JHAC: Jiří Háva, Private Entomological Laboratory & Collection, Únětice u Prahy, Prague-west, Czech Republic;
MZHF: Finnish Museum of Natural History, Helsinki, Finland;
NMPC: National Museum, Praha, Czech Republic;
QCAZ: Museum of the Pontifical Catholic University of Ecuador, Ecuador;
RGPC: Rolando Salinas Gómez, private collection, Santiago, Chile;
SMNS: Staatliches Museum für Naturkunde, Stuttgart, Germany;
URPC: Uno Roosileht, private collection, Tallin, Estonia;
WZPC: Wolfgang Ziegler, private collection, Rondeshagen, Germany.

Corrections to the checklist of the Spanish Dermestidae

HOLLOWAY et al. (2019) have published a paper containing a checklist of the Spanish Dermestidae. In the paper, two species are mentioned as being valid taxa, but both are synonyms. Furthermore several relevant citations concerning synonymy and records are missing in that paper.

HOLLOWAY et al. (2019)	**valid species**
Paranovelsis incognitus (Háva, 2003) Syn. HÁVA & HERRMANN 2018.	*Paranovelsis aequalis* (Sharp, 1902)
Anthrenus amandae Holloway, 2019 Syn. HÁVA & HERRMANN 2019b.	*Anthrenus pimpinellae* (Fabricius, 1775)

Taxonomy

Dermestes (***Dermestes***) ***cernyi*** Háva, 2009 **stat. nov**.

Dermestes (Dermestes) bicolor cernyi Háva, 2009: 120.

Material examined: S. Kazakhstan, Chulakkurdan env., 480 m, 25.5.2016, light, leg. Martin Marík, 1 ♀, A. Herrmann det., (AHEC); Kazakhstan, Almaty region, Uygur district, Temirlik canyon 43.358681, 79.165506, 2.7.2019, alt. 970m, Juha Salokannel leg., 1 ♀, A. Herrmann det., (AHEC); Kazakhstan, Janybek, 15.04.1996, V. Perepel leg., 1 ♂, J. Háva det., (JHAC); Kazakhstan, Prov. Almaty, 22 km N Masak, 450 m, 78°27′E 43°13′N, 21.vi.1996, 1 ♀, J. Háva det., (JHAC).

Remarks. The species was described by HÁVA (2009) from Uzbekistan as subspecies of *D. bicolor* Fabricius, 1781. Based on the characters figured by (Háva 2009) and of the recently collected specimens, the taxon is moved into a new status.

Distribution. Species known from Uzbekistan, new record for Kazakhstan.

Dermestes* (*Dermestes*) *palmi Sjöberg, 1950

Dermestes geltzermani Kozminykh, 1997: 77.
Dermestes hoeltzermanni Kozminykh, 1998: 176 **syn. nov**.

Remarks. Kozminykh (1997) described the species *Dermestes geltzermani* (holotype specimen). The same specimen has been described by Kozminykh (1998) as *Dermestes hoeltzermanni*. The species name *hoeltzermanni* is a new objective synonym of *D. geltzermani* respectively for *D. palmi* Sjöberg, 1950.

Distribution. Species known from Finland, Sweden, Mongolia, Russia: Altay, Amur, Baykal, Karelia, Khabarovsk, Perm, Primorski, Udmurtia, Ussuri.

Anthrenus* (*Anthrenus*) *bilyi Háva, 2000

Anthrenus montanus Zhantiev, 2009: 1404 **syn. nov**.

Material examined: Holotype of *Anthrenus montanus* (♂): Armenia, Talinskij r-n, selo Karmraszen, 2005 m, 25.vi.1976, V. Gorbatovskij, (ZMAS).

Holotype of *Anthrenus bilyi* Háva (♂): Kirgizia, Kuk-kul ozero, Chamza-Abad env., 7.v.1977, Sv. Bílý lgt., (JHAC).

Remarks. Checking of type material, the species *A. montanus* is in all morphological characters (forming scales on pronotum and elytra, antennae, male genitalia) identical with *Anthrenus* (*Anthrenus*) *bilyi* Háva, 2000; *A. montanus* is new junior synonym of *A. bilyi* Háva.

Distribution. Species known from Armenia, Kyrgyzstan and Uzbekistan.

Globicornis cypriensis Háva & Herrmann, 2014 **stat. nov.**

Globicornis signatipennis cypriensis Háva & Herrmann, 2014: 176.

Remarks. The species was described by Háva & Herrmann (2014) from Cyprus as subspecies of *G. signatipennis* Pic, 1899. Based on the characters figured by (Háva & Herrmann 2014) and of the recently collected specimens, the taxon is moved into a new status.

Distribution. Species known from Cyprus.

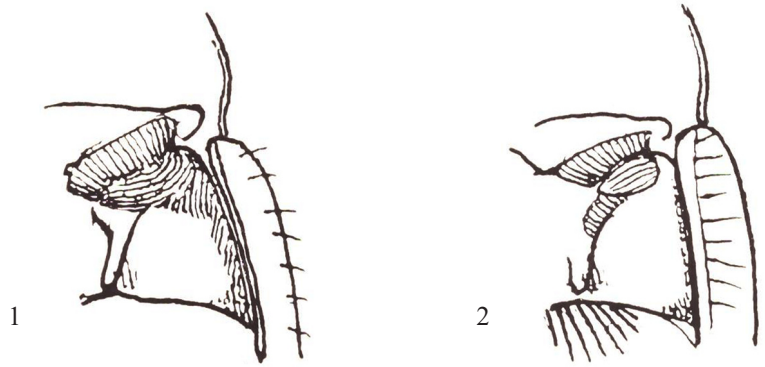
Thorictus westwoodi Wollaston, 1854 **stat. nov**.
(Fig. 1)

Thorictus westwoodi Wollaston, 1854: 220.
Thorictus grandicollis ssp. *westwoodi:* John, 1963: 204; Háva, 2015: 50.

Material examined: P - Porto Santo, Pico Ana Ferreira, 203 m, 33°02.45´N, 16°22.11´W, 14.10.2018, J. Větrovec lgt., 1 spec., J. Háva det., (JHAC).

Remarks. The species was described by Wollaston (1854) from Madeira. John (1963) stated it as a subspecies of *T. grandicollis* Germar, 1842. Based on the characters of recently collected specimens, the taxon is moved to a new status.

Distribution. Species known from Madeira and Porto Santo Islands.



Figs. 1-2: Setation on margin of thorax, ventral view: 1- *T. westwoodi* Wollaston, 1854; 2- *T. grandicollis* Germar, 1842 (by JOHN 1963)

Faunistics

Subfamily Attageninae

Attagenus beali Zhantiev, 2005

Material examined: Yemen, Hadbramaut, As Sawm-Qbar Hud, 22.iv.1992, R. Linnavuori leg., 1 ♀, J. Háva det., (MZHF).

Distribution. Species known from Saudi Arabia, the United Arab Emirates, Oman, new for Yemen.

Attagenus brunnescens (Pic, 1904)

Material examined: Cyprus occ., Panagia vill., 50 km N of Pafos, 1100 m, 1.6.1999, F. Kantner lgt., 1 ♂, 1 ♀, J. Háva det., (JHAC).

Distribution. Species known from Armenia, Iran, Syria and Turkey, new for Cyprus.

Attagenus brunneus Faldermann, 1835

Material examined: N India, Kashmir, Srinagar Distr., Srinagar botanical garden, 34°5.23´N 74°52.45´E, 5.6.2019, A. Maqbool lgt., 5 ♂♂, 3 ♀♀, J. Háva det., (JHAC).

Distribution. Holarctic species, new for India: Kashmir.

Attagenus cyphonoides Reitter, 1881

Material examined: Ukraine, Zhytomyr Raion, Zhytomyr city [130 km W of Kyev], 6.2019, O. Masliukivskyi lgt., 1 ♂, J. Háva det., (JHAC).

Distribution. Species known from Europe, Egypt, Morocco, Nigeria, Senegal, South Sudan, Sudan, Tunisia, Afghanistan, China, India, Iran, Iraq, Israel, Kazakhstan, Mongolia, Pakistan, Russia, Saudi Arabia, Tajikistan, Turkmenistan, Uzbekistan, Canada, Mexico, U.S.A., Australia: Queensland, new for Ukraine.

Attagenus smirnovi Zhantiev, 1973

Material examined: Russia, Ussuri Reg., 20 km NW Chernyshevka, Anuchinsky distr., 200 m, 11-18.8.2016, A. Shamaev lgt., 1 ♂, J. Háva det., (JHAC).

Distribution. Species known from Palaearctic, Oriental and Afrotropical Regions, new for Russia: Ussuri Region.

Attagenus unicolor unicolor (Brahm, 1790)

Material examined: Uruguay, Montevideo, Penarol, 20.12.1930, 1 ♂, A. Herrmann det., (AHEC).

Distribution. Cosmopolitan species, new for Uruguay.

Attagenus unicolor simulans Solsky, 1876

Material examined: N India, Kashmir, Srinagar Distr., Srinagar botanical garden, 34°5.23´N 74°52.45´E, 5.6.2019, A. Maqbool lgt., 1 ♂, 12 ♀♀, J. Háva det., (JHAC).

Distribution. Species known from Afghanistan, N China, Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan, Turkmenistan, Uzbekistan, new for India: Kashmir.

Subfamily Dermestinae

Dermestes (***Dermestinus***) ***szekessyi szekessyi*** Kalík, 1950

Material examined: Estonia, Tehumardi, 58º10'/22º15', 15.07.2018, seashore under seaweed, U. Roosileht lgt., 1 spec., U. Roosileht & A. Herrmann det., (URPC).

Distribution. Species known from Europe, C, W Kazakhstan, Mongolia, Russia: Astrakhan, Novosibirsk, Stavropol, Tuva (Háva 2015), new for Estonia.

Dermestes (***Dermestinus***) ***undulatus*** Brahm, 1790

Material examined: Belge Congo, Bambesa, 10.vi.1937, J. Vrydagh, 1 spec., A. Herrmann det., (ISNB).

Distribution. Holarctic species, new introduced species for Congo.

Dermestes (***Montandonia***) ***fuliginosus*** Rossi, 1792

Material examined: Armenia, Aragatsotn, Pamb Pass, 2152 m, 5.6.2017, W. Ziegler leg., 1 ♂, A. Herrmann det., (WZPC).

Distribution. Species known from Europe, Azerbaijan, Georgia, Turkey, Iran, W Russia, new for Armenia. In the literature (Háva 2015), this species is recorded also from „Caucasus".

Subfamily Megatominae

Anthrenus (***Anthrenodes***) ***amoenulus*** Reitter, 1896

Material examined: Cyprus, Paphos, Yeroskipos, 20.7.1939, Hakar Linb., 3 spec., J. Háva det., (2 MZHF, 1 JHAC); Cyprus, Kambos, 25.7.1939, Hakar Lindb., 1 spec., J. Háva det., (MZHF); Cyprus, Larnaka, 25.6.-1.7.1939, Hakar Lindb., 1 spec., J. Háva det., (MZHF); Cyprus, Kykko, 15-17.7.1939, Hakar Lindb., 2 spec., J. Háva det., (MZHF, JHAC).

Distribution. Species known from Afghanistan, Caucasus, Caspian Lowlands, Iran, Russia, Turkey, Turkmenistan, new for Cyprus.

Anthrenus* (*Anthrenodes*) *fernandezi Háva, 2003

Material examined: Chad, Farcha, 20-22.5.1973, R. Linnavuori leg., 1 ♀, J. Háva det., (MZHF); Nigeria Kw. St., Shangunu-Rofia, 22.7.1973, R. Linnavuiro leg., 2 ♀♀, J. Háva det., (MZHF, JHAC).

Distribution. Species known from Burkina Faso, Cameroon, new for Chad and Nigeria.

Anthrenus* (*Anthrenus*) *pimpinellae isabellinus Küster, 1848

Material examined: Israel c., Old Yaffa port, 32°05´N 34°75´E, 24.iv.2019, V. Novák lgt., 1 spec., J. Háva det., (JHAC).

Distribution. Species known from France, Italy, Spain, Algeria, Morocco, Tunisia, U.S.A. (introduced), new for Israel.

Anthrenus* (*Anthrenus*) *pimpinellae pimpinellae (Fabricius, 1775)

Material examined: England, London, Battersea Park, 20.6.2015, L. Roučka leg., 1 ♂, 2 ♀♀, J. Háva et., (JHAC).

Remarks. HOLLOWAY et al. (2018) removed this species from the British fauna. DUFF (2018) mentioned this species in the list of British Coleoptera. Herewith the occurrence is confirmed for England.

Distribution. Nearly cosmopolitan species.

Anthrenus* (*Anthrenus*) *scrophulariae (Linnaeus, 1758)

Material examined: Argentina, Tucuman, Tafi del Valle, ii. 1956, Col. C. Orlog, 1 spec., A. Herrmann det., (AHEC).

Distribution. Nearly cosmopolitan species, new introduced species to Argentina.

Anthrenus* (*Anthrenus*) *senegalensis Pic, 1927

Material examined: Benin (West-Afrika): Natilingou, 13.4.1988, K. Erger leg., 2 ♂♂, J. Háva det., (SMNS, JHAC).

Distribution. Species known from Gambia, Guinea Bissau, Senegal, Sierra Leone, new for Benin.

Anthrenus* (*Nathrenus*) *biskrensis Reitter, 1887

Material examined: I. Lipari, Vallone Muria, 19.vi.1998, B. Carleti, B. Cecchi, L. Dapporto, P Lo Cascio, C. Moreno leg., 1 spec., J. Háva det., (JHAC).

Distribution. Species known from Italy: Lampedusa, Sicily, Malta, Spain, Algeria, Libya, Morocco, Tunisia, new for Italy: Lipari Island.

Anthrenus* (*Nathrenus*) *zahradniki Háva, 2003

Material examined: „Cypr. [Cyprus], Kykko, 15-17.7.1939, Hakan Lindb.", 2 spec., J. Háva det., (MZHF).

Distribution. Species known from Greece, Lebanon, Turkey, new for Cyprus.

Cryptorhopalum bicolor Sharp, 1902

Material examined: Ecuador, Napo, Cosanga, 2100 m, malaise trap, 9.2019, Jim McClarin leg., 1 spec., J. Háva det., (QCAZ).

Distribution. Species known from Belize, Honduras, Nicaragua, Panama, new for Ecuador.

Cryptorhopalum germanum Sharp, 1902

Material examined: Mexico: Mexico state, 40 km NW Puebla de Zaragoza, 2800 m, 19°35´N, 98°66´W, 26.vi.2019, A. Shamaev leg., 8 spec., J. Háva det., (JHAC).

Distribution. Species known from Guatemala, Mexico: Guanajuato, Guerrero, Morelos, Oaxaca, new for Mexico: Mexico state.

Orphinus* (*Orphinus*) *beali Herrmann, Háva & Zhang, 2011

Material examined: China, Shaanxi, Qinling mts., Xunyangba (6 km E), 1000-1300 m, 23.v.-13.vi.1998, I. H. Marshal lgt., 1 ♀, J. Háva det., (JHAC); China, Sichuan prov., Ya´an prefecture, Ya´an Co., Road 108, ca. 20 km S Ya´an, ca. 1000 m, 19.vi.1998, A. Pütz leg., 1 ♂, J. Háva det., (JHAC).

Distribution. Species known from China: Yunnan, new for Shaanxi and Sichuan.

Orphinus* (*Orphinus*) *bezdeki Háva & Kadej, 2016

Material examined: India, Tamil Nadu, Nilgiri Hills, 11 km SE Kotagiri, 1100±100 m, Kunchapanai env., 11°22´N 76°56´E, 7-22.v.2000, P. Pacholátko leg., 51 spec., (47 NMPC, 4 JHAC).

Distribution. Species known from India: Maharasthra, new for India: Tamil Nadu.

Orphinus* (*Orphinus*) *kadeji Herrmann & Háva, 2014

Material examined: Laos, Vientiane / 30.iii.1990, E. Kondorosy leg., 1 ♀, J. Háva det., (JHAC).

Distribution. Species known from Thailand, new for Laos.

Orphinus* (*Orphinus*) *kresli Háva, 2003

Material examined: Nepal W, Gorkha, Khanchok-Arughat Bazar, 1300-1700 m, 23.5.1990, Probst leg., 1 ♀, J. Háva det., (JHAC).

Distribution. Species known from central Nepal, otherwise second known specimen.

Orphinus* (*Orphinus*) *sikkimensis Háva & Herrmann, 2004

Material examined: Bhutan west, Thimphu Prov., Taba, 2500-2600 m, 15-22.viii.1990, C. Holzschuh leg., 1 ♀, J. Háva det., (JHAC).

Distribution. Species known from India: Sikkim, Darjeeling, new for Bhutan.

Orphinus* (*Orphinus*) *unifasciatus Háva, 2006

Material examined: „India, Bhimthal [Uttaranchal], ii. [19]86", 1 ♀, J. Háva det., (JHAC).

Distribution. Species known from India: Himachal Pradesh, new for Uttaranchal. Second known specimen.

Phradonoma charon Háva & Kadej, 2008

Material examined: Cyprus, Limassol, Colossi, 3.7.1939, Hakkan Lindb., 1 spec., J. Háva det., (MZHF).

Distribution. Species known from Greece, Turkey, new for Cyprus.

Reesa vespulae (Milliron, 1939)

Material examined: „RA.Neuquen, 26.ii.1946, Hayward. Willink", 1 spec., A. Herrmann det., (AHEC).

Distribution. Cosmopolitan species, new for Argenitina.

Thaumaglossa dembickyi Háva, 2002

Material examined: Philippines, Central Visayas, Samar, Lope de Vega, Febr. 2019, local collector, 1 ♂, 1 ♀, J. Háva det., (JHAC); Philippines, MINDANAO, Zamboanga del Norte, Gutallac, March 2019, local collector, 1 ♂, J. Háva det., (JHAC).

Distribution. Species already known from the Philippines (HÁVA 2015): Luzon, Mindanao, new for Visayas.

Thaumaglossa rufula Pic, 1931

Material examined: Indonesia, E Kalimantan, Maura Ritan vill., 00°24.0´N, 116°1´E, 49 m, 5. Xii.2011, J. Hájek, J. Schneider & P. Votruba leg. / border of fields and rainforest in foothill near Beleyan river, individual collecting in puddle and on vegetation, + light trap, 1 ♂, J. Háva det., (NMPC).

Distribution. Species known from the Philippines, Indonesia: Java, new for Kalimantan.

Trogoderma diiorioi Háva, 2017

Material examined: Argentina, Bariloche/Rio Negro, 01.01.1955, Leg. S. Schajovskoi, 1 spec., A. Herrmann & J. Háva det., (AHEC); Argentina, Pucará/Parque Nacional Lanín, XI-1951, Leg. S. Schajovskoi, 1 ♂, A. Herrmann & J. Háva det., (AHEC).

Distribution. Species known only from Argentina.

Trogoderma koenigi Pic, 1954

Material examined: China, Zhejiang prov., West Tianmu Shan (Mts.) reserve, border of secondary mixed forest near entrance of reserve; at light, 30°18.34´N, 119°26.46´E, 310 m, 23.vi.-6.vii.2017, J. Hájek & J. Růžička leg., 1 ♀, J. Háva det., (NMPC).

Distribution. Species known from China: Fujian, new for Zhejiang Prov.

Trogoderma stachi Mroczkowski, 1958

Material examined: „Buenos Aires, I.30“, 1 ♂, J. Háva det., (AHEC); „Sao Paulo, Bras.“ / „Eurhopalus ? vicinus Sol var.“ [M. Pic. det], 1 ♂, J. Háva det., (JHAC).

Remarks. The habitus and male genitalia are firstly illustrated (Figs. 3-4).

Distribution. Species known from Brazil, new for Argentina.

Figs. 3-4: *Trogoderma stachi* **Mroczkowski, 1958: 3- habitus, dorsal view; 4- male genitalia**

Trogoderma variabile Ballion, 1878

Material examined: Argentina, Mendoza, Luján de Cuyo en plafón, 15.01.2019, leg. G. Gomariz, 1 ♀, A. Herrmann det., (AHEC).

Distribution. Nearly cosmopolitan species, newly introduced species to Argentina.

Subfamily Orphilinae

Orphilus subnitidus LeConte, 1861

Material examined: Mexico, Baja California state, Parque Nac. Constitution de 1857, 12 km SW Laguna Hanson, 1700 m, Sierra de Juares, 31.96N 1.5.99W, 15.vi.2019, A. Shamaev leg., 5 spec., J. Háva det., (JHAC).

Distribution. Species known from Canada: Alberta, British Columbia, West U.S.A, new for Mexico: Baja California.

Subfamily Thorictinae

Thorictus grandicollis grandicollis Germar, 1842

Material examined: Chile, Región de O'higgins (VI Región), Cerro Llivi llivi, Lo Miranda, 13.10.2019, leg. Rolando Salinas Gómez, 1 spec., J. Háva & A. Herrmann det., (RGPC).

Remarks. The entomologist Rolando Salinas Gómez from Chile informed us by email that he found a specimen of the genus *Thorictus* near Santiago, in the coastal mountain range. It walked through some wooden sticks in one of his terrariums; the specimen probably arrived with some *Camponotus chilensis* that he caught a few days before. This was the first record of a specimen belonging to the genus *Thorictus* from America as well as from the whole Neotropical region. The species is unlikely to have been hiding in America to this day, the beetle was certainly introduced from Europe, Africa or Asia. The genus *Thorictus* includes more than 170 valid species respectively subspecies, all of them are very small, entirely brown or black, nearly hairless and look habitually very similar to each other. *Thorictus grandicollis* Germar, 1842 is the most common species of this genus in Southern Europe and the Mediterranean subregion.

Distribution. The species known from south Europe and the Medditerranean subregion, Armenia, Azerbaijan and Turkmenistan, newly introduced in Chile.

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A little known and synonym ant-lions 2. (Neuroptera: Myrmeleontidae)

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Ábrahám, L. & Giacomino, M.: *A little known and synonym ant-lions 2. (Neuroptera: Myrmeleontidae)*.

Abstract: The authors examined antlion types in several collections and, as a result, 44 new synonymous names were found and 8 new combinations were established. Label data of the type specimens, distribution and some taxonomical comments were published. *Acanthaclisis aurora* Klapálek, 1912 **n. syn.** of *Phanoclisis longicollis* (Rambur, 1842); *Creoleon pallida* Fraser, 1950 **n. syn.** of *Nohoveus lepidus* (Klug in Ehrenberg, 1834); *Myrmeleon tschernovi* Krivokhatsky, N. A., Shapoval & A. P. Shapoval, 2014 **n. syn.** of *Myrmeleon bore* (Tjeder, 1941); *Myrmeleon montanus* Navás, 1914 **n. syn.** of *Myrmeleon trivialis* Gerstaecker, 1885; *Cueta elongata* Navás, 1914 **n. syn.** of *Cueta divisa* Navás, 1912; *Cueta externa* Navás, 1914 **n. syn.** of *Cueta indefinita* Navás, 1914; *Cueta gracilis* Navás, 1924 **n. syn.** of *Cueta indefinita* Navás, 1914; *Cueta simplicior* Navás, 1934 **n. syn.** of *Cueta indefinita* Navás, 1914; *Cueta pilosa* Navás, 1934 **n. syn.** of *Cueta indefinita* Navás, 1914; *Nesoleon scalaris* Navás, 1912 **n. syn.** of *Cueta pallens* (Klug in Ehrenberg, 1834). "*Nesoleon lepidus* Klug." is a wrong combination (Banks 1913) and not extant species. *Cueta dissimulata* Navás, 1913 **n. syn.** of *Cueta trivirgata* (Gerstaecker, 1894); *Dendroleon qiongana* Yang, 2002 **n. syn.** of *Gatzara caelestis* (Krivokhatsky, 1997); *Dendroleon angulineura* C.-k. Yang, 1987 **n. syn.** of *Gatzara jubilaea* Navás, 1915; *Myrmeleon contractus* Walker, 1860 **n. comb.** of *Layahima contracta* (Walker, 1860); *Layahima nebulosa* Navás, 1912 **n. syn.** of *Layahima contracta* (Walker, 1860); *Distoleon cubitalis* (Navás, 1914) **n. comb.** of *Banyutus cubitalis* (Navás, 1914); *Formicaleo feai* Navás, 1915 **n. syn.** of *Banyutus cubitalis* (Navás, 1914); *Cymatala pallora* C.-k. Yang, 1986 **n. comb.** of *Banyutus pallorus* (C.-k. Yang, 1986) and **n. syn.** of *Banyutus cubitalis* (Navás, 1914); *Creoleon maurus* Navás, 1923 **n. syn.** of *Creoleon lugdunensis* (Villers, 1789); *Creagris interrupta* Navás, 1914 **n. syn.** of *Creoleon mortifer* (Walker, 1853); *Creagris loanguana* Navás, 1913 **n. syn.** of *Creoleon mortifer* (Walker, 1853); *Creoleon nigritarsis* Navás, 1921 **n. syn.** of *Creoleon mortifer* (Walker, 1853); *Creagris venosus* Navás, 1914 **n. syn.** of *Creoleon mortifer* (Walker, 1853); *Neeles roscidus* Navás, 1937 **n. comb.** of *Distoleon roscidus* (Navás, 1937) and **n. syn.** of *Distoleon nefandus* (Walker, 1853); *Distoleon symphineurus* C.-k. Yang, 1986 **n. syn.** of *Distoleon solitarius* (Hölzel, 1970); *Macronemurus interruptus* Kolbe, 1897 **n. syn.** of *Distoleon sylphis* (Gerstaecker, 1894); *Formicaleo turbidus* Navás, 1915 **n. syn.** of *Distoleon sylphis* (Gerstaecker, 1894); *Formicaleo lambarenus* Navás, 1921 **n. syn.** of *Distoleon sylphis* (Gerstaecker, 1894); *Formicaleo gilsi* Navás, 1933 **n. syn.** of *Distoleon sylphis* (Gerstaecker, 1894); *Neeles muzanus* Navás, 1922 **n. comb.** of *Distoleon muzanus* (Navás, 1922) and **n. syn.** of *Distoleon sylphis* (Gerstaecker, 1894); *Feina languidus* Navás, 1931 **n. syn.** of *Distoleon tholloni* (Navás, 1914); *Neuroleon parvissimus* Fraser, 1952 **n. syn.** of *Geyria lepidula* (Navás, 1912); *Formicaleo dumontinus* Navás, 1933 **n. comb.** of *Macronemurus dumontinus* (Navás, 1933) and **n. syn.** of *Macronemurus appendiculatus* (Latreille, 1807); *Macronemurus schoutedeni* Navás, 1930 **n. syn.** of *Macronemurus loranthe* Banks, 1911; *Macronemurus jejunus* Navás, 1912 **n. syn.** of *Macronemurus melanthe* Banks, 1911; *Macronemurus ianthe* Banks, 1911 **n. syn.** of *Macronemurus perlatus* (Gerstaecker, 1885); *Macronemurus nuncius* Navás, 1913 **n. syn.** of *Macronemurus perlatus* (Gerstaecker, 1885); *Formicoleo fictus* Navás, 1913 **n. syn.** of *Macronemurus perlatus* (Gerstaecker, 1885); *Formicaleo neavinus* Navás, 1913 **n. comb.** of *Macronemurus neavinus* (Navás, 1913) and **n. syn.** of *Macronemurus perlatus* (Gerstaecker, 1885); *Macronemurus wittei* Navás, 1932 **n. syn.** of *Macronemurus perlatus* (Gerstaecker, 1885); *Neuroleon lukhtanovi* Krivokhatsky, 1996 **n. syn.** of *Neuroleon erato* Hölzel, 1972; *Neuroleon nubilus* Navás, 1913 **n. syn.** of *Neuroleon* (*Ganussa*) *tenellus* (Klug in Ehrenberg, 1834); *Tahulus sordidatus* Navás, 1936 **n. syn.** of *Pseudoformicaleo gracilis* (Klug in Ehrenberg,

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1834); *Indoleon tacitus sinicus* C.-k. Yang in C.-k. Yang & X.-l. Wang, 2002 **n. syn.** of *Indoleon tacitus* (Walker, 1853); *Myrmeleon lagopus* Gerstaecker, 1894 **n. comb.** of *Nedroledon lagopus* (Gerstaecker, 1894), *Nedroledon striatus* Hölzel, 1972 **n. syn.** of *Nedroledon lagopus* (Gerstaecker, 1894); *Paraglenurus lotzi* Miller & Stange, 1999 **n. syn.** of *Paraglenurus pumilus* Yang, 1997. 49 photographs of type specimens are presented.

Keywords: Taxonomy, valid species, new synonym, lectotype designation, Palearctic, Afrotropic, Indomalaya.

Introduction

LINNAEUS (1758, 1767) established the science of taxonomy and nomenclature was followed by later researchers. Later, Neuroptera specialists provided more and more detailed descriptions and compiled the first catalogues (RAMBUR 1842 and WALKER 1853). Despite the greatest efforts and good intentions of the researchers, repeated species descriptions also happened.

In 1853, WALKER ranked all antlion species in one genus: *Myrmeleon*, which made their identification complicated. Later, in 1866, HAGEN restored the earlier classification ranking the species into different genera and also provided important species revisions. His works were completed by MCLACHLAN (1868), who continued the specific and generic revision of species listed in WALKER (1853).

Even in the earlier monographs, under their generic name, authors used to list literature references, together with the taxonomical changes to let us follow the changing status of the species. This practice continues today and is becoming more and more accurate. Nowadays, in the faunistic papers, not only name changes (combinations, synonyms, etc.) but numerous biological information is published like habitat, distribution, behavior, ecology, etc.

In the early 20th century, the antlion research became more intensive and a high number of species were described from non-European continents. Most of these descriptions were provided by Navás. He was criticized by several contemporary authors and a high number of his species was synonymized by BANKS (1913) and ESBEN-PETERSEN (1920).

In the second half of the 20th century, comprehensive studies and monographs were published on the antlion fauna of various geographic areas based on thorough explorations that were done ever before. Good examples of these works are HÖLZEL 1972, GHOSH 1984, NEW 1985a,b,c, and ASPÖK et al. 1980. In addition, major worldwide generic revisions were published eg. HÖLZEL 1987, MANSELL 1985, STANGE 1976, etc.

In the 21st century, this trend continued. For the future, revisions of genera *Myrmeleon, Distoleon, Neuroleon*, etc. shall be focused. In addition, the revision of the antlion fauna of smaller or larger countries shall be continued, eg. KRIVOKHATSKY (2011).

The catalogue of Myrmeleontidae by STANGE (2004), is the most important subrecent work providing a new synthesis of research in antlion taxonomy.

Recently online databases and web catalogues become more and more important. Lacewing Digital Library (Oswald 2019), the antlion of South Africa (Mansell 2018), Fauna Europaea (Letardi et al. 2019, etc., makes research easier.

We are facing another major synthesis, since significant progress has already been made in the information transmission and in the digitization of type specimens, especially in various museums like MRAC (Belgium), ZMHB (Berlin) and Tauber et al. 2019, etc. All of these require more accurate taxonomic and nomenclature information and make our research even more efficient.

The aim of this paper is to provide new information and synonymous names discovered in the study of the type specimens in terms of more useful local fauna surveying and the distribution of the species.

Material and methods

In the first part of this paper, the material and methods entry was already elaborated. In the current paper, the same methods are applied (Giacomino & Ábrahám 2018).

The examined type and other non-type specimens are from the following collections:

BMNH - Natural History Museum, London, England.
CAUB - China Agricultural University, Beijing, China.
EMAU - Ernst-Moritz-Arndt Universität, Zoologisches Institut and Museum, Greifswald, Germany.
MCSN - Museu Civico de Storia Naturale "Giacoma Doria", Genoa, Italy.
MNHP - Museum National d'Histoire Naturelle, Paris, France.
MRAC - Musée Royal de 1'Afrique Centrale, Tervuren, Belgium.
NHMW - Naturhistorisches Museum, Wien, Austria.
USMB - Upper Silesian Museum, Bytom, Poland.
OXUM - Hope Entomological Collections, University Museum, Oxford, England.
ZMHB - Museum für Naturkunde der Humboldt Universitat zu Berlin, Bereich Zoologisches Museum, Berlin, Germany.

Abbreviations. – Chlist, Checklist; Comb, New combination; Com, Comment; Dist, Distribution; Hom, Homonym; Mon, Monograph; Morph, Morphology; Nom, Nomenclature; Odescr, Original description; Syn, Synonym.

Results and discussion

Family **Myrmeleontidae**
Subfamily **Myrmeleontinae** Latreille, 1802
Tribe **Acanthaclisini** Navás, 1912

Phanoclisis longicollis (Rambur, 1842)

Acanthaclisis longicollis Rambur, 1842: 381 (Odescr).

Syn. *Acanthaclisis aurora* Klapálek, 1912: 144 (Odescr), **n. syn.**, (Fig. 1) (Figure © by Natural History Museum Vienna, NOaS Image Collection; published with permission).

Nora aurora (Klapálek, 1912) - Navás 1912a (Comb).

Phanoclisis aurora (Klapálek, 1912) - Banks 1913 (Comb), Aspöck & Hölzel 1996 (Chlist), Aspöck et al. 2001 (Mon), Stange 2004 (Mon).

Type of Acanthaclisis aurora. Checked, preserved in NHMW.

LECTOTYPE (**present designation**): female "/ Lectotype / Acanthaclisis aurora / Klapálek, 1912 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ Typus [red label] // Egypten 1904 [printed] / Medinet- / Fayum / 12. VIII [with Klapálek's handwriting] / leg. Werner [vertically printed] [white label] // Acanthaclisis / aurora n. sp. [white label with Klapálek's handwriting] // Acanthaclisis / longicollis / Rbr. [handwritten white label] /".

In KLAPÁLEK (1912) "Medinet-Fayum, Ägypten, 12. August 1904; 1 ♂".

Type condition. Bad, left forewing and tip of the abdomen missing.

Comment. *Nora* Navás, 1912a is a junior homonym of *Nora* Niceville, 1893 (Lepidoptera), the objective replacement name is *Phanoclisis* Banks, 1913. KLAPÁLEK (1912) described the new species based on the different measurements, colourization and the unspotted wings compared to *Phanoclisis longicollis*. All those characters are very variable especially the spotted or unspotted wings (KRIVOKHATSKY 2005a). Only the major monographs (ASPÖCK & HÖLZEL 1996, ASPÖCK et al. 2001, STANGE 2004) listed the occurrence of the species in Egypt. EL-HAMOULY & FADL (2011) did not mention it in the Egyptian checklist. An unknown person already put a handwritten label to the type as *Acanthaclisis longicollis* previously but this information was not found in the litera-

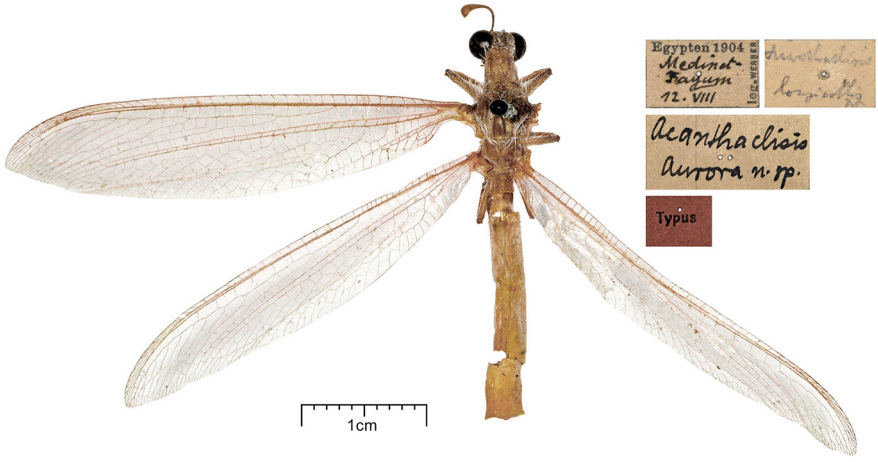

Fig. 1: ***Acanthaclisis aurora*** **Klapálek, 1912 n. syn. of** ***Phanoclisis longicollis*** **(Rambur, 1842)**

ture (Esben-Petersen 1920, Aspöck et al. 2001, Stange 2004). We confirm that *Phanoclisis aurora* Klapálek, 1912 is a new junior synonym of *Phanoclisis longicollis* (Rambur, 1842).

Distribution of Phanoclisis longicollis. It is a widespread species in the sub-Saharan and Saharan zones (Prost 1998) and in the Arabian Peninsula (Ábrahám & Harten 2014) but false data are known in South Africa (Walker 1853) and Indonesia (Stange 2004).

Tribe **Myrmecaelurini** Esben-Petersen, 1918

Nohoveus lepidus (Klug in Ehrenberg, 1834)

Nohoveus lepidus (Klug in Ehrenberg, 1834): 36 (Odescr).
Syn. *Creoleon pallida* Fraser, 1950: 124 (Odescr), **n. syn.**, (Fig. 2).
Myrmecaelurus pallidus (Fraser, 1950) - Stange 2004 (Comb, Mon).

Type of Creoleon pallida. Checked, preserved in MNHP.

Lectotype (**present designation**): male "/ Lectotype / Creoleon pallidus / Fraser, 1950 / design.: Ábrahám & / Giacomino 2017 [red label] /"

Label information. "/ Type [red label] // Aïr . Agadez / 500 m. 3, VIII - 1947 / L. Chopard et / A. Villiers Rec. [blue label] // Museum Paris [white label with narrow black margins] // Creoleon [underlined] / pallida [underlined] ♂ / Type [in capital letters and underlined] / det. F. C. Fraser [handwritten white label] /".

In Fraser (1950) "Agadez (Aïr) 500 m., 3-VIII to 13-IX-47 (L. C. and A. V.)".

Synonymy is marked as "/ Nohoveus lepidus / (Klug in Ehrenberg, 1834) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Good, left antenna missing.

Fig. 2: ***Creoleon pallida*** **Fraser, 1950 n. syn. of** ***Nohoveus lepidus*** **(Klug in Ehrenberg, 1834)**

Comment. *Creoleon pallida* Fraser, 1950 is a new junior synonym of *Nohoveus lepidus* (Klug in Ehrenberg, 1834). We agree with KRIVOKHATSKY (2005b) that synonymy of *Myrmecaelurus* A. Costa, 1855 with *Nohoveus* Navás, 1918 (STANGE 2004) is incorrect.

Distribution of Nohoveus lepidus. It is a widespread species in North Africa and in the Arabian Peninsula (STANGE 2004).

Tribe **Myrmeleontini** Latreille, 1802

Myrmeleon bore (Tjeder, 1941)

Myrmeleon bore (Tjeder, 1941): 74 (Odescr).

Syn. *Myrmeleon tschernovi* Krivokhatsky, N. A., Shapoval & A. P. Shapoval, 2014: 173 (Odescr), **n. syn.**, (Fig. 3).

Type of Myrmeleon tschernovi. Only non type specimens were checked in USMB.

Label information. "/ Kalinyingrad Ribacse, / ornitolog lovuska 2013 / A. Shapoval [white label in printed Russian letters] // N 132 K. k. / 27. 08. 2013 /14 [white label] // Myrmeleon tschernovi / Kriv. & Shaps,. / V. Krivokhatsky [white label in printed letters] /". This male specimen was placed into the entomological collection of Rippl-Rónai Museum, Kaposvár.

In KRIVOKHATSKY et al. (2014) "Holotype: ♂, Kaliningrad Prov., Cu-ronian Spit, "Fringilla" Research Station, stationary trap for bird capturing, 12.VII.2012 (A.P. Shapoval)".

Specimen condition. Excellent.

Fig. 3: *Myrmeleon tschernovi* Krivokhatsky, N. A., Shapoval & A. P. Shapoval, 2014 n. syn. of *Myrmeleon bore* (Tjeder, 1941)

Comment. *Myrmeleon tschernovi* Krivokhatsky, N. A., Shapoval & A. P. Shapoval, 2014 is a new junior synonym of *Myrmeleon bore* (Tjeder, 1941). Synonymy based on the accurate description (KRIVOKHATSKY et al. 2014) and non type examination. It is a common pit building species in the coastal area of the Baltic sea.

Distribution of Myrmeleon bore. A widespread Palaeartic species from Europe to Japan (Röhricht 1998).

Myrmeleon trivialis Gerstaecker, 1885

Myrmeleon trivialis Gerstaecker, 1885: 23 (Odescr), Stange 2004 (Mon), Zhan et al. 2011 (Dist), Atkar et al. 2018 (Dist), Wang et al. 2018 (Mon), Yang, D. et al. 2018 (Chlist).

Syn. *Myrmeleon montanus* Navás, 1914d: 234 (Odescr), Ghosh & Sen 1977 (Chlist), Ghosh 1984 (Mon), 1991 (Dist), 1997 (Dist), Stange 2004 (Mon), **n. syn.**, (Fig. 4).

Type of Myrmeleon montanus: female checked, preserved in MNHP.

Label information. "/ Type [white label in capital red letters] // Museum Paris / Darjiling / Harmand 1890 [green label in printed letters] // Myrmeleon / montanus ♀ Nav. / Navás S. J. det. [white label with Navás's handwriting] // Lectotype [red label in capital letters] // Myrmeleon / montanus / Navás, 1914 / Lectotype / J. Legrand det. 1992 [white label with Legrand's handwritting] /".

In Navás (1914d) "Himalaya: Darjeeling, Harmand 1890 (Mus. de Paris)".

Synonymy is marked as "/ Myrmeleon trivialis / Gerstaecker, 1885 / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Fig. 4: *Myrmeleon montanus* Navás, 1914 n. syn. of *Myrmeleon trivialis* Gerstaecker, 1885

Type condition. Medium, antenna missing, tip of left forewing broken and base of right forewing damaged.

Comment. *Myrmeleon montanus* Navás, 1914 is a new junior synonym of *Myrmeleon trivialis* Gerstaecker, 1885

Distribution of Myrmeleon trivialis. A widespread species in the Oriental region (Pakistan, India, Nepal, Thailand, Vietnam and China).

Tribe **Nesoleontini** Markl, 1954

Cueta divisa (Navás, 1912)

Nesoleon divisus Navás, 1912c: 235 (Odescr), Banks 1913 (Syn).

Cueta divisa (Navás, 1912) - Oswald 2019 (Comb).

Syn. *Cueta elongata* Navás, 1914a: 17 (Odescr), Stange 2004 (Mon), **n. syn.**, (Fig. 5).

Type of Cueta elongata. Checked, preserved in MNHP.

LECTOTYPE (**present designation**): male "/ Lectotype / Cueta elongata / Navás, 1914 / design.: Ábrahám & / Giacomino 2017 [red label] /".

Label information. "/ Museum Paris / Ch Alluaud / Et R. Jeannel [green label] // Afrique Orient. Anglaise / Tavéta / Alluaud & Jeannel / Mars 1912 750m St 65 [white label in printed letters] // Cueta / elongata ♂ Nav. [with Navás's handwriting] / Navás S. J. det. [printed] [white label] /".

In NAVÁS (1914a) "Afrique Orientale Anglaise: Tavéta, alt. 750 m., st. nº 65, mars 1912 (Alluaud et Jeannel)".

Synonymy is marked as "/ Cueta divisa / Navás, 1912 / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Good, antenna missing.

Comment. It is conspecific with *Myrmeleon variegatus* Klug in Ehrenberg, 1834 which is a homonym and its name was replaced by HÖLZEL (1982) to *Cueta klugi* Hölzel, 1982. *Cueta divisa* Navás, 1912 is available for *Myrmeleon variegatus* Klug in Ehrenberg, 1834, consequently *Cueta klugi* Hölzel, 1982 is also synonym (OSWALD

Fig. 5: *Cueta elongata* Navás, 1914 n. syn. of *Cueta divisa* Navás, 1912

2019). At first, BANKS (1913) recognised the taxonomical status of *Cueta divisa* Navás, 1912 and synonymed to *Myrmeleon variegatus* Klug in Ehrenberg, 1834 but he did not consider that *Myrmeleon variegatus* Klug in Ehrenberg, 1834 was a homonym. *Cueta elongata* Navás, 1914a is a new junior synonym of *Cueta divisa* Navás, 1912.

Distribution of Cueta divisa. Data are known from the Saharan zone: Cape Verde Islands, Senegal, Sudan, Kenya, Somalia, Saudi Arabia, Oman, Yemen (as *Cueta klugi*) (ASPÖCK et al. 2001) as weel as in Ethiopia (BANKS 1911), Tanzania (WEELE 1910), Chad (NAVÁS 1912d). Its occurring in Madagascar (as *Cueta klugi*) (WEELE 1909, PENNY 2004, STANGE 2004) needs to be reaffirmed.

Cueta indefinita Navás, 1914

Cueta indefinita Navás, 1914b: 103 (Odescr), Penny 2004 (Chlist), Stange 2004 (Mon), Ábrahám & Dobosz 2011 (Dist, Com), (Fig. 6).

Syn. *Cueta externa* Navás, 1914b: 104 (Odescr), Navás 1933a (Morph, Dist), 1934b (Morph, Dist), Handschin 1963 (Dist), Whittington 2002 (Dist), Penny 2004 (Chlist), Stange 2004 (Mon), **n. syn.**, (Fig. 7).

Syn. *Cueta gracilis* Navás, 1924: 104 (Odescr), Penny 2004 (Chlist), Stange 2004 (Mon), Ábrahám & Dobosz 2011 (Com), **n. syn.**, (Fig. 8).

Syn. *Cueta simplicior* Navás, 1934a: 51 (Odescr), Penny 2004 (Chlist), Stange 2004 (Mon), Ábrahám & Dobosz 2011 (Com), **n. syn.**, (Fig. 9).

Syn. *Cueta pilosa* Navás, 1934a: 52 (Odescr), Penny 2004 (Chlist), Stange 2004 (Mon), **n. syn.**, (Fig. 10).

Type of Cueta indefinita. Checked, preserved in MNHP.

Lectotype (**present designation**): female "/ Lectotype / Cueta indefinita / Navás, 1914 / design.: Ábrahám & / Giacomino 2017 [red label] /".

Label information. "/ Type [white label in capital red letters] // Museum Paris / Madagascar / Rég. de Sakarami / Maurice de Rothschild / 1905 [blue label] // Cueta / indefinita ♀ Nav. [with Navás's handwriting] / Navás S.J. det. [printed] [blue label] // Holotype [red label in capital printed letters] // Cueta indefinita / Navás, 1914 / Holotype / J. Legrand dét, 1992 [white label] /".

In Navás (1914b) "Madagascar. Rég. de Sakarmi, Maurice de Rothschild."

Type condition. Poor, left antenna missing, fore and hindwings damaged.

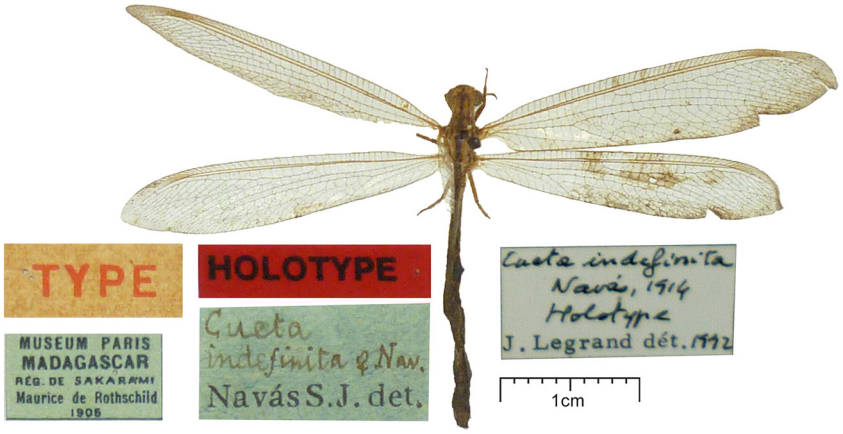

Fig. 6: Lectotype of *Cueta indefinita* Navás, 1914

Comment. It is only one and valid *Cueta* Navás, 1911 taxon from Madagascar. Navás (1914b, 1934a) described four *Cueta* sp. from Madagascar namely *Cueta externa* Navás, 1914; *Cueta gracilis* Navás, 1914; *Cueta pilosa* Navás, 1934; *Cueta simplicior* Navás, 1934. *Cueta pilosa* is a homonym of *Cueta pilosa* Navás, 1917 from Vietnam revealed by Stange (2004) otherwise the four taxa are new synonyms of *Cueta indefinita* Navás, 1914. Type of *Cueta indefinita* Navás, 1914 is only a lectotype specimen. Ábrahám & Dobosz (2011) have already referred to the possible synonymy of *Cueta* species described from Madagascar.

Distribution of Cueta indefinita. Madagascar.

Type of Cueta externa. Checked, preserved in MNHP.

LECTOTYPE (**present designation**): female "/ Lectotype / Cueta externa / Navás, 1914 / design.: Ábrahám & / Giacomino 2017 [red label] /".

Label information. "/ Type [white label in red letters] // Museum Paris / Madagascar / Prov. De Tulear / Bas Fiherena / F. Geay 1906 [blue label] // Cueta / externa ♂ Nav. [with Navás's handwriting] / Navás S.J. det. [printed] [blue label] // Mission / F. Geay / madagascar / bas Fiherena / nº=5414 jan. 1906 [white label handwritten] // Holotype red label in capital printed letters // Cueta externa / Navás, 1914 / Holotype ♀ / J. Legrand dét, 1992 [white label] /".

Fig. 7: ***Cueta externa*** **Navás, 1914 n. syn. of** ***Cueta indefinita*** **Navás, 1914**

In NAVÁS (1914b) "Madagascar, Prov. de Tulear, Bas Fiherena".

Synonymy is marked as "/ Cueta indefinita / Navás, 1914 / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. According to NAVÁS (1914b) the type material was in pure condition (missing head) when describing. The type condition probably has not changed since his describing. The designated lectotype specimen has not a head, too.

Comment. At first, the type specimen was designated by Legrand as holotype based on labels and missing head. NAVÁS (1914b) marked the sex of type as a male on the original label but the type specimen is a female in which we agree with Legrand.

Type of Cueta gracilis. Lectotype male checked, preserved in MNHP.

Lectotype was designated by Legrand "/ Lectotype [red label in capital printed letters] // Cueta gracilis / Navás, 1924 / Lectotype / J. Legrand dét. 1992 [white label with Legrand's handwriting] /".

Label information. "/ Type [white label in red letters] // Museum Paris / Madagascar S/ District de Tsihombé / Beloha / Lieut. Decary 1919 [blue label] // Beloha 5.3. [19]18 [white label with handwriting] // Cueta / gracilis Nav. [with Navás's handwriting] / det. Navás S. J. [printed] [blue label] /".

Fig. 8: *Cueta gracilis* Navás, 1924 n. syn. of *Cueta indefinita* Navás, 1914

In Navás (1924) "Madagascar S., District de Tsihombé, Beloha, Lieut. Decary, 1919".

Synonymy is marked as "/ Cueta indefinita / Navás, 1914 / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Good, left forewing damaged at the base of costal area.

Comment. *Cueta gracilis* Navás, 1924 is a new synonym of *Cueta indefinita* Navás, 1914.

Type of Cueta simplicior. Checked, preserved in MNHP.

Lectotype was designated by Legrand "/ Lectotype [red label in capital printed letters] // Cueta simplicior / Navás, 1934 / Lectotype / J. Legrand dét. 1992 [white label with Legrand's handwriting] /".

Label information. "/ Type [white label in red letters] // Betroka / Madagascar / I. 1933 [blue label with Navás's handwritting] // Cueta / simplicior Nav. [with Navás's handwritting] / det. Navás S.J. [printed] [blue label] // Museum Paris / Login Navas legit 19 [blue label] /".

In Navás (1934a) "Madagascar, Enero de 1933".

Synonymy is marked "/ Cueta indefinita / Navás, 1914 / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Good, antenna broken, the abdomen is glued to a label.

Comment. *Cueta simplicior* Navás, 1934 is a new synonym of *Cueta indefinita* Navás, 1914.

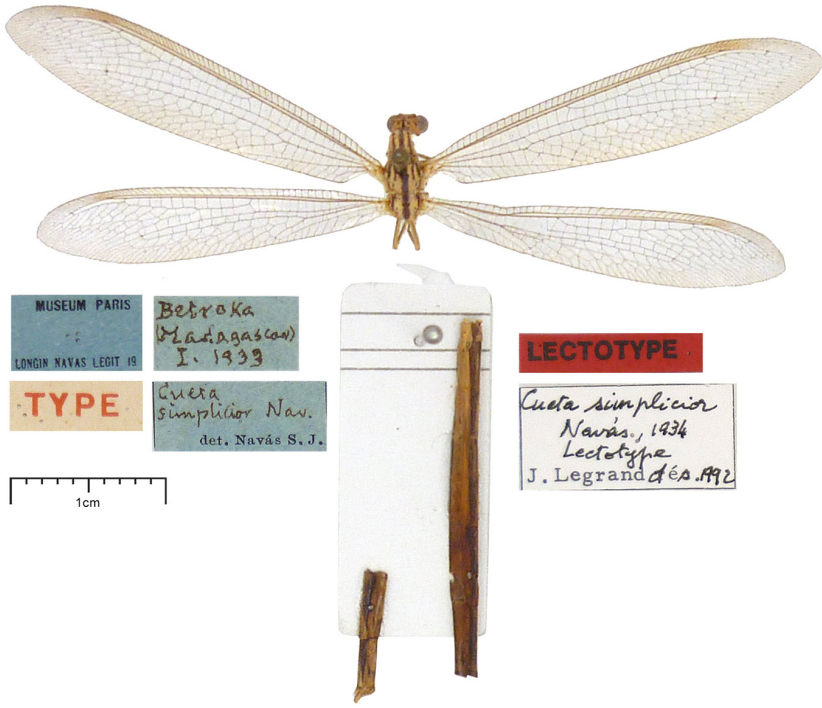

Fig. 9: ***Cueta simplicior*** **Navás, 1934 n. syn. of** ***Cueta indefinita*** **Navás, 1914**

Type of Cueta pilosa. Checked, preserved in MNHP.

LECTOTYPE (**present designation**): male "/ Lectotype / Cueta pilosa / Navás, 1934 / design.: Ábrahám & / Giacomino 2017 [red label] /".

Label information. "/ Type [white label in capital red letters] // Ihossy / Madagascar / II - 1933 [blue label with Navás's handwriting] // Cueta / pilosa Nav. [with Navás's handwriting] / P. Navás S. J. det. [printed] [green label] // Museum Paris / Longin Navas Legit 19 [blue label in printed letters] /".

In NAVÁS (1934a) "Madagascar: Ihosy, Febrero de 1933; Bekily, Abril de 1933".

Synonymy is marked as "/ Cueta indefinita / Navás, 1914 / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Good, apart from lacking of antenna.

Comment. *Cueta pilosa* Navás, 1934 is a new synonym of *Cueta indefinita* Navás, 1914. It is both homonym and synonym too, only one and same species, *Cueta indefinita* Navás, 1914 is known from Madagascar.

Cueta pallens (Klug in Ehrenberg, 1834)

Cueta pallens (Klug in Ehrenberg, 1834): 36 (Odescr).
Syn. *Nesoleon scalaris* Navás, 1912c: 126 (Odescr), **syn. n.**, (Fig. 11).
Cueta scalaris (Navás, 1912) - Stange 2004 (Mon, Comb).

Type of Nesoleon scalaris. Checked, preserved in BMNH.

LECTOTYPE (**present designation**): female "/ Lectotype / Nesoleon scalaris Navás, 1912 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Fig. 10: ***Cueta pilosa*** **Navás, 1934 n. syn. of** ***Cueta indefinita*** **Navás, 1914**

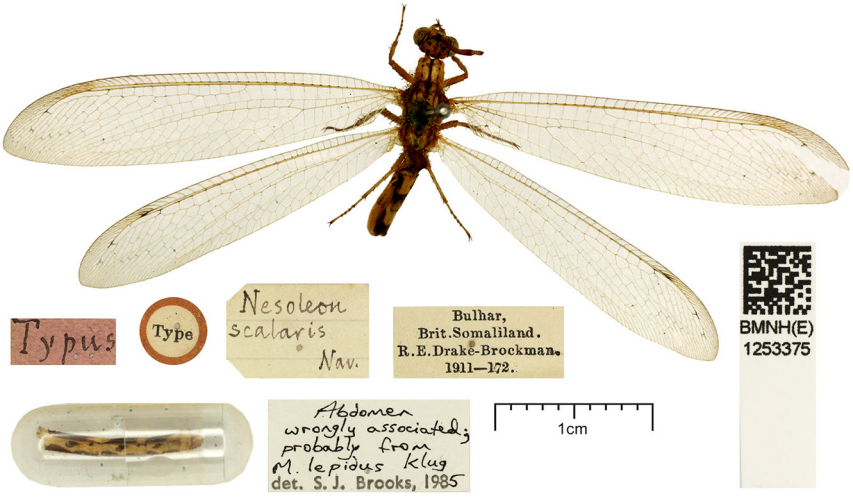

Fig. 11: ***Nesoleon scalaris*** **Navás, 1912 n. syn. of** ***Cueta pallens*** **(Klug in Ehrenberg, 1834)**

Label information. "/ Type [round shaped white label with red margin] // Typus [red label with Navás's handwriting] // Bulhar / Brit. Somaliland / R. D. Drake-Brockman / 1911 - 172 [white label] // Nesoleon / scalaris Nav. [white label with Navás's handwriting] // Abdomen / wrongly associated; / probably from M. lepidus Klug / det. S. J. Brooks 1985 [white label] // QR code / BMNH(E) / 1253375 [white label] /.

In NAVÁS (1912c) "Afrique orientale, Bulhar, Somaliland, R. D. Drake Brockman, 1911".

Synonymy is marked as "/ Cueta pallens / (Klug in Ehrenberg, 1834) / syn.: Ábrahám & / Giacomino 2019 [white label in printed letters]/".

Type condition. Poor, abdomen missing.

Comment. *Cueta scalaris* Navás, 1912 is a new junior synonym of *Cueta pallens* (Klug in Ehrenberg, 1834). Based on the original description (NAVÁS 1912c), the broken abdomen was glued to the type specimen before description. The label pinned by Brooks to the type specimen is correct, the glued abdomen belongs to *Nohoveus lepidus* (Klug in Ehrenberg, 1834). This glued type specimen was named by BANKS (1913) as "*Nesoleon lepidus* Klug." which is a wrong combination and is not extant species.

Distribution of Cueta pallens. Also a widely distributed species in the Saharan zone known in North Africa from Morocco (ÁBRAHÁM 2017) to Egypt, and in East Africa: Sudan (ESBEN-PETERSEN 1931), Kenya (in coll. Rippl-Rónai Museum, Kaposvár), in Asia: Israel and Saudi Arabia (HÖLZEL 1982, ASPÖCK et al. 2001). FRASER (1950, 1951) published two uncertain distribution data from Niger and Madagascar.

Cueta trivirgata (Gerstaecker, 1885)

Cueta trivirgata (Gerstaecker, 1885): 32 (Odescr).

Syn. *Cueta dissimulata* Navás, 1913a: 269 (Odescr), Stange 2004 (Mon), Mansell 2018 (Syn), (Fig. 12).

Type of Cueta dissimulata. Checked, preserved in BMNH.

LECTOTYPE (**present designation**): male "/ Lectotype / Cueta dissimulata Navás, 1913 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ Type H.T [round shaped white label with red margin] // Typus [red label with Navás's handwriting] // Pretoria / (W. L. D.) [white label] // Distant coll. / 1911 - 383. [white label] // Cueta / dissimulata Nav. [with Navás's handwriting] / Navás S.J. det. [printed] [white label] // QR code / BMNH(E) / 1253369 [white label in printed letters] /".

In NAVÁS (1913a) "Pretoria W. L. D."

Type condition. Excellent.

Comment: *Cueta dissimulata* Navás, 1913 is a synonym of *Cueta trivirgata* (Gerstaecker, 1885). The status of the species was revealed by MANSELL (2018), although it has not been published yet. There has not been any information of the species since the description (NAVÁS 1913a).

Distribution of Cueta trivirgata. It occurs in the southern part of Africa. However, its real distribution is unclear because it is very similar to *Cueta punctatissima* (Gerstaecker, 1894).

Tribe **Dendroleontini** Banks, 1899

Gatzara caelestis (Krivokhatsky, 1997)

Dendroleon caelestis Krivokhatsky, 1997: 663 (Odescr).

Syn. *Dendroleon qiongana* Yang, 2002 - Yang et Wang 2002: 296 (Odescr), **n. syn.**, (Fig. 13).

Gatzara qionganus (Yang, 2002) - Wan et al. 2004 (Comb).

Gatzara qiongana (Yang, 2002) - Wang et al. 2012 (Comb), 2018 (Mon), Yang et al. 2018 (Chlist).

Fig. 12: ***Cueta dissimulata*** **Navás, 1913 synonym of** ***Cueta trivirgata*** **(Gerstaecker, 1894)**

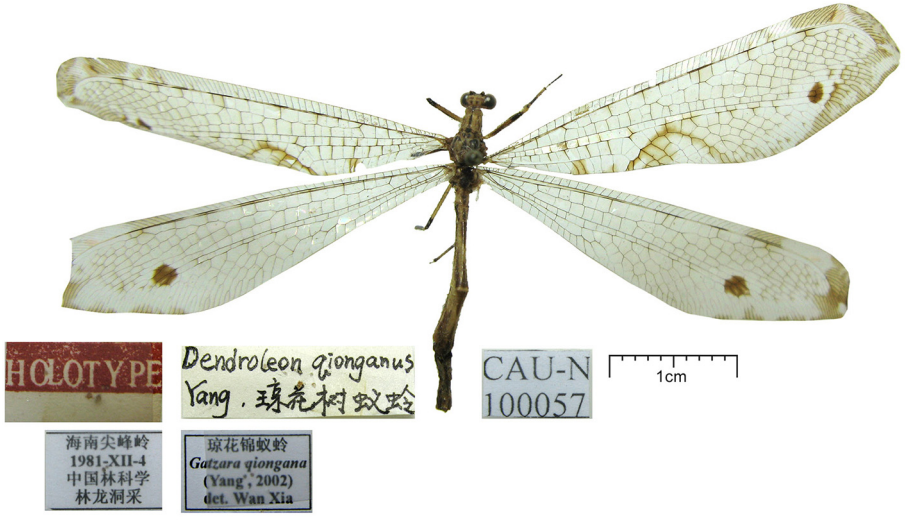

Fig. 13: ***Dendroleon qiongana*** **Yang, 2002 n. syn. of** ***Gatzara caelestis*** **(Krivokhatsky, 1997)**

Type of Dendroleon qiongana: Holotype female checked, preserved in CAUB.

Label information. "/ Holotype [white label in red brand in capital white letters] // ????? [handwritten in Chinese] / 1981-XII-4 / ????? [handwritten in Chinese] / ????? [handwritten in Chinese] [white label with black upper and lower margins] // ????? [handwritten in Chinese] / Gatzara qiongana / (Yang, 2002) / det. Wan Xia [white label with black margin] // CAU-N / 100057 [white label with black upper and lower margins] /".

In YANG & WANG (2002) "Holotype ♀, Hainan Prov. Jianfanling, 1981. XII. 4."

Type condition. Good, antennae missing.

Comment. *Gatzara qiongana* (Yang, 2002) is a new junior synonym of *Gatzara caelestis* (Krivokhatsky, 1997).

Distribution of Gatzara caelestis. The occurrence is known in SE Asia: Vietnam (KRIVOKHATSKY 1997), China (YANG & WANG 2002, WAN et al. 2004, WANG et al. 2012, 2018).

Gatzara jubilaea Navás, 1915

Gatzara jubilaea Navás, 1915a: 386 (Odescr).
Syn. *Dendroleon angulineurus* C.-k. Yang, 1987: 212 (Odescr), Stange 2004 (Mon), **n. syn.**, (Fig. 14).
Gatzara angulineurus (C.-k. Yang, 1987) - Wan et al. 2004 (Comb).
Gatzara angulineura (C.-k. Yang, 1987) - Wang et al. 2012 (Comb), 2018 (Mon).

Type of Dendroleon angulineurus. Holotype checked, preserved in CAUB.

Label information. "/ Holotype [white label in red brand in capital white letters] // ????? [handwritten in Chinese] / 2400 m / 1975-VII-22 / ????? [handwritten in Chinese] [white label with black upper and lower margins] // ????? [handwritten in Chinese] / Gatzara angulineurus / (Yang, 1987) / det. Wan Xia [white label with black upper and lower margins] // CAU-N / 100048 [white label with black upper and lower margins] /". In YANG (1987) "Holotype ♂, Tibet Gyirong Co. 2400 m (1985-VI-22, Huang Fu-seng)".

Type condition. Medium, left antenna and tip of abdomen missing.

Comment. *Gatzara angulineura* (C.-k. Yang, 1987) is a new junior synonym of *Gatzara jubilaea* Navás, 1915. There are slight differences between the label data of the holotype and the published data.

Distribution of Gatzara jubilaea. Published data are known from China (Xizang) (YANG 1987, WANG et al. 2018) and India (NAVÁS 1915a, 1929, 1930b, GHOSH & SEN 1977, WHITTINGTON 2002). There are unpublished data of specimens from Nepal (in coll. Rippl-Rónai Museum, Kaposvár).

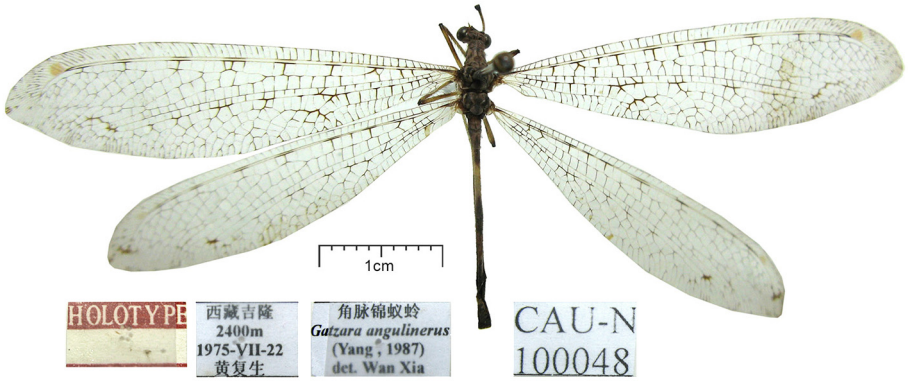

Fig. 14: *Dendroleon angulineurus* C.-k. Yang, 1987 n. syn. of *Gatzara jubilaea* Navás, 1915

Fig. 15: Lectotype of *Myrmeleon contractus* (Walker, 1860)

Fig. 16: *Layahima nebulosa* Navás, 1912 n. syn. of *Layahima contracta* (Walker, 1860)

Layahima contracta (Walker, 1860) **n. comb.**

Myrmeleon contractus Walker, 1860: 192 (Odescr), Stange 1976 (Tax), 2004 (Mon), Gravely & Maulik 1911 (larva), (Fig. 15).

Syn. *Layahima nebulosa* Navás, 1912a: 36 (Odescr), 1926a (Dist), Ghosh 1984 (Mon), 2000 (Mon), Ghosh & Sen 1977 (Chlist), Whittington 2002 (Dist), **n. syn.**, (Fig. 16).

Type of Layahima contracta. Checked, preserved in BMNH.

LECTOTYPE (**present designation**): female "/ Lectotype / Myrmeleon contractus Walker, 1860 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ Type [round shaped white label with green margin] // 65 [white label] // Ind.[ia] [white label] // contractus Wlk. [white label handwritten] // abdomen / missing [blue label] // BMNH(E) / 1201829 [white label] /".

In WALKER (1860) "Hindostan".

Type condition. Medium, abdomen and antannae missing.

Comment. *Myrmeleon contractus* Walker, 1860 is moved to *Layahima* Navás, 1912.

Distribution of Layahima contracta. India (WALKER 1860, GHOSH & SEN 1977).

Type of Layahima nebulosa. Checked, preserved in MNHP.

LECTOTYPE (**present designation**): female "/ Lectotype / Layahima nebulosa Navás, 1912 / design.: Ábrahám & / Giacomino 2017 [red label] /".

Label information. "/ Typus [red label with Navás's handwriting] // Layahima / nebulosa Nav. / (Darjeeling) / Himalaya [white label with Navás's handwriting] // Muséum Paris / Login Navás Legit 19 [white label in printed letters] // Holotype [red label in capital letters] // Layahima nebulosa / Navás, 1912 / holotype / Stange det. 1976 [white label with Legrand's handwriting] /".

In NAVÁS (1912a) "Darjeeling en el Himalaya".

Synonymy is marked as "/ Layahima contracta / (Walker, 1860) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Bad, wings broken but glued.

Comment. *Layahima nebulosa* Navás, 1912 is a new junior synonym of *Layahima contracta* (Walker, 1860). The type is not a holotype but only a lectotype.

Tribe **Nemoleontini** Banks, 1911

Banyutus cubitalis (Navás, 1914) **n. comb.**

Formicaleo cubitalis Navás, 1914d: 252 (Odescr), (Fig. 17).

Distoleon cubitalis (Navás, 1914) - Stange 2004 (Comb, Mon).

Syn. *Formicaleo feai* Navás, 1915a: 389 (Odescr), Poggi 1993 (List), **n. syn.**, (Fig. 18).

Banyutus feai (Navás, 1915) - Krivokhatsky 1997 (Comb).

Syn. *Cymatala pallora* C.-k. Yang, 1986: 424 (Odescr), Stange 2004 (Mon), Wang et al. 2018 (Mon), Yang et al. 2018 (Chlist), **n. syn.**, (Fig. 19).

Banyutus pallorus (C.-k. Yang, 1986) - **n. comb.**

Type of Formicaleo cubitalis. Checked, preserved in BMNH.

LECTOTYPE (**present designation**): male "/ Lectotype / Distoleon cubitalis Navás, 1914 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ Holo- / type [round shaped white label with red margin] // Typus [red label with Navás's handwriting] // Formicaleo / cubitalis / Nav. [with Navás's handwriting] / Navás S. J. det. [printed] [white label] // N. India [white label] // Brit. Mus. / 1950-553 [white label] // Formicaleo / cubitalis Navás / TYPE / N. India [white label with handwriting] // BMNH(E) 1201822 [white label] /".

In NAVÁS (1914d) "N. India".

Type condition. Good, only antennae missing.

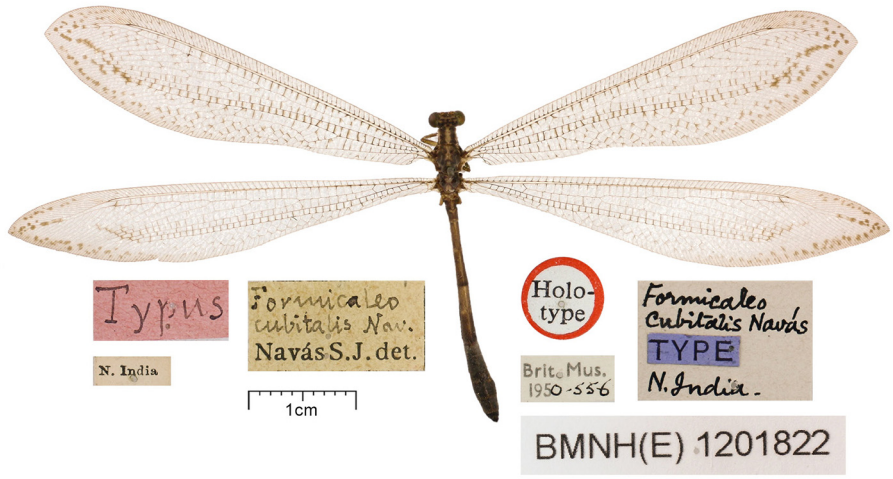

Fig. 17: *Distoleon cubitalis* (Navás, 1914) n. comb. of *Banyutus cubitalis* (Navás, 1914)

Comment. *Distoleon cubitalis* (Navás, 1914) (Stange 2004) is moved to *Banyutus* Navás, 1912. The type is deposited in BMNH - Natural History Museum, London and not in "(Mus. de Cambridge)" as it was mentioned by Navás (1914d) in the original publication.

Distribution of Banyutus cubitalis. Known in SE Asia: India, Burma (now Mianmar) (Navás 1914d, Ghosh & Sen 1977) and China (Yunnan) (Yang 1986).

Type of Formicaleo feai. Checked, preserved in MCSN.

Syntypes were designated by Poggi (1993).

Label information. "/ Typus [red label with Navás's handwriting] // Palon / (Pegú) / L.Fea VIII-IX. 87 [white label with narrow black margins] // Formicaleo / Feai / Nav. [with Navás's handwriting] / Navás S. J. det. [printed] [white label] // Syntypus / Formicaleo / feai / Navás 1915 [handwritten] // Museo Civico / di Genova [white label in printed letters] /".

In Navás (1915) "Birmán: Palon (Pegud), L. Fea. VIII-IX. [18]97. (Mus. de Génova)", in Poggi (1993) "[Birmania], Palon, (Pegu), VIII-IX.[18]87, L. Fea."

Type condition. Syntype with typus label is in bad condition, head, legs and distal part of abdomen missing. Otherwise all syntypes are also in very bad conditions.

Comment. *Banyutus feai* (Navás, 1915) is a new junior synonym of *Banyutus cubitalis* (Navás, 1914). One of the syntypes is labeled by Krivokhatsky as white label with his handwritting "/ Banyutus 1996 / feai (Nav.) / Krivokhatsky det /". We agree with Krivokhatsky (1997) that *Banyutus indicus* Navás, 1929 is also a synonym.

Type of Cymotala pallora. Holotype male checked, preserved in CAUB.

Label information. "/ Holotype / ♂ [white label with red upper band] // ???? [handwritten in Chinese] / 1979-IX-18 1800m [white label] // ???? [handwritten in Chinese] / Cymatala / pallora / Yang, 1986 / Det. Jikun Yang [white label with narrow black margins] // CAU-N / 101867 [white label] /".

In Yang (1986) "Holotype male, Yunnan Prov., Lancang Lahu Aut. Co., 1978-V-18".

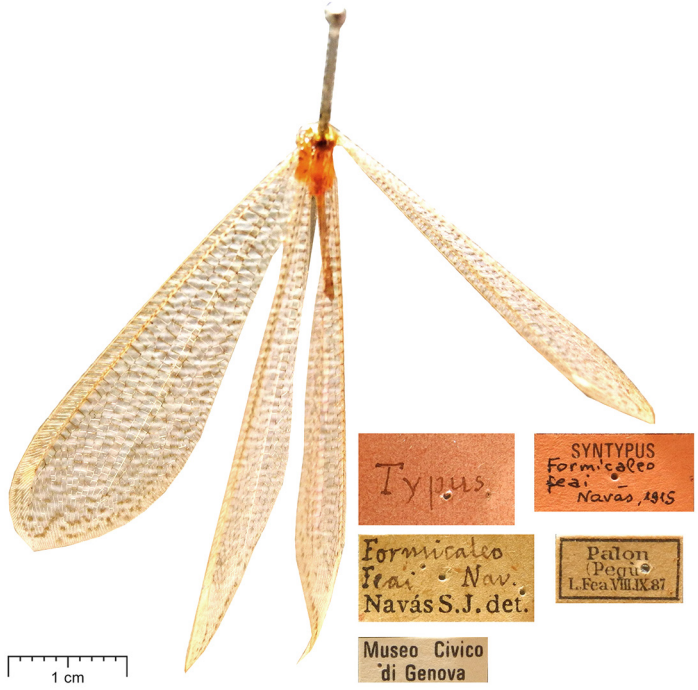

Fig. 18: ***Formicaleo feai*** **Navás, 1915 n. syn. of** ***Banyutus cubitalis*** **(Navás, 1914)**

Fig. 19: ***Cymatala pallora*** **C.-k. Yang, 1986 n. syn. of** ***Banyutus cubitalis*** **(Navás, 1914)**

Type condition. Medium, wings broken and glued, tip of abdomen broken but glued to small paper.

Comment. *Cymatala pallora* C.-k. Yang, 1986 is moved to *Banyutus* Navás, 1912. and it is a new junior synonym of *Banyutus cubitalis* (Navás, 1914).

Creoleon lugdunensis (Villers, 1789)

Creoleon lugdunensis (Villers, 1789): 63 (Odescr).

Syn. *Creoleon maurus* Navás, 1923: 340 (Odescr), Aspöck & Hölzel 1996 (Chlist), Aspöck et al. 2001 (Mon), Stange 2004 (Mon), **n. syn.**, (Fig. 20).

Type of Creoleon maurus. Female checked, preserved in MNHP.

Label information. "/ Typus [red label with Navás's handwriting] // Creoleon / maurus Nav. [with Navás's handwriting] / P. Navás S. J. det. [printed] [green label] // Coll. Lacroix [white label] // sons / (Tunisie) [green label with handwriting] // Lectotype [red label in capital letters] // Creoleon maurus / Navás, 1923 / Lectotype / J. Legrand det. 1992 [white label with Legrand's handwritting] /".

In Navás (1923) "Tunisie, Sousse. Coll. Lacroix".

Synonymy is marked as "/ Creoleon lugdunensis / (Villers, 1789) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Medium, antenna lost, apex of forewing incomplete.

Comment. There has not been data on the taxa since the description (Navás 1923). Aspöck et al. (2001) documented it as nomen dubius due to the type material was lurking or lost. *Creoleon maurus* Navás, 1923 is a new junior synonym of *Creoleon lugdunensis* (Villers, 1789).

Distribution of Creoleon lugdunensis. It occurs in the West Mediterranean area, in Europe: Spain, Portugal, France, Italy, Switzerland and in Africa: Morocco, Algeria, Tunesia (Aspöck et al. 2001). In Stange (2004), the distribution data of *Creoleon lugdunensis* (Villers, 1789) are mixed with the data of *Creoleon plumbeus* (Olivier, 1811).

Fig. 20: *Creoleon maurus* Navás, 1923 n. syn. of *Creoleon lugdunensis* (Villers, 1789)

Creoleon mortifer (Walker, 1853)

Creoleon mortifer (Walker, 1853): 353 (Odescr).
Syn. *Creagris loanguana* Navás, 1913c: 489 (Odescr), **n. syn.**, (Fig. in TRAUBER et al. 2019).
Creoleon loanguanus (Navás, 1913) - Stange 2004 (Mon, Comb), Tauber et al. 2019 (Tax).
Syn. *Creagris venosa* Navás, 1914c: 645 (Odescr), **n. syn.**, (Fig. 22).
Creoleon venosus (Navás, 1914) - Stange 2004 (Mon, Comb).
Syn. *Creagris interrupta* Navás, 1914c: 646 (Odescr), **n. syn.**, (Fig. 23).
Creoleon interruptus (Navás, 1914) - Navás 1933a (Dist, Comb), 1934a (Dist), Penny 2004 (List), Stange 2004 (Mon).
Syn. *Creoleon nigritarsis* Navás, 1921: 304 (Odescr), Navás 1928 (Dist), Stange 2004 (Mon), **n. syn.**, (Fig. 21).
Creoleon nigritarsis Navás, 1911 [sic] - Whittington 2002 (Dist).

Type of Creagris loanguana. Syntype checked, preserved in OXUM.

Label information. "/ Typus [red label with Navás's handwriting] // Creagris / loanguanus / Nav. [with Navás's handwriting] / Navás S.J. det [printed] [white label] // N. E. Rhodesia, / East Loangwa, / Dist. 3-3500 ft., / Mbala country., / Coll. 13-v-1905 / by S. A. Neave. / Pres. '06 by him / and B. S. A. Co. [white label in printed letters] // Type [in capital letters] Neur: No 66 / Creagris loanguana / Navas [handwritten], / Hope Dept. Oxford [in capital letters] [white label with black margins] /".

In NAVÁS (1913c) "N. E. Rhodesia, East Loangwa, Dist. 3-3500 ft., Mbala country, Coll. 13-V-1905, S. A. Neave".

Synonymy is marked as "/ Creoleon mortifer / (Walker, 1853) female / syn.: Ábrahám & / Giacomino 2019 [white label in printed letters]/".

Type condition. Excellent.

Comment. TAUBER et al. (2019) designated and figured a syntype. *Creoleon loanguanus* (Navás, 1913) is a new synonym of *Creoleon mortifer* (Walker, 1853).

Distribution of Creoleon mortifer. It is a widespread species especially is the southern hemisphere of Africa but its distribution has not been cleared yet because of many synonyms. All African *Creoleon* species should be revised in the future.

Type of Creagris venosa. Male checked, preserved in BMNH.

Label information. "/ Typus [red label with Navás's handwriting] // Creagris / venosa / Nav. [with Navás's handwriting] / P. Navás S. J. det. [printed] [blue label] // Bloemfontein / Wilman 1898 [white label in printed letters] // Syn- / type [round label with blue margin in capital letters] // Creagris / venosa Navás [white label with handwriting] / Type [in capital printed letters in blue background] // Brit. Mus. / 1950-556 [white label] // BMNH(E) / 1201828 [white label in printed letters] /".

In NAVÁS (1914c) "Afrimer. Bloemfontein, Wilman, 1898".

Synonymy is marked as "/ Creoleon mortifer / (Walker, 1853) / syn.: Ábrahám & / Giacomino 2019 [white label in printed letters]/"

Type condition. Good, antennae missing, abdomen broken but stored in genital vial.

Comment. *Creoleon venosus* (Navás, 1914) is a new synonym of *Creoleon mortifer* (Walker, 1853).

Type of Creagris interrupta. Checked, preserved in BMNH.

Label information. "/ Typus [red label with Navás's handwriting] // Creagris / interrupta / Nav. [with Navás's handwriting] / P. Navás S. J. det. [printed] [blue label] // Mozambique / F. Muir [white label in printed letters] // Syn- / type [round label with blue margin in capital letters] // Creagris / interrupta Navás [white label with handwriting] / Type [in capital printed letters in blue background] // Brit. Mus. / 1950-556 [white label // BMNH(E) / 1201831 [white label in printed letters] /".

In NAVÁS (1914c) "Mozambique, F. Muir".

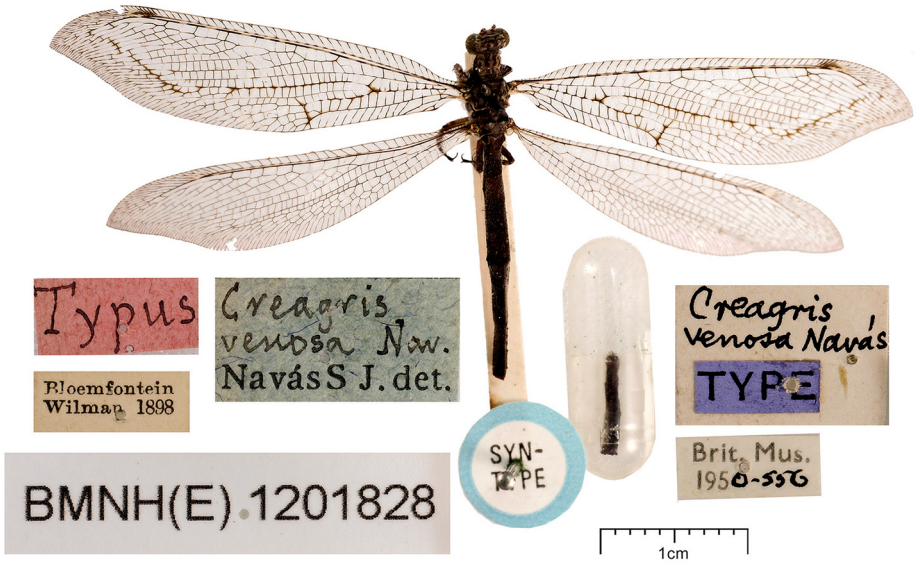

Fig. 22: ***Creagris venosa*** Navás, 1914 **n. syn. of** ***Creoleon mortifer*** **(Walker, 1853)**

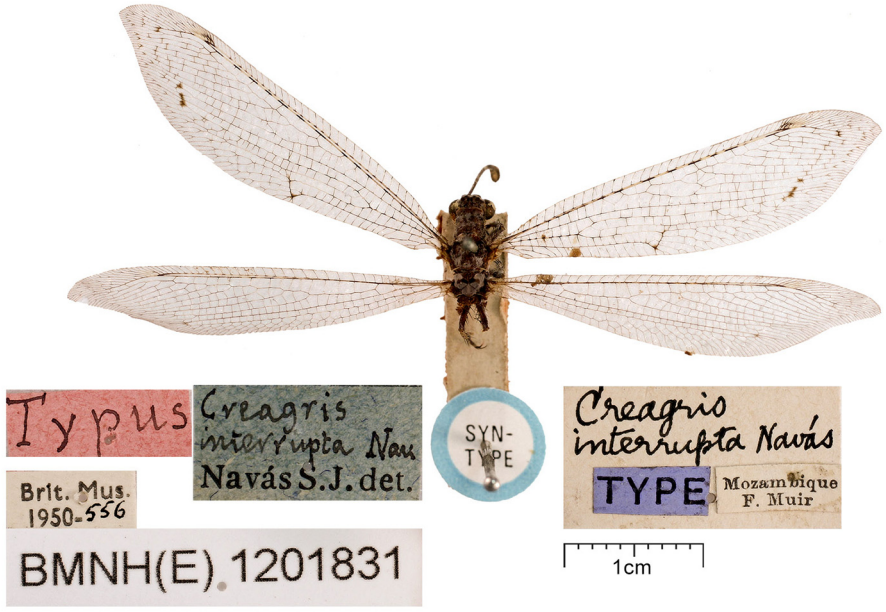

Fig. 23: ***Creagris interrupta*** **Navás, 1914 n. syn. of** ***Creoleon mortifer*** **(Walker, 1853)**

Synonymy is marked as "/ Creoleon mortifer / (Walker, 1853) / syn.: Ábrahám & / Giacomino 2019 [white label in printed letters]/".

Type condition. Medium, rigth antenna and abdomen missing.

Comment. *Creoleon interruptus* (Navás, 1914) is a new synonym of *Creoleon mortifer* (Walker, 1853). The same distribution data were published by NAVÁS (1933a, 1934a) from Kenya and Madagascar but the collecting site can be found in Madagascar and not in Kenya.

Type of Creoleon nigritarsis. Checked, preserved in MNHP.

Lectotype female was designated by Legrand "/ Lectotype [red label in capital letters] // Creoleon nigritarsis / Navás, 1921 / Lectotype / J. Legrand dét. 1992 [white label with Legrand's handwriting] /".

Label information. "/ Museum Paris / Bechuanaland / Gaberones / R. Ellenberger, 1915 [blue label] // Février [white label] // Type [white label in capital red letters] // Creoleon / nigritarsis Nav. [with Navás's handwriting] / P. Navás S.J. det. [printed] [blue label] /".

In NAVÁS (1919 [1921]) "Bechuanaland: Gaberones, R. Ellenberger, Febrero de 1915".

Synonymy is marked as "/ Creoleon mortifer / (Walker, 1853) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/"

Type condition. Good, rigth antenna missing.

Comment. *Creoleon nigritarsis* Navás, 1921 is a new synonym of *Creoleon mortifer* (Walker, 1853).

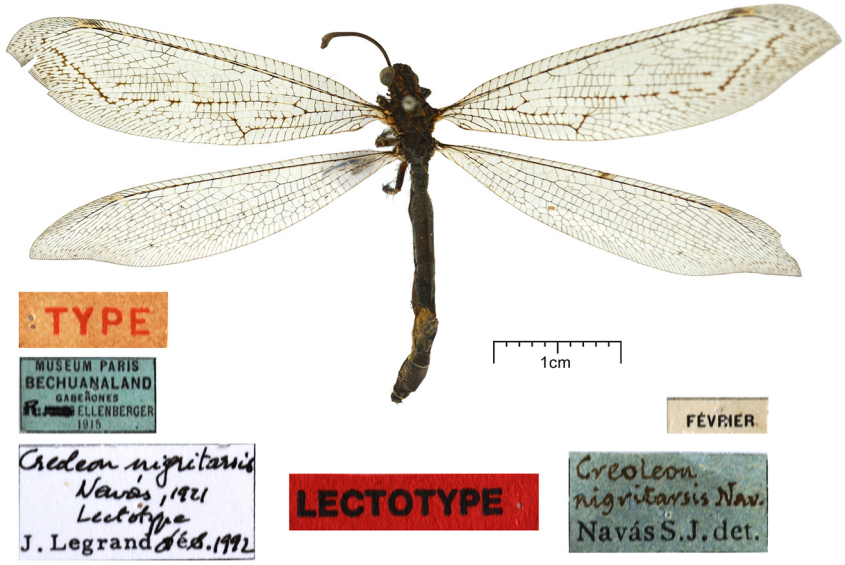

Fig. 21: *Creoleon nigritarsis* Navás, 1921 n. syn. of *Creoleon mortifer* (Walker, 1853)

Distoleon nefandus (Walker, 1853)

Myrmeleon nefendus (Walker, 1853): 357 (Odescr).
Macronemurus nefandus (Walker, 1853) - Hagen 1866 (Comb), McLachlan 1868 (List), Needham 1909 (Dist), Ghosh 1983 (Dist), 1984 (Redescr, Comb), Ghosh & Sen 1977 (Chlist).
Distoleon nefandus (Walker, 1853) - Stange 2004 (Mon, Comb), (Fig. 24).
Syn. *Nelees roscidus* Navás, 1937: 1476 (Odescr), **n. syn.**, (Fig. 25).
Neuroleon (*Neuroleon*) *roscidus* (Navás, 1937) - Stange 2004 (Mon, Comb).
Distoleon roscidus (Navás, 1937) - **n. comb.**

Type of Distoleon nefandus. Checked, preserved in BMNH.

Lectotype (**present designation**). Sex unknown. "/ Lectotype / Myrmeleon nefandus Walker, 1853 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ Type [round shaped white label with green margin] // nefandus [white label with handwriting] // BMNH(E) / 1201834 [white label] // Abdomen / missing [blue label in printed letters] /".

In Walker (1853) "North India".

Type condition. Poor, antenna and tip of abdomen missing.

Comment. Valid species.

Distribution of Distoleon nefandus. It is known only in India (Maharashtra, Bihar, Orissa) (Walker 1853, Navás 1937, Ghosh 1984). *Distoleon* Baks, 1910 genus should be revised in the future.

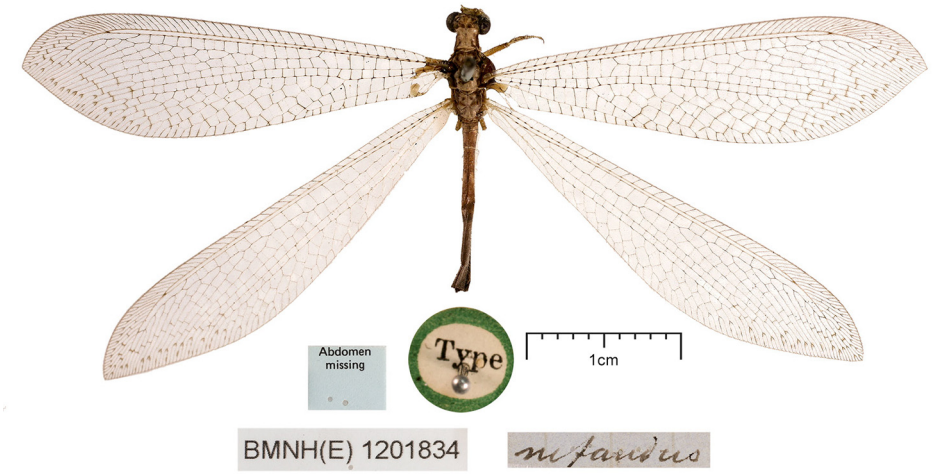

Fig. 24: Type of *Myrmeleon nefandus* Walker, 1853

Type of Distoleon roscidus. Checked, preserved in MNHP.

Lectotype (**present designation**): female "/ Lectotype / Macronemurus roscidus (Navás, 1937) / design.: Ábrahám & / Giacomino 2017 [red label] /".

Label information. "/ Type [white label in capital red letters] // Lonawla / (Bombay) / 30. X. 1934 [white label with handwriting] // Nelees / roscidus Nav. [with Navás's handwriting] / det. Navás S.J. [printed] [white label] // Muséum Paris / Login Navas legit / 10 [white label in capital letters] /".

In Navás (1937) "Gonawla, Bombay, India, 23-30.X.1934, H. Benavente S. J. leg".

Fig. 25: *Neeles roscidus* Navás, 1937 n. syn. of *Distoleon nefandus* (Walker, 1853)

Synonymy is marked as "/ Distoleon nefandus (Walker, 1853) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/"

Type condition. Good, rigth wing broken but glued.

Comment. *Neuroleon* (*Neuroleon*) *roscidus* (Navás, 1937) (Stange 2004) is moved to *Distoleon* Banks, 1910 and it is a new junior synonym of *Distoleon nefandus* (Walker, 1853).

Distoleon solitarius (Hölzel, 1970)

Distoleon solitarius (Hölzel, 1970): 132 (Odescr).

Syn. *Distoleon symphineurus* C.-k. Yang, 1986: 427 (Odescr), Wang et al. 2018 (Mon), Yang et al. 2018 (Chlist), **n. syn.**, (Fig. 26).

Type of Distoleon symphineurus: Holotype male checked, preserved in CAUB.

Label information. "/ CAU-N / 100812 [white label] // Holotype / ♀ [white label with red upper band] // ??????? [handwritten in Chinese] / ????? [handwritten in Chinese] / 1700m / ????? [handwritten in Chinese] [19]80. 06. 30. [white label] // ????? [handwritten in Chinese] / Distoleon / symphineurus / Yang, 1986 / Det. Jikun Yang [white label with narrow black margins] // CAU-N / 100813 [white label] // Paratype / ♂ [white label with yellow upper band] // ????? [handwritten in Chinese] / ????? [handwritten in Chinese] / 1700m / ????? [handwritten in Chinese] [19]79. 06. 22. [white label] // ????? [handwritten in Chinese] / Distoleon / symphineurus / Yang, 1986 / Det. Jikun Yang [white label with narrow black margins] /".

In YANG (1986) "Holotype ♂, Yunnan Prov., Dongchuan C. 1700 m, 1980-VI-30; allotype ♂, Deqen Co. 3000 m, 1979-VI-22 at light".

Type condition. Bad, both antennae missing, abdomen lost (holotype); medium, right antenna missing, tip of abdomen lost (paratype).

Comment. *Distoleon symphineurus* C.-k. Yang, 1986 is a new junior synonym of *Distoleon solitarius* (Hölzel, 1970). Holotype and paratype labels were confused in the collection and in the original description or vice versa (YANG 1986).

Distribution of Distoleon solitarius. China (Yunnan) (YANG 1986), Mongolia (HÖLZEL 1970, KRIVOKHATSKY et al. 1996).

Fig. 26: *Distoleon symphineurus* C.-k. Yang, 1986 n. syn. of *Distoleon solitarius* (Hölzel, 1970)

Distoleon sylphis (Gerstaecker, 1894)

Formicaleo sylphis Gerstaecker, 1894: 137 (Odescr), (Fig. 27).
Distoleon sylphis (Gerstaecker, 1894) - Stange 2004 (Mon, Comb).
Syn. *Macronemurus interruptus* Kolbe, 1897: 23 (Odescr), Banks 1920 (Dist), **n. syn.**, (Fig. 28).
Distoleon interrupta (Kolbe, 1897) - Stange 2004 (Mon, Comb).
Syn. *Formicaleo turbidus* Navás, 1915b: 11 (Odescr), **n. syn.**, (Fig. 29).
Formicaleon turbidus (Navás, 1915) - Banks 1920 (Dist).
Distoleon turbidus (Navás, 1915) - Stange 2004 (Mon, Comb).
Syn. *Formicaleo lambarenus* Navás, 1921: 303 (Odescr), **n. syn.**, (Fig. 30).
Distoleon lambarenus (Navás, 1921) - Stange 2004 (Mon, Comb).
Syn. *Formicaleo gilsi* Navás, 1933c: 311 (Odescr), **n. syn.**, (Fig. 31).
Distoleon gilsi (Navás, 1933) - Stange 2004 (Mon).
Syn: *Nelees muzanus* Navás, 1922: 252 (Odescr), **n. syn.**, (Fig. 32).
Neuroleon (*Neuroleon*) *muzanus* (Navás, 1922) - Stange 2004 (Mon, Comb).
Distoleon muzanus (Navás, 1922) - **n. comb.**

Type of Distoleon sylphis. Checked, preserved in EMAU.

Lectotype (**present designation**): male "/ Lectotype / Formicaleo sylphis / Gerstaecker, 1885 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ sylphis / Gerst.* / Agoncho, / Gabun, Buchh. //, white label // Zool. Mus. / Greifswald / II 27 432 [blue label with narrow black margins and with Gerstaecker's handwriting] /".

In Gerstaecker (1894) "Agoncho (Gabon)".

Type condition. Good, right antenna broken.

Comment. It is a valid species and four synonyms can be found as *Macronemurus interruptus* Kolbe, 1897, *Formicaleo turbidus* Navás, 1915b, *Formicaleo lambarenus* Navás, 1921, *Formicaleo gilsi* Navás, 1933.

Distribution of Distoleon sylphis. It occurs in tropical Africa: Gabon (Gerstaecker 1894), Kenya (Kolbe 1897), Democratic Republic of the Congo (Banks 1920, Navás 1919 [1921], 1933c) and Mozambique (Navás 1922).

Fig. 27: Lectotype of *Distoleon sylphis* (Gerstaecker, 1894)

Type of Macronemurus interruptus. Checked, preserved in ZMHB.

LECTOTYPE (**present designation**): female "/ Lectotype / Macronemurus interruptus Kolbe, 1897 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ Type [red label in printed letters] // S.Albert-Njansa / Buginda / 8. VII. [18]91 / Stuhlmann S. [blue label in printed letters] // Macronemurus / interruptus / n. sp. Kolbe [white label with Kolbe's handwriting] // 55 [white label in printed numbers] // QR code/ http://coll-mfn-berlin.deudbca61 [white label in printed letters] /".

In KOLBE (1897) "südlich vom Albert-Nyansa, 1 ♀ (8. Juli 1891, Stuhlmann)".

Synonymy is marked as "/ Distoleon sylphis / (Gerstaecker, 1894) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Fig. 28: *Distoleon interrupta* (Kolbe, 1897) n. syn. of *Distoleon sylphis* (Gerstaecker, 1894)

Type condition. Good, left antenna broken and left tips of wings missing.

Comment. *Distoleon interrupta* (Kolbe, 1897) is a new synonym of *Distoleon sylphis* (Gerstaecker, 1894).

Type of Formicaleo turbidus. Checked, preserved in MNHP.

Lectotype was designated by Legrand "/ Formicaleo / turbidus Navás, 1915 / Lectotype / J. Legrand dét. 1992 [white label with Legrand's handwriting] /".

Label information. "/ Type [white label in capital letters] // Museum Paris / Congo / R. Thollon 1886 [green label] // Formicaleo / turbidus Nav. / P. Navás S.J. det. [in printed letters] [blue label with Navás's handwriting] /".

In Navás (1915) "Congo, R. Thollon, 1886".

Synonymy is marked as "/ Distoleon sylphis / (Gerstaecker, 1894) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Bad, right antenna and abdomen broken and missing.

Comment. *Distoleon turbidus* (Navás, 1915) is a new synonym of *Distoleon sylphis* (Gerstaecker, 1894) .

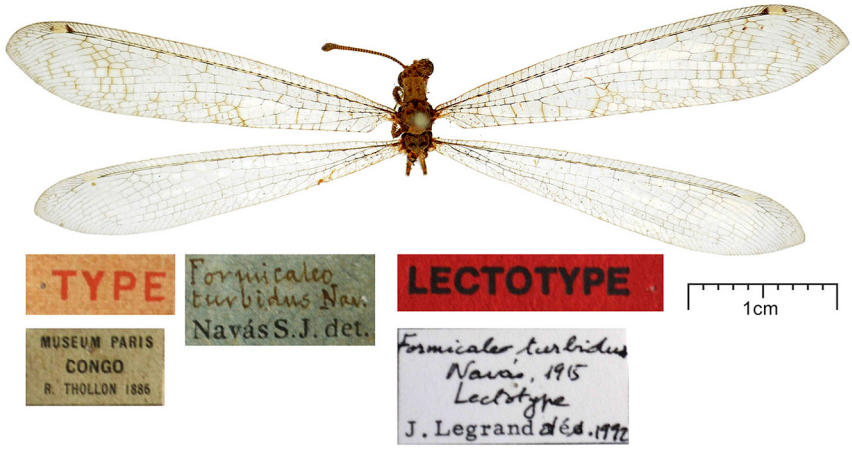

Fig. 29: *Distoleon turbidus* (Navás, 1915) n. syn. of *Distoleon sylphis* (Gerstaecker, 1894)

Type of Formicaleo lambarenus. Checked, preserved in MNHP.

Lectotype was designated by Legrand "/ Lectotype [red label in capital printed letters] / Formicaleo / lambarenus Navás, 1921 / Lectotype / J. Legrand dét. 1992 [white label with Legrand's handwriting] /".

Label information. "/ Type [white label in capital letters] // Museum Paris / Ogcoué / Lambaréné / R. Ellenberger 1912 [blue label] // Formicaleo / lambarenus Nv [with Navás's handwriting] / P. Navás S.J. det. [printed] [blue label] /".

In Navás (1919 [1921]) "Congo francés: Ogooaié, Lambaréné, R. Ellenberger, 1912".

Synonymy is marked as "/ Distoleon sylphis / (Gerstaecker, 1894) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Bad, right antenna and abdomen broken and missing.

Comment. *Formicaleo lambarenus* Navás, 1921 is a new synonym of *Distoleon sylphis* (Gerstaecker, 1894).

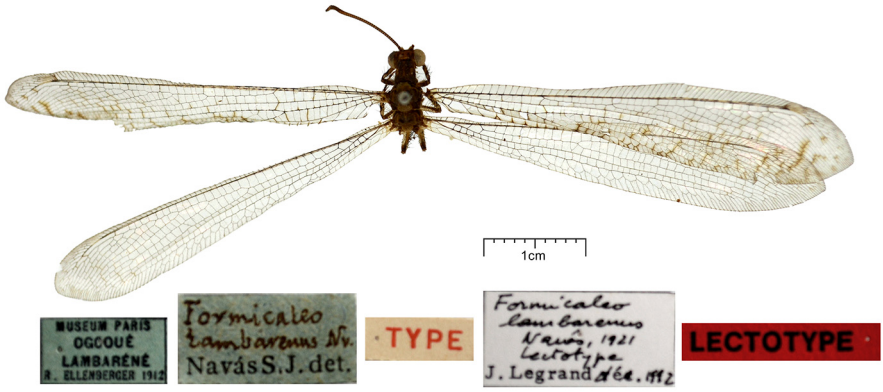

Fig. 30: ***Formicaleo lambarenus*** **Navás, 1921 n. syn. of** ***Distoleon sylphis*** **(Gerstaecker, 1894)**

Type of Distoleon gilsi. Female, checked, preserved in MRAC.

Label information. "/ Tipo [red label in capital printed letters] // Musée du Congo / Fulu sur Lua / (Ubangi), 1931, / M. Van Gils [white label] // MRAC - Tervuren / database No / MRAC00486 [white label] // Formicaleo / Gilsi Nav. [with Navás's handwriting] / P. Navás S.J. det. [printed] [blue label] // Type [red label with double margins and in capital letters] // R. dét / Y / 2426 [white label] /".

Fig. 31: ***Formicaleo gilsi*** **Navás, 1933 n. syn. of** ***Distoleon sylphis*** **(Gerstaecker, 1894)**

In Navás (1933c) "Fulu sur Lua (Ubangi), 1931, M. Van Gils".

Type condition. Bad, antenna broken, head and wings strongly damaged.

Comment. *Formicaleo gilsi* Navás, 1933 is a new synonym of *Distoleon sylphis* (Gerstaecker, 1894).

Type of Neeles muzanus: Checked, preserved in MNHP.

Lectotype was designated by Legrand "/ Lectotype [red label in capital letters] // Neeles muzanus / Navás, 1922 / Lectotype / J. Legrand det. 1992 [white label with Legrand's handwritting] /".

Label information. "/ Type [white label in capital letters] // Museum Paris / Bassin Inf. du Zambèze / Vallée du Muza / 32º long. E., 18º lat. S. / (DE 1000 A 1120 D'alt.) / G. Vasse 1905 [blue label] // Neeles / muzanus Nav. [with Navás's handwriting] / Navás S.J. det. [printed] [blue label] /".

In Navás (1922) "Afrique. Bassin inf. du Zambèze, Vallée du Muza, 32º long. E. 18º lat. S. (De 1000 à 1120 m. d'altit.), G. Vasse, 1905" (Mus. de Paris)".

Synonymy is marked as "/ Distoleon sylphis / (Gerstaecker, 1894) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Medium antenna missing, wings broken but glued.

Comment. *Neuroleon* (*Neuroleon*) *muzanus* (Navás, 1922) (Stange 2004) is moved to *Distoleon* Banks, 1910 and it is a new synonym of *Distoleon sylphis* (Gerstaecker, 1894).

Distoleon tholloni Navás, 1914

Formicaleo tholloni Navás, 1914b: 105 (Odescr), (Fig. 34).
Distoleon tholloni (Navás, 1914) - Stange 2004 (Mon, Comb).
Syn. *Feina languida* Navás, 1931: 264 (Odescr), **n. syn.**, (Fig. 35).
Distoleon languida (Navás, 1931) - Stange 2004 (Mon, Comb).
Distoleon languidus (Navás, 1931) - Oswald 2019 (Nom).

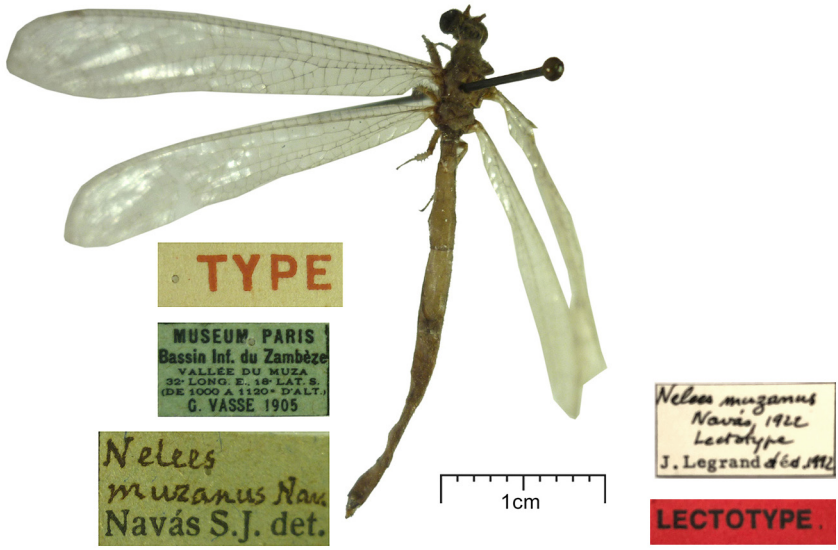

Fig. 32: ***Neeles muzanus*** **Navás, 1922 n. syn. of** ***Distoleon sylphis*** **(Gerstaecker, 1894)**

Type of Distoleon tholloni. Checked, preserved in MNHP.

Lectotype male was designated by Legrand "/ Lectotype [red label in capital printed letters] // Formicaleo tholloni / Navás, 1914 / Lectotype / J. Legrand dét. 1992 [white label with Legrand's handwriting] /".

Label information. "/ Type [white label in capital letters] // 1108 6 86 [white round shaped label] // Museum Paris / Congo / R. Thollon 1886 [blue label] // Formicaleo / Tholloni Nav. [with Navás's handwriting] / P. Navás S.J. det. [printed] [blue label] /".

In NAVÁS (1914b) "Congo, Thollon, 1886".

Type condition. Good, antennae missing.

Comment. It is a valid species.

Distribution of Distoleon tholloni. It occurs in tropical Africa: Ivory Coast, Democratic Republic of the Congo (NAVÁS 1914b).

Fig. 33: Lectotype of *Distoleon tholloni* (Navás, 1914)

Type of Distoleon languidus. Checked, preserved in MRAC.

Label information. "/ Holotype [red label with double black margins and in capital letters] // Typus [red label with handwritting] // Musée du Congo / Katanga Kafakumba / 23-V-[19]25 / F. G. Overleat [white label] // MRAC - Tervuren / database No / MRAC00545 [blue label] // Feina / languida Nav. [with Navás's handwriting] / P. Navás S.J. det. [printed] [blue label] // Kafakumba / 23. V. [19]25 / G. F. Overleat [blue label with handwritting] // R. dét / 1751 / v [white label with black margins] /".

In NAVÁS (1931) "♀ / Kafakumba, 23-V-1925 (G. F. Overlaet)".

Type condition. Good, only antenna missing.

Comment. *Distoleon languidus* (Navás, 1931) is a new junior synonym of *Distoleon tholloni* (Navás, 1914). Earlier, STANGE (2004) has already synonymed *Dolicholeon ghesquierinus* Navás, 1932 to *Distoleon languidus* (Navás, 1931) which we also confirm.

Geyria lepidula (Navás, 1912)

Geyria lepidula (Navás, 1912b): 748 (Odescr).

Syn. *Neuroleon parvissimus* Fraser, 1952: 481 (Odescr), **n. syn.**, (Fig. 35).

Geyria parvissima (Fraser, 1952) - Stange 2004 (Mon, Comb).

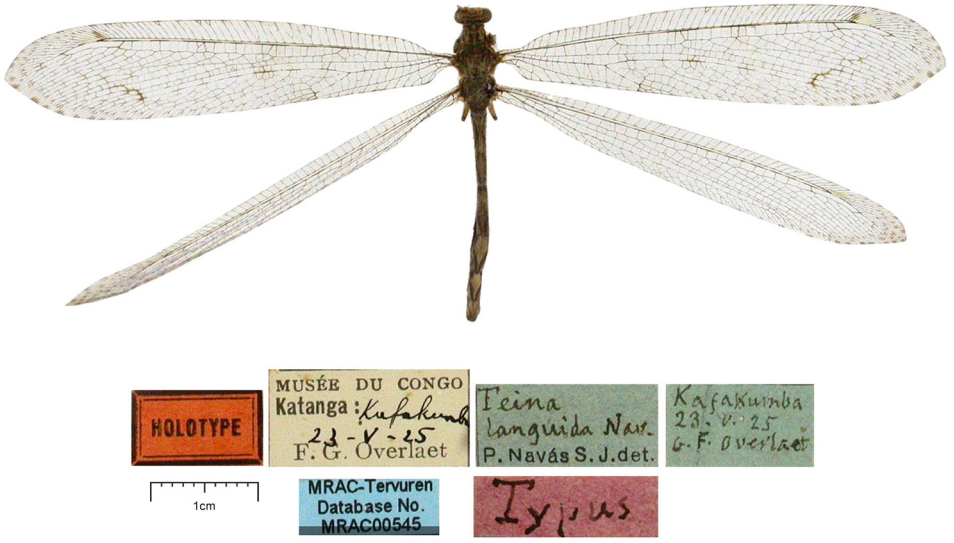

Fig. 34: ***Feina languida*** **Navás, 1931 n. syn. of** ***Distoleon tholloni*** **(Navás, 1914)**

Type of Neuroleon parvissimus. Checked, preserved in MNHP.

Lectotype (**present designation**): male "/ Lectotype / Neuroleon parvissimus Fraser, 1952 / design.: Ábrahám & / Giacomino 2017 [red label] /".

Label information. "/ Type [red label in capital letters] // Mauretanie / Arjoril. 1948 / L. Berland et A. Villiers rec. [blue label] // Neuroleon ♂ / parvissimus / Fraser, 1952 //, blue label // Museum Paris [blue label] /".

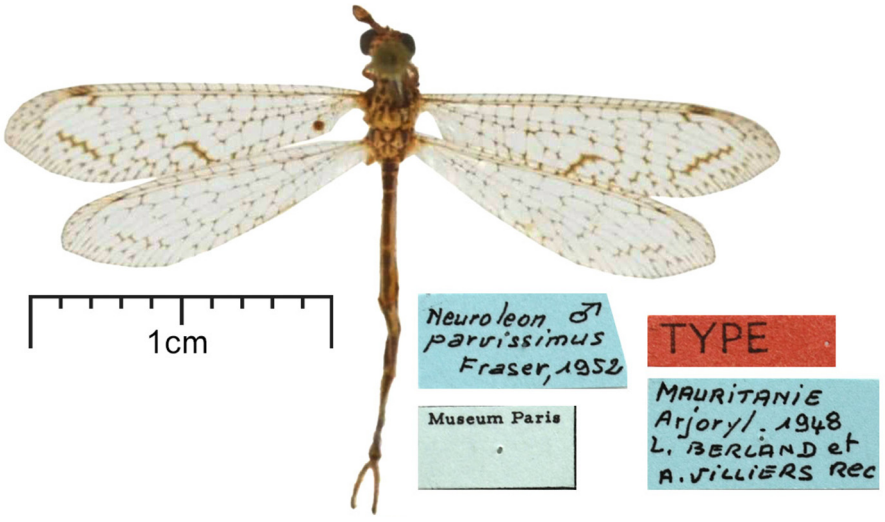

Fig. 35: ***Neuroleon parvissimus*** **Fraser, 1952 n. syn. of** ***Geyria lepidula*** **(Navás, 1912)**

In FRASER (1952) "Akjoujt (Mauretania), 28-X-[19]48 (coll. L. Berland and A. Villiers)".

Synonymy is marked as "/ Geyria lepidula / (Navás, 1912) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Excellent, left antenna missing.

Comment. *Geyria parvissima* (Fraser, 1952) is a new synonym of *Geyria lepidula* (Navás, 1912) .

Distribution of Geyria lepidula. A common and a widespread species, known in the Saharan zone from Morocco via Israel to the Arabian Peninsula (ASPÖCK et al. 2001). Its area expands to SW Asia: Iran (HÖLZEL 1987), Pakistan (ÁBRAHÁM 2017) and NW India (Rajasthan) (GHOSH 1981).

Macronemurus appendiculatus (Latreille, 1807)

Macronemurus appendiculatus (Latreille, 1807): 193 (Odescr).
Syn. *Formicaleo dumontinus* Navás, 1933b: (Odescr), **n. syn**., (Fig. 36).
Distoleon dumontinus (Navás, 1933b) - Aspöck & Hölzel 1996 (Comb, Chlist), Aspöck et al. 2001 (Mon).
Macronemurus dumontinus (Navás, 1933b) - **n. comb**.

Type of Formicaleo dumontinus. Checked, preserved in MNHP.

Lectotype female was designated by Legrand "/ Lectotype [red label in capital letters] / Formicaleo / dumontinus Navás, 1933 / Lectotype / J. Legrand dét. 1992 [white label with Legrand's handwriting] /".

Label information. "/ Museum Paris / Tunisie / Maknassy, C. Dumont, 1927 [blue label] // Juin [white label with narrow balck frame] // Type [white label in capital red letters] // Formicaleo / dumontinus Nav. [blue label with Navás's handwriting] / P. Navás S.J. det. [in printed letters] /".

In NAVÁS (1933b) "Tunisie: Maknassy, C. Dumont, 1927, Juin".

Synonymy is marked as "/ Macronemurus appendiculatus / (Latreille, 1807) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type condition. Good, both antennae missing.

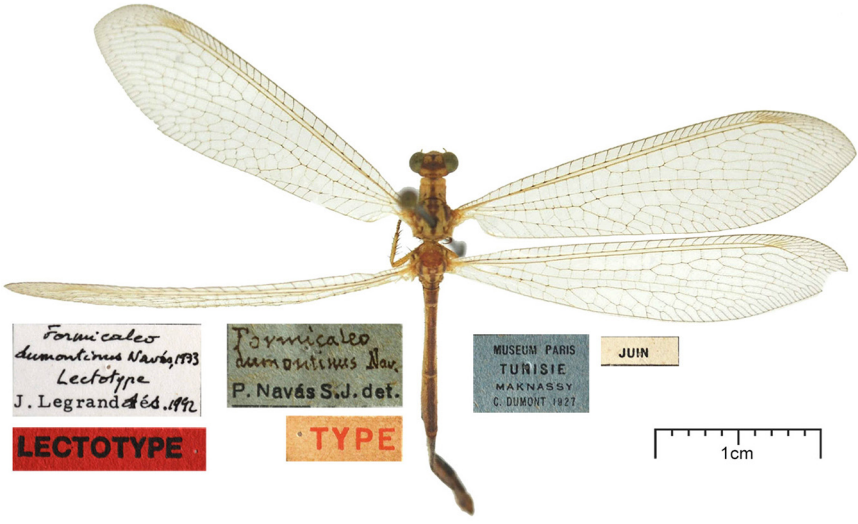

Fig. 36: *Formicaleo dumontinus* Navás, 1933 n. syn. of *Macronemurus appendiculatus* (Latreille, 1807)

Comment. *Distoleon dumontinus* (Navás, 1933b) (Aspöck & Hölzel 1996) is moved to *Macronemurus* A. Costa, 1855 and it is a new junior synonym of *Macronemurus appendiculatus* (Latreille, 1807) .Aspöck et al. (2001) treated it as a nomen dubium because the type specimen was presumed to have been lost before. Stange (2004) checked the type but he did not synonymed it.

Distribution of Macronemurus appendiculatus. Its distribution is still not clear, it is a common species in SW Europe and North Africa. The faunistical data are uncertain in Central Europe (Slovakia) (Letardi et al. 2018). Earliar, its occurrence in Greece (Stein 1863) seemed to be uncertain in the Balkan Peninsula but it was recently confirmed by Devetak et al. (2013) in Albania. Its occurrence is also uncertain in Asia: Lebanon, Israel, Turkey (Hölzel 1987, Aspöck et al. 2001, Cambulat 2007), Egypt (Sinai) and Palestine (now Israel) (Navás 1926b, Bodenheimer 1937).

Macronemurus loranthe Banks, 1911

Macronemurus loranthe Banks, 1911: 25 (Odescr).

Syn. *Macronemurus schoutedeni* Navás, 1930a: 305 (Odescr), Stange 2004 (Mon), **n. syn.**, (Fig. 37).

Type of Macronemurus schoutedeni. Male, checked, preserved in MRAC.

Label information. "/ Type [red label with double margins and in capital printed letters] / Typus [red label with handwriting] // Musée du Congo / Haut-Uele: Oka/ 2-V-1925 / Dr. H. Schouteden [white label] // Formicaleo / schoutedeni Nav. [with Navás's handwriting] / P. Navás S.J. det. [printed] [blue label] // MRAC - Tervuren / database No / MRAC00487 [blue label] // R. dét / S / 1474 [white label] /".

In Navás (1930) "Ituri: Mahagi".

Type condition. Good, antennae missing.

Comment. *Macronemurus schoutedeni* Navás, 1930 is a new junior synonym of *Macronemurus loranthe* Banks, 1911.

Distribution of Macronemurus loranthe. It may occur in tropical and subtropical Africa: Mali (Michel & Letourmy 2007), Togo (Banks 1911), Democratic Republic of the Congo (Navás 1930a).

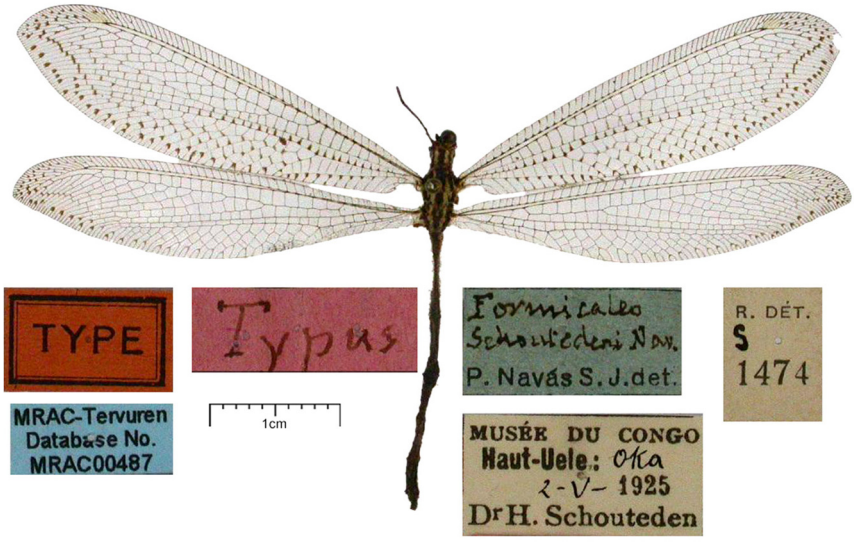

Fig. 37: ***Macronemurus schoutedeni*** **Navás, 1930 n. syn. of** ***Macronemurus loranthe*** **Banks, 1911**

Macronemurus melanthe Banks, 1911

Macronemurus melanthe Banks, 1911: 24 (Odescr).
Syn. *Macronemurus jejunus* Navás, 1912a: 74 (Odescr), Stange 2004 (Mon), **n. syn.**, (Fig. 38).

Type of Macronemurus jejunus. Male checked, preserved in MNHP.

Label information. White label in capital red letters // Type //, white label with Navás's handwriting // Macronemurus / jejunus ♂ / Nav. //, blue label in printed letters // Museum Paris / Haut-Dahomey, de Djoujou-Kouandé, Lieut Brot 1908 //, red label in capital letters // Lectotype //, white label with Legrand's handwriting // Macronemurus jejunus / Navás, 1912 / Lectotype / J. Legrand dét. 1912 //. In NAVÁS (1912a) "Alto Dahomey, Djoujou-Kouandé, Brot leg., 1908".

Type condition. Medium, antennae and rigth hindwing missing.

Comment. *Macronemurus jejunus* Navás, 1912 is a new junior synonym of *Macronemurus melanthe* Banks, 1911.

Distribution of Macronemurus melanthe. Known in tropical central Africa: Benin, Togo (BANKS 1911, NAVÁS 1912a).

Fig. 38: ***Macronemurus jejunus*** **Navás, 1912 n. syn. of** ***Macronemurus melanthe*** **Banks, 1911**

Macronemurus perlatus (Gerstaecker, 1885)

Formicaleo perlatus Gerstaecker, 1885: 14 (Odescr) (Fig. 39).
Distoleon perlatus (Gerstaecker, 1885) - Whittington 2002 (Comb, Dist).
Macronemurus perlatus (Gerstaecker, 1885) - Esben-Petersen 1928a (Comb, Dist), 1928b (Dist), Stange, 2004 (Mon).
Syn. *Macronemurus ianthe* Banks, 1911: 25 (Odescr), Stange, 2004 (Mon), **n. syn.**, (Fig. 40).
Syn. *Macronemurus nuncius* Navás, 1913a: 270 (Odescr), Stange, 2004 (Mon), **n. syn.**, (Fig. 41).
Syn. *Formicoleo fictus* Navás, 1913a: 270 (Odescr), **n. syn.**, (Fig. 42).
Macronemurus fictus (Navás, 1913) - Stange, 2004 (Mon).
Syn. *Formicaleo neavinus* Navás, 1913c: 491 (Odescr), **n. syn.**, (Fig. in TRAUBER et al. 2019).
Distoleon neavinus (Navás, 1913) - Stange 2004 (Comb, Mon), Tauber et al. 2019 (Tax).
Macronemurus neavinus (Navás, 1913) - **n. comb.**
Syn. *Macronemurus wittei* Navás, 1932: 272 (Odescr), 1936a (Dist), Stange 2004 (Mon), **n. syn.**, (Fig. 43).

Type of Macronemurus perlatus. Checked, preserved in EMAU.

Lectotype (**present designation**). female "/ Lectotype / Formicaleo perlatus / Gerstaecker, 1885 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ perlatus / Gerst* / Transvaal Stdgr. [Staudinger] [blue label with narrow black margins and with Gerstaecker's handwriting] // Zool. Mus. / Greifswald / II 27 429 [white label] /".

In Gerstaecker (1884) "Transvaal".

Type condition. Medium, antenna missing, abdomen broken but glued it back.

Comment. Otto Staudinger, German lepidopterolgist who was a contemporary entomologist with Gerstaecker and bought many exotic materials from Asia and Africa then posted the specimens to different experts among others to Gerstaecker. *Macronemurus ianthe* Banks, 1911, *Macronemurus nuncius* Navás, 1913, *Macronemurus neavinus* Navás, 1913, *Macronemurus wittei* Navás, 1932 and *Macronemurus fictus* (Navás, 1913) are new synonyms of *Macronemurus perlatus* (Gerstaecker, 1885).

Distribution of Macronemurus perlatus. Namibia (Esben-Petersen 1928a, Mansell 2000), Ethiopia (Esben-Petersen 1928b), Republic of South Africa (Navás 1913a, http://www.africamuseum.be, det: Mansell), Kenya (Navás 1914a), Zimbabwe (Whittington 2002), Angola (Navás 1912a), Mozambique, Tanzania, Uganda (Banks 1911, Oswald 2019).

Fig. 39: Lectotype of *Formicaleo perlatus* Gerstaecker, 1885

Type of Macronemurus ianthe. Checked, preserved in ZMHB.

Lectotype (**present designation**): "/ Lectotype / Macronemurus inanthe Banks, 1911 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ Type [red label in printed letters] // D. O. Afrika Lan- / genburg 15.-17. / V. [18]99. Dr. Fülleborn [blue label with handwriting] // Macronemurus / ianthe / type Bks [white label with double red margins and with Banks's handwriting] // QR code / http://coll-mfn-berlin.deudbca7f [white label in printed letters] /".

In Banks (1911) "Langenburg, D. O. Afrika".

Type condition. Medium, tip of fore and hindwings broken.

Comment. *Macronemurus ianthe* Banks, 1911 is a new synonym of *Macronemurus perlatus* (Gerstaecker, 1885).

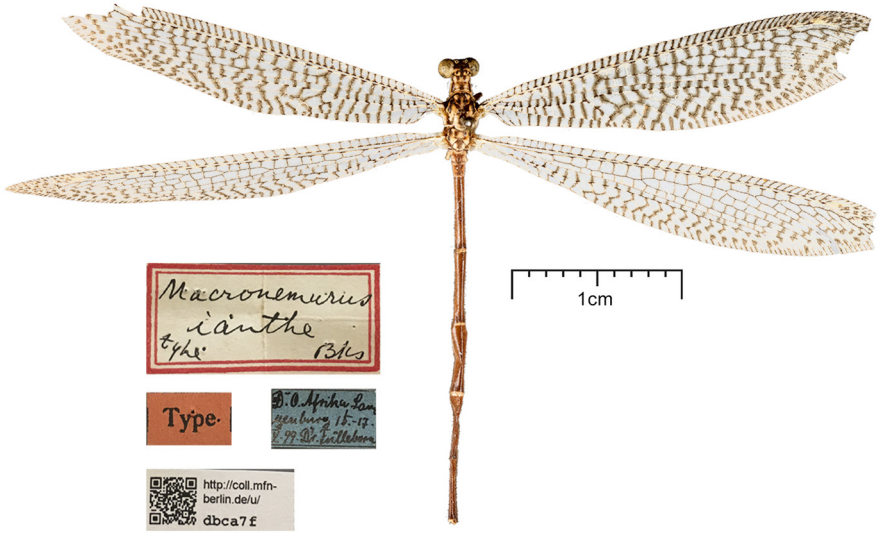

Fig. 40: ***Macronemurus ianthe*** **Banks, 1911 n. syn. of** ***Macronemurus perlatus*** **(Gerstaecker, 1885)**

Type of Macronemurus nuncius. Checked, preserved in BMNH.

LECTOTYPE (**present designation**): male "/ Lectotype / Macronemurus nuncius Navás, 1913 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ Type / H.T [round shaped white label with red margin] // Typus [red label with Navás's handwriting] // Barberton / (P. Rendall) [white label] // Distant coll. / 1911 - 383. [white label] // Macronemurus / nuncius Nav. [with Navás's handwriting] / Navás S.J. det. [printed] [white label] // QR code / BMNH(E) / 1253367 [white label] /".

In NAVÁS (1913a) "Barberton, P. Rendall".

Synonymy is marked as "/ Macronemurus perlatus / (Gerstaecker, 1885) / syn.: Ábrahám & / Giacomino 2019 [white label in printed letters]/".

Type condition. Good, left forewing deformed.

Comment. *Macronemurus nuncius* Navás, 1913 is a new synonym of *Macronemurus perlatus* (Gerstaecker, 1885). There has not been any information of the species since the description (NAVÁS 1913a).

Type of Macronemurus fictus. Checked, preserved in BMNH.

LECTOTYPE (**present designation**): female "/ Lectotype / Formicoleo fictus Navás, 1913 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ Type / H.T [round shaped white label with red margin] // Typus [red label with Navás's handwriting] // Pretoria / (W. L. D.) [white label] // Distant coll. / 1911 - 383. [white label] // Formicoleo fictus Nav. [with Navás's handwriting] / Navás S.J. det. [printed] [white label] // QR code / BMNH(E) / 1253368 [white label in printed letters] /".

In NAVÁS (1913a) "Pretoria W. L. D".

Synonymy is marked as "/ Macronemurus perlatus / (Gerstaecker, 1885) / syn.: Ábrahám & / Giacomino 2019 [white label in printed letters]/".

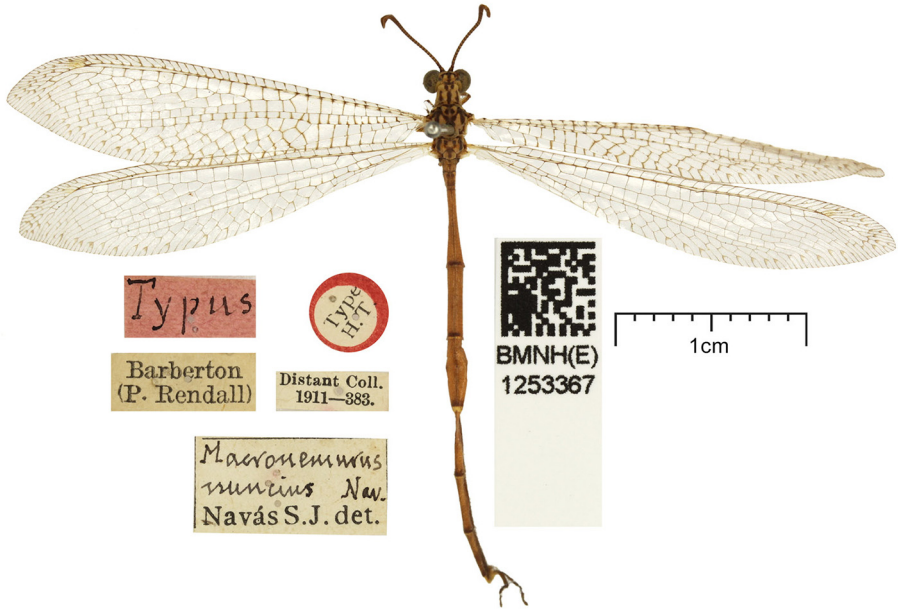

Fig. 41: ***Macronemurus nuncius*** **Navás, 1913 n. syn. of** ***Macronemurus perlatus*** **(Gerstaecker, 1885)**

Fig. 42: ***Macronemurus fictus*** **(Navás, 1913) n. syn. of** ***Macronemurus perlatus*** **(Gerstaecker, 1885)**

Type condition. Good, left antenna missing.

Comment. *Macronemurus fictus* Navás, 1913 is a new synonym of *Macronemurus perlatus* (Gerstaecker, 1885). There has not been any information on the species since the description (NAVÁS 1913a).

Type of Macronemurus neavinus. Sex undetermined, checked, preserved in OXUM.

Label information. Lectotype is designated by TAUBER et al. (2019) "/ Typus [red label with handwriting] // Formicaleo / neavinus / Nav. [with Navás's handwriting] / P. Navás S.J. det. [printed] [white label] / [2x] / N. E. Rhodesia, [in capital letters] / Fort Jameson / (3800 ft) / Capt.1.iv.1904. / by S.A.Neave. / Pres' 06 by him / and B.S.A. Co. [white label in printed letters] // Type [printed] Neur: No 68 / Formicaleo / neavinus / Navas/ [handwritten] / Hope Dept.Oxford [printed] [white label with narrow black margins] /".

In NAVÁS (1913c) "N. E. Rhodesia, Fort Jameson 3800 ft, 1-IV-1904, S. A. Neave".

Synonymy is marked as "/ Macronemurus perlatus / (Gerstaecker, 1885) / syn.: Ábrahám & / Giacomino 2019 [white label in printed letters]/".

Type condition. Medium, distal part of abdomen missing.

Comment. Based on the length of body in the original description (NAVÁS 1913c), the gender might be female. *Distoleon neavinus* (Navás, 1913) (STANGE 2004) is moved to *Macronemurus* A. Costa, 1855 and it is a new junior synonym of *Macronemurus perlatus* (Gerstaecker, 1885). Only the type is known from Zimbabwe (Rhodesia) (NAVÁS 1913c). TAUBER et al. (2019) figured the type specimen.

Type of Macronemurus wittei. Male, checked, preserved in MRAC.

Label information. "/ Typus [red label with handwriting] // Type [red label with double margins and in capital printed letters] // Musée du Congo [printed] / Kiambi / 24-IV-[19]31. / G. F. de Witte [handwritten] [white label] // Macronemurus / Wittei Nav. [with

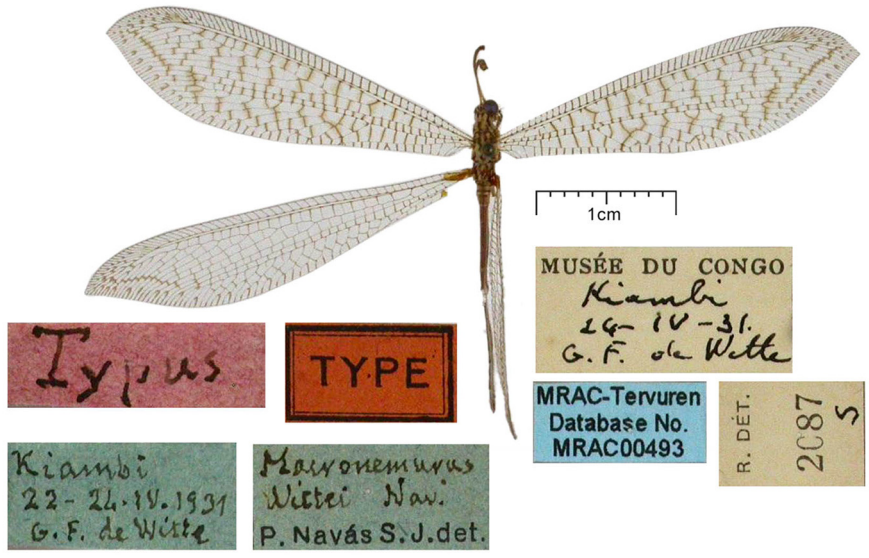

Fig. 43: ***Macronemurus wittei*** **Navás, 1932 n. syn. of** ***Macronemurus perlatus*** **(Gerstaecker, 1885)**

Navás's handwriting] / P. Navás S.J. det. [printed] [blue label] // Kiambi / 22-24-IV. 1931 / G. F. de Witte [blue label with Navás's handwriting] // MRAC - Tervuren / database No / MRAC00493 [blue label] // R. dét / 2087 / S [white label] /".

In Navás (1932) "Kiambi 6.V.1931, 22-24.-IV.-1931. G. F. De Witte".

Type condition. Medium, tip of abdomen missing.

Comment. *Macronemurus wittei* Navás, 1932 is a new junior synonym of *Macronemurus perlatus* (Gerstaecker, 1885).

Neuroleon erato Hölzel, 1972

Neuroleon erato Hölzel, 1972: 53 (Odescr).

Syn. *Neuroleon* (*Ganussa*) *lukhtanovi* Krivokhatsky, 1996: 303 (Odescr), Mirmoayedi 2007 (Dist), Mirmoayedi et al. 1998, 2015, Khabiev & Krivokhatsky 2014 (Dist), Krivokhatsky et al. 2015 (Dist), Dobosz et al. 2017 (Dist), Kerimova & Krivokhatsky 2018 (Dist), **n. syn.**, (Fig. 44).

Type of Neuroleon lukhtanovi. Paratype specimen checked, preserved in USMB.

Label information. "/ Paratypus [printed] / Neuroleon ♀ / luktanovi / Krivokhatsky [red label with Krivokhatsky's handwriting] // Berzingi Ashkhabad / Turkm.[enistan] 20-22. 06. [1]991 / Krivokhatsky [white label in Russian letters // 5858/ 14107 / coll. Upper Silesian Museum / (USMB) Bytom Poland [white label with black margins] /".

In Krivokhatsky (1996) "Holotype. ♂, Uzbekistan, Kughitang Mountains, 10 km NE of Sherabad, 23.VI.1994 (V. Lukhtanov)".

Type condition. Paratype excellent.

Comment. *Neuroleon lukhtanovi* Krivokhatsky, 1996 is a new synonym of *Neuroleon erato* Hölzel, 1972.

Distribution of Neuroleon erato. It is a widespread species found in West Asia: Israel, Iran, Saudi-Arabia, Afghanistan, Pakistan (Aspöck et al. 2001, Mirmoayedi et al. 1998, 2015), in Caucasus region Dagestan (Russia) (Khabiev & Krivokhatsky 2014), Georgia (Dobosz et al. 2017) and in the Central Asia: Tajikistan, Turkmenistan, Uzbekistan (Krivokhatsky 1996, Krivokhatsky et al. 2015), Kazakhstan, Kyrgyzstan (Khabiev & Krivokhatsky 2014).

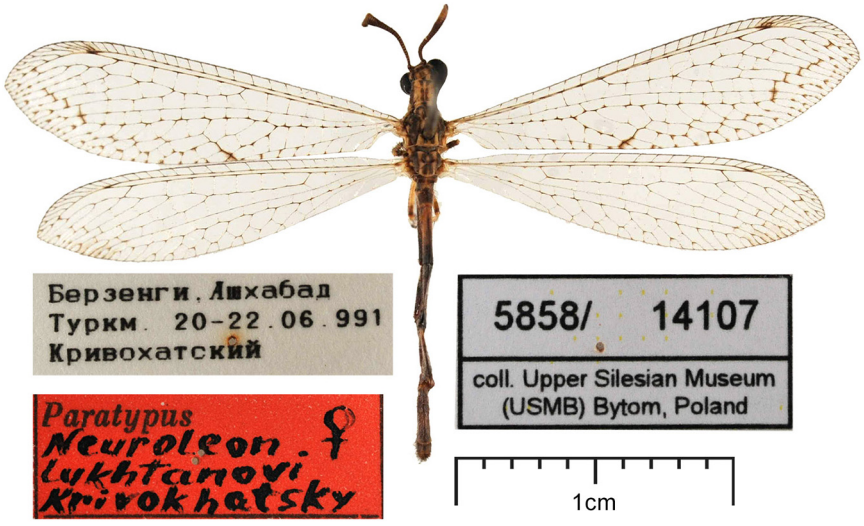

Fig. 44: ***Neuroleon lukhtanovi*** **Krivokhatsky, 1996 n. syn. of** ***Neuroleon erato*** **Hölzel, 1972**

Neuroleon* (*Ganussa*) *tenellus (Klug in Ehrenberg, 1834)

Neuroleon (*Ganussa*) *tenellus* (Klug in Ehrenberg, 1834): 35 (Odescr).
Syn. *Neuroleon nubilus* Navás, 1913b: 452 (Odescr), Stange, 2004 (Mon), **n. syn.**, (Fig. 45).

Type of Neuroleon nubilus. Female checked, preserved in BMNH.

Lectotype was designated by S. J. Brooks in 1984 in the collection but the designation has not been published yet.

Label information. "/ Type [round shaped white label with red margin] // Typus [red label with Navás's handwriting] // Oued Nssa / (de Ghardaïa to / Guerrara) / 3.-5. VI. 1912 / Haltert & Hilg. [white label with black margins] // Neuroleon / nubilus / Nav. [with Navás's handwriting] / Navás S. J. det. [printed] [white label] // Brit. Mus. / 1927-307 [white label] // 2 syntypes listed as / Ain Guettara & Ouid Mya Sud / det. S. J. Brooks 1984 [in printed letters] [white label] // syn. of N. tenellus (Klug) / [is this spec. selected to lecto- / type; / other syntype probably / lost [white label with handwriting] // QR code / BMNH(E) / 1253363 [white label] /".

In NAVÁS (1913b) "Oued Nça (de Ghardaïa à Guerrara), 3-5 juin. 1 échantillon".

Type condition. Medium, antenna lost, right hindwing glued, abdomen missing but preserved in genital vial.

Comment. *Neuroleon nubilus* Navás, 1913 is a new junior synonym of *Neuroleon* (*Ganussa*) *tenellus* (Klug in Ehrenberg, 1834).

Distribution of Neuroleon tenellus. It is a widely distributed species known from South Europe (ASPÖCK et al. 2001) and North Africa (Morocco: ÁBRAHÁM 2017) via West Asia (ÁBRAHÁM & VAN HARTEN 2014) to Middle Asia (KRIVOKHATSKY et al. 2015).

Pseudoformicaleo gracilis (Klug in Ehrenberg, 1834)

Pseudoformicaleo gracilis (Klug in Ehrenberg, 1834): 35 (Odescr).
Syn. *Tahulus sordidatus* Navás, 1936b: 113 (Odescr), **n. syn.**, (Fig. 46).
Pseudoformicaleo sordidatus (Navás, 1936) - Stange 2004 (Comb).

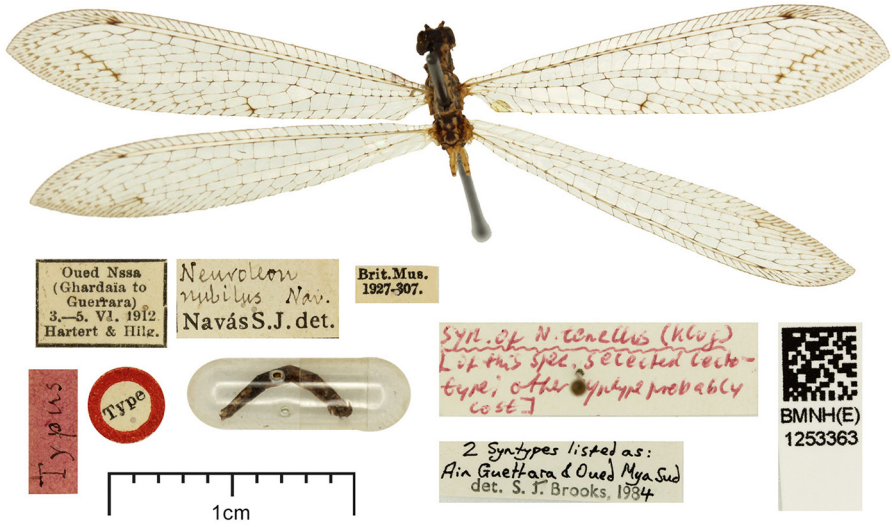

Fig. 45: *Neuroleon nubilus* Navás, 1913 n. syn. of *Neuroleon* (*Ganussa*) *tenellus* (Klug in Ehrenberg, 1834)

Fig. 46: *Tahulus sordidatus* Navás, 1936 n. syn. of *Pseudoformicaleo gracilis* (Klug in Ehrenberg, 1834)

Type of Tahulus sordidatus. Lectotype female checked, preserved in MNHP.

Lectotype was designated by Legrand "/ Lectotype [red label in capital printed letters] // Tahulus sordidatus / Navás, 1936 / Lectotype / J. Legrand dét. 1992 [white label with Legrand's handwriting] /".

Label information. "/ Type [white label in capital red letters] // Kenya / Lodwar / Turkana Sud / 600 m [white label] // Múseum de Paris / Mission de l'Omo / C. Arambourg / P. A: Chappuis & R. Jeannel / 1932-33 [blue label] // Tahulus / sordinatus [sic] Nav. [with Navás's handwriting] / det. Navás S. J. [printed] [blue label] /".

In Navás (1936b) "Kénya: Lodwar, Turkana Sud, st. 37, 600 m".

Synonymy is marked as "/ Pseudoformicaleo gracilis (Klug in Ehrenberg, 1834) / syn.: Ábrahám & / Giacomino 2017 [white label in printed letters]/".

Type, condition. Good, antenna missing.

Comment. *Tahulus sordidatus* (Navás, 1936) is a new synonym of *Pseudoformicaleo gracilis* (Klug in Ehrenberg, 1834).

Distribution of Pseudoformicaleo gracilis. It is a widespread species in the Saharan zone: Morocco Tunisia Algeria, Egypt, Iran, Israel, Turkey, Syria, Oman, Saudi Arabia (Stange 2004) and Kenya (Navás 1936b).

Tribe **Glenurini** Banks, 1927

Indoleon tacitus (Walker, 1853)

Indoleon tacitus (Walker, 1853): 362 (Odescr).

Syn. I*ndoleon tacitus sinicus* C.-k. Yang in C.-k. Yang & X.-l. Wang, 2002: 297 (as "tacirtus [sic] sinecus [sic]") (Odescr), Wang et al. 2018 (Mon), Yang et al. 2018 (Chlist), **n. syn.**, (Fig. 47).

Type of Indoleon tacitus sinicus. Holotype checked, preserved in CAUB.

Label information. "/ Holotype [white label with red brand in capital white letters] // ????? [handwritten in Chinese]] / 1980. 05. 6. / ????? [handwritten in Chinese] / ????? [handwritten in Chinese] [white label with black margins] // Indoleon tacirtus / sinecus

/ ????? [handwritten in Chinese] [white label with handwriting] // CAU-N / 101866 [white label with black upper and lower margins] /".

In YANG & WANG (2002) "Nainan [sic] Prov. Mt. Limushan 1980. V. 6."

Type condition. Medium, antennae, legs and tip of abdomen missing.

Comment. *Indoleon tacitus sinicus* C.-k. Yang in C.-k. Yang & X.-l. Wang, 2002 is a new junior synonym of *Indoleon tacitus tacitus* (Walker, 1853). According to OSWALD (2019) the name of the species was misprinted in the original paper (YANG & WANG 2002).

Distribution of Indoleon tacitus. China (Hainan) (YANG & WANG 2002), Malaysia (WALKER 1853), Laos (unpublished data in coll. Rippl-Rónai Museum, Kaposvár).

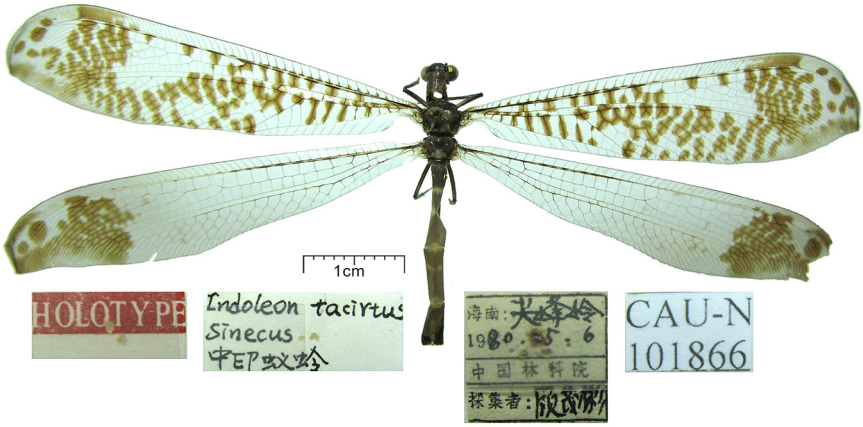

Fig. 47: ***Indoleon tacitus sinicus*** **C.-k. Yang in C.-k. Yang & X.-l. Wang, 2002 n. syn. of** ***Indoleon tacitus tacitus*** **(Walker, 1853)**

Nedroledon lagopus (Gerstaecker, 1894) **n. comb.**

Myrmeleon lagopus Gerstaecker, 1894: 143 (Odescr), Hölzel 1972 (Chlist), Aspöck et al. 2001 (Chlist), Canbulat 2007 (Chlist), Stange 2004 (Mon), (Fig. 48).

Syn. *Nedroledon striatus* Hölzel, 1972: 65 (Odescr), Şengonca 1979 (Dist), Satar & Özbay 2004 (Dist), Canbulat 2007 (Chlist), Aspöck et al. 2001 (Mon), Stange 2004 (Mon), Mirmoayedi et al. 2015 (Chlist), **n. syn.**

Type of Nedroledon lagopus. Checked, preserved in EMAU.

LECTOTYPE (**present designation**). female "/ Lectotype / Myrmeleon lagopus / Gerstaecker, 1894 / design.: Ábrahám & / Giacomino 2019 [red label] /".

Label information. "/ lagopus / Gerst* / Mardin Stdgr. [white label with narrow black margins and with Gerstaecker's handwriting] // M. lagopus / Gerst* / Mardin / Stgr. / [with glued tip of abdomen and white label handwritten in pencil] // Zool. Mus. / Greifswald / II 27 438 [white label] /".

In GERSTAECKER (1894) "Mardin, Mesopotamiae [today SE Turkey]".

Type condition. Medium, antenna and some legs broken and lost, tip of abdomen broken but glued to label.

Comment. *Myrmeleon lagopus* Gerstaecker, 1894 is moved to *Nedroledon* Navás, 1914. HÖLZEL (1972) marked it as nomina dubia in the checklist of the Middle East Asia.

Fig. 48: Lectotype of *Myrmeleon lagopus* Gerstaecker, 1894 n. comb. of *Nedroledon lagopus* (Gerstaecker, 1894)

Aspöck et al. (2001) supposed that the type material had been lost and taxonomical status of the species left incertae sedis. Canbulat (2007) also listed in the Turkish Neuroptera checklist without any comments. The lectotype specimen is not typical since A2 simple instead of forking in both forewings otherwise it agrees with all characters of genus *Nedroledon* Navás, 1914. *Nedroledon striatus* Hölzel, 1972 is a new junior synonym of *Nedroledon lagopus* (Gerstaecker, 1894). The genus of *Nedroledon* Navás, 1914 contains characteristically different species and should be divided into at least two genera.

Distribution of Nedroledon lagopus. This species was collected in Turkey (Gerstaecker 1894, Şengonca 1979, Satar & Özbay 2004, Canbulat 2007) and Iran (Hölzel 1972, Aspöck et al. 2001).

Paraglenurus pumilus (C.-k. Yang, 1997)

Glenuroides pumilus C.-k. Yang, 1997: 616 (Odescr), Yang, C.-k. 1999 (Dist), (Fig. 49).

Paraglenurus pumilus (Yang, 1997) - Stange 2004 (Comb), Wang et al. 2018 (Mon), Yang et al. 2018 (Chlist).

Syn. *Paraglenurus lotzi* Miller & Stange, 1999: 58 (Odescr), **n. syn.**

Type of Paraglenurus pumilus. Holotype male checked, preserved in CAUB.

Label information. "/ Holotype / ♂ [white label with red brand in capital white letters] // ????? [text in Chinese letters] / 1980 ? [text in Chinese letters] 9 [? text in Chinese letters] 26 / [? text in Chinese letters] / ????? [text in Chinese letters] [white label] // ????? [text in Chinese letters] / Glenuroides / pumilus / Yang, 1997 / Det. Jikun Yang [white label with black margins] // CAU-N / 101837 [white label with black upper and lower margins] //.

In Yang (1997) "Holotype ♂, Dongshan Co., Fujian Prov., 1980-IX-26."

Type condition. Good, antenae and two legs missing.

Comment. *Paraglenurus lotzi* Miller & Stange, 1999 is a new junior synonym of *Paraglenurus pumilus* Yang, 1997. Synonymy based on accurate description and figures (Miller & Stange 1999)

Distribution of Paraglenurus pumilus. Only the published type material is known from China (Fujian) (Yang 1997) and Taiwan (Miller et al. 1999).

Fig. 49: Holotype of *Paraglenurus pumilus* (C.-k. Yang, 1997)

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Sawflies of the Bakony Mountains and the Balaton Uplands (Hymenoptera: Symphyta)

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Haris, A.: *Sawflies of the Bakony Mountains and the Balaton Uplands (Hymenoptera: Symphyta).*
Abstract: 358 species are listed from the Bakony Mountains and the Balaton Uplands. *Monostegia analis* (Konow, 1887) and *Pristiphora cincta* Newman, 1837 are new records for the Hungarian fauna. *Megalodontes laticeps* Konow, 1897, *Gilpinia laricis* (Jurine, 1807), *Tenthredo arcuata* Förster, 1771, *Apethymus cerris* (Kollar, 1850), *Monostegia cingulata* (Konow, 1891), *Empria alector* Benson, 1938, *Cephalcia alpina* (Klug, 1808), *Nematinus luteus* (Panzer, 1805), *Nematus brevivalvis* Thomson, 1871, *Pachynematus montanus* (Zaddach, 1883), *Pamphilius aurantiacus* (Giraud, 1857) are cancelled from the fauna-list of the Bakony Mountains.

Keywords: Hymenoptera, Symphyta, Hungary, Bakony, new records

Introduction

The Bakony is a limestone cliff mountains with an area of about 4000 km^2, the westernmost and largest member of the Transdanubian Mountains (Fig. 1).

The Bakony is divided by the west-eastern fracture line between Devecser and Várpalota into two parts: the North Bakony and the South Bakony (Fig. 3 and 4). In broader sense, the Keszthely Plateau (Figs. 7 and 8) and the Balaton Uplands (Figs. 2, 5, 6 and 10) are also part of the Bakony Mts.

The Bakony is dominantly made up of Triassic and Jurassic marine sediments (limestone, dolomite, marl). In its southern areas, volcanic basalt also appears. The present form of the mountains likely formed during the Tertiary period, some 45 million years ago. Its highest peak is the Kőris hill with 709 m altitude above the sea level. There are also 15 strictly protected caves in this region.

The mountain range is perpendicular to the most common, northwestern wind direction. As a result of this, most of the precipitation occurs in the northwestern Bakony area (up to 800 mm per year in some areas), while the southeast, especially the Veszprém Plateau, is dry (with less than 600 mm yearly precipitation). The annual average temperature is 8.5°C in North Bakony and close to 10°C in South Bakony. The slopes overlooking Lake Balaton have Mediterranean influences, making the summer even warmer and the winter even milder.

Almost 84% of the Bakony Mountains are covered with forests. The area of these forests approximately 140,000 hectares. The main species of hornbeam and beech forests are European ash, sycamore maple and Norway maple, large-leaved linden and small-leaved linden and wild cherry. In the higher elevations we can see Scotch elm,

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sycamore maple and European ash. The pine forests, planted in the last 100 years, are also significant part of the vegetation. Next to Fenyőfő, the pine forest is native. Here, there is a special micro-landscape with low nutrient sandy soil maintaining this special habitat. This is the only one natural pine vegetation in the lower regions of the Carpathian Basin.

Material and methods

The studied material are deposited in 3 collections. The largest is the Bakony Natural History Museum in Zirc. From this collection, 1938 specimens of 197 species are identified by the author in 2019 and further 5137 specimens of 280 species were checked and reidentified. Further 800 specimens are deposited in the Rippl-Rónai Museum in Kaposvár and approximately 600 specimens in Budapest (Hungarian Natural History Museum).

For identification, ZHELOCHOVTSEV's (1988) work on the sawflies of the European part of the former USSR was consulted. We also used some recent revisions and works to make the identifications even more precise (ACHTERBERG and AARTSEN 1986, BLANK & RITZAU 1998, HARIS 2001, 2006, HARIS and GYURKOVICS 2014, KOCH 1988a and b, PROUS 2012, PROUS et al. 2017, TAEGER 1987, 1988, 2002 and TAEGER 2015).

Whenever it was necessarry (subfamily Nematinae and genus *Dolerus*), male genitals were dissected and studied.

For the discussion of distribution of sawflies, we consulted the book of ROLLER and HARIS (2008) titled *Sawflies of the Carpathian Basin, History and Current Research* augmented by other faunistic records from the Carpathian Basin (AMBRUS 1979, ROLLER 1999, 2000, ROLLER et al. 2006, HARIS 2001, 2009, 2010, 2011, 2012, 2018, 2019; HARIS and GYURKOVICS 2012, BALÁZS and HARIS 2019).

The places of captures of each species were checked and revised. We completed the missing data, where the relevant locations were not given, but the ones of the meadows, hills or valleys were published only. On the other hand, several indefinite locations can't be given precisely. These locations are discussed below:

Cuha valley (Cuha-völgy). In several cases, the collectors labelled the insects only as Bakony: Cuha valley neglecting to give the exact location. In these cases, we should consider the following: Cuha valley is the valley of the Cuha brook. Its total length is 81 km, the brook flows through the area of the following municipialities: Eplény, Olaszfalu, Zirc, Porva, Bakonyszentlászló, Réde and Bakonybánk.

Gerence-valley (Gerence-völgy). Similar to the case above, it is also an indefinite record resulted by improper labelling of the collectors in the 60's and 70's. Gerence valley is the valley of the Gerence brook. The lenght of this brook is 57 km and flows through the following municipialities: Bakonybél, Hárskút, Pénzesgyőr, Takácsi and Bakonykoppány.

For the host plants record, the *Liston Compendium of European sawflies* was the most used monograph (LISTON 1995) augmented with other papers like CHEVIN and HAMON 2010, MACEK 2012, SCHEDL 1972, 1973, 1975, 1976, 1980, 1983, 1987, 2003.

The higher classification of sawflies applied in this work follows the Hymenoptera part of *Fauna Europaea* (ACHTERBERG 2013).

Most of the specimens were collected by Sándor Tóth and Jenő Papp. Other collectors were Levente Ábrahám, Attila Haris, Előd Kondorosy, Mária Csiby, Ágota Kasper, Lajos Zombori, Béla Kalivoda, Csaba Kutasi, László Móczár, József Erdős, Zsuzsanna

Szurgyi, József Bali, Beáta Harmat, Attila Kohanóczy, László Rézbányai, Attila Podlussány and Mrs. Havasi.

Till present, the most important papers on the sawflies fauna of the Bakony Mts. and Balaton Upland is the 4 papers series of ZOMBORI (1973, 1979, 1980 and 1982b), titled: *Sawfly collection of the Bakony Natural History Museum I.- IV.* In this series, he listed the data of 269 species, and colour variations. The early papers, containing 1-3 records from the Bakony Mts. and the first checklist of sawflies of the Kingdom of Hungary are discussed in details in ZOMBORI 1978b. Beyond the 4 papers monograph of Zombori the following papers contain significant amount of data (100-500 data per each) from the Bakony Mountains and the Balaton Upland: "*The sawfly-collection of Somogy County Museum*" (HARIS 2001); the "*Revisional list of the Hungarian Nematinae*" (HARIS 2001); the "*Sawflies of the Keszthely Hills and its surroundings*" (HARIS 2019); "*The genus Tenthredopsis Costa, 1859 in Hungary*" (HARIS and GYURKOVICS 2019) and the monograph, titled "*Sawflies of the Carpathian Basin, History and Current Research*" (ROLLER and HARIS 2008).

In the faunistic list below, we publish all occurrences of each species in the Bakony Mts. and the Balaton Uplands. Only the checked and revised data are published. In bracket, we indicate the source of these data. At the end of each entry, new records take place. Finally, we provide the frequency of each species and the host plants. For the discussion of the frequency, we use the following categories:

"rare species": less or max 10 specimens were captured in Hungary in the last 160 years.

"sporadic species": 11-30 specimens were captured in the last 160 years.

"frequent species": more than 30 specimens were captured and finally

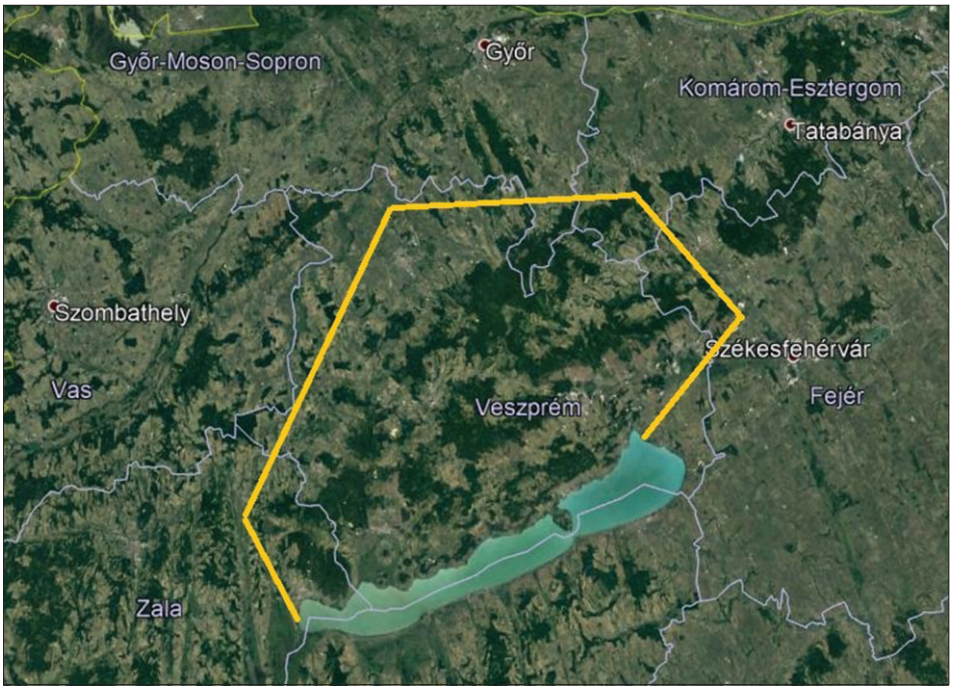

Fig. 1: Map of the investigated area

"common species": the 20 most frequent species, mostly insect pests, high amount (hundreds) of specimens were collected. These species are common everywhere.

Translations: For better understanding of the geographical names, we provide the following translations from Hungarian to English: tó – lake, mező – field, rét – meadow, hegy – hill, domb – hill, patak – brook, völgy – valley. These words are frequently parts of the Hungarian geographical names.

Results and discussion

List of the species

Xyelidae

Xyela (*Xyela*) *graeca* J.P.E.F. Stein, 1876: Cserszegtomaj: Büdöskúti út (HARIS 2019). Sporadic. Larva on *Pinus nigra*.

Xyela (*Xyela*) *curva* Benson, 1938: Szentkirályszabadja: Kő-hegy. Larva feeds on *Pinus mugo*, *P. cembra* and *P. nigra*. Sporadic.

Pamphiliidae

Acantholyda (*Acantholyda*) *erythrocephala* (Linné, 1758): Bakonybél (ZOMBORI 1973). Sporadic. Larva on *Pinus* spp.

Acantholyda (*Itycorsia*) *hieroglyphica* (Christ, 1791): Várpalota. Sporadic. Host plants: *Pinus* spp.

Cephalcia abietis (Linné, 1758): Bakony (MÓCZÁR and ZOMBORI 1973), [Kardosrét] Cuha-völgy (ZOMBORI 1973). Sporadic. Host plant: *Picea abies*.

Cephalcia arvensis Panzer, 1803: Cserszegtomaj: Várvölgyi út: Pörkölt-hegy (HARIS 2019), [Csesznek:] Gézaháza. Sporadic. Host plant: *Picea* spp.

Neurotoma fausta (Klug, 1808): Bakony (MÓCZÁR and ZOMBORI 1973), [Isztimér:] Menyeke (ZOMBORI 1973). Sporadic. Host plant unknown.

Neurotoma mandibularis (Zaddach, 1866): Balatonfüred. Rare. Larva on *Quercus*.

Neurotoma nemoralis (Linné, 1758): Herend, Pápa, Veszprémfajsz (ZOMBORI 1973), Balatongyörök: Bélap-völgy, Cserszegtomaj: Büdöskúti út, Cserszegtomaj: Dobogó (HARIS 2019). Frequent. Larva on *Prunus mahaleb, P. armeniaca, P. spinosa* and *P. cerasus*.

Pamphilius alternans (A. Costa, 1860): [Csesznek:] Gézaháza (ZOMBORI 1973) Balatonalmádi, Balatonfüred: Nagymező, Tihany: Kiserdő-tető. Sporadic. Host plant unknown.

Pamphilius ignymontiensis Lacourt, 1973: [Királyszállás:] Barok-völgy, Tés. Rare. Known host plants: *Acer platanoides* and *A. campestre.*

Pamphilius betulae (Linné, 1758): Várpalota (ZOMBORI 1973). Sporadic. Host plant: *Populus tremula*.

Pamphilius hortorum (Klug, 1808): Fenyőfő: Pisztrángos-tó. Sporadic. Larva on *Rubus idaeus*.

Pamphilius jucundus (Eversmann, 1847): Balatongyörök: Bélap-völgy (HARIS 2019), Tihany: Kiserdő-tető. Rare. Host plant unknown.

Pamphilius marginatus (Serville, 1823): Eplény: Malomréti-völgy. Rare. Larva on *Corylus avellana* and on *Carpinus betulus*.

Pamphilius pallipes (Zetterstedt, 1838): Ugod. Rare. Larva on *Betula*.

Fig. 2: Landscape from Öskü with the medievale rotunda (photo: Attila Haris)

Fig. 3: Tücsöknyerítő Hills and Sátorma (photo: András Zámbó)

Fig. 4: Kongó: landscape between Nemesvita and Szigliget
(photo: András Zámbó)

Fig. 5: Meadow at Tapolca
(photo: András Zámbó)

Pamphilius sylvaticus (Linné, 1758): [Királyszállás:] Barok-völgy, Cuha-völgy, [Hárskút:] Esztergáli-völgy, Gyulafirátót, Nemesvámos, Németbánya, Somlóvásárhely, Zirc (Zombori 1973), Porva: Pálihálás (Roller and Haris 2008), Csehbánya: Középső-Hajag, Tihany: Kiserdő-tető, Tihany: Ranger's house. One of the most frequent sawfly species. Host plants: *Sorbus aucupariae, Malus* spp., *Prunus* spp. and *Crataegus* spp.

Pamphilius vafer (Linné, 1767): Cuha-völgy (Zombori 1973). Sporadic. On *Alnus glutinosa* and *A. incana*.

Pseudocephaleia praeteritorum (Semenov, 1934): Vászoly (Shinohara and Zombori 1997). Rare. Host plant unknown.

Megalodontesidae

Megalodontes cephalotes (Fabricius, 1781): Nyirád: Felsőnyirádi-erdő. (Zombori 1973), Tapolca (Haris 1998). Frequent. Host plant: *Peucedanum cervania*.

Megalodontes fabricii (Leach, 1817): Pétfürdő (Zombori 1973), Hidegkút (Roller and Haris 2008), Tihany: Gejzír-mező, Tihany: Csúcs-hegy, Tihany: Külső-tó, Tihany: Sajkod. Sporadic. Host plant unknown.

Megalodontes plagiocephalus (Fabricius, 1804): Bakonyszentlászló, Isztimér: Mellár, Szentkirályszabadja, Tihany, Uzsa, Veszprémfajsz (Zombori 1973), Ábrahámhegy, Cserszegtomaj, (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Dobogó (Haris 2019) Balatonalmádi, Balatongyörök: Bélap-völgy, Cserszegtomaj: Gyötrös-tető, Hidegkút, Litér: Mogyorós-domb, Pápa, Sóly: falu É-i szegélye, Szentbékkálla: Fekete-hegy, Tihany: Gejzír-mező, Tihany: Kiserdő-tető, Tihany: Akasztó-domb, Veszprém: Csatár-hegy. One of the most frequent Megalodontesidae species. Known host plant: *Peucedanum alsaticum*.

Megalodontes thor Taeger, 2002: Tihany: Gejzír-mező. Sporadic. Host plant unknown.

Blasticotomidae

Blasticotoma filiceti Klug, 1834: Fenyőfő: Kisszépalma (Zombori 1973). Rare. Host ferns are *Athyrium filix-femina, Matteuccia struthiopteris, Dryopteris* spp., *Polystichium* spp., and *Pteridium aquilinum*.

Argidae

Aprosthema humeratum (Konow, 1892): Veszprém (Roller and Haris 2008). Rare. Host plant unknown.

Aprosthema instratum (Zaddach, 1895): Balatonudvari (Roller and Haris 2008). Rare. Host plant unknown.

Aprosthema intermedium (Zaddach, 1864): Balatonudvari (Roller and Haris 2008). Rare. Host plant unknown.

Aprosthema konowi (Mocsáry, 1891): Balatronudvari, Hidegkút (Roller and Haris 2008). Rare. Host plant unknown.

Aprosthema melanurum (Klug, 1814): Tihany: Kis-erdő. Sporadic. Host plants: *Lathyrus pratensis* and *Vicia cracca*.

Arge berberidis Schrank, 1802: Ábrahámhegy, Dörgicse, Gyenesdiás, Káptalanfüred, Nemesvámos, Vállus, Veszprém (Zombori 1973), Balatonalmádi, Balatonszepezd, Tihany, (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Dobogó (Haris 2019), Balatonfüred: Száka-hegy, Csopak: Nosztori-völgy, Porva: Generál-erdő, Szentgál: Mecsek-hegy, Tihany: Gejzír-mező. Frequent. Larva on *Berberis* and *Mahonia* spp.

Arge cyanocrocea (Förster, 1771): Ajka, Csatka, Csesznek, Csetény, Csőszpuszta, Fenyőfő, [Csesznek:] Gézaháza, Halimba, Kapolcs, Pétfürdő, Somlóvásárhely, Tapolca, Úrkút, Zalaszántó. (ZOMBORI 1973), Keszthelyi-hgs. (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Dobogó, Csehbánya: Középső-Hajag, Cserszegtomaj: Várvölgyi út: Pörkölt-hegy. (HARIS 2019) [Zirc:] Akli: Gerence-völgy, Bakonyszombathely: Feketevíz-patak, Balatonkenese: Tátorjános, Bánd: Vár-hegy, Csopak: Nosztori-völgy, Eplény: Malomréti-völgy, Fenyőfő: Ősfenyves, [Csesznek:] Gézaháza, Hajmáspuszta, Hárskút, Hétházpuszta, Királyszállás: Barok-völgy, Porva-Csesznek, Tapolca: Szent György-hegy, Tihany, Tihany: Gejzír-mező, Tapolca: Fenyős-domb, Tihany: Kiserdő-tető, Tihany: Külső-tó, Tihany: Ranger's house, Ugod: Séd, Vinye: Kőpince-forrás. Common species. Known host plants: *Rubus idaeus* and *Sanguisorba officinalis*.

Arge enodis (Linné, 1767): Bakonybél, Balinka, Bodajk, Csatka, Csehbánya, Kúp, Városlőd, Veszprém. (ZOMBORI 1973) Alsóörs: railway station, Balatonfűzfő: at Lake Balaton, Cuha-völgy, Olaszfalu: Felsőpere, Tapolca: Kalapács-ér, Tihany: Bozsai-öböl, Várvölgy. Frequent. Host plants: *Salix* spp.

Arge frivaldszkyi (Tischbein, 1852): Tihany: Külső-tó. Rare. Host plant unknown.

Arge gracilicornis (Klug, 1814): [Királyszállás:] Barok-völgy, Csesznek, Úrkút, Zalaszántó (ZOMBORI 1973), Zalaszántó: Tátika-erdő (HARIS 2019). Frequent. Larva on *Rubus idaeus*.

Arge melanochra (Gmelin, 1790): Bakonybél, Bakonykoppány, Bakonypölöske, Bakonyszombathely, Bodajk, Csatka, Csetény, Felsőörs, Halimba, Herend, Isztimér, [Ajka:] Jókai-bánya, [Fenyőfő:] Kisszépalma, Márkó, Pétfürdő, Porva, [Ugod:] Somberek, Sümeg, Tapolca, Tés, Tihany, Uzsa, Úrkút, Vállus, Városlőd, Várvölgy, Veszprém, Veszprémfajsz, Zirc (ZOMBORI 1973), Ajka, Sümeg (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Várvölgy: Bándi-mező, Vállus: Láz-tető (HARIS 2019), Ajka: Köleske, Bakonynána: Római-fürdő, Balatonfüred: Nagymező, Balatonkenese: Tátorjános, [Vállus:] Büdöskút, Csopak: Nosztori-völgy, Eplény: Malomréti-völgy, Farkasgyepű, Felsőörs: Királykúti-völgy, Fenyőfő: Ősfenyves, Fenyőfő: Pisztrángos-tó, Hétházpuszta, Kardosrét: Cuha-völgy, [Ugod:] Királykapu, Nagytárkány, Porva: Ménesjárás, Pula, Olaszfalu: Felsőpere, Öcs: Nagy-tó, Szentgál: Mecsek-hegy, Tapolca: Fenyős-domb, Tihany, Tihany: Gejzír-mező, Tihany: Külső-tó, Ugod, Ugod: Szár-hegy, Várvölgy, Vinye: Kőpince-forrás, Zirc, [Zirc:] Akli: Gerence-völgy, Zirc: Cigány-domb, Zirc: Három-hegy. The most common Argid sawfly. Host plant: *Crataegus oxycantha*.

Arge nigripes (Retzius, 1783): Balatongyörök: Bélap-völgy (HARIS 2019), Balatonfüred: Koloska-völgy, Fenyőfő, Hárskút: Esztergáli-völgy, Kiliántelep, Tihany: Gejzír-mező. Fequent. Host plants: *Rosa* spp.

Arge ochropus (Gmelin, 1790): Bakonynána, Balatonalmádi, Lovas, Monoszló, Pétfürdő, Tapolca, Tihany, Úrkút, Veszprémfajsz, Zalaszántó (ZOMBORI 1973), Hidegkút, Tihany (ROLLER and HARIS 2008), Zalaszántó: Tátika-erdő (HARIS 2019), Bánd: Vár-hegy, Szentgál: Somod, Zirc: Cigány-domb. Pest of *Rosa* spp. Locally frequent.

Arge pagana (Panzer, 1797): Bakonybél, Balatonalmádi, Balinka, Bodajk, Cuha-völgy, Felsőörs, Fenyőfő, Gyepűkaján, Káptalanfüred, Németbánya, Tihany, [Ugod:] Somberek, Úrkút, Városlőd, Zalaszántó (ZOMBORI 1973), Balatongyörök: Bece-hegy, Rezi, Szentbékkálla, Vászoly (ROLLER and HARIS 2008), Cserszegtomaj: Fagyos-kereszt (HARIS 2019), Felsőörs: Királykúti-völgy, Hárskút: Esztergáli-völgy, Németbánya, Tihany: Bozsai-öböl, Tihany: Gejzír-mező, Tihany: Kiserdő-tető, Tihany: Külső-tó, Tihany: Óvár, . Frequent. Host plants: *Rosa* spp.

Arge rustica (Linné, 1758): Balatonalmádi, Gyenesdiás, [Fenyőfő:] Kisszépalma, Vállus, Veszprémfajsz (ZOMBORI 1973), Balatongyörök: Bélap-völgy (HARIS 2019),

Fenyőfő: Ősfenyves, Olaszfalu: Felsőpere, Németbánya: Pisztrángos-tó, Olaszfalu: Malom-völgy. Frequent. Host plant: *Quercus* spp.

Arge ustulata (Linné, 1758): [Királyszállás:] Barok-völgy, Márkó, Zirc (Zombori 1973), Balatonfüred, Zirc (Roller and Haris 2008), Eplény: Malomréti-völgy, Csehbánya: Középső-Hajag, Királyszállás: Barok-völgy, Olaszfalu: Malomréti-völgy, Zirc: Cigány-domb. Frequent. Larva on *Betula*, *Salix* and *Crataegus*.

Spinarge metallica (Klug, 1834): Zirc (Mocsáry 1900). Rare, the solely record from Hungary. Larva on *Betula pendula*.

Sterictiphora angelicae (Panzer, 1799): Bakonybél, Budapest, Hajmáspuszta, Káptalanfüred, Márkó, Szigliget, Tihany (Zombori 1973), Mindszentkálla, Pápa, (Roller and Haris 2008), Kiliántelep, Nyirád. Frequent species. Larva on *Prunus*.

Sterictiphora geminata (Gmelin, 1790): Balatoncsicsó, Porva: Pálihálás (Roller and Haris 2008). Larva on *Rosa* spp. and *Sorbus aucuparia*. Sporadic.

Sterictiphora longicornis Chevin, 1982: Balatoncsicsó (Roller and Haris 2008), Cuha-völgy, [Hárskút:] Esztergáli-völgy, [Bakonyszentlászló:] Hódos-ér, Kardosrét, Pénzesgyőr: Szömörke-völgy, [Devecser] Széki-tó. Note: It was (1981) separated from the similar *S. geminata*, all available records were checked. Sporadic. Host plant: *Carpinus betulus*. Adults associated with *Prunus spinosa*.

Cimbicidae

Abia aenea (Klug, 1820): Hárskút: Esztergáli-völgy (Zombori 1973), Balatongyörök, Isztimér: Tüskés, Tihany: Gejzír-mező. Sporadic. Host plants: *Lonicera* and *Symphoricarpos* spp.

Abia candens Konow, 1887: [Zirc:] Aklipuszta (Zombori 1973), Balatongyörök (Roller and Haris 2008). Sporadic. Larva on *Knautia arvensis*.

Abia fasciata (Linné, 1758): [Kardosrét] Cuha-völgy, Várpalota (Zombori 1973). Sporadic. Host plants: *Lonicera xylosteum*, *L. periclymenum*, *L. tatarica*, *Leycesteria* spp. and *Symphoricarpos* spp.

Abia nitens (Linné, 1758): Felsőörs, Várpalota, Veszprém (Zombori 1973), Bakonyszentlászló (Roller and Haris 2008), Hegyesd: Szent Péter-dűlő. Less frequent than the next species. Host plants: *Scabiosa columbaria* and *S. canescens*.

Abia sericea (Linné, 1767): Csatka, Veszprém, Zalaszántó (Zombori 1973), Cserszegtomaj (Roller and Haris 2008), Zalaszántó: Tátika-erdő (Haris 2019), Bakonybél: Barátok útja, Budatava, Cuha-völgy, Porva-Csesznek, Zirc: Három-hegy. Frequent. Larva on *Succisa*, *Knautia* and *Fragari*a spp.

Cimbex femoratus (Linné, 1758): Bakonybél, Sáska, Szigliget, Várpalota, (Zombori 1973), Sümeg (Haris 1998), Bakonybél: Kőris-hegy, Tapolca. Widely distributed, frequent species. Host plants: *Betula pendula* and *B. pubescens*.

Cimbex luteus (Linné, 1758): Bakonybél, Vállus, Várpalota (Zombori 1973) Sporadic. Larva on *Populus tremula* and *Salix* spp.

Cimbex quadrimaculatus (O.F. Müller, 1766): Bakonyjákó (Zombori 1973), Balatonalmádi, Balatonfüred: Nagymező, Veszprém. Frequent insect pest. Larva on *Crataegus*, *Pyrus* and *Prunus* spp.

Corynis crassicornis (Rossi, 1790): Bakony: Northern part of Cuha-völgy, Balatonfüred, Bodajk, Csopak, Öcs, Sümeg, Tapolcafő, Vállus, Városlőd (Zombori 1973), Eplény: Malomréti-völgy, Hegymagas: Szent György-hegy, Öcs: Nagy-tó, Szentgál: Somod, Tapolca, Tihany: Külső-tó. Sporadic. Hosts are *Sedum* spp. (*S. album*, *S. acre* and *S. sexangulare*).

Corynis obscura (Fabricius, 1775): Tapolca (Mocsáry 1900), Hidegkút, Tapolca (Roller and Haris 2008). Larva on *Geranium sylvaticum*. Sporadic.

Pseudocavellaria amerinae (Linné, 1758): Bakonybél (ZOMBORI 1973). Host plants: *Salix* and *Populus* spp. Frequent.

Trichiosoma latreillii Leach, 1817: Bakonybél, Veszprém (ZOMBORI 1973). Rare. Larva on *Betula* and *Salix.*

Trichiosoma vitellina (Linné, 1760): Bakonybél (ZOMBORI 1973). Host plants unknown. Rare.

Diprionidae

Diprion pini (Linné, 1758): Sümeg (ROLLER and HARIS 2008), [Csopak:] Nosztori-völgy. Frequent. Insect pest of *Pinus* spp.

*Gilpina frutetoru*m (Fabricius, 1793): Zirc (MOCSÁRY 1900). Larva on *Pinus sylvestris*. Rare in Hungary.

Gilpina polytoma (Hartig, 1834): Badacsony (MÓCZÁR and ZOMBORI 1973). Larva on *Picea abies* and *P. obovata*. Sporadic.

Monoctenus juniperi (Linné, 1758): Bakony, (MÓCZÁR and ZOMBORI 1973), Fenyőfő. *Pinus sylvestris* and *Juniper* vegetation. Host plants: *Juniperus communis* and *J. nana.* Sporadic.

Monoctenus obscuratus (Hartig, 1837): Fenyőfő (ZOMBORI 1973). Sporadic. Host plants: *Juniperus communis* and *J. nana*.

Neodiprion sertifer (Geoffroy, 1785): Sóly (HAVAS 1897), Fenyőfő. Larva on *Pinus* spp. Frequent.

Tenthredinidae

Dolerinae

Dolerus (*Poodolerus*) *aeneus* Hartig, 1837: Felsőörs, Fenyőfő (ZOMBORI 1979), Keszthelyi-hgs.: Pilikáni út (HARIS 1998), Cserszegtomaj: Dobogó, Cserszegtomaj: Keszthelyi-hgs.: Pilikáni street (HARIS 2019), Bakonybél: Gerence-völgye, Eplény: Malomréti-völgy, Zirc: Cigány-domb. Sporadic. Host plants: *Graminae*.

Dolerus (*Poodolerus*) *anthracinus* (Klug, 1818): Pápasalamon (ZOMBORI 1979), Fenyőfő: Halastavak (ROLLER and HARIS 2008). Sporadic. Host plants: *Graminae*.

Dolerus (*Poodolerus*) *asper* Zaddach, 1859: Balatongyörök: Bélap-völgy (HARIS 2019). Sporadic. Host plants: *Graminae* and *Cyperaceae*.

Dolerus (*Dolerus*) *bajulus* Serville, 1823: Ácsteszér, Bakonybél, Bakonycsernye, Hajmáspuszta, Gyulafirátót, [Pápa:] Kéttornyúlak, [Bakonybél:] Kőris-hegy, Márkó, Németbánya, Olaszfalu, Pálihálás, [Ugod:] Somberek, Somlóvásárhely, Tüskevár, Ugod, Várvölgy, Veszprém, Zalaszántó (ZOMBORI 1979), Bakony: Cuha-völgy, (ROLLER and HARIS 2008), Zalaszántó: Kovácsi-hegy, Várvölgy (HARIS 2019), Bakonybél: Gerence-völgy, Bakonybél: Fekete-séd, Bakonynána, Balatonalmádi: Budatava, Felsőörs: Királyréti-völgy, Hárskút: Esztergáli-völgy, Hajmáspuszta, Veszprém: Aranyos-völgy. Frequent. Larva on *Equisetum palustre*.

Dolerus (*Dolerus*) *bimaculatus* (Geoffroy, 1785): Bakonybél, Balatonfüred, Gyulafirátót, Herend, Németbánya (ZOMBORI 1979), Lesenceistvánd: patakpart, láprét. Sporadic. Larva on *Equisetum* spp.

Dolerus (*Poodolerus*) *blanki* Liston, 1995: Tapolca. Rare. Hostplant unknown.

Dolerus (*Poodolerus*) *brevicornis* Zaddach, 1859: Rezi: Gyöngyösi csárda, Zalaszántó: Alsó-nyíres (HARIS 2019). Sporadic. Larva on *Graminae*.

Dolerus (*Oncodolerus*) *eversmanni* W.F. Kirby, 1882: Bakony: Cuha-völgy, Bakonybél, Bakonyszűcs, Csehbánya, Herend, Márkó, Pénzesgyőr, Somlóvásárhely, Vinyesándormajor (ZOMBORI 1979), Vállus (ROLLER and HARIS 2008), Várvölgy: Zsidi-rét (HARIS 2019), Eplény: Malomréti-völgy, Fenyőfő: Pisztrángos-tó, Lesenceistvánd,

[Bakonyszentlászló:] Hódos-ér völgye, [Fenyőfő:] Kék-hegy, Zirc. Frequent. Larva on *Equisetum arvense* and *E. palustre*.

Dolerus (*Achaetoprion*) *ferrugatus* Serville, 1823: Zirc (Zombori 1979), Bakonybél (Roller and Haris 2008), Öcs: Nagy-tó. Sporadic. Host plant: *Juncus effusus*.

Dolerus (*Poodolerus*) *fumosus* Stephens, 1835: Eplény: Malomréti-völgy, Királyszállás: Barok-völgy. Sporadic. Hostplant unknown. In interesting way, where *Dolerus sanguinicollis* Kl. specimens were captured, the males of *D. sanguinicollis* weren't, but males of *Dolerus fumosus* Steph. were found. Probably, the males of the two closely related species are reversed, or the females of *D. fumosus* has red colour variation either.

Dolerus (*Dolerus*) *germanicus* ssp. *germanicus* (Fabricius, 1775): Ajka, [Zirc:] Akli, Ácsteszér, [Ugod:] Somberek, Bakonybél, Bakonykoppány, Balatonfüred, Balinka, Csatka, Csehbánya, Fenyőfő, Gyulafirátót, Hajmáspuszta, Herend, Németbánya, Nyárád, Nyirád, Olaszfalu, Pápa, Pénzesgyőr, Porva, Somlóvásárhely, Tapolcafő, Tihany: Külső tó, Várvölgy, Vinyesándormajor, [Bakonyszűcs] Vörös János-séd, Zalaszántó (Zombori 1979), Kapolcs, Keszthely (Haris 1998), Bakonybél, Bakonyszentlászló, Balatongyörök, Pápa, Vonyarcvashegy, (Roller and Haris 2008), Várvölgy: Zsidi-rét, Vonyarcvashegy: láprét, (Haris 2019), Aszófő: Köves-földek, Bakonyszűcs: Vörös János-séd, Balatonalmádi: Budatava, Balatonfüred: Balatonpart, Csesznek, Dudar, Eplény: Malomréti-völgy, [Bakonyszentlászló:] Hódosér-völgy, [Ugod:] Királykapu, Lesenceistvánd, Porva, Ugod: Séd, Zirc: Cigány-domb. Common. Larva on *Equisetum arvense* and *E. palustre*.

Dolerus (*Poodolerus*) *gonager* (Fabricius, 1781): Balatonalmádi, Balatonfüred, Eplény, Farkasgyepű, Herend, [Bakonyszentlászló:] Hódos-ér, Márkó, Padragkút, Porva, Pula, Sáska, [Pénzesgyőr:] Szömörke-völgy, Tés, Veszprém, Zirc (Zombori 1979), Vállus (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Vállus: Szarvas-kotrás, Vállus: Kis-Láz-völgy (Haris 2019), Bakonybél: Gerence-völgy, Csesznek: Vár-hegy, Dudar: Ördög-árok, Eplény: Malomréti-völgy, [Csesznek:] Gézaháza: Ördög-árok, Kővágóörs, Kővágóörs: Kornyi-tó, Lesenceistvánd, Pénzesgyőr, Szentbékkálla, Tihany: Csúcs-hegy, Zirc, Zirc: Kőbánya, Zirc: Arborétum, Zirc: Pintér-hegy. Common. Larva on *Graminae*.

Dolerus (*Poodolerus*) *haematodes* (Schrank, 1781): Eplény, Herend, Kapolcs, Márkó, Porva, Várpalota, Zirc (Zombori 1979), Csesznek: Ördög-árok, Dudar: Ördög-árok, [Csesznek:] Gézaháza: Ördög-árok, [Fenyőfő:] Kisszépalma: patak. Frequent. Larva on *Juncus*, *Scirpus*, *Carex* and *Gramineae*.

Dolerus (*Poodolerus*) *liogaster* C. G. Thomson, 1871: Bakonybél, Farkasgyepű, [Bakony:] Gerence-völgy, Herend, [Pénzesgyőr:] Szömörke-völgy, Tés (Zombori 1979), Cserszegtomaj: Várvölgyi út: Pörkölt-hegy (Haris 2019). Sporadic. Host plants: *Graminae*.

Dolerus (*Achaetoprion*) *madidus* (Klug, 1818): Herend (Zombori 1979), Veszprém (Roller and Haris 2008), Felsőörs: Királykúti-völgy. Sporadic. Host plant: *Juncus effusus*.

Dolerus (*Poodolerus*) *niger* (Linné, 1767): Bakony: Cuha-völgy, Bakonypölöske, Balatonfüred, [Királyszállás:] Barok-völgy, [Csesznek:] Gézaháza, Halimba, Herend, [Nagyvázsony:] Kab-hegy, Márkó, Sáska, [Pénzesgyőr:] Szömörke-völgy (Zombori 1979), Fenyőfő (Haris 1998), Hárskút: Augusztin-tanya, Pénzesgyőr. Sporadic. Host plants: *Poaceae*.

Dolerus (*Poodolerus*) *nigratus* (O.F. Müller, 1776): Bakony: Cuha-völgy, Bakonybél, Eplény, Farkasgyepű, [Bakony:] Gerence-völgy, Gyulafirátót, Hajagos, Herend, [Bakonyszentlászló:] Hódos-ér, [Csesznek: Cuha:] Káró, Németbánya, Pénzesgyőr,

[Herend:] Rakottyás, Somlóvásárhely, [Pénzesgyőr:] Szömörke-völgy, Várvölgy, Veszprém, Vörösberény, Zirc (ZOMBORI 1979), Sümeg, Tapolca (HARIS 1998), Fenyőfő (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Fagyos-kereszt, Rezi: Gyöngyösi csárda, Várvölgy: Bándi-mező, Várvölgy: Zsidi-rét, Zalaszántó: Alsónyíres (HARIS 2019), Bakonybél: Gerence-völgy, Csesznek: Várbükk, Eplény: Malomréti-völgy, [Csesznek:] Gézaháza: Ördög-árok, Hárskút, [Bakonyszentlászló:] Hódos-ér völgye, Huszárokelőpuszta, Kővágóörs, Lesenceistvánd, Szentbékkálla, Tapolca, Zirc: Cigány-domb, Zirc: Három-hegy, Zirc: Kardosrét, Zirc: Szarvaskút. Common. Larva on *Gramineae* including cereals.

Dolerus (*Poodolerus*) *nitens* Zaddach, 1859: Zalaszántó (ZOMBORI 1979), Várvölgy: Zsidi-rét, Zalaszántó: Kovácsi-hegy (HARIS 2019). Sporadic. Larva on *Cyperaceae* and *Graminae*.

Dolerus (*Achaetoprion*) *pachycerus* Hartig, 1837: Tihany (ROLLER and HARIS 2008). Rare. Host plant: *Juncus gerardii*.

Dolerus (*Poodolerus*) *picipes* (Klug, 1818): Bakony: Cuha-völgy, Dörgicse, Eplény, Felsőörs, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza, [Bakonyszentlászló:] Hódosér, Márkó, Németbánya, Padragkút, Paloznak, Szentgál, [Pénzesgyőr:] Szömörke-völgy, Tés, Veszprém, Zirc (ZOMBORI 1979), Balatongyörök, Balatonudvari (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy (HARIS 2019), Eplény: Malomréti-völgy, Csehbánya: Középső-Hajag, Dudar, [Fenyőfő:] Kék-hegy, Fenyőfő: Pisztrángos-tó, Fenyőfő: Ősfenyves, Hárskút: Esztergáli-völgy, [Bakonyszentlászló:] Hódosér-völgye, Szentbékkálla, Tapolca: Fenyős-domb, Tihany: Külső-tó Zirc, Zirc: Cigány-domb. Frequent. Larva on *Graminae*.

Dolerus (*Equidolerus*) *pratensis* (Linné, 1758): Bakonybél (ZOMBORI 1979), Tihany (ROLLER and HARIS 2008), Lesenceistvánd: láprét (marshy meadow). Rare. Host plant: *Equisetum heliocharis*.

Dolerus (*Poodolerus*) *puncticollis* C. G. Thomson, 1871: Bakony: Cuha-völgy, Balatonfüred, Eplény, Fenyőfő, Gyulafirátót, Márkó (ZOMBORI 1979), Balatonalmádi, Balatongyörök, Porva: Pálihálás, Vállus (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Rezi: Gyöngyösi csárda, Várvölgy: Bándi-mező, Várvölgy: Zsidi-rét (HARIS 2019), Bakonybél: Gerence-völgy, Csesznek: Vár-hegy, Dudar: Ördög-árok, Eplény: Malomréti-völgy, [Bakonyszentlászló:] Hódosér-völgye, Hárskút: Augusztintanya, Királyszállás: Barok-völgy, Kővágóörs: Kornyi-tó, Lesenceistvánd, Lesenceistvánd: patakpart, Lókút, Pénzesgyőr, Szentbékkálla, Tihany: Külső-tó, Zirc, Zirc: Cigány-domb, Vállus. Common. Larva on *Graminae* including cereals.

Dolerus (*Poodolerus*) *sanguinicollis* (Klug, 1818): Bakony: Cuha-völgy, Dudar, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza, Királyszállás, [Pénzesgyőr:] Szömörke-völgy, (ZOMBORI 1979), Eplény: Malomréti-völgy, Zirc: Szarvaskút. Sporadic.

Dolerus (*Achaetoprion*) *triplicatus* (Klug, 1818): Tapolca (HARIS 1998). Sporadic. Larva on *Juncus filiformis* and *J. effusus*.

Dolerus (*Poodolerus*) *varispinus* Hartig, 1837: Kővágóörs, Porva: Pálihálás (ROLLER and HARIS 2008), Gyulafirátót: Kálvária-domb. Rare. Host plants: *Poaceae*.

Dolerus (*Dicrodolerus*) *vestigialis* (Klug, 1818): Bakonybél, Bakonyszűcs, Balatonfüred, Felsőörs, [Bakony:] Gerence-völgy, Herend, Márkó, Németbánya, [Pénzesgyőr:] Szömörke-völgy, Tapolcafő, Vállus, Városlőd (ZOMBORI 1979), Bakonybél, Balatonfüred, Porva: Pálihálás (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Vonyarcvashegy: Láprét, Vállus: Szentmiklósi-völgy (HARIS 2019), Csehbánya: Középső-Hajag, Fenyőfő: Pisztrángos-tó, Fenyőfő: halastó, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza: Ördög-árok, Hajmáspuszta, [Bakonyszentlászló:] Hódosér-völgy, Lesenceistvánd, Németbánya, Olaszfalu, Porva-Csesznek, Zirc: Pintér-hegy, Zirc:

Fig. 6: Bélap völgy (Bélap-valley)
(photo: Attila Haris)

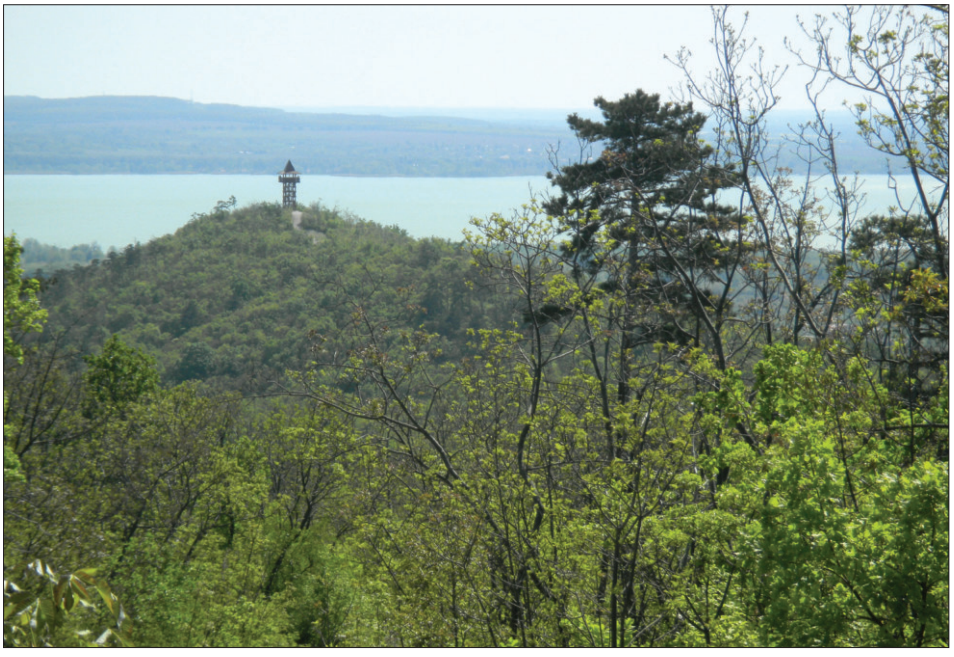

Fig. 7: Keszthelyi-hegység (Keszthely Hills) outlook to Lake Balaton
(photo: Attila Haris)

Fig. 8: On the way to Nemesgulács
(photo: András Zámbó)

Fig. 9: Csönge-hegy (Csönge Hill) at Salföld
(photo: András Zámbó)

Cigány-domb, Zirc: Szarvaskút. Common. Host plants: *Equisetum palustre*, *E. sylvaticum*, *E. arvense* and *E. pratens*e.

Selandriinae

Aneugmenus fuerstenbergensis (Konow, 1885): Fenyőfő (Zombori 1979). Rare. Host plant: *Pteridium aquilinum*.

Aneugmenus padi (Linné, 1760): Fenyőfő (Zombori 1979). Host plants: *Asplenium* sp. and *Pteridium aquilinum*. Sporadic in the Carpathian Basin, but rare in Hungary.

Aneugmenus temporalis (C. G. Thomson, 1871): Uzsa (Roller and Haris 2008). Rare. Host plant: *Pteridium aquilinum*.

Birka (*Birka*) *annulitarsis* (C. G. Thomson, 1870): Bakony (Zombori 1982a). Sporadic. Host plant unknown.

Birka (*Birka*) *cinereipes* (Klug, 1816): [Csesznek:] Gézaháza, Kapolcs, Királyszállás, Lesenceistvánd, Öcs, [Pénzesgyőr:] Szömörke-völgy, Tapolcafő, Zirc (Zombori 1979), Balatongyörök: Bélap-völgy, Cserszegtomaj: Dobogó, (Haris 2019), Bakonyszentlászló, Vinye: Hódos-ér, Bakonyszombathely: Feketevíz-patak, Királyszállás: Barok-völgy, [Bakonybél:] Vörös János-séd, Zirc: Arborétum, Zirc: Pintér-hegy. Sporadic. Host plants: *Myosotis* spp.

Brachythops flavens (Klug, 1816): Bakony (Zombori 1982a), Bakonyszűcs, Balatonfüred, Kapolcs (Zombori 1979), Köveskál: Kornyi-tó (Roller and Haris 2008). Sporadic. Larva on *Carex* spp.

Nesoselandria morio (Fabricius, 1781): Bakony: Cuha-völgy, Bakonybél, Csatka, Fenyőfő, [Bakony:] Gerence-völgy, Lesenceistvánd, Németbánya, Tapolcafő, Veszprém, [Bakonybél:] Vörös János-séd, (Zombori 1979), Vállus (Roller and Haris 2008), Balatongyörök: Bélap-völgy (Haris 2019), Csehbánya. Frequent. 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*.

Selandria serva (Fabricius, 1793): Bakonybél, Bakonyszombathely, Csetény, Eplény, Felsőörs, [Bakony:] Gerence-völgy, Gyulafirátót, Hajmáspuszta, Kapolcs, [Pápa:] Kéttornyúlak, [Csesznek:] Kő-árok, Németbánya, Öcs, Padragkút, Pannonhalma, Pápa, [Pénzesgyőr:] Szömörke-völgy, Tés, Tüskevár, [Bakonybél:] Vörös János-séd, Zirc (Zombori 1979), Badacsony, Hegymagas, Keszthelyi-hgs., Köveskál, Kővágóörs, Salföld, Tihany (Roller and Haris 2008), Csesznek, Tihany: Külső-tó. Frequent. Host plants: *Poaceae*, *Carex* spp. and *Juncus* spp.,

Strongylogaster macula (Klug, 1817): Zirc: Pintér-hegy (Zombori 1977). Rare, larva on *Dryopteris* spp., *Dryopteris carthusiana, D. dilatata, Polystichum* spp., *Arachnoides miqueliana, Athyrium filix-femina* and *Pteridium aquilium*.

*Strongylogaster multifasciat*a (Geoffroy, 1785): Hárskút (Roller and Haris 2008). Locally fequent. Larva on *Dryopteris* spp., *Polystichum* spp., *Matteuccia struthiopteris* and *Pteridium aquilium*.

Strongylogaster xanthocera (Stephens, 1835): Fenyőfő (Zombori 1979). Larva on *Dryopteris* spp., *Polystichum* spp., *Athyrium* spp. and *Pteridium aquilium*. Rare.

Allantinae

Allantus (*Emphytus*) *calceatus* (Klug, 1818): [Pápa:] Kéttornyúlak, Lesenceistvánd (Zombori 1979), Balatongyörök: Bélap-völgy, Várvölgy: Zsidi-rét, (Haris 2019), Lesenceistvánd, Tihany: Bozsai-öböl. Sporadic. Host plants: *Rubus*, *Sanguisorba*, *Rosa*, *Filipendula*, *Fragaria* and *Alchemilla* spp.

Allantus (*Emphytus*) *cinctus* (Linné, 1758): Bakonybél, Bakonynána, Farkasgyepű, [Csesznek:] Gézaháza, Káptalanfüred, Nagyvázsony, Szentgál, Vörösberény (ZOMBORI 1979), Alsóörs, Balatoncsicsó, Csopak: Nosztori-völgy, Lovas, (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlő-hegyek (HARIS 2019), Bakonyszentlászló: fenyves, Csesznek, Fenyőfő, Királyszállás: Barok-völgy, Tihany: tájvédelmi őrház, Tihany: Kiserdő-tető Ősfenyves. Frequent. Host plants: *Rosa* spp.

Allantus (*Emphytus*) *cingulatus* (Scopoli, 1763): Bakony: Cuha-völgy, [Csesznek:] Gézaháza, Gyulafirátót, Hajmáskér, Hajmáspuszta, Tés, Tihany, Várvölgy (ZOMBORI 1979), Balatoncsicsó (ROLLER and HARIS 2008) Balatongyörök: Bélap-völgy, Várvölgy: Nagyláz-tető (HARIS 2019), Balatonalmádi, Balatonfüred: Nagymező, Bakonyszentlászló: Vinye: Hódos-ér, Eplény: railway cross, Tihany: tájvédelmi őrház. Frequent. Larva on *Fragaria* and *Rosa* spp.

Allantus (*Emphytus*) *didymus* (Klug, 1818): [Hárskút:] Esztergáli-völgy, Lovas, Tihany, Veszprém (ZOMBORI 1979), Balatonalmádi, Balatongyörök, Csobánka, Hegyesd, Uzsa, Veszprém, (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy (HARIS 2019), Bakonyszombathely: Feketevíz-patak, Balatonkenese: Soós-hegy, Gyepűkaján: Hosszúnyíres, Öskü, Sümeg: around the castle, Tapolca: Fenyős-domb, Vászoly. Sporadic. Larva on *Sanguisorba minor*; old records from *Rubus* and *Rosa* spp. need checking.

Allantus (*Emphytus*) *melanarius* (Klug, 1818): Tihany: Akasztó-domb (ZOMBORI 1979), Balatongyörök: Bélap-völgy (HARIS 2019), Hárskút: Esztergáli-völgy. Frequent. Host plant: *Cornus sanguinea*.

Allantus (*Emphytus*) *laticinctus* (Serville, 1823): Bakony (ZOMBORI 1982a). We have only this indefinite record from the Bakony Mountains. The voucher specimen probably lost. Rare. Larva on *Rosa* spp.

Allantus (*Emphytus*) *rufocinctus* (Retzius, 1783): Farkasgyepű, Herend (ZOMBORI 1979), Bakonybél: Gerence-völgy, Balatonalmádi, Királyszállás: Barok-völgy. Larva on *Rosa* and *Rubus* spp. Frequent.

Allantus (*Allantus*) *viennensis* (Schrank, 1781): Fenyőfő (ZOMBORI 1979), Bakony, (ZOMBORI 1982a), Badacsony (ROLLER and HARIS 2008). Host plants: *Rosa* spp. Sporadic.

Ametastegia (*Protemphytus*) *carpini* (Hartig, 1837): Bakonybél, [Hárskút:] Esztergáli-völgy, Németbánya, Veszprém, Vinyesándormajor (ZOMBORI 1979), Balatongyörök: Bélap-völgy (HARIS 2019), Lesenceistvánd, Ugod: Szár-hegy. Frequent. Host plant: *Geranium* spp.

Ametastegia (*Ametastegia*) *equiseti* (Fallén, 1808): Bakony: Cuha-völgy, Balatonalmádi, Balatoncsicsó, Bakonybél, Bakonyszűcs, [Királyszállás:] Barok-völgy, [Csesznek:] Kő-árok, Németbánya, Tihany (ZOMBORI 1979), Fenyőfő (ROLLER and HARIS 2008), Csesznek, Eplény: Malomréti-völgy, [Csesznek:] Gézaháza: Ördög-árok, Királyszállás: Barok-völgy, Zirc: Pintér-hegy. Frequent. Larva on *Chenopodium album*, *Lythrum salicaria*, *Polygonum persicaria* and *Rumex acetosella*.

Ametastegia (*Ametastegia*) *glabrata* (Fallén, 1808): Gyulafirátót, Hajmáspuszta, Nyárád, Tüskevár (ZOMBORI 1979), Tihany (ROLLER and HARIS 2008), Kővágóörs: Kornyi-tó, Tihany: Bozsai-öböl, Tihany: Külső-tó. Frequent. Larva on *Chenopodiaceae*, *Polygonaceae*, *Plantago*, *Salix*, *Lithrum*, *Ribes* and *Rubus* spp.

Ametastegia (*Protemphytus*) *pallipes* (Spinola, 1808): Bakony: Cuha-völgy, Csesznek, [Hárskút:] Esztergáli-völgy, [Csesznek:] Gézaháza, Iharkút, Lesenceistvánd, Somlóvásárhely, Tapolcafő, Veszprém, [Csesznek:] Zörög-tető (ZOMBORI 1979), Badacsony, Balatoncsicsó, Fenyőfő, Hidegkút (ROLLER and HARIS 2008), Tihany: Gejzír-mező, Zirc: Arborétum. Frequent. Host plants: *Viola* spp.

Ametastegia (*Protemphytus*) *tenera* (Fallén, 1808): [Csesznek:] Gézaháza (Zombori 1979), Fenyőfő: Szépalma, Porva: Pálihálás (Roller and Haris 2008), Bakonyszombathely: Feketevíz-patak, Csehbánya: Középső-Hajag, Tihany: Gejzír-mező. Frequent. Larva on *Rumex* spp.

Apethymus cereus (Klug, 1818): [Fenyőfő:] Kék-hegy Rare. Host plant: *Quercus robur.*

Athalia ancilla ssp. *ancilla* Serville, 1823: Bakony: Cuha-völgy, Bakonybél, Bakonypölöske, Balatonakali, Balinka, Bodajk, Borzavár, Csetény, Fenyőfő, [Csesznek:] Gézaháza, Gyulafirátót, Gyulakeszi, Hajmáspuszta, Herend, Márkó, [Gyulafirátót:] Miklád, Nagyvázsony, Nemesvámos, Pápa, Pétfürdő, Porva, Pula, Révfülöp, [Balatonakali:] Ságpuszta, Somlóvásárhely, Szentgál, Szentkirályszabadja, Szigliget, Ugod, Tapolca, Tapolcafő, Tés, Tihany, Várpalota, Veszprém, Zalaszántó, Zirc (Zombori 1979), Balatonakali, Balatonederics, Balatongyörök, Révfülöp, Tihany, Tihany: Cser-hegy, Városlőd (Roller and Haris 2008), Tihany: Külső-tó, Vászoly: Öreg-hegy. Insect pest. Host plants: *Diplotaxis tenuifolia*, *Erysimum cheirnthoides*, *Raphanus raphanistrum* and *Sinapsis* spp.

Athalia bicolor Serville, 1823: Bakony: Cuha-völgy, Bakonybél, Bakonyszűcs, [Királyszállás:] Barok-völgy, Csehánya, Dörgicse, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza, Gyulafirátót, Hárskút, Iharkút, [Nagyvázsony:] Kab-hegy, [Ugod:] Királykapu, Királyszállás, [Gézaháza] Mogyorós, Németbánya, Öcs, Padragkút, Paloznak, Somló, [Pénzesgyőr:] Szömörke-völgy, Sümeg, Tapolcafő, Veszprém, Vinyesándomajor, Vörösberény, Zirc (Zombori 1979), Kapolcs (Haris 1998) Keszthelyi-hgs., Vállus, Tihany (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Várvölgy: Zsidi-rét (Haris 2019), Fenyőfő: Pisztrángos-tó, Gyulafirátót, Hárskút: Esztergáli-völgy, Olaszfalu: Malom-völgy, Tihany: Kiserdő-tető, Tihany: Külső-tó, Zirc: Cigány-domb. Frequent. Host plant: *Ranunculus* spp.

Athalia circularis (Klug, 1815): Bakony: Cuha-völgy, Bakonybél, Bakonyszombathely, Bakonyszűcs, Balatonfüred, Balinka, [Királyszállás:] Barok-völgy, Borzavár, Csatka, Csesznek, Csőszpuszta, Felsőörs, Fenyőfő, Gyulafirátót, Hajmáspuszta, Hétházpuszta, Iharkút, Káptalanfüred, Királyszálllás, Monoszló, Nemesvámos, Németbánya, Nyirád, Olaszfalu, Öcs, Padragkút, Pálihálás, [Zirc:] Pintér-hegy, Porva, Porva-Csesznek, Rezi, Sáska, Sümeg, Tapolcafő, Tés, Ugod, Úrkút, Vállus, Várpalota, Vinyesándormajor, Vonyarcvashegy, Zalaszántó, Zirc (Zombori 1979), Kapolcs (Haris 1998) Bakony: Cuha-völgy, Keszthelyi-hgs., Tihany (Roller and Haris 2008), Várvölgy: Bándi-mező (Haris 2019), Bakonybél: Som-hegy, Fenyőfő: Ősfenyves, Fenyőfő: Pisztrángos-tó, Kővágóörs: Kornyi-tó, Szentgál: Somod, Tihany: Bozsai-öböl, Tihany: Gejzír-mező, Tihany: Külső-tó, Zirc: Arborétum, Zirc: Szarvaskút, . Frequent. Host plants: *Arctium lappa, Ajuga reptans, Veronica beccabunga, V. longifolia, V. officinalis, Alliaria petiolata, Glechoma hederacea, Melampyrum, Capsella* and *Lycopus* spp.

Athalia cordata Serville, 1823: Badacsony, Bakonybél, Bakonykoppány, Bakonynána, Bakonyszombathely, Balinka, [Királyszállás:] Barok-völgy, Cserszegtomaj, Dörgicse, [Hárskút:] Esztergáli-völgy, Fenyőfő, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza, Gyulafirátót, Hajmáskér, Hajmáspuszta, Királyszállás, [Ugod:] Királykapu, Kislőd, Márkó, Nemesvámos, Németbánya, Nyárád, Olaszfalu, Padragkút, Porva, Pula, Szentgál, Tapolcafő, Tés, Tihany, Ugod, Vállus, Várpalota, Veszprém, Vinyesándormajor, Zalaszántó, Zirc (Zombori 1979), Cserszeg, Kapolcs (Haris 1998), Balatonalmádi, Balatonakali, Balatoncsicsó, Balatongyörök: Bece-hegy, Bakonyszentlászló, Cserszegtomaj, [Gyulakeszi:] Csobánc, Kővágóörs, Tihany, Uzsa, Veszprém, Vállus (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlő-hegyek, Cserszegtomaj: Dobogó, Cserszegtomaj: Fagyos-kereszt (Haris 2019),

Csesznek: Ördög-árok, Farkasgyepű, Fenyőfő: Pisztrángos-tó, Hárskút: Esztergáli-völgy Szentgál: Somod, Tihany: Külső-tó. Common. Larva on *Misopates orontinum*, *Antirrhinum majus*, *Ajuga reptans*, *Teucrium scorodonia* and *Plantago* spp.

Athalia liberta (Klug, 1815): Ajka, Bakony: Cuha-völgy, Bakonybél, Balatonfüred, Balatonkenese, Balinka, [Királyszállás:] Barok-völgy, Bodajk, Budatava, Csesznek, Csopak, Dudar, Fenyőfő, Gyulafirátót, Hajmáspuszta, Hétházpuszta, [Ugod:] Királykapu, Királyszálllás, Németbánya, Olaszfalu, Somlóvásárhely, Szentgál, Pálihálás, Porva, Tés, Ugod, Uzsa, Vállus, Zirc, [Csesznek:] Zörög-tető (ZOMBORI 1979), Gyenesdiás, Tihany (ROLLER and HARIS 2008), Vállus: Láz-tető (HARIS 2019), Bakonybél: Somhegypuszta, Csesznek: Vár-bükk, Fenyőfő: Ősfenyves, Szentgál: Somod, Tihany, Tihany: Bozsai-öböl. Frequent. Feeding on *Alliaria petiolata*, *Arabidopsis thaliana*, *Cardamine hirsuta* and *Sisymbrium officinale*.

Athalia lugens (Klug, 1815): Bakonybél, Bakonyszombathely, Hajmáspuszta, Iharkút, Ugod, Uzsa (ZOMBORI 1979), Fenyőfő: Pisztrángos-tó, [Fenyőfő:] Kisszépalma, Tihany: Bozsai-öböl. Sporadic. Feeding on various *Cruciferae*.

Athalia paradoxa Konow, 1886: Tihany (Roller and HARIS 2008). Rare. Host plant unknown.

Athalia scutellariae Cameron, 1880: Balatonalmádi: Budatava (ZOMBORI 1979). Sporadic. Larva on *Scutellaria* spp.

Athalia rufoscutellata Mocsáry, 1879: Hárskút, Tihany (ZOMBORI 1979), Tés: Kis-futóné. Sporadic. Host plant unknown.

Athalia rosae (Linné, 1758): Ajka, Badacsony, Bakonybél, Bakonykoppány, Bakonynána, Bakonyszentkirály, Bakonyszombathely, Balatonalmádi, Balatonfüred, Balatonfűzfő, Balatonkenese, Balinka, Csesznek, Csetény, Csőszpuszta, Dudar, Fenyőfő, [Csesznek:] Gézaháza, Gyulafirátót, Hajmáspuszta, [Bakonyszentlászló:] Hódos-ér, Káptalanfüred, Keszthely, [Pápa:] Kéttornyúlak, Márkó, [Gyulafirátót:] Miklád, Nemesvámos, Pálihálás, Porva, [Balatonakali:] Ságpuszta, Szentgál, Szigliget, Somlóvásárhely, Tapolcafő, Tés, Tihany, Városlőd, Vonyarcvashegy, [Bakonybél:] Vörös János-séd, Zirc (ZOMBORI 1979), Cserszeg (HARIS 1998), Balatonederics, Balatonkenese, [Gyulakeszi:] Csobánc, Keszthelyi-hgs., Salföld, Szentbékkálla, Tihany, Uzsa, Veszprém, (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Cserszeg , Cserszegtomaj: Dobogó, Vonyarcvashegy: Láprét, Zalaszántó: Alsó-nyíres (HARIS 2019), Balatonalmádi, Béb, Cserszegtomaj: Csóka-kő, Eplény: Malomréti-völgy, Fenyőfő: Pisztrángos-tó, Kiliántelep, Rezi, Szentgál: Somod, Tapolca: Fenyős-domb, Tihany: Bozsai-öböl, Tihany: Gejzír-mező, Tihany: Kiserdő, Tihany: Külső-tó, Várpalota, Zalaszántó: Hidegkút, Zirc: Három-hegy. 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.

Empria excisa (C. G. Thomson, 1871): [Bakony:] Gerence-völgy (ZOMBORI 1979). Sporadic. Host plant unknown.

Empria hungarica (Konow, 1895): Köveskál (HARIS 1998). Rare. Host plant unknown.

Empria liturata (Gmelin, 1790): [Zirc:] Akli, Dudar, Gyulafirátót, Lesenceistvánd, Vörösberény (ZOMBORI 1979), Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út, Szőlő-hegyek, Cserszegtomaj: Büdöskúti út, Cserszegtomaj: Dobogó, Cserszegtomaj: Fagyos-kereszt, Várvölgy: Bándi-mező, Vállus: Kis-Láz-völgy (HARIS 2019), Hárskút: Esztergáli-völgy, Királyszállás: Barok-völgy, Pénzesgyőr: Szömörke-völgy, Tihany: tájvédelmi őrház, Veszprém: Alsóerdő. Zirc: Arborétum. Frequent. Host plants: *Fragaria* and *Geum* spp.

Empria parvula (Konow, 1892): Bakony: Cuha-völgy, [Hárskút:] Esztergáli-völgy, Hévíz (Zombori 1979), Balatongyörök: Bélap-völgy (Haris 2019). Sporadic. Host plant unknown.

Empria pumila (Konow, 1896): Tihany (Roller and Haris 2008). Sporadic. Host plant unknown.

Empria sexpunctata (Serville, 1823) (=*Empria klugi* Steph.): Bakony: Cuha-völgy, [Hárskút:] Esztergáli-völgy, Tés (Zombori 1979), Fenyőfő, Porva: Pálihálás, Vállus (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Büdöskúti út (Haris 2019). Frequent. Larva on *Geum* spp.

Empria tridens (Konow, 1896): Bakony: Cuha-völgy, [Eplény:] Malomréti-völgy, Pula (Zombori 1979), Balatongyörök: Bélap-völgy, Cserszegtomaj: Dobogó (Haris 2019), Bakonybél: Gerence-völgy, Fenyőfő: Pisztrángos-tó, Hárskút: Esztergáli-völgy. Frequent. Host plants: *Geum* spp. and *Rubus idaeus*.

Eriocampa ovata (Linné, 1760): Pálihálás (Zombori 1979), Devecser: Széki-erdő, Zirc: Szarvaskút. Frequent. Larva on *Alnus* spp.

Harpiphorus lepidus (Klug, 1818): Badacsony (Zombori 1982a). Sporadic. Larva on *Quercus*.

Monsoma pulveratum (Retzius, 1783): Lesenceistvánd (Zombori 1979). Sporadic. Larva on *Alnus* spp.

Monostegia abdominalis (Fabricius, 1798): Bakony: Cuha-völgy, Bakonyszűcs: Somberek, Balatonalmádi: Csacsi-rét, Nagyvázsony, Nemesvámos: Tekeres-völgy, Somberek (Zombori 1979), Németbánya, Városlőd (Roller and Haris 2008). Frequent. Recorded on *Glaux maritima*, *Lysimachia numularia* and *L. vulgaris*.

Monostegia analis (Konow, 1887): [Zirc:] Pintér-hegy, Borzavár, Zalaszántó: Tátika-erdő. Rare. New record for the Carpathian Basin.

Monostegia nigra (Konow, 1896): Eplény: Malomréti-völgy, Vállus: Büdöskút, Zalaszántó: Kovácsi-hegy. Sporadic. Host plant unknown.

Taxonus agrorum (Fallén, 1808): Bakonybél, Fenyőfő, [Csesznek:] Gézaháza, Németbánya, Vörösberény (Zombori 1979), Köveskál (Haris 1998), Balatongyörök: Bélap-völgy (Haris 2019) Eplény: Malomréti-völgy. Frequent. Host plants: *Rubus idaeus* and *R. caesius*.

Taxonus sticticus (Klug, 1817): Bakony: Cuha-völgy, [Csesznek:] Gézaháza, Kapolcs, Királyszállás, Ugod, Vállus (Zombori 1979), Kapolcs (Haris 1998). Sporadic. Host plant unknown.

Blennocampinae

Blennocampa phyllocolpa Viitasaari et Vikberg, 1985: Tihany (Ambrus 1964b), Zirc (Ambrus 1964c), Bakony (Ambrus 1978), Fenyőfő: Kisszépalma, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza, Hajmáspuszta, Iharkút, Királyszállás, [Csesznek:] Kő-árok, Városlőd, Zirc (Zombori 1979), Eplény: Malomréti-völgy, Hárskút: Esztergáli-völgy, Zirc: Kardosrét. Frequent. Larva rolls the leaves of *Rosa* spp.

Claremontia alternipes (Klug, 1816): Kardosrét, Farkasgyepű, Hévíz (Zombori 1979), Bakony: Cuha-völgy (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Vállus: Kis-Láz-völgy (Haris 2019), Bakonybél: Gerence-völgy, Eplény: Malomréti-völgy, [Csesznek:] Gézaháza: Ördög-árok, Királyszállás: Barok-völgy, Tihany: Kiserdő, Kúpi-erdő, Zirc: Arborétum, Zirc: Pintér-hegy. Sporadic. Host plant: *Rubus idaeus*.

Claremontia brevicornis (Brischke, 1883): Bakonyszentlászló (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Fagyos-kereszt, Várvölgy: Bándi-mező, Zalaszántó: Alsó-nyíres (Haris 2019), Bakonybél: Gerence-völgy, Eplény: Malomréti-völgy. Frequent. Host plants: *Fragaria* spp., *Sanguisorba* spp. and *Potentilla reptans.*

Claremontia puncticeps (Konow, 1889): Bakony (AMBRUS 1978), Királyszállás: Barok-völgy. Rather rare. Host plant: *Sanguisorba minor*.

Claremontia tenuicornis (Klug, 1816): Gyulafirátót, Tapolcafő, Tés, Veszprém (ZOMBORI 1979), Porva: Pálihálás (ROLLER and HARIS 2008). Sporadic. Larva on *Filipendula ulmaria*.

Claremontia uncta (Klug, 1816): Fenyőfő, Királyszállás: Barok-völgy: *Pinus sylvestris* and *Juniper* vegetation. Rare. Host plants: *Alchemilla* spp.

Claremontia waldheimii (Gimmerthal, 1847): Bakonybél, [Bakonyszentlászló:] Hódos-ér, Márkó, Vinyesándormajor (ZOMBORI 1979) Balatoncsicsó, Tihany (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlőhegyek (HARIS 2019), Balatonfüred: Száka-hegy, Bakonybél: Gerence-völgy, Olaszfalu: Alsópere, Olaszfalu: Alsópere, [Fenyőfő:] Kék-hegy, Királyszállás: Barok-völgy, Tihany: tájvédelmi őrház. Frequent. Host plant: *Geum urbanum*.

Eutomostethus luteiventris (Klug, 1816): Felsőörs, Bakonybél, Balatonakarattya, Padragkút, Zalaszántó (ZOMBORI 1979). Frequent. Larva on *Juncus effusus*.

Eutomostethus ephippium (Panzer, 1798): Bakony: Cuha-völgy, Bakonybél, Bakonykoppány, Bakonypölöske, Bakonyszentlászló, Bakonyszűcs, Balatonalmádi, Balatonfüred, Bodajk, Csetény, [Bakony:] Gerence-völgy, Eplény, [Csesznek:] Gézaháza, Gyulafirátót, Hajmáspuszta, Iharkút, Isztimér, [Pápa:] Kéttornyúlak, Királyszállás, [Bakonybél:] Kőris-hegy, Nemesvámos, Németbánya, Olaszfalu, Padragkút, Tapolcafő, Tés, Tihany, Ugod, Uzsa, Vinyesándormajor, [Bakonybél:] Vörös János-séd, Zalaszántó (ZOMBORI 1979), Balatonalmádi, Cserszegtomaj, Keszthelyi-hgys., Nemesvita, Németbánya, Pálihálás, Pápa (ROLLER and HARIS 2008), Cserszegtomaj: Várvölgyi út: Pörkölt-hegy, Vonyarcvashegy: Láprét, Zalaszántó: Alsó-nyíres, (HARIS 2019), Bakonybél: Gerence-völgy, Bakonybél: Hódosér-völgye, Balatonalmádi, Balatonfüred, Borzavár, Eplény: Malomréti-völgy, Fenyőfő: Pisztrángos-tó, Kővágóörs: Kornyi-tó, Olaszfalu: Malom-völgy, Ugod: Szár-hegy, Zirc: Arborétum, Zirc: Pintér-hegy, Porva-Csesznek, Zirc: Szarvaskút, Common, larva on *Poaceae*.

Eutomostethus gagathinus (Klug, 1816): [Csesznek:] Gézaháza, Gyulafirátót, Kapolcs, Nyirád, Tihany, [Bakonybél:] Vörös János-séd, (ZOMBORI 1979), Cserszegtomaj (ROLLER and HARIS 2008), Vonyarcvashegy: láprét (HARIS 2019). Sporadic. Host plant: *Carex paniculata*.

Eutomostethus luteiventris (Klug, 1816): Balatongyörök: Bélap-völgy (HARIS 2019). Sporadic, locally frequent. Larva on *Juncus effusus*.

Halidamia affinis (Fallén, 1807): Bakony: Cuha-völgy, Bakonybél, Felsőörs, Fenyőfő, [Csesznek:] Gézaháza, Kardosrét, Királyszállás, [Gézaháza] Mogyorós-kert, Tihany, Zalaszántó, Zirc (ZOMBORI 1979), Tihany: Kiserdő, Tihany: tájvédelmi őrház, Csabrendek: Rendeki-hegy. Frequent. Host plants: *Galium aparine* and *G. molugo*.

Hoplocampoides xylostei (Vallot, 1836): Bakony (AMBRUS 1978), Bakonybél (ZOMBORI 1979). Produce galls on *Lonicera xylosteum*, ocasionally on *L. coerulea* and *L. nigra*. Rare.

Monophadnoides rubi (Harris, 1845): [Bakony:] Gerence-völgy (ZOMBORI 1979), Bakonygyepes, Hárskút (ROLLER and HARIS 2008), Rezi: Gyöngyösi csárda, Zalaszántó: Alsó-nyíres (HARIS 2019). Generally frequent. Host plants: *Filipendula ulmaria*, *Geum* spp. and *Rubus* spp.

Monophadnoides ruficruris (Brullé, 1832): Bakony: Gerence-völgy (ZOMBORI 1979). Frequent. Host plant: *Rubus fructicosus*.

Monophadnus monticola (Hartig, 1837): Bakony. Cuha-völgy (ROLLER and HARIS 2008). All other *M. monticola* published by ZOMBORI, 1979 are proved to be *M. pallescens*. Sporadic. Larva on *Helleborus* spp.

Fig. 10: ***Urocerus augur*** **(Klug, 1803) (photo: Attila Haris)**

Monophadnus pallescens (Gmelin, 1790): Bakony: Cuha-völgy, Bakonybél, Eplény, Farkasgyepű, [Csesznek:] Gézaháza, [Csesznek: Cuha:] Káró, [Csesznek:] Kő-árok, Németbánya, Padragkút, Sáska, Zalaszántó (Zombori 1979), Balatongyörök, Fenyőfő (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlő-hegyek, Cserszegtomaj: Dobogó, Cserszegtomaj: Várvölgyi út: Pörkölt-hegy, Rezi: Gyöngyösi csárda, (Haris 2019), Bakonybél: Gerence-völgy, Eplény: Malomréti-völgy, Fenyőfő, [Csesznek:] Gézaháza, Királyszállás: Barok-völgy, Kardos-rét, Lesenceistvánd, Padragkút, Zirc: Pintér-hegy: *Pinus sylvestris* and *Juniper* vegetation. Common. Host plants: *Ranunculus acris*, *R. repens*, *R. lanuginosus* and *Anemone nemorosa*.

Monophadnus spinolae (Klug, 1816): Ajka, Bakony: Cuha-völgy, Bakonybél, Csesznek, Eplény, Felsőörs, Halimba, Köveskál, Monostorapáti, Pula, Tihany, Úrkút Vállus, Veszprém, (Zombori 1979), Balatongyörök, Tihany, (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Vállus: Láz-tető (Haris 2019), Balatonkenese: Tátorjános, Csabrendek: Rendeki-hegy. Sporadic. Host plants: *Clematis vitalba* and *C. flammula*.

Pareophora pruni (Linné, 1758): Tihany (Zombori 1979), Porva: Pálihálás (Roller and Haris 2008), Cserszegtomaj: Dobogó, Cserszegtomaj: Fagyos-kereszt, Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlő-hegyek (Haris 2019), Tihany: Csúcs-hegy, Tihany: tájvédelmi őrház. Frequent. Larva on *Prunus spinosa*.

Periclista (*Periclista*) *albiventris* (Klug, 1816): Mindszentkálla (Roller and Haris 2008), Balatongyörök: Bélap-völgy (Haris 2019). Sporadic. Host plant unknown.

Fig. 11: ***Tremex alchymista*** **Mocsáry, 1886 (photo: Csaba Kutasi)**

Fig. 12: ***Trichiosoma vitellina*** **(Linné, 1760) (photo: Csaba Kutasi)**

Periclista (*Periclista*) *lineolata* (Klug, 1816): Zirc (Zombori 1979). Rare. Larva on *Quercus* spp. like *Quercus rubra*.

Phymatocera aterrima (Klug, 1816): [Királyszállás:] Barok-völgy, [Hárskút:] Esztergáli-völgy, Farkasgyepű, Káptalanfüred, Olaszfalu, Tapolcafő, Vinyesándormajor, Vörösberény (Zombori 1979), Badacsony, Balatoncsicsó (Roller and Haris 2008), Fenyőfő: Pisztrángos-tó, Kővágóörs, Tapolca: Szent György-hegy, Tihany: Sajkod, Tihany: tájvédelmi őrház. Host plants: *Polygonatum* spp. Frequent.

Rhadinoceraea (*Rhadinoceraea*) *reitteri* Konow, 1890: Tihany: Csúcs-hegy, Tihany: Kiserdő. Sporadic. Larva on *Iris pumila*, *I. germanica* and *I. sambucina*.

Stethomosthus fuliginosus (Schrank, 1781): Bakonybél, Bakonykoppány, Bakonynána, Balatoncsicsó, Balatonfüred, [Királyszállás:] Barok-völgy, Eplény, Farkasgyepű, Iharkút, Lesenceistvánd, Németbánya, Öcs, Porva-Csesznek, Tapolcafő, Tihany, Veszprém, Vinyesándormajor (Zombori 1979), Bakony: Cuha-völgy (Roller and Haris 2008), Zalaszántó: Alsó-nyíres (Haris 2019), Bakonybél: Gerence-völgy, Balatonfüred: Koloska-völgy, Eplény: Malomréti-völgy, Fenyőfő: Pisztrángos-tó, [Csesznek:] Gézaháza, [Bakonyszentlászló:] Hódosér-völgy, Németbánya: Pisztrángos-tó, Tihany: Bozsai-öböl, Zirc: Arborétum, Zirc: Szarvaskút. Frequent. Larva on *Ranunculus acris*, *R. repens* and *R. sceleratus*.

Stethomostus funereus (Klug, 1816): Kiliántelep: Balatonpart. Rare. Host plant unknown.

Tomostethus nigritus (Fabricius, 1804): [Királyszállás:] Barok-völgy, [Fenyőfő:] Kisszépalma, [Csesznek:] Kő-árok, Márkó, (Zombori 1979), Fenyőfő (Roller and Haris 2008). Sporadic. Host plant: *Fraxinus excelsior*.

Heterarthrinae

Caliroa cerasi (Linné, 1758): Hárskút: Kőris-hegy (Roller and Haris 2008). Frequent. Larva on *Pyrus, Malus, Prunus, Crataegus, Sorbus, Rosa, Cydonia, Mespilus, Rubus, Amygdalus, Cerasus, Amelanchier, Pyracantha, Cotoneaster* rarely *Quercus*, *Salix* spp.

Endelomyia aethiops (Gmelin, 1790): Bakonybél, Gyenesdiás, Tés (Zombori 1979), Balatonfüred, Porva: Pálihálás (Roller and Haris 2008), Balatongyörök: Bélap-völgy (Haris 2019), Szentgál: Mecsek-hegy. Sporadic. Larva on *Rosa* spp.

Fenella nigrita Westwood, 1839: Fenyőfő, [Isztimér:] Menyeke, Németbánya (Zombori 1979), Balatonszéplak, Márkó (Zombori 1990), Bakony: Gerence-patak (Roller and Haris 2008), Fenyőfő, Ősfenyves. Sporadic. Host plants: *Potentila reptans* and *Agrimonia eupatoria*.

Fenusa dohrnii (Tischbein, 1846): Gyulafirátót, [Ugod:] Somberek, (Zombori 1979). Sporadic. Host plant: *Alnus* spp.

Hinatara nigripes (Konow, 1907): Balatongyörök: Bélap-völgy, Cserszegtomaj: Fagyos-kereszt (Haris 2019). Sporadic. Host plant: *Acer campestre*.

Heterarthrus microcephalus (Klug, 1818): Fenyőfő (Zombori 1979). Host plants: *Salix caprea* and *Salix starkeana*. Sporadic.

Metallus albipes (Cameron, 1875): Tihany: Csúcs-hegy (*Zombori* 1990). Rare. Larva on *Rubus idaeus*.

Metallus lanceolatus (C. G. Thomson, 1870): Hétházpuszta, Olaszfalu: Alsópere: Szederkény (Zombori 1976). Rare. Host plant: *Geum urbanum*.

Metallus pumilus (Klug, 1816): Monostorapáti (Zombori 1979), Balatonfüred: camping. Frequent. Larva on *Rubus* spp.

Profenusa pygmaea (Klug, 1816): Bakony: [Gézaháza] Mogyorós, Márkó: Menyeke, Sümeg: Sarvaly (ZOMBORI 1975a), [Csesznek:] Gézaháza, Márkó, Sümeg (ZOMBORI 1979), Fenyőfő. Sporadic. Larva on *Quercus* spp.

Profenusa thomsoni (Konow, 1886): Csesznek (ZOMBORI 1990). Rare. Larva makes mines inside the leaves of *Betula pubescens* and *B. verrucosa*.

Tenthredininae

Aglaostigma (*Astochus*) *aucupariae* (Klug, 1817): [Zirc:] Aklipuszta, Hárskút: Esztergáli-völgy, Bakony: Northern part of Cuha-völgy Bakonybél, Eplény, [Csesznek:] Gézaháza, [Csehbánya] Hajag, Hajmáskér, Herend, [Bakonyszentlászló:] Hódos-ér, Lesenceistvánd, Márkó, Pápa, Pápasalom, Sáska, Tés, Tihany, Városlőd, Veszprém, Vörösberény, Zirc (ZOMBORI 1980), Berhida, Porva: Pálihálás (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlő-hegyek, Cserszegtomaj: Pilikáni dolomitbánya, Cserszegtomaj: Várvölgyi út: Pörkölt-hegy, Vállus: Szarvaskotrás, Vállus: Kis-Láz-völgy, Várvölgy: Bándi-mező, Várvölgy: Zsidi-rét, Zalaszántó: Alsó-nyíres (HARIS 2019), [Zirc:]Aklipuszta: Gerence-völgy, Bakonybél, Bakonybél: Gerence-völgy, Csehbánya: Középső-Hajag, Eplény: Malomréti-völgy, Hárskút: Esztergáli-völgy, [Vonyarcvashegy:] Pető-hegy, Pénzesgyőr: Szömörke-völgy, Tihany: Csúcs-hegy, Tihany: Gejzír-mező, Tapolca: Tapolca-patak, Tihany: Kiserdő-tető, Ugod: Szár-hegy, Várpalota: Királyszállás, Zirc: Arborétum. Common. Larva on *Galium mollugo* and *G. boreale*.

Aglaostigma (*Astochus*) *fulvipes* (Scopoli, 1763): Bakonybél, Bakony: Cuha-völgy, Dudar, Eplény, [Hárskút:] Esztergáli-völgy, Fenyőfő, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza, Gyulafirátót, [Bakonyszentlászló:] Hódos-ér, Huszárokelőpuszta, Királyszállás, Lesenceistvánd, Lókút, Márkó, [Gézaháza] Mogyorós, [Csesznek:] Ördög-árok, Pénzesgyőr, Sáska, [Pénzesgyőr:] Szömörke-völgy, Tés, Tihany, Városlőd, Veszprém, Zalaszántó, Zirc (ZOMBORI 1980), Kapolcs (HARIS 1998), Balatongyörök: Bece-hegy, Porva: Pálihálás (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlő-hegyek, Cserszegtomaj: Fagyos-kereszt, Gyenesdiás: Lőtér, Rezi: Gyöngyösi csárda, Várvölgy: Zsidi-rét (HARIS 2019), Csehbánya: Középső-Hajag, Eplény: Malomréti-völgy, Fenyőfő: Pisztrángos-tó, Tihany: Kis-erdő, Tihany: Külső-tó, Tihany: tájvédelmi őrház. Common. Larva on *Galium mollugo* and *G. verum*.

Aglaostigma (*Aglaostigma*) *lichtwardti* (Konow, 1892): [Bakonyszentlászló:] Hódos-ér, Bakonybél, Porva (ZOMBORI 1980). Sporadic. Larva on *Petasites* spp.

Macrophya (*Macrophya*) *albicincta* (Schrank, 1776): Bakony: Cuha-völgy Bakonybél, Bakonyszűcs, [Királyszállás:] Barok-völgy, Csetény, Eplény, [Bakony:] Gerence-völgy, Isztimér, [Bakonybél:] Kőris-hegy, Pápa, Porva, [Pénzesgyőr:] Szömörke-völgy, Tés, Zalaszántó (ZOMBORI 1980), Balatoncsicsó, Porva: Pálihálás, Salföld, Tapolca: Szent György-hegy, Tihany, Vászoly (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlő-hegyek, Cserszegtomaj: Fagyos-kereszt, Rezi: Gyöngyösi csárda, Vonyarcvashegy: láprét (HARIS 2019), Ajka: Köleskepe, [Zirc:] Aklipuszta: Gerence-patak, Bakony: Cuha-völgy, Bakonybél: Arborétum, Bakonybél: Gerence-völgy, Bakonybél: Szömörkés, Bakonypölöske: Kúpi-erdő, Bakonyszentkirály, Balatonalmádi: Tulipán u. 15, Balatonfőkajár: Somló-hegy, Balatonfüred: Koloska-völgy, Bodajk, Bodajk: Zseriszállás, Csehbánya, Dudar: Ördög-árok, Eplény: Malomréti-völgy, Fenyőfő, Fenyőfő: Halastó, Fenyőfő: Pisztrángos-tó, Fenyőfő: Kisszépalma, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza: Ördög-árok, Gyulafirátót, Hajmás, Hajmáspuszta, [Bakonyszentkirály:] Hajmáspuszta: Halastavak, Hárskút: Esztergáli-völgy, Hárskút: Molnár-tanya, Herend: Aranyos, Herend: Somod, Hétházpuszta,

[Huszárokelőpuszta] Huszárokelő-patak, Iharkút, Kapolcs: Egervíz, Királyszállás: Barok-völgy, Köveskál: Fekete-hegy, Márkó, Márkó: Séd-patak, Mogyorós-domb, Monostorapáti: Doma-hegy, Németbánya, Padragkút: Hajagos, Pénzesgyőr, Pénzesgyőr: Gerence-völgy, Pénzesgyőr: Kerteskő, Sáska: Bükkös-tető, Somlóvásárhely: Somló, Sümeg, Szentkirályszabadja: Kő-hegy, Tapolca: Mogyoró-domb, Tapolca: Tapolca-patak, Tés, Tés: Sötéthorog-völgy, Tihany: Kis-erdő,Tihany: Szabadstrand, Tihany: Külső-tó, Tihany: Sajkod, Tihany: tájvédelmi őrház, Városlőd: Torna-mente, Vállus: Barbacs, Vörösberény: Malom-völgy, Zalaszántó: Kovácsi-hegy, Zirc: Szarvaskút, Zirc: Arborétum, Zirc: Cigány-domb, Zirc: Cuha-patak, Zirc: Pintér-hegy. Common. Host plants: *Sambucus ebulus*, *S. nigra*, *S. racemosa*, *Valeriana officinalis* and *Viburnum opalus*.

Macrophya (*Macrophya*) *annulata* (Geoffroy, 1785): Balatonkenese, Bakonybél, Bakonykoppány, Bakonypölöske, Bakonyszűcs, [Bakony:] Gerence-völgy, Gyepűkaján, Gyulafirátót, Halimba, Isztimér, Kapolcs, [Bakonybél:] Kőris-hegy, Márkó, Németbánya, Tapolcafő, Tihany, Ugod, Uzsa, Városlőd, Várpalota, Zirc (Zombori 1980), Badacsony, Bakonybél, Balatonalmádi, Balatonfüred, Cserszegtomaj: Kő-hát (Roller and Haris 2008), Cserszegtomaj: Dobogó, Cserszegtomaj: Fagyos-kereszt, Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlő-hegyek (Haris 2019), Ajka, Aszófő, Bakonybél: Gerence-patak, Bakonybél: Szömörkés-völgy, Bakonyszentlászló: Vinye, Bakonyszűcs: Gerence-völgy, Csopak: Nosztori-völgy, Eplény: Malomréti-völgy, Felsőörs, Fenyőfő: Pisztrángos-tó, Gyenesdiás: Szék-tető, Gyulafirátót, Gyulafirátót: Miklád, Hárskút: Esztergáli-völgy, Németbánya: Vadászház, Porva-Csesznek, Sáska: Szár-hegy, Sümeg: Mogyorósd [Mogyorós-domb], Sümeg: Sarvaly, Tapolca: Szent György-hegy, Tapolca: Tapolca-patak, Tés: Kis-Futóné, Tihany: Akasztó-domb, Tihany: Bozsai-öböl, Tihany: Kis-erdő, Tihany: Külső-tó, Vállus: Büdöskút: Fekete-hegy, Várpalota: Cseri-erdő, Zirc, Zirc: Arborétum, Zirc: Pintér-hegy, Zirc: Szarvaskút. Frequent. Larva on *Potentilla reptans*, *Origanum vulgare*, *Euphorbia*, *Rosa*, *Rubus* and *Sambucus* spp.

Macrophya (*Macrophya*) *blanda* (Fabricius, 1775): Ajka, Bakonypölöske, Balatonalmádi, Balatonfüred, Bodajk, [Csesznek:] Gézaháza, Köveskál, Németbánya, Tapolcafő, Tihany (Zombori 1980), Balatonfüred: Koloska-völgy, Bodajk: Zseriszállás, Borzavár, Felsőörs, Gyenesdiás: Szék-tető, Iharkút, Királyszállás: Barok-völgy, Németbánya: Vadászház, Vállus: Láz-tető, Zirc: Cuha-völgy. Frequent. Host plant unknown.

Macrophya (*Macrophya*) *carinthiaca* (Klug, 1817): Porva: Páskom. Rare in Hungary. Larva on *Geranium sylvaticum* and *G. sanguineum*.

Macrophya (*Macrophya*) *chrysura* (Klug, 1817): Balatonalmádi, Veszprém (Zombori 1980), Balatonfüred, Balatongyörök, Veszprém, (Roller and Haris 2008), Vászoly: Öreg-hegy. Sporadic. Host plant *Daucus carota*.

Macrophya (*Macrophya*) *crassula* (Klug, 1817): Tapolca (Mocsáry 1900), Isztimér, Halimba, Úrkút (Zombori 1980), Cserszegtomaj: Dobogó (Haris 2019), Ajka: Köleskepe, Bodajk, Eplény: Malomréti-völgy, Hétházpuszta, Iharkút: Láposak, Németbánya: Pisztrángos-tó, Sáska: Bükkös-tető, Somlóvásárhely: Somló, Tapolca: Szent György-hegy, Várpalota: Várvölgy, Zirc: Szarvaskút. Sporadic. Host plant: *Sambucus ebulus*.

Macrophya (*Macrophya*) *diversipes* (Schrank, 1782): Bakonybél, Balatonalmádi, Köveskál, Tapolcafő, Tihany, Városlőd (Zombori 1980), Hidegkút (Roller and Haris 2008), Csehbánya: Középső-Hajag, Tihany: Gejzír-mező, Tés: Kis-Futóné. Frequent. Host plant unknown.

Macrophya (*Macrophya*) *duodecimpunctata* (Linné, 1758): Bakonybél, Balatonfüred, Nagyvázsony, Németbánya, Veszprém, (Zombori 1980), Cserszegtomaj (Roller and

Haris 2008), Balatongyörök: Mogyorós út: Szőlő-hegyek (HARIS 2019), Fenyőfő: Kisszépalma, Fenyőfő: Ősfenyves, Gyulafirátót: Halastó, [Bakonyszentkirály:] Hajmáspuszta: Halastavak, Hárskút: Esztergáli-völgy, Herend: Aranyos, Kapolcs: Bondoró-hegy, Kapolcs: "Kálomis", Németbánya: Vadászház, Öcs: Nagy-tó, Tapolcafő: Mogyorós-domb, Tapolcafő: Kalapács-ér, Tihany: Bozsai-öböl, Zirc: Pintér-hegy, Uzsa, Várpalota: Loncsos, Vállus: Büdöskút, Veszprém: Tekeres-völgy, [Bakonybél:] Vörös János-séd, Felsőörs, Tihany: Kiserdő-tető. Common. Host plants: *Graminae*, *Cyperaceae* and *Carex* spp.

Macrophya (*Macrophya*) *erythrocnema* A. Costa, 1859: Márkó, Tapolcafő (ZOMBORI 1980), Cserszegtomaj: Dobogó (HARIS 2019), Csesznek: Várbükk. Sporadic. Host plant: *Knautia arvensis.*

Macrophya (*Macrophya*) *militaris* (Klug, 1817): Tapolca (MOCSÁRY 1900), Ácsteszér, Bodajk, Fenyőfő, Hajmáspuszta, Úrkút (ZOMBORI 1980), Balatongyörök (ROLLER and HARIS 2008), Bakonybél: Gerence-patak völgy, Bakonyszentkirály: Újmajor, Eplény: Malomréti-völgy, Sümeg: Sarvaly, Uzsa, Várpalota: Cseri-erdő, Zirc, Zirc: Szarvaskút. Sporadic. Host plant: *Rubus caesius*.

Macrophya (*Macrophya*) *montana* ssp. *montana* (Scopoli, 1763): Bakony: Cuha-völgy, Bakonyszűcs, Bakonybél, Balatonalmádi, Balatonfüred, Balatonkenese, Csehbánya, Fenyőfő, Észak Cuha-völgy, Halimba, Herend, Hétházpuszta, Kapolcs, [Ugod:] Királykapu, Királyszállás, Szentgál, Porva, Porva-Csesznek, Tapolcafő, Ugod, Városlőd, Várpalota, Veszprém, Zalaszántó, Zirc (ZOMBORI 1980), Badacsony, Balatongyörök, Hidegkút, Kékkút, Szarvaskút, (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Dobogó, Cserszegtomaj: Várvölgyi út: Pörkölt-hegy (HARIS 2019), Bakonybél: Gerence-patak, Bakonykoppány: Huszárokelő-patak, Bakonyszombathely: Feketevíz-patak, Balatonalmádi: Budatava, Balatonkenese: Tátorjános, Bodajk: Zseriszállás, Csopak: Nosztori-völgy, Eplény Malomréti-völgy, Fenyőfő: Halastó, Fenyőfő: Ősfenyves, Herend: Rakottyás, Hárskút: Esztergáli-völgy, Hétházpuszta, [Ugod:] Királykapu, Királyszállás: Barok-völgy, Németbánya: Vadászház, [Csopak:] Nosztori-völgy, Öcs: Nagy-tó, Pénzesgyőr, Porva-Csesznek, Sümeg: Kopasz-domb, Szentgál: Mecsek-hegy, Tapolcafő: below Mogyorós-domb, Tapolca: Tapolca-patak, Tihany: Bozsai-öböl, Tihany: Gejzír-mező, Tihany: Kis-erdő, Tihany: Külső-tó, Tihany: Szabadstrand, Uzsa, Vállus: Láz-tető, Zirc: Cuha-völgy, Zirc: Pintér-hegy, Zirc: Szarvaskút. Common. Host plant: *Rubus caesius*.

Macrophya (*Macrophya*) *postica* Brullé, 1832: Tapolca (MOCSÁRY 1900), Csetény, Herend, Köveskál, Sáska, Tihany, Úrkút, Veszprém, (ZOMBORI 1980), Kemenesszentpéter (HARIS 1998) Balatonkenese (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy (HARIS 2019), Ajka, Herend: Somod, Tihany: Gejzír-mező, Tapolca: Szent György-hegy. Frequent. Host plant unknown.

Macrophya (*Pseudomacrophya*) *punctumalbum* (Linné, 1767): Tapolca (MOCSÁRY 1900), Bakonyszűcs, Eplény, Fenyőfő, Hajmáspuszta, Pula, Tihany, Ugod (ZOMBORI 1980), Balatongyörök: Bece-hegy (ROLLER and HARIS 2008), Bakonyszombathely: Feketevíz-patak, Káptalanfa, Vállus: Büdöskút. Sporadic. Host plants: *Fraxinus* spp. and *Ligustrum* spp.

Macrophya (*Macrophya*) *recognata* Zombori, 1979: Bakonyszűcs, [Pénzesgyőr:] Szömörke-völgy, Zirc (ZOMBORI 1980), Csesznek: Cuha-völgy, [Bakonyszentkirály:] Hajmáspuszta: Halastavak, Királyszállás: Barok-völgy, Márkó: Séd-patak völgye, Németbánya, Németbánya: Vadászház, Porva, Rezi, Zirc: erdő. Sporadic. Host plant unknown.

Macrophya (*Macrophya*) *ribis* (Schrank, 1781): Bakony: Cuha-völgy, Ugod, Zalaszántó (ZOMBORI 1980), Balatonhenye, Bakonyszűcs, Csabrendek: Tüskés-puszta, Fenyőfő:

Fig. 14: ***Blasticotoma filiceti*** **Klug, 1834 (photo: Attila Haris)**

Fig. 15: ***Tenthredo sabariensis*** **(Mocsáry, 1880) (photo: Attila Haris)**

Pisztrángos-tó, Herend: Aranyos, Kapolcs: Egervíz, Városlőd: Torna-mente, Zalaszántó: Kovácsi-hegy, Zirc: Arborétum, Zirc: erdő, Zirc: Szarvaskút. Frequent. Larva on *Sambucus nigra*.

Macrophya (*Macrophya*) *rufipes* (Linné, 1758): Bakonybél, Herend, Hétházpuszta, Isztimér, Tapolcafő, Tihany, Városlőd, Várpalota, Zirc, (ZOMBORI 1980), Tapolca (HARIS 1998), Cserszegtomaj: Dobogó, Várvölgy: Bándi-mező (HARIS 2019), Eplény: Malomréti-völgy, Szentgál: Somod, Kővágóörs: Kornyi-tó, , Tihany: Gejzír-mező, Tihany: Külső-tó. Frequent. Larva on *Agrimonia eupatoria*.

Macrophya (*Macrophya*) *sanguinolenta* (Gmelin, 1790): Balatonfüred, Fenyőfő, [Csesznek:] Gézaháza, Hárskút, Királyszálllás, [Herend] Mogyorós-domb, [Csesznek:] Zörög-tető (ZOMBORI 1980), Bakony: Cuha-völgy, Porva: Pálihálás (ROLLER and HARIS 2008), Ajka, Bakonybél: Gerence-völgy, Bazsi, Eplény: Malomréti-völgy, Hárskút: Esztergáli-völgy, Németbánya, Pénzesgyőr: Gerence-völgy, Porva-Csesznek, Ugod: Vörös János-séd, Tihany: Kis erdő-tető, Vállus: Láz-tető, Sümeg: Mogyorós-domb. Sporadic. Larva on *Galeopsis* spp., *Senecio* spp. and *Veronica* spp.

Macrophya (*Macrophya*) *teutona* (Panzer, 1799): [Csesznek:] Gézaháza, Szentgál (ZOMBORI 1980). Sporadic. Larva on *Euphorbia* spp.

Pachyprotasis antennata ssp. *antennata* (Klug, 1817): Bakony: Northern part of Cuha-völgy, Bakonyszűcs: Márvány-árok, Németbánya, Porva: erdő (ZOMBORI 1980). Sporadic. Larva on *Filipendula ulmaria*, *Hypericum* spp. and *Fraxinus* spp.

Pachyprotasis rapae (Linné, 1767): Bakony: Cuha-völgy, [Királyszállás:] Barok-völgy, Bakonybél, Bakonygyepes, Csesznek, Dudar, Eplény, [Hárskút:] Esztergáli-völgy, Farkasgyepű, Fenyőfő, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza, Hévíz, [Bakonyszentlászló:] Hódos-ér, Huszárokelőpuszta, Iharkút, Kapolcs, Királyszállás, [Csesznek:] Kő-árok, [Bakonybél:] Kőris-hegy, Lesenceistvánd, Márkó, Nagyvázsony, Németbánya, Olaszfalu, Padragkút, Pénzesgyőr, Porva, [Ugod:] Somberek, [Pénzesgyőr:] Szömörke-völgy, Tés, Ugod, Úrkút, Várpalota, Zalaszántó, Zirc (ZOMBORI 1980), Fenyőfő, Porva: Pálihálás, Vállus, (ROLLER and HARIS 2008), Bakonyszentlászló: Hódos-ér, Eplény: Malomréti-völgy, Fenyőfő: Ősfenyves, Hárskút: Esztergáli-völgy, Zirc: Arborétum. Frequent. Host plants: *Solanum tuberosum, Pedicularis palustris, Angelica sylvestris, Veronica beccabunga, Betonica officinalis, Corylus avellana, Salix caprea, Fraxinus excelsior, Tussilago farfara, Symphoricarpos albus, Scrophularia, Solidago, Verbascum, Origanum, Atropa, Sarothamnus, Senecio, Polygonum, Aspidium, Epilobium, Hypericum, Galeopsis, Mentha, Polystichum, Plantago, Quercus* and *Stachys* spp.

Pachyprotasis simulans (Klug, 1817): Fenyőfő: Pisztrángos-tó. Sporadic. Host plants: *Scrophularia*, *Senecio* and *Solidago* spp.

Pachyprotasis variegata (Fallén, 1808): [Csesznek:] Gézaháza, [Csesznek:] Kő-árok, Pénzesgyőr, Porva, Zirc (ZOMBORI 1980). Host plants: *Solanum tuberosum*, *Leontodom hispidus*, *Leucanthemum vulgare*, *Pyrethrum corymbosum*, *Valeriana officinalis* and *Digitalis* spp. Sporadic.

Perineura rubi (Panzer, 1803): Bakony: Northern part of Cuha-völgy (ZOMBORI 1980). Sporadic. Host plant unknown. Adults associated with *Rubus* spp.

Rhogogaster (*Rhogogaster*) *chlorosoma* (Benson, 1943): Bakonybél, Eplény, [Csesznek:] Gézaháza, Halimba, Pénzesgyőr, Ugod, [Bakonybél:] Vörös János-séd, (ZOMBORI 1980), Gyenesdiás (ROLLER and HARIS 2008), Gyenesdiás: Kőbánya (HARIS 2019) Felsőörs, Tihany: Gejzír-mező, Tapolca: Tapolca-patak, Vállus. Frequent. Host plants: *Pteridium aquilinum, Alnus glutinosa, Circaea* spp., *Prunus* spp., *Ranunculus* spp., *Rosa* spp., *Salix alba, S. purpurea , Stellaria* spp., *Filipendula ulmaria, Populus tremula, Padus* spp., *Betula* spp., *Corylus avellana* and *Sorbus* spp.

Rhogogaster (*Cytisogaster*) *picta* (Klug, 1817): Fenyőfő, Gyulafirátót, [Csesznek:] Kő-árok, Márkó, [Gézaháza] Mogyorókert, Tapolca, Zirc (Zombori 1980), Bakony: [Gézaháza]Gézahegy, Veszprém (Roller and Haris 2008), Balatongyörök: Mogyorós út: Szőlőhegyek (Haris 2019), Hárskút: Esztergáli-völgy. Sporadic. *Cytisus scoparius*, *C. nigricans*, *Genista germanica* and *G. tinctoria*.

Rhogogaster (*Rhogogaster*) *punctulata* (Klug, 1817): Pénzesgyőr (Zombori 1980). Host plants: *Salix, Sorbus, Rosa, Betula, Alnus, Fraxinus, Prunus* and *Corylus* spp. Sporadic in the Carpathian Basin, in Hungary rare.

Rhogogaster (*Rhogogaster*) *scalaris* (Klug, 1817): Bakony: Cuha-völgy, Csehbánya, [Csesznek:] Gézaháza, Felsőörs, Fenyőfő, Gyulafirátót, Királyszállás, Németbánya, (Zombori 1980), Csesznek: Gézaháza, Vinye: Hódos-ér. Frequent. *Chamnaerion angustifolium*, *Salix* spp., *Populus* spp., *Alnus* spp., *Quercus* spp., *Filipendula* spp., *Stellaria* spp. and *Circaea* spp.

Sciapteryx consobrina (Klug, 1816): Bakony: Cuha-völgy, [Királyszállás:] Barok-völgy, Balatoncsicsó, [Hárskút:] Esztergáli-völgy, Fenyőfő, Hárskút, Márkó, Pápasalamon, Porva, [Pénzesgyőr:] Szömörke-völgy, Tés, Veszprém, Zalaszántó, Zirc (Zombori 1980), Balatongyörök: Bélap-völgy, Cserszegtomaj: Büdöskúti út (Haris 2019), [Bakonybél:] Borostyánkút, Eplény: Malomréti-völgy, Hárskút: Esztergáli-völgy, Vállus, Várpalota: Vár-völgy. Frequent. Larval hosts: *Adoxa* spp., *Anemone* spp., *Ranunculus acris* and *Ranunculus ficaria*.

Sciapteryx costalis (Fabricius, 1775): Márkó, Porva, Tés, Szentbékkálla, (Zombori 1980), Cserszegtomaj: Büdöskúti út, Zalaszántó: Alsó-nyíres (Haris 2019), Balatonalmádi. Frequent. Host plant: *Ranunculuis acris*.

Siobla sturmii (Klug, 1817): Bakonybél, Porva-Csesznek, [Ugod:] Somberek, Várpalota (Zombori 1980). Larva on *Impatiens nolitangere*. Sporadic.

Tenthredo (*Zonuledo*) *amoena* (Gravenhorst, 1807): Bakonybél, Bakonyszombathely, Bodajk, Borzavár, Csesznek, Dudar, Fenyőfő, [Bakonybél:] Kőris-hegy, Olaszfalu, Pálihálás, [Zirc:] Pintér-hegy, Porva, Porva-Csesznek, Pula, Szentgál, Úrkút, Zirc (Zombori 1980), Balatoncsicsó (Roller and Haris 2008), Cserszegtomaj: Csóka-kő (Haris 2019), Adásztevel, Bakonybél: Barátok útja, Bakonybél: Gerence-völgy, Bakonybél: Száraz-Gerence, Bakonynána, Bazsi, Farkasgyepű, Fenyőfő: Ősfenyves, Királyszállás: Barok-völgy, [Bakonybél:] Top of Kőris-hegy, Zirc: Három-hegy. Frequent. Larva on *Hypericum maculatum* and *H. perforatum.*

Tenthredo (*Tenthredella*) *atra* Linné, 1758: Bakonycsernye, Balinka, Fenyőfő, [Csesznek:] Gézaháza, Királyszállás, Márkó, [Gézaháza] Mogyoróskert, Olaszfalu, Szentgál,[Pénzesgyőr:] Szömörke-völgy, Pálihálás, Porva, Tapolcafő, Tés, Zalaszántó, Zirc (Zombori 1980), Zalaszántó: Kovácsi-hegy (Haris 2019), Tihany: Bozsai-öböl, Tihany: Kis-erdő. Frequent. Larval hosts: *Lamium*, *Mentha*, *Plantago*, *Vicia*, *Ranunculus*, *Scabiosa*, *Brassica* and *Solanum* spp.

Tenthredo (*Cephaledo*) *bifasciata* ssp. *rossii* (Panzer, 1803): Ajka, Balatonfüred, Csesznek, Eplény, [Csesznek:] Gézaháza, Isztimér, Kapolcs, Monostorapáti, Pápateszér, Pénzesgyőr, Pétfürdő, Somlóvásárhely, Szentkirályszabadja, Tihany: Külső-tó, Úrkút, Veszprémfajsz (Zombori 1980), Badacsony, Bakonybél (Roller and Haris 2008), Fehérvárcsurgó, Hétházpuszta, Tihany: Külső-tó. Frequent. Host plants: *Scrophularia* and *Verbascum* spp.

Tenthredo (*Cephaledo*) *bifasciata* ssp. *violacea* (Andre, 1881): Tihany: Akasztó-domb (Roller and Haris 2008), Bakony: Cuha-völgy, Fehérvárcsurgó, Hétházpuszta, Németbánya, Öcs: Nagy-tó, Tihany: Gejzír-mező, Tihany: Külső-tó, Tihany: Óvár, Veszprém: Jutas. Frequent. Host plant unknown.

Tenthredo (*Tenthredella*) *bipunctula* Klug, 1817: Németbánya (ZOMBORI 1980). Larva on *Senecio finschii*. Rare in Hungary.

Tenthredo (*Tenthredo*) *brevicornis* (Konow, 1886): Bakonybél, Fenyőfő, Kovácsdomb, [Bakonybél:] Kőris-hegy, Németbánya, Pénzesgyőr, [Ugod:] Somberek, Tihany: Külső-tó, Zalaszántó, Zirc (ZOMBORI 1980), Zalaszántó: Kovácsi-hegy (HARIS 2019), Farkasgyepű, Csesznek. Frequent. Host plant: *Lotus corniculatus*.

Tenthredo (*Endotethryx*) *campestris* Linné, 1758: Bakonybél: Barátok útja, Bakonybél: Kőris-hegy, Bakonybél: Tevelvár, Bazsi, Csehbánya, [Bakony:] Gerence-völgy, [Nagyvázsony:] Kab-hegy, Németbánya, Kapolcs: Eger-víz, Királyszállás, Királyszállás: Barok-völgy, Németbánya, Sáska: Szár-hegy, [Ugod:] Somberek, Zalaszántó: Tátika, Zirc: Arborétum. Frequent. Host plant: *Aegopodium podagraria*.

Tenthredo (*Tenthredella*) *colon* Klug, 1817: [Nagyvázsony:] Kab-hegy, Németbánya, Zirc (ZOMBORI 1980), Bakonybél: Barátok útja. Host plants: polyphagous: *Salix*, *Epilobium*, *Pteridium*, *Circaea*, *Fuschia* spp. and *Chamaenerion angustifolium*. Sporadic.

Tenthredo (*Cephaledo*) *costata* Klug, 1817: Fenyőfő, Isztimér, [Gézaháza] Mogyorós, Uzsa, Veszprém (ZOMBORI 1980), Hidegkút (ROLLER and HARIS 2008). Frequent. Host plant unknown.

Tenthredo (*Elinora*) *dahlii* Klug, 1817: Tapolca (MOCSÁRY 1900), Szentbékála, Tihany (ROLLER and HARIS 2008), Sóly, Vászoly. Sporadic. Host plant unknown.,

Tenthredo (*Zonuledo*) *distinguenda* (Stein, 1885): Balatonakali, Dudar, [Csesznek:] Gézaháza, Herend, Hétházpuszta, Padragkút, Pénzesgyőr, (ZOMBORI 1980), Tihany: Hosszú-hegy (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Várvölgy: Bándi-mező (HARIS 2019), Csehbánya: Középső-Hajag, Olaszfalu: Malom-völgy, Szentgál: Mecsek-hegy, Tés: Kis-Futóné, Zirc, Zirc: Cigány-domb, Zirc: Szarvaskút. Frequent. Host plant unknown.

Tenthredo (*Cephaledo*) *excellens* (Konow, 1886): Badacsony, Cserszeg (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy (HARIS 2019), Eplény: Malomréti-völgy, Hétházpuszta, Tihany: Kis-erdő, Sporadic. Host plant unknown.

Tenthredo (*Tenthredella*) *ferruginea* Schrank, 1776: Bakonybél: Hubertlak. Polyphagous: *Alnus*, *Salix*, *Filipendula*, *Rubus*, *Prunus*, *Aspidium*, *Pteridium*, *Atropa* and *Sorbus* spp. Sporadic in the Carpathian Basin, in Hungary rare.

Tenthredo (*Elinora*) *flaveola* Gmelin, 1790: Balatonalmádi, Tihany (ZOMBORI 1980), [Bakonybél:] Kőris-hegy (ROLLER and HARIS 2008), Veszprém. Sporadic. *Brassica oleracea*, *B. nigra*, *Sinapis arvensis*, *S. alba*, *Raphanus raphanistrum* and *Isatis tinctoria*.

Tenthredo (*Tenthredella*) *livida* Linné, 1758: Ajka, Bakony: Northern part of Cuha-völgy, Bakonybél, Bakonyszűcs, [Királyszállás:] Barok-völgy, Borzavár, Csőszpuszta, Eplény, Felsőörs, Hárskút, Királyszállás, [Bakonyszűcs:] Márvány-árok, Németbánya, Pénzesgyőr, Sümeg, Tapolcafő, Ugod, Uzsa, Veszprém, Zirc (ZOMBORI 1980), Tapolca: Szent György-hegy (ROLLER and HARIS 2008). Sporadic, locally frequent. Larva on *Salix* spp., *Corylus avellana*; *Epilobium* spp.; *Lonicera* spp.; *Pteridium aquilinum*; *Rosa* spp., *Sorbus aucuparia*, *Symphoricarpos albus*, *Viburnum opulus*, *Arctium lappa* and *Athyrium filix-femina*.

Tenthredo (*Maculedo*) *maculata* Geoffroy, 1785: [Királyszállás:] Barok-völgy, Bodajk, Eplény, Fenyőfő, Herend, Királyszállás, Németbánya, Padragkút, Ugod, Vállus (ZOMBORI 1980), Hidegkút (ROLLER and HARIS 2008), Vállus: Láz-tető (HARIS 2019), Hárskút: Esztergáli-völgy. Sporadic. Host plants: *Brachypodium* spp. and *Dactylis* spp.

Tenthredo (*Tenthredella*) *mandibularis* Fabricius, 1804: Eplény, Szentgál, Vinye (ZOMBORI 1980), Bakonynána, Eplény: Malomréti-völgy, [Bakonybél:] Kőris-hegy,

Németbánya, Somlóvásárhely: Somló, Tihany: Külső-tó, Zirc: Pintér-hegy, Zirc: Szarvaskút. Larva on *Petasites* and *Tussilago* spp. Sporadic.,

Tenthredo (*Tenthredo*) *marginella* Fabricius, 1793: Vinye (Zombori 1980), other published specimens by Zomori proved to be *Tenthredo thomsoni* Curtis. Zalaszántó: Tátika-erdő (Haris 2019), Zirc, Felsőörs: Királykúti-völgy, Zirc, Farkasgyepű. Sporadic. Host plants: *Mentha* and *Ocimum* spp.

Tenthredo (*Eurogaster*) *mesomela* Linné, 1758: [Zirc:] Aklipuszta, Bakony: Northern part of Cuha-völgy, Bakonybél, Bakonykoppány, Bakonyszűcs, Balatonfüred, Bodajk, Borzavár, Csehbánya, Eplény, Felsőörs, Fenyőfő, Gyepűkaján, [Bakony:] Gerence-völgy, [Csesznek:] Gézaháza, Hajmáspuszta, Halimba, Hárskút, Herend, Hétházpuszta, Homokbödöge, Iharkút, [Nagyvázsony:] Kab-hegy, Kapolcs, Kardosrét, Királyszállás, Kúp, [Bakonyszűcs:] Márvány-árok, Pénzesgyőr, Nagyvázsony, Németbánya, Porva-Csesznek, Porva, [Ugod:] Somberek, Tapolcafő, Tés, Ugod, Úrkút, Vállus, Városlőd, Veszprém, Vinye, Zirc (Zombori 1980), [Zirc:] Akli: Gerence-völgy, Bakonyszombathely: Feketevíz-patak, Eplény: Malomréti-völgy, Hárskút: Esztergáli-völgy, Pénzesgyőr: Gerence-völgy, Porva: Páskom, Zirc: Hármaskút, Zirc: Szarvaskút. Frequent. Larval hosts: *Polygonum persicaria*, *Arctium lappa*, *Heracleum* spp., *Ranunculus* spp., *Epilobium* spp., *Rumex* spp, *Salix* spp., *Veronica* spp., *Tussilago* spp., *Petasites* spp., *Senecio* spp., *Solidago* spp., and *Stachys* spp.

Tenthredo (*Tenthredella*) *moniliata* Klug, 1817: Hidegkút (Roller and Haris 2008). Larva on *Menyanthes trifoliata* and *Origanum* spp. Rare in Hungary.

Tenthredo (*Cephaledo*) *neobesa* Zombori, 1980: [Ajka:] Jókai-bánya, Rezi (Zombori 1980), Ajka, Szigliget (Roller and Haris 2008), Vállus: Láz-tető (Haris 2019). Rare. Host plant unknown.

Tenthredo (*Tenthredo*) *notha* Klug, 1817: Nagyvázsony: Kab-hegy (Roller and Haris 2008), Zalaszántó: Kovácsi-hegy, Zalaszántó: Tátika-erdő (Haris 2019), Bakonybél: Csesznek, Eplény: Malomréti-völgy, Fenyőfő: Ősfenyves, Farkasgyepű, [Bakonyszentlászló:] Hódos-ér, [Bakonybél:] Kőris-hegy (top), Németbánya, Pénzesgyőr, Porva, Somhegy, Várvölgy, Zalaszentlászló: Hidegkút, Zirc, Zirc: Három-hegy, Zirc: Tündérmajor. Frequent. Host plants: *Trifolium repens* and *Vicia cracca*.

Tenthredo (*Tenthredo*) *omissa* (Förster, 1844): Bakony: Cuha-völgy, Bakonybél, Gyulafirátót, Porva, Szentgál (Zombori 1980), Tapolca (Haris 1998), Sümeg, Vállus, Várvölgy (Roller and Haris 2008). Frequent. Host plants: *Plantago media* and *P. lanceolata*.

Tenthredo (*Tenthredella*) *procera* Klug, 1817: Bakonybél: Szömörkés-völgy, [Bakonyszentkirály:] Hajmáspuszta: Halastavak, Pénzesgyőr, Zirc: Arborétum, Zirc: Szarvaskút. Host plants: *Symphytum officinale* and *Petasites* spp. Sporadic.

Tenthredo (*Elinora*) *sabariensis* (Mocsáry, 1880): Tapolca: Szent György-hegy (Roller and Haris 2008), Tihany. Rare. Host plant unknown.

Tenthredo (*Tenthredo*) *schaefferi* Klug, 1817: Nagyvázsony: Kab-hegy (Roller and Haris 2008), Bakonybél: Hideg-hegy, [Ugod:] Somberek,. Sporadic. Larva on *Vicia cracca*.

Tenthredo (*Tenthredella*) *solitaria* Scopoli, 1763: Eplény, [Hárskút:] Esztergáli-völgy, Királyszállás, Márkó, Pénzesgyőr, Tapolcafő, Vállus, Várpalota, Zirc (Zombori 1980), Vállus: Láz-tető (Haris 2019), Eplény: Malomréti-völgy, Hárskút: Esztergáli-völgy, Olaszfalu: Malom-völgy, Szentgál: Mecsek-hegy, Zirc: Pintér-hegy. Sporadic in Hungary. Larva on *Euphorbia cyparissius*.

Tenthredo (*Tenthredo*) *scrophulariae* Linné, 1758: Ajka, Bakonybél, Csőszpuszta, [Hárskút:] Esztergáli-völgy, Gyulafirátót, Kardosrét, Porva-Csesznek, Sáska, Zalaszántó (Zombori 1980), Bakonybél: Barátok útja, Bakonybél: Gerence-völgy, Bakonybél:

"Hides"-hegy, Bakonybél: Száraz-Gerence, Borzavár, Felsőörs: Királykúti-völgy, Fenyőfő: Farkasgyepű, Hárskút: Esztergáli-völgy, Káptalanfa: Sárosfőpuszta, Németbánya, Somhegy. Sporadic. Larva on *Scrophularia* spp., *Buddleja alternifolia*, *Buddleja davidi* and *Verbascum* spp.

Tenthredo (*Temuledo*) *temula* Scopoli, 1763: Pénzesgyőr, Tés, Bakonybél, Balatonfüred, Bodajk, Csehbánya, Bakony: Cuha-völgy, Dörgicse, Fenyőfő, [Bakony:] Gerence-völgy, Halimba, Herend, Királyszállás, Márkó, Nagyvázsony, Németbánya, Úrkút, Vállus, Városlőd, Várpalota (ZOMBORI 1980), Balatongyörök, Hidegkút, Tapolca: Szent György-hegy, Tihany: Hosszú-hegy (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy (HARIS 2019), [Zirc:] Akli: Gerence-völgy, Balatonalmádi, Bánd: Vár-hegy, Eplény: Malomréti-völgy, Hárskút: Esztergáli-völgy, Királyszállás: Barok-völgy, [Csopak:] Nosztori-völgy, Tapolca: Fenyős-domb, Tihany: Kis-erdő, Zirc: Arborétum. Frequent, locally common. Larva on *Ligustrum* and *Origanum* spp.

Tenthredo (*Tenthredo*) *thompsoni* (Curtis, 1839): Badacsony (ROLLER and HARIS 2008), Bakonybél, Bakonybél: Barátok útja, Bakonynána, Bakonyszombathely, Bodajk, Farkasgyepű, Fenyőfő, Fenyőfő: Ősfenyves, Csesznek, Csesznek: Várbükk, Csőszpuszta, Németbánya, Odvaskői-barlang, Pálihálás, Porva, Szentgál, [Ugod:] Somberek, [Pénzesgyőr:] Szömörke-völgy, Tapolcafő, Úrkút, Vinye, Zalaszántó, Zirc. Frequent. Host plant: *Pimpinella major*.

Tenthredo (*Maculedo*) *trabeata* Klug, 1817: Bakony: Cuha-völgy, Porva-Csesznek (ZOMBORI 1980). Host plants: *Cicerbita alpina*, *Cichorium intybus*, *Crepis biennis*, *Lapsana communis*, *Prenanthes purpurea*, *Senecio ovatus* and *Petasites hybridus*. Sporadic.

Tenthredo (*Tenthredo*) *vespa* Retzius, 1783: Ajka, Bakonybél, Bakonynána, Bakonyszentlászló, Fenyőfő, Olaszfalu, Pálihálás, Pápa, Pápateszér, [Bakonyszűcs:] Rókapuszta, Tapolcafő, Úrkút, Zalaszántó (ZOMBORI 1980), Balatonfüred (ROLLER and HARIS 2008), Zalaszántó: Kovácsi-hegy, Zalaszántó: Tátika-erdő (HARIS 2019), Bakony: Cuha-völgy, Bakonynána, Cserszegtomaj: Csókakő, Farkasgyepű, Fenyőfő: Ősfenyves, Felsőörs: Királykúti-völgy, [Bakonybél:] Kőris-hegy (top), Németbánya. Frequent. Host plants: *Lonicera caprifolium*, *Syringa vulgaris*, *Viburnum opulus*, *Fraxinus excelsior*, *Jasminum officinale*, *Rosa*, *Spiraea*, *Acer platanoides*, *Ligustrum vulgare*, *Symphoricarpos albus*, *S. alba*.

Tenthredo (*Maculedo*) *vespiformis* Schrank, 1781: Balatonfüred, Csesznek, Isztimér, Vállus (ZOMBORI 1980), Vállus: Láz-tető (HARIS 2019), Tihany: Kis erdő-tető. Sporadic in Hungary. Host plant unknown.

Tenthredo (*Tenthredo*) *zona* Klug, 1817: Csopak, Herend, Vállus (ZOMBORI 1980), Cserszegtomaj (ROLLER and HARIS 2008), Vállus: Láz-tető (HARIS 2019) Tihany: tanösvény, Zirc: Pintér-hegy. Sporadic. Host plant: *Hypericum perforatum*.

Tenthredo (*Zonuledo*) *zonula* Klug, 1817: Ajka, [Zirc:] Aklipuszta, [Csesznek:] Gézaháza, [Ugod:] Királykapu, Szentgál, Vinye, Bakonybél, Bakonyszombathely, Bakonyszűcs, Balatonfüred, Fenyőfő, Herend, Isztimér, Kapolcs, Kardosrét, Olaszfalu, Padragkút, Pénzesgyőr, Somlóvásárhely, Tés, Tihany, Úrkút, Uzsa, Városlőd, Veszprém, Veszprémfajsz, Zirc (ZOMBORI 1980), Várpalota, Fenyőfő (HARIS 1998), Balatonalmádi, Hidegkút (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Dobogó, Várvölgy: Bándi-mező (HARIS 2019), Eplény: Malomréti-völgy, Csabrendek: Tüskés-puszta, [Csesznek:] Gézaháza, Gyulafirátót, [Csopak:] Nosztori-völgy, Porva: Páskom, Szentgál: Somod, Szentgál: Mecsek-hegy, Tapolca: Fenyős-domb, Tés: Kis-Futóné, Tihany: Kis erdő-tető, Ugod, Zirc: Cigány-domb.Common. Host plant: *Hypericum perforatum*.

Tenthredopsis friesei (Konow, 1884): Bakony: Gerence-völgy, Bakony: Hajmáspuszta, [Csesznek:] Gézaháza, [Nagyvázsony:] Kab-hegy, Bakonybél: Hideghegyi-dűlő, Bakonybél: Kőris-hegy, Bakonyszűcs: Bécsi-árok, Gyulafirátót: Halastó, Hajmás, Hárskút: Esztergáli-völgy, Hárskút: Ödön-hegy, Hegyhátszentjakab, Hidegkút, [Bakonyjákó:] Iharkút: Tisztavíz, Irsa-patak, Pénzesgyőr, Sáska: Szár-hegy (Haris and Gyurkovics 2014) Gyenesdiás (Roller and Haris 2008), Eplény: Malomréti-völgy, Gyulafirátót: Kálvária-domb, Fenyőfő: Ősfenyves. Frequent. Host plants: *Holcus mollis* and other *Poaceae*.

Tenthredopsis lactiflua (Klug, 1817): Fenyőfő: Kisszépalma, Kapolcs: Bondoró-hegy, Somlóvásárhely: Somló, Zirc: Cigány-domb (Haris and Gyurkovics 2014), Balatonkenese, Balatonszőlős, Kővágóörs (Roller and Haris 2008), Balatongyörök: Bélap-völgy (Haris 2019). Sporadic. Host plant unknown.

Tenthredopsis litterata (Geoffroy, 1785): Tapolca (Mocsáry 1900), Badacsony, Bakony: Cuha-völgy, Bakony: Gézaháza: Mogyorós, Bakonykoppány: Somberekséd, Balatonakali, Balatonfüred, Balatonfüred: Koloska-völgy, Gyenesdiás, Gyenesdiás: Ló-hegy, Eplény: Malomréti-völgy, Márkó: Menyeke, Pénzesgyőr: Kerteskő, Porva, Szigliget: Antal-hegy, Tapolcafő, Tés: Hegyes-berek, Tihany: Sajkod, Ugod: Durrogós-tető, Vállus: Büdös-kút, Vállus: Láz-tető, Várpalota: Barok-völgy, Zirc: Pintér-hegy (Haris and Gyurkovics 2014), Mindszentkálla: Öreg-hegy (Roller and Haris 2008), Cserszegtomaj: Dobogó (Haris 2019), [Zirc:] Akli, Bánd: Vár-hegy, [Csesznek:] Gézaháza, Várpalota, [Csopak:] Nosztori-völgy, Tihany: Gejzír-mező, Tihany: Kis erdő-tető, Tihany: Külső-tó, Zirc: Cigány-domb. Frequent. Larva on *Agrostis*, *Dactylis* and *Calamagrostis* spp.

Tenthredopsis nassata (Linné, 1767): Badacsony, Balatonfüred, Cserszegtomaj, Felsőörs, Hárskút: Lazsnak úti dűlő, Nagyvázsony (Haris and Gyurkovics 2014), Balatonfüred, Gyenesdiás, Hárskút (Roller and Haris 2008), Bakonyszentlászló: Vinye: Fenyőfő, Balatonkenese: Tátorjános, Csehbánya: Középső-Hajag, [Csopak:] Nosztori-völgy, Tihany: Gejzír-mező, Zirc: Cigány-domb. Frequent. Host plants: *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): Bakony: Cuha-völgy, Bakony: Gézaháza: Mogyorós, Bakony: [Gézaháza] Géza-hegy, [Nagyvázsony:] Kab-hegy, [Csesznek:] Bakony: Kő-árok, Bakony: Séd-völgye, [Ugod:] Bakony: Somberek, Bakonyszentlászló, Balatonfüred: Koloska-völgy, Balatonalmádi: Öreg-hegy, Balatonudvari, Fenyőfő: Kisszépalma, Iharkút, Márkó: Menyeke, Nemesvámos: Tekeres-völgy, Németbánya: Laposak, Porva, Tapolcafő: Kalapácsér, Zirc: Botanic garden, Zirc: Cuha-völgy (Haris and Gyurkovics 2014), Mindszentkálla (Roller and Haris 2008), Cserszegtomaj: Dobogó (Haris 2019), Bánd: Vár-hegy, Csehbánya: Középső-Hajag, Dudar, Olaszfalu: Malom-völgy. Frequent. Larva on *Brachypodium sylvaticum*.

Tenthredopsis scutellaris (Fabricius, 1804): Bakonybél: Tevelvár, Bakonykoppány: Somberekséd, Sümeg: Sarvaly, Ugod: Durrogós-tető, Ugod: Somberek: Hubertlak (Haris and Gyurkovics 2014), Csehbánya: Középső-Hajag. Sporadic. Larva on *Poa pratense*, *Festuca elatior*, *Dactylis glomerata* and *Elytrigia repens*.

Tenthredopsis sordida (Klug, 1817): Tapolca (Mocsáry 1900), Bakony: Cuha-völgy, Bakony: Farkasgyepű, Bakony: Hétházpuszta, [Ugod:] Bakony: Királykapu, [Csesznek:] Bakony: Kő-árok, Bakony: Lókút, Bakony: [Gézaháza] Mogyorós, Bakonybél: Hubert-lak, Bakonykoppány: Somberekséd, Balatoncsicsó, Eplény: Álmos-hegy, Eplény: Malomréti-völgy, [Csesznek:] Gézaháza, Lesenceistvánd, Márkó, Olaszfalu, Tapolcafő: Kalapács-ér, Tapolca: Szent György-hegy, Tihany, Ugod: Durrogós-tető, Úrkút: Bocskor-

hegy, Vállus: Láz-tető, Városlőd: Torna-patak, Zirc: Botanic garden, Zirc: Cigány-domb, Zirc: Cuha-völgy, Zirc: Pintér-hegy (HARIS and GYURKOVICS 2014), Pénzesgyőr, Porva: Pálihálás (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy (HARIS 2019), Csehbánya: Középső-Hajag, Eplény: Malomréti-völgy, Olaszfalu: Malom-völgy, Tihany: Bozsai-öböl, Tihany: Kis-erdő. Frequent. Larva on *Arrhenatherum elatius*, *Lolium perenne*, *Carex* spp., *Calamagrostis* spp. and *Dactylis glomerata*.

Tenthredopsis stigma (Fabricius, 1798): Tapolca (MOCSÁRY 1900), Bakony: Cuha-völgy, Bakony: Gézaháza: Mogyorós, Bakony: Lókút, Balatonfüred: Tamás-hegy, Balatonudvari, Kardosrét: Cuha-völgy, Felsőörs, Fenyőfő, Fenyőfő: Kisszépalma, Gyenesdiás: Ló-hegy, Hárskút: Molnár-tanya, Herend: Incsekfa, Herend: Rakottyás, Hidegkút, Kapolcs, Padragkút: Hajagos, Padragkút: Sárcsikút, Somlóvásárhely: Somló, Szentbékkálla, Tapolcafő: Mogyorós-domb alja, Tihany: Barátlakások, Tihany: Hosszú-hegy, Zirc, Zirc: Cuha-völgy (HARIS and GYURKOVICS 2014), Kapolcs (HARIS 1998), Balatonfüred, Balatonudvari, Hidegkút, Szentbékkálla, Tihany, Vászoly: Nagyvár-hegy, (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Dobogó, Várvölgy: Bándi-mező (HARIS 2019), Balatonfüred: Nagymező, Eplény: Malomréti-völgy, Olaszfalu: Malom-völgy, Tihany: Gejzír-mező, Tihany: Kis-erdő, Vászoly: Öreg-hegy, Veszprém: around Bakony Művek, Veszprém: Gulya-domb, Zirc: Három-hegy. Frequent. Host plant: *Triticum intermedium*.

Tenthredopsis tarsata (Fabricius, 1804): Bakony: Cuha-völgy, Bakony: [Gézaháza] Géza-hegy, Bakony: Farkasgyepű, Bakony: Gerence-völgy, [Csesznek:] Bakony: Kő-árok, [Ugod:] Bakony: Somberek-völgy, Bakonybél: Hubertlak, Balatonfüred: Koloska-völgy, Csehbánya, Csesznek, Dörgicse: Kő-hegy, Eplény: Malomréti-völgy, Felsőörs, Fenyőfő: Kisszépalma, [Csesznek:] Gézaháza, Hajagos, [Bakonyszentlászló:] Hódosér-völgye, Iharkút, Királyszállás: Barok-völgy, Olaszfalu, Óbarok, Padragkút, Padragkút: Sarckút, Pénzesgyőr, Porva-Csesznek, Somlóvásárhely: Somló, Szentkirályszabadja, Szigliget: Antal-hegy, [Pénzesgyőr:] Szömörke-völgy, Tihany, Tihany: Southern beach, Vörösberény: Malom-völgy, Zalaszántó: Kovácsi-hegy, Zirc: Bocskor-hegy, Zirc: botanic garden, Zirc: Pintér-hegy (HARIS and GYURKOVICS 2014), Keszthelyi-hgys. (HARIS 1998) Badacsony, Tihany (ROLLER and HARIS, 2008), Cserszegtomaj: Keszthelyi-hgys. (HARIS 2019), Csehbánya: Középső-Hajag, Eplény: Malomréti-völgy, [Csesznek:] Gézaháza, Hárskút: Esztergáli-völgy, Olaszfalu: Malom-völgy, Tihany: tájvédelmi őrház, Tihany: Kis-erdő, Vászoly: Öreg-hegy, Zirc: Arborétum, Zirc: Pintér-hegy. Frequent. Host plants: *Poaceae*, particularly *Brachypodium silvaticum*.

Tenthredopsis tesselata (Klug, 1817): Bakony: Cuha-völgy, Bakony: Farkasgyepű, Bakony: Gerence-völgy, Bakony: Gézaháza: Mogyorós, Balatonalmádi: Tulipán str. 15., Eplény: Malomréti-völgy, Fenyőfő, Hidegkút, Lesenceistvánd, Németbánya: vadászház, Perkupa: Telekes-völgy, Somlóvásárhely: Somló, Zalaszántó: Kovácsi-hegy, Zirc (HARIS and GYURKOVICS 2014), Cserszegtomaj: Dobogó, Cserszegtomaj: Várvölgyi út: Pörkölt-hegy (HARIS 2019), Dudar, Fenyőfő: *Pinus sylvestris* and *Juniper* forest, Németbánya. Sporadic. Larva on *Deschampsia*, *Dactylis*, *Aira* and *Lolium* spp.

Nematinae

Anoplonyx destructor Benson, 1952: Zirc (HARIS 2001). Larva on *Larix* spp. Rare.

Anoplonyx ovatus (Zaddach, 1883): Bakony: Cuha-völgy (HARIS 2001). Host plant: *Larix europaea*. Rare.

Cladius (*Priophorus*) *brullei* (Dahlbom, 1835): Csesznek, [Bakonyszentlászló:] Hódos-ér, Tés (HARIS 2001), Balatongyörök: Bélap-völgy, Cserszeg (HARIS 2019), Tihany: Kis-erdő, Tihany: Ranger's house. Frequent. Larva on *Rubus* spp.

Cladius (*Priophorus*) *rufipes* Serville, 1823: Szentkirályszabadja, Tihany: Akasztó-domb, Sajkod (Haris 2001), Tihany: Kis-erdő. Larva on *Ulmus* spp. Sporadic.

Cladius (*Priophorus*) *compressicornis* (Fabricius, 1804): Fenyőfő, Tihany (Haris 2001), Eplény: Malomréti-völgy, Csehbánya: Középső-Hajag, Zirc: Három-hegy, [Fenyőfő:] Kék-hegy, Frequent. Host plants: *Betula, Cotoneaster, Rubus, Sorbus, Prunus, Crataegus, Corylus, Fragaria* and *Rosa* spp., also *Laurus nobilis* and *Aronia arbutifolia*.

Cladius (*Cladius*) *pectinicornis* (Geoffroy, 1785): Balatonakarattya, Balatonfüred, Cserszegtomaj, Dörgicse, Eplény, Fenyőfő, Gyenesdiás, Hétházpuszta, Királyszállás, Márkó: Menyeke, Nagymező, Olaszfalu, Öskü, Porva, Porva: Ménesjárás, [Ugod:] Szár-hegy, Szentkirályszabadja, Tapolcafő, Tábormező, Tihany, Tüskevár, Ugod, Várpalota, Veszprém, Zirc, (Zombori 1982b), Balatoncsicsó, Cserszegtomaj, Hidegkút, Szentbékkálla, Tihany (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Cserszeg, Rezi: Gyöngyösi csárda, Vállus: Kis-Láz-völgy, Zalaszántó: Alsó-nyíres (Haris 2019) Balatonfüred: Nagymező, Balatongyörök: Bélap-völgy, Cserszegtomaj: Csóka-kő, Nagyvázsony: víztározó, Tihany: Bozsai-öböl, Tihany: Kis erdő-tető, Tihany: Külső-tó, Zirc: Szarvaskút. Common. Host plant: *Rubus* spp.

Cladius (*Trichiocampus*) *ulmi* (Linné, 1758): Tihany: Kis-erdő-tető. Rare. Larva on *Ulmus* spp.

Dineura stilata (Klug, 1816): Bakony: [Gézaháza] Mogyorós-kert, [Bakony:] Gerence-völgy Larva on *Crataegus* spp. Rare.

Euura atra (Jurine, 1807): Fenyőfő (Haris 2001), Balatonalmádi (Haris 2002). Frequent. *Salix* spp.

Euura fagi (Zaddach, 1876) (= *Nematus fagi* Zadd.): Cserszegtomaj: Várvölgyi road (Haris 2019). Rare. Larva on *Fagus sylvatica*.

Euura fallax (Serville, 1823) known as *Pachynematus xanthocarpus* (Hartig, 1840): Balatongyörök: Bélap-völgy (Haris 2019), Eplény: Malomréti-völgy, [Bakonyszentkirály:] Hajmáspuszta: Halastavak, Kővágóörs, Szentbékkálla, Tapolca: Fenyős-domb, Tihany: Belső-tó, Tihany: Kis-erdő. Frequent. Larva on *Graminae*.

Euura laeta (Brischke, 1883): Bakony (Ambrus 1978). Host plant: *Salix viminalis*. Rare.

Euura mucronata (Hartig, 1837): [Csesznek:] Bakony: Kő-árok, [Csesznek:] Gézaháza (Haris 2001). Host plants: *Salix* spp. Rare.

Euura testaceipes (Brischke, 1883): Tihany (Ambrus 1964b), Bakony (Ambrus 1978). Galls on stem of leaves of *Salix alba* and *S. fragilis*. Frequent.

Euura venusta (Brischke, 1883): Fenyőfő, Zirc: Szarvaskút (Haris 2001). Galls on *Salix aurita*, *S. caprea* and *S. cinerea*. Rare.

Euura viridis (Stephens, 1835) (= *Nematus viridis* Steph.): Nagyesztergál: Veimpuszta (Zombori 1982). Mentioned as *Nematus prasina* Hartig, 1835. Now, it is synonyme of *E. viridis*. The voucher specimen wasn't found. Sporadic.

Euura bergmanni (Dahlbom, 1835) (= *Nematus bergmanni* Dhlb.): Bakonygyepes, Balatonalmádi, Eplény (Zombori 1982b), Gyenesdiás, Németbánya: Jáger-hegy (Roller and Haris 2008), Tihany: Bozsai-öböl. Frequent. Host plant: *Salix* spp.

Euura hypoxantha (Förster, 1854)) (= *Nemtaus hypoxanthus* Först.): Badacsony, [Balatonalmádi] Buda-tava, Bakony: Cuha-völgy, (Haris 2001). Larva on *Salix* spp. Sporadic.

Euura incompleta (Förster, 1854)) (= *Nematus incompletus* Först.): Bakonybél, Felsőörs (Haris 2001). Larva on *Lathyrus vernus* and *L. pratensis*. Frequent.

Euura tibialis (Newman, 1837) (= *Nematus tibialis* New.): Badacsony, Bakonynána, Bodajk, Csesznek, Farkasgyepű, Hajmáspuszta, Porva, Ugod, Várvölgy (Zombori 1982b), Fenyőfő (Roller and Haris 2008), Bakonykút. Frequent. Larva on *Robinia*

pseudacacia and also on *Robinia viscosa*, *R. hispida* and *Gleditsia triacanthos*.

Euura myosotidis (Fabricius, 1804) (=*Nematus myosotidis* F.): Ajka, Bakony: Cuha-völgy, Bakonybél, Bakonykoppány, Csehbánya, Csesznek, Dudar, Eplény, [Hárskút:] Esztergáli-völgy, Farkasgyepű, Felsőörs, [Csesznek:] Gézaháza, Gyulafirátót, Hétházpuszta, Kapolcs, Kardosrét, [Gézaháza] Mogyorós, [Gyulafirátót:] Miklád, Pannonhalma, Porva, Szentgál, Tapolcafő, Tés, Tihany, Ugod: Somberek, [Pénzesgyőr:] Szömörke-völgy, Vonyarcvashegy, [Bakonybél:] Vörös János-séd, Zalaszántó (ZOMBORI 1982b), Gyenesdiás, Keszthelyi-hgs. (ROLLER and HARIS 2008), Balatongyörök: Bélap-völgy, Balatongyörök: Mogyorós út: Szőlő-hegyek, Cserszegtomaj: Dobogó, Cserszegtomaj: Fagyos-kereszt, Zalaszántó: Alsó-nyíres (HARIS 2019), Bakonybél: Gerence-völgy, Eplény: Malomréti-völgy, Sáska: Agár-tető, Tihany: Bozsai-öböl, Tihany: Kiserdő-tető, Tihany: Külső-tó. Common. Larval hosts: *Onobrychis* and *Trifolium* spp.

Euura pavida (Serville, 1823) (= *Nematus pavidus* Serv.): Bakony: Cuha-völgy, [Csesznek:] Gézaháza Németbánya, Zirc (HARIS 2001). Larva on *Salix* spp. and *Populus tremula*. Frequent.

Euura ribesii (Scopoli, 1763) (= *Nematus ribesii* Scop.): Olaszfalu (HARIS 2001). Larva mostly on *Ribes uva-crispa*, sometimes on other *Ribes* spp (*R. nigrum* or *R. rubrum*). Sporadic.

Euura salicis (Linné, 1758)(=*Nematus salicis* L.): Bakonybél (HARIS 2001). Larva on *Salix alba*, *S. fragilis* and *S. vitellina*. Sporadic.

Euura trautmanni (Enslin, 1919) (=*Amauronematus trautmanni* Ensl.): [Csesznek:] Bakony: Kő-árok, Németbánya (HARIS 2001). Larva on *Salix atrocinerea*. Rare.

Euura vicina (Serville, 1823) (=*Nematus vicinus* Serv.): Eplény, Hétházpuszta, Királyszállás, (HARIS 2001). Larva on *Betula*, *Populus*, *Salix* and *Rumex*. Sporadic.

Euura viridissima (Möller, 1882) (=*Nematus viridissimus* Möll.): Bakony: Szarvaskút, Zirc (HARIS 2001). Larva on *Alnus*. Sporadic.

Euura clitellata (Serville, 1823) (=*Pachynematus clitellatus* Serv.): Bakonyszentlászló, Fenyőfő, Keszthelyi-hgys., Vállus, Városlőd (ROLLER and HARIS 2008), Cserszegtomaj: Dobogó (HARIS 2009), Hajmáskér, [Gézaháza] Mogyorós, Tihany: Kis-erdő. Frequent. Larval hosts: *Graminae*, *Carex* and *Juncus* spp.

Euura imperfecta (Zaddach, 1876)(=*Pachynematus imperfectus* Zadd.): Zirc (HARIS 2001). Rare. Larva on *Larix* spp.

Euura obducta (Hartig, 1837) (=*Pachynematus obductus* Htg.): Bakony: Cuha-völgy (HARIS 2001), Padragkút: Nyíri-tó. Sporadic. Larva on *Gramineae* (*Poa*, *Festuca* spp.) and *Carex* spp.

Euura vaga (Fabricius, 1781) (=*Pachynematus vagus* F.): Bakonybél, Fenyőfő (HARIS 2001), Felsőörs. Larva on *Carex* spp. Frequent.

Euura leucapsis (Tischbein, 1846) (=*Phyllocolpa leucaspis* Tischb.): Tihany (AMBRUS 1964b), Bakony (AMBRUS 1978). Frequent. Larval hosts: *Salix phylicifolia*, *S. aurita*, *S. caprea* and *S. cinerea.*

Euura leucosticta (Hartig, 1837) (=*Phyllocolpa leucosticta* Htg.): [Csesznek:] Bakony: Kő-árok (AMBRUS 1978). Frequent. *Salix aurita*, *S. caprea*, *S. atrocinerea* and *S. cinerea*.

Euura oblita (Serville, 1823) (=*Phyllocolpa oblita* Serv.): Gyenesdiás (AMBRUS 1964a), Bakony (AMBRUS 1978). Rare. Galls on *Salix alba*, *S. fragilis*, *S. triandra* and *S. rubens*.

Euura albipennis (Hartig, 1837) (=*Polynematus albipennis* Htg.): Tihany (HARIS 2001). Rare. Larva on *Polygonum persicaria*.

Euura annulata (Gimmerthal, 1834) (=*Polynematus annulatus* Gimm.): Bakonybél, Zirc (Haris 2001), Hétházpuszta, Szarvaskút, Vinye. Larva on *Rumex* spp. Frequent.

Euura bridgmanii (Cameron, 1883) (=*Pontania bridgmanii* Cam.): Bakony (Ambrus 1978). Sporadic. Larva on *Salix caprea*, *S. aurita* and *S. cinerea*.

Euura kriechbaumeri (Konow, 1901) (=*Pontania kriechbaumeri* Knw.): Bakony (Ambrus 1978). Galls on *Salix eleagnos*. Rare.

Euura proxima (Serville, 1823) (=*Pontania proxima* Serv.): Bakony (Ambrus 1978), Balatonalmádi, Balatonfűzfő, [Csesznek:] Bakony: Kő-árok (Haris 2001), Porva: Pálihálás (Roller and Haris 2008). Frequent, larva on *Salix fragilis* and *S. alba*.

Euura vesicator (Bremi-Wolf, 1849) (=*Pontania vesicator* Bremi-Wolf): Gyenesdiás (Ambrus 1964a), Bakony (Ambrus 1978). Frequent. Galls on *Salix purpurea*.

Euura viminalis (Linné, 1758) (=*Pontania viminalis* L.): Gyenesdiás (Ambrus 1964a), Tihany (Ambrus 1964b), Bakony (Ambrus 1978), Vonyarcvashegy: Láprét (Haris 2019). Frequent. Larva on *Salix purpurea*.

Hoplocampa chrysorrhoea (Klug, 1816): Veszprémfajsz (Zombori 1977), Hidegkút. Host plant: *Prunus spinosa*. Sporadic.

Hoplocampa crataegi (Klug, 1816): Bakony: Cuha-völgy, Herend, Kapolcs, (Zombori 1979). Frequent. Larva on *Crataegus* spp.

Hoplocampa flava (Linné, 1760): Tés (Zombori 1979). Frequent. Larva on P*runus domestica* and *Prunus spinosa*.

Hoplocampa fulvicornis (Panzer, 1801): Veszprémfajsz (Zombori 1979). Sporadic. Larva on *Prunus spinosa*.

Hoplocampa minuta (Christ, 1791) Rezi (Haris 1998). Frequent. Larva on *Prunus domestica*, *P. armeniaca*, *P. institia*, *P. avium* and *P. spinosa*.

Mesoneura opaca (Fabricius, 1775): [Fenyőfő:] Bakony: Kék-hegy (Zombori 1979). Frequent. Larva on *Quercus* for instance: *Quercus rubra* and *Quercus robur*.

Nematinus fuscipennis (Serville, 1823): Fenyőfő, Zirc (Haris 2001) Larva on *Alnus* spp. and *Carpinus betulus*. Sporadic.

Nematinus bilineatus (Klug, 1819): Bakony: Szarvaskút, Bakonykoppány: Gerence-völgy, Fenyőfő, Tapolcafő, Zirc. Sporadic. Larva on *Alnus* spp.

Nematinus steini Blank, 1998: Eplény: Álmos-hegy. Frequent. Larva on *Alnus* spp.

Nematus alniastri (Scharfenberg, 1805) (=*Craesus alniastri* Scharf.): Bakonybél: Gerence-völgy (Haris 2001), Csesznek. Larva on *Alnus* spp. Sporadic.

Nematus brischkei Zaddach, 1876 (=*Craesus brischkei* Zadd.): Eplény (Haris 2001). Larva feeds on *Corylus* and *Carpinus* spp. Rare.

Nematus lucidus (Panzer, 1801): Balatongyörök: Bélap-völgy (Haris 2019), Balatonalmádi, Eplény: Malomréti-völgy, Fenyőfő: Pisztrángos-tó, Tihany: Kis erdő-tető. Frequent. Larva on *Crataegus* and *Prunus spinosa*.

Platycampus luridiventris (Fallén, 1808): Fenyőfő, Tapocafő (Haris 2001), Fenyőfő: Kisszépalma. Larva on *Alnus glutionosa* and *A. incana*. Sporadic.

Pristiphora albitibia (Costa, 1859): Balatongyörök: Mogyorós út: Szőlő-hegyek (Haris 2019), Mogyorós, Tihany: Kis erdő-tető. Rare. Host plant: *Vicia cracca*, *V. hirsuta*, *V. tetrasperma*, *V. baicalensis* and *V. unijuga*.

Pristiphora aphantoneura (Förster, 1854): Nagyvázsony (Haris 2001), Balatongyörök: Bélap-völgy (Haris 2019), Bakonybél, Nyárád: Bitva-rétek. Frequent. Host plants: *Salix* spp. and *Lathyrus pratensis*.

Pristiphora appendiculata (Hartig, 1837): [Gézaháza] Mogyorós. Frequent. Host plants: *Ribes* spp.: *Ribes alpinum*, *R. rubrum*, *R. uva-crispa*, *R. aureum*, *R. sanguineum*, *R. nigrum* and *R. spicatum*.

Pristiphora armata (C. G. Thomson, 1863): [Csesznek:] Bakony: Kő-árok, Eplény, Iharkút, Tihany, Köveskál, Zalaszántó, Zirc (HARIS 2001), [Zirc:] Akli, Balatonalmádi, Balinka, Csetény, Fenyőfő: Kisszépalma, Hajmáskér: Tabán-hegy, Királyszállás: Barok-völgy, Öskü: Sötét Horog-völgy, Porva: erdészház, Tihany: Akasztó-domb, Ugod: Szár-hegy, Várvölgy: Nagyláz-tető, Vinye, Zalaszántó: Tátika-erdő, Zirc: Pintér-hegy. Frequent. Larva on *Crataegus* spp.

Pristiphora biscalis (Förster, 1854): Márkó: Menyeke, Tapolca: Szent György-hegy. Rare in Hungary. Host plant: *Prunus spinosa*.

Pristiphora cincta Newman, 1837: Bakony: Cuha-völgy. New record for Hungary. Larva on *Betula pubescen*s, *Salix* spp., *Vaccinium myrtillus*, *V. uliginosum*, *V. myrtil-loides*, *V. angustifolium* and *V. macrocarpon*.

Pristiphora confusa Lindqvist, 1955: Balatoncsicsó (HARIS 2001). Host plants: *Salix caprea*, *Salix fragilis* and *S. phylicifolia*. Sporadic.

Pristiphora fausta (Hartig, 1837): Balatongyörök: Bélap-völgy (HARIS 2017). Rare. Larva on *Quercus robur*.

Pristiphora insularis Rohwer, 1910: Hárskút (HARIS 2001). Sporadic. Larva on *Amelanchier asiatica*, *Chaenomeles japonica*, *Rosa* spp., *Rosa majalis*, *Rosa pimpinel-lifolia* and *Rosa onoei*.

Pristiphora laricis (Hartig, 1837): Balatongyörök: Bélap-völgy, Vonyarcvashegy: Láprét (HARIS 2019), Bakony: Cuha: Káró, [Csesznek:] Kő-árok. Sporadic. Host plants: *Larix* spp.: *Larix decidua*, *L. kaempferi*, *L. sibirica*, *L. gmelinii*, *L. laricina*, *L. occiden-talis* and *Larix* × *eurolepis*.

Pristiphora maesta (Zaddach, 1876): Bakony: Northern part of Cuha-völgy (HARIS 2001). Larva on *Malus* spp.: *Malus sylvestris* and *M. domestica*. In interesting way, this species is considered of insect pest of apple orchards, however, it is rarely captured in Hungary. It is only known from the Northern valley of Cuha brook in the Bakony Mountains, the other recorded place of capture is in Bátorliget (NE Hungary).

Pristiphora melanocarpa (Hartig, 1840): Németbánya (HARIS 2001). Larva on *Betula* spp.: *Betula pendula*, *B. pubescens* and *B. nana*. Sporadic.

Pristiphora monogyniae (Hartig, 1840): Balatoncsicsó, Balatonudvari, Fenyőfő, Tihany (HARIS 2001), Balatongyörök: Bélap-völgy (HARIS 2019). Frequent. Larva on *Prunus spinosa*, ocasionally on *P. domestica*.

Pristiphora pallidiventris (Fallén, 1808): Bakonybél, Felsőörs, [Bakonyszentlászló:] Hódosér-völgy, Királyszállás, Lesenceistvánd, Tihany (HARIS 2001), Balatonalmádi, Farkasgyepű, Iharkút, Tihany: Kis-erdő. Frequent. Larva on *Geum*, *Potentilla*, *Rubus* and *Filipendula* spp. *Filipendula ulmaria*, *Geum urbanum*, *G. rivale*, *Rubus chamaemorus*, *R. idaeus*, *R. fruticosus* and *R. ulmifolius*.

Pristiphora punctifrons (Thomson, 1871): Bakony: [Gézaháza] Mogyorós (ZOMBORI 1982b, HARIS 2001). Rare. Larva on *Rosa canina* and *Rosa majalis*.

Pristiphora rufipes Serville, 1823: Bakonyszentlászló (HARIS 2001). Host plants: *Aquilegia vulgaris*, *A. chrysantha*, *A. caerulea*, *A. canadensis*, *A. flabellata*, *A. olympica*, *Ribes uva-crispa* and *R. rubrum*. Sporadic.

Pristiphora subbifida (C. G. Thomson, 1871): Eplény, Királyszállás (HARIS 2001), Balatongyörök: Bélap-völgy (HARIS 2019), Bakonybél: Gerence-völgy, Fenyőfő: Kisszépalma, Hajmáspuszta. Sporadic. Host plants: *Acer campestre*, sometimes *A. pseu-doplatanus* and *A. orientale*.

Pristiphora thalictri (Kriechbaumer, 1884): Várpalota: Vár-völgy. Rare. Host plants: *Thalictrum aquilegiifolium* and *T. minus*.

Pseudodineura parvula (Klug, 1816): Lesenceistvánd (ZOMBORI 1976). Larva on *Pulsatilla vulgaris*, *P. grandis*, and *P. patens*. Sporadic.

Stauronematus platycerus (Hartig, 1840): Németbánya (Haris 2001). Host plants: *Populus tremula* and *Salix* spp. The only European sawfly, whose larva erects a palisade of dried saliva around its feeding place. Frequent.

Cephoidea

Calameuta (*Calameuta*) *filiformis* (Eversmann, 1847): Bakony: Northern part of Cuha-völgy, Bakonybél, Bakonyszűcs, Fenyőfő, [Csesznek:] Gézaháza Hárskút, [Nagyvázsony:] Kab-hegy, [Isztimér:] Menyeke, Németbánya, Nyirád, Padragkút, Pétfürdő, Szentgál, Városlőd, (Zombori 1973), Balatonalmádi, Balatongyörök, Gyenesdiás, Keszthelyi-hgys. (Roller and Haris 2008), Várvölgy: Zsidi-rét (Haris 2019), Balatonfüred: Koloska-völgy, Balatonkenese: Tátorjános, Bakonybél, Bakonyszombathely: Feketevíz-patak, Cuha-völgy: Kardosrét, Eplény: Malomréti-völgy, Fenyőfő: Pisztrángos-tó, [Bakonyszentkirály:] Hajmáspuszta: Halastavak, Hétházpuszta, Újszépalma, Tihany: Bozsai-öböl, Várpalota, Zirc: Pintér-hegy. Frequent species. Larva lives in stems of *Arrhenaterum elatius*, *Phalaris arundinacea*, *Calamagrostis epigeios*, *Elytrigia repens* and *Phragmites communis*.

Calameuta (*Calameuta*) *haemorrhoidalis* (Fabricius, 1781): [Csesznek:] Gézaháza Kő-hegy, Kapolcs, Németbánya, Nyirád, Sümeg, Vállus (Zombori 1973), Szentbékálla (Roller and Haris 2008), Vállus: Barbacs (Haris 2019), Bakonygyepes: láprét. Frequent. Host plant unknown.

Calameuta (*Calameuta*) *pallipes* (Klug, 1803): Bakony: Cuha-völgy, Bakonybél, Gézaháza: Mogyorós-kert, Tés, Vállus, Zalaszántó, Zirc (Zombori 1973), Bakonyszentlászló, Porva: Pálihálás (Roller and Haris 2008), Vállus: Láz-tető, Zalaszántó: Kovácsi-hegy, (Haris 2019), Eplény: Malomréti-völgy, Balatonfüred: Nagymező, Királyszállás: Barok-völgy, Tihany: Csúcs-hegy. Frequent on diverse *Poaceae*.

Cephus brachycercus C. G. Thomson, 1871: Bakonybél, Bakonykoppány, Vállus (Zombori 1973), Balatongyörök: Bélap-völgy (Haris 2019), Balatonfüred: Nagymező, Tihany: Kis-erdő. Widely distributed, sporadic species. Host plant unknown.

Cephus infuscatus C. G. Thomson, 1871: Ábrahámhegy (Roller and Haris 2008). Host plant: *Phalaris arundinacea*. Rare.

Cephus nigrinus C. G. Thomson, 1871: [Fenyőfő:] Kisszépalma, Zirc (Zombori 1973), [Csesznek:] Gézaháza, Királyszállás: Barok-völgy, Lesenceistvánd, Tihany: Kis-erdő, Zirc. Frequent species. Host plants: *Milium effusum* and *Poa pratens*.

Cephus pygmaeus (Linné, 1767): Bakonybél, Bakonykoppány, Bakonypölöske, Csehbánya, Csopak, Dörgicse, Fenyőfő: Kisszépalma, [Bakony:] Gerence-völgy, Herend, Herend: Rakottyás, Pénzesgyőr: Kerteskő, Kapolcs, Márkó: Menyeke, Vinyesándormajor, Nagyvázsony, Sáska, Sümeg, Tapolcafő, Uzsa, Vállus, Városlőd: Csóványos, (Zombori 1973), Balatongyörök, Hidegkút, Sümeg, Tihany (Roller and Haris 2008), Balatongyörök: Mogyorós út: Szőlő-hegyek, Cserszegtomaj: Dobogó (Haris 2019), Balatonfüred: Balaton-part, Bakonybél, Eplény: Malomréti-völgy, Hétházpuszta, [Ugod:] Királykapu, Szentgál: Somod, Tihany: Kis erdő-tető, Ugod: Szőlő-hegy,Vászoly: Öreg-hegy. Common. Insect pest of cereals and *Gramineae*.

Cephus runcator Konow, 1896: Bakonyszombathely: Feketevíz-patak, Tihany: Külső-tó. Sporadic. Host plant unknown.

Cephus spinipes (Panzer, 1800): Bakonypölöske, Iharkút, Királyszállás: Barok-völgy, [Bakonybél:] Kőris-hegy, [Isztimér:] Menyeke, Nyirád, Sümeg, Tihany, Vállus, Városlőd (Zombori 1973), Balatonalmádi, Balatongyörök (Roller and Haris 2008), Balatongyörök: Bélap-völgy, Cserszegtomaj: Várvölgyi út: Pörkölt-hegy, Cserszegtomaj: Dobogó (Haris 2019), Ácsteszér, Balatonfüred: Balatonpart, Balatonfüred: Camping,

Eplény: Malomréti-völgy, Fenyőfő: Ősfenyves, Gyulafirátót, Hajmáspuszta, Hajmáspuszta: Halastó, Királyszállás: Barok-völgy, Tapolcafő: Kalapács-ér, Tihany: Gejzír-mező, Tihany: Külső-tó, Tihany: Sajkod, Olaszfalu: Malom-völgy, Zirc: Cigány-domb. Frequent. Host plant: *Phleum pratense*.

Phylloecus linearis (Schrank, 1781) (= *Hartigia linearis* Schrk.): [Zirc:] Aklipuszta, Hárskút, Zirc (ZOMBORI 1973), Ajka. Sporadic. Larva feeds on *Agrimonia eupatoria*.

Phylloecus niger (Harris, 1779) (= *Hartigia nigra* Harris): Bakony: Cuha-völgy, Balatoncsicsó, [Csesznek:] Gézaháza, Zalaszántó (ZOMBORI 1973), Balatongyörök: Bélap-völgy, Zalaszántó: Kovácsi-hegy (HARIS 2019), Eplény: Malomréti-völgy, Fenyőfő: Pisztrángos-tó, Hárskút: Esztergáli-völgy, Tihany: Kis erdő-tető. Sporadic in Hungary. Host plants: *Rosa* and *Rubus* spp.

Janus cynosbati (Linné, 1758) (= *Janus femoratus* Curtis, 1830): [Csesznek:] Gézaháza (ROLLER and HARIS 2008), Fenyőfő, *Pinus sylvestris* and *Juniper* vegetation. Sporadic. Host plants: *Quercus pubescens* and *Q. robur*.

Janus luteipes (Lepeletier, 1823): Németbánya (ZOMBORI 1973). Host plants: *Salix*, *Populus* and *Viburnum* spp. Sporadic.

Trachelus tabidus (Fabricius, 1775): Bakonybél (ZOMBORI 1973). Larva on *Hordeum*, *Secale* and *Triticum* spp. Rare.

Trachelus troglodyta (Fabricius, 1787): Bakony: Cuha-völgy, Herend, Vállus, (ZOMBORI 1973), Vállus: Büdöskút: Fekete-hegy (HARIS 2019), Olaszfalu: Malom-völgy. Sporadic. Host plant: *Secale cereale*.

Siricidae

Sirex noctilio Fabricius, 1793: Tapolca (MOCSÁRY 1900), Káptalanfüred, Pula, Tés, Várpalota (ZOMBORI 1973), Zirc. In *Picea*, *Larix*, *Pinus*, *Abies* and *Pseudotsuga*. Symbiotic fungus: *Amylostereum areolatum*. Frequent.

Sirex juvencus (Linné, 1758): Balatonalmádi: Öreg-hegy, Ugod. Mainly in *Picea* spp. but also in *Pinus*, *Abies* and *Pseudotsuga*. Symbiotic fungus: *Amylostereum areolatum*. Sporadic.

Tremex alchymista Mocsáry, 1886: Várpalota (ZOMBORI 1973), Rezi (ROLLER and HARIS 2018), Rezi: Cseres: Postaút (HARIS 2019), Balatonalmádi. Rare. Host plants: *Quercus*, *Acer*, *Betula*, *Fagus* and *Carpinus* spp.

Tremex fuscicornis (Fabricius, 1787): Bakonybél, Balatonalmádi, Németbánya, Öcs, Tés, Veszprém (ZOMBORI 1973), Zirc. The most frequent *Siricidae*. Host plants: *Fagus*, *Acer*, *Salix*, *Betula*, *Populus* and *Ulmus*.

*Tremex magu*s (Fabricius, 1787): Hévíz (HARIS 2019). Rare. Host plants: *Betula*, *Quercus*, *Carpinus* and *Populus* spp.

Urocerus augur (Klug, 1803): Csopak, Herend: Bányatelep. Rare. Host plants: *Abies alba*, *A. cilicica*, *A. borisii-regis*, *A. procera*, *Picea abies* and *Pinus sylvestris*.

Urocerus gigas (Linné, 1758): [Pénzesgyőr:] Szömörke-völgy, Vállus, Veszprém (ZOMBORI 1973), Vállus: Büdös-kút (HARIS 2019). Sporadic. Larva lives in *Pinus*, *Picea*, *Larix* and *Abies* spp.

Xeris spectrum (Linné, 1758): Bakonybél, Németbánya, Veszprém (ZOMBORI 1973). Larva lives in *Pinus*, *Picea*, *Abies*, *Larix*, *Pseudotsuga* and *Chamaecyparis* spp. Sporadic.

Xiphydria camelus (Linné, 1758): Bakonykoppány, Káptalanfüred (ZOMBORI 1973). Sporadic. Host plants: *Betula* and *Alnus* spp.

Xiphydria longicollis (Geoffroy, 1785): Olaszfalu: Kis Csiga-hegy. Host plants: *Acer*, *Quercus*, *Pinus* and *Betula* spp. Frequent.

Orussidae

Orussus abietinus (Scopoli, 1763): Bakonybél, [Csesznek:] Gézaháza, Gyulafirátót, Németbánya (Zombori 1973), Pápa (Roller and Haris 2008), Cserszegtomaj: Várvölgyi street (Haris 2019). Sporadic. Parasitoid of *Semanotus unduatus* L.

Orussus unicolor Latreille, 1812: Vállus (Zombori 1973), Devecser (Roller and Haris 2008). Rare.

Changes in the sawfly fauna of the Bakony Mountains and the Balaton Uplands

This year, approximately 2000 specimens were identified and the remaining 7000 specimens were checked. Several groups needed total reidentification. One of them is genus *Tenthredopsis* Costa, 1859, reidentificaiton is based on the work of Blank and Ritzau (1998); these results were already published in Haris and Gyurkovics, 2014 and these data were taken over to this paper, replacing the outdated original identification of Zombori, 1980. The arcuata group of genus *Tenthredo* was fully reidentified either based on Taeger, 1988, also the genus *Rhogogaster*, based on Taeger, 2015 and the whole subfamily of Nematinae based on Zhelochovtsev, 1988 (this revision was already published by Haris, 2001). In this way, from the original 269 names of Zombori, 1973, 1979, 1980 and 1982, 20 names and species were cancelled (some of them were already published in Haris, 2001). With the new records, the number of species is increased up to 358 species (109 species are newly added).

Evaluation of the sawfly fauna

Dominant species

In the Zirc collection, (7075 specimens), 4 species were collected with more than 200 specimens. These are: *Athalia rosae* (Linné, 1758) (586 specimens), *Macrophya montana* (Scopoli, 1763) (208 specimens), *Tenthredo notha* Klug, 1817 (279 specimens) and *Macrophya albicincta* (Schrank, 1776) (255 specimens). This 4 species amounts 19% of the total material; 40% of the total material consists only the 15 most frequent species (collected more than 100 specimens of each). These species are: the four species mentioned above and *Eutomostethus ephippium* (Panzer, 1798), *Athalia ancilla* Serville, 1823, *Athalia cordata* Serville, 1823, *Athalia circularis* (Klug, 1815), *Tenthredopsis tarsata* (Fabricius, 1804), *Pachyprotasis rapae* (Linné, 1767), *Aglaostigma aucupariae* (Klug, 1817), *Aglaostigma fulvipes* (Scopoli, 1763), *Tenthredo mesomela* Linné, 1758, *Tenthredo zonula* Klug, 1817 and *Arge melanochra* (Gmelin, 1790).

Rare species

From the total 358 species, 62 species are rare (rare means: less than 10 specimens were captured in the last 160 years, since the Hymenoptera collecting is intensive in Hungary). It is 17% of the total number of the species.

Blasticotoma filiceti Klug, 1834: Fenyőfő, around Kisszépalma, 25-31. 05. 1965, 1 female. This was the only specimen in Hungary collected till 2010, when 2 females were captured in Somogy county, in Szenta and Berzence. Other places of capture from the Carpathian Basin: Körmöci hegység (Körmöci Mountains), Királyhágó, Uglya: Kvasznij patak, Tiszaborkút. Host ferns are *Athyrium filix-femina*, *Matteuccia struthiopteris*, *Dryopteris* spp., *Polystichium* sp., *Pteridium aquilinum*. Known from Austria,

Switzerland, Czech Republic, Germany, Denmark, Finland, France, Great Britain, The Netherlands, Poland, Russia, Sweden, Slovakia and Ukraine (Fig. 14).

Aprosthema humeratum (Konow, 1892): Veszprém: 1 female, 23 August 1972. Known from Austria, Croatia, Czech Republic, Hungary, Italy, Slovakia and Spain. From the Carpathian Basin, we have records only from Mecsek: Zobák and Čajkov near Levice (Csejkő), there is also an indefinite record from Croatia.

Aprosthema instratum (Zaddach, 1895): Balatonudvari, 09. 05. 1976, 1 male. In the Carpathian Basin, all places of captures are from Hungary, namely Pécel, Felsőtárkány, Debrecen and Balatonudvari. We have also an indefinite record from Croatia. It occurs only in Germany, Croatia and Hungary.

Aprosthema intermedium (Zaddach, 1864): Occurs only in Debrecen, Felsőtárkány, Pécel and Balatonudvari in Hungary. We have 2 additional records from Transylvania: Bélbor (Bilbor) and Ponoare. It is recorded in Hungary, Romania, Denmark, Germany, Latvia, Lithuania, Russia and Ukraine.

Aprosthema konowi (Mocsáry, 1891): Balatronudvari, 09. 05. 1976, 1 female, Hidegkút, 1 male, no further data. Known from Balatronudvari, Hidegkút Budakeszi, Hűvösvölgy, Buda, and Szigetbecse in Hungary. From the Carpathian Basin, it is also recorded in Székelykeresztúr (Cristuru Secuiesc), Nagyenyed (Aiud) and Szerbkeresztúr (Srpski Krstur). It occurs also in Germany and Italy.

Arge frivaldszkyi (Tischbein, 1852): Tihany: Külső-tó, 07. 05. 1983, 1 female. Out of Tihany, from Hungary, this species is known from Simontornya, Gellérthegy, Sukoró, Martonvásár, Vértes: Gém hegy and Diósd. Few specimens were captured in Slovakia: Štúrovo (Párkány), Kamenica nad Hronom (Garamkövesd) and Fačkovské sedlo (Facskói hágó). It is recorded in Albania, Bulgaria, Greece, Hungary, Macedonia, Romania, Slovakia and Ukraine.

Spinarge metallica (Klug, 1834): Zirc (MOCSÁRY 1900). This is the only known record from Hungary. The voucher specimen is lost. From the Carpathian Basin, we have records from Vihorlat-Remeťské Hámre: 4 males 8 females, 15 July 1969 and one old female from Tusnád (19th century) is deposited in the Budapest collection. Further known localities: Dicsőszentmárton (Tirnaveni), and Korytnica. It occurs in Europe, except Scandinavia.

Neurotoma mandibularis (Zaddach, 1866): Balatonfüred, 19. 04. 1981, 1 female. In Hungary, it is also known from: Simontornya, Egyek, Ohat and Őriszentpéter: Bárkás-tó. Other records from the Carpathian Basin: Kamenica nad Hronom (Garamkövesd) Borosjenő (Ineu) and Hriňová (Herencsvölgy). Rare European species.

Pamphilius marginatus (Serville, 1823): Eplény: Malomréti-völgy, 23. 05. 1978, 1 female. Known distribution in Hungary: Budapest, Aggtelek, Perkupa, Szin, Mecsek hgs.: Takanyó völgy. Rare European species.

Pamphilius pallipes (Zetterstedt, 1838): Ugod, 10. 05. 1973, 1 female. In Hungary, it is captured only in Budapest, Komjáti and Perkupa. Also known from Piesting, Turzovka (Turzófalva), Polonina Rovna, Feketehegy (Cserno Gora) and Rivna. Rare European species.

Pseudocephaleia praeteritorum (Semenov, 1934) The species is known from Albania, Azerbaijan, China, Croatia, Italy, Romania and Turkey. Only 3 specimens are known from the Carpathian Basin so far, one female from Vászoly (North of Lake Balaton) collected on 23rd April 1984, one female from Borosjenő (Ineu, West Transylvania) collected on 10th April 1921 and 1 female from Jestice (Jeszte): Nagy-Somos, 3rd May 2019.

Trichiosoma latreillii Leach, 1817: Rare Palaearctic species. In the Carpathian Basin, out of Hungary, we have record from Orsova (Orsova: Alion: 7 May 1995), and indefinite record from Slovakia. In Hungary, known from Bakonybél: Hubertlak: 2 males, 11 May 1964, Veszprém: Tekeres-völgy: 1 male, 10 August 1965, and 1 female from Simontornya.

Trichiosoma vitellina (Linné, 1760): The only known specimens from Hungary captured in Bakonybél: Hubertlak: 1 male, 8-10 June 1964. We have further records from Sninský kameň (Szinnaikő): 2 males, (19th c.), Vályalunga: 1 female, Gorgota (Valea Lunga: Gorgota): 1 female, 3rd May 1968, and 1 male from Retyezát (Mt. Retezat) 19th c. Rare Palaearctic species (Fig. 12).

Dolerus (*Achaetoprion*) *pachycerus* Hartig, 1837: Tihany: Külső-tó, 09. 05. 1957, 1 male. Only few specimen are known from Hungary: Budapest: Rákos, Simontornya, Kőszeg, Veresegyház, Szentendre and Csepel (part of Budapest). Also known from Humenné (Homonna), Viničky (Szöllőske), Nagyszeben (Sibiu), Cernegura and Cracaoani. It is widely distributed, rare, North and Central European species.

Dolerus (*Poodolerus*) *blanki* Liston, 1995: Tapolca, 11. 03. 1990, 1 male. From Hungary, it is reported from Szeged, Fehértó, Kis-Balaton: Zala part, Darány and Kaposvár: Tókaji-parkerdő. Other records from the Carpathian Basin: Humenné (Homonna), Hátszeg (Hateg), Tasnád (Tasnad), Peér (Pir), Nagyszeben (Sibiu), Magura, Vízakna (Ocna Sibiului), Szenterzsébet (Gusterita), Pöltinis (Paltinis), Gyilkos-tó (Lacu Rosu), Fogaras (Mt. Fagaras), Szinája (Sinaia) and Ogulin. Occurrence: temperate and Northern Europe.

Dolerus (*Equidolerus*) *pratensis* (Linné, 1758): Bakonybél: Vörös János-séd, 21. 05. 1959, 1 female, Lesenceistvánd, láprét, 04. 05. 1973, 1 male and Tihany, 10. 04. 1987, 1 female. Originally sporadic species. It has not been captured in Hungary in the last 40 years. In this period, hardly any specimens were collected even in the Carpathian Basin, except one, near Bratislava.

Dolerus (*Poodolerus*) *varispinus* Hartig, 1837: From Hungary, only known from the Bakony Mountains. Porva: Pálihálás, Kővágóörs and Gyulafirátót: Kálvária-domb. From the Carpathian Basin, we have further records from Devínska Kobyla (Pozsony: Dévény), Rovná hoľa-Luková (Lukó), Trebusafejérpatak (Dilove), Loučka, Palačov and from the Szörényi érchegység (Muntilor Semenic). Central and Northern European species.

Aneugmenus fuerstenbergensis (Konow, 1885): In Hungary, only known from Fenyőfő, 03. 05. 1974, 1 female. Other records from the Carpathian Basin: Poiana-Teiului (Piatra Nemat): 1 female, 19 Aug. 1959, Bicaz baraj 19 June 1960, Pingarati, 5 july 1960 and also known from Leithagebirge b. Admont. Rare, Palaearctic species.

Aneugmenus temporalis (C. G. Thomson, 1871): Uzsa, 02. 09. 1958, 1 female. From Hungary, we have records from the Kőszegi Mts. and Mátra Mts.: Gyepes-völgy. Further records from the Carpathian Basin: Malé Ozorovce (Kisazar), NPR Turková (nat. res. at Feketevág), Nagymuzsaj (Muzhievo), Berlebán (Kosztilevka), Karánsebes (Caransebes): Borló (Borlova) and it is also recorded in NE Croatia.

Strongylogaster macula (Klug, 1817): The only known specimen from Hungary: 1 female, 30. 05. 1974, Zirc: Pintér-hegy. We have further records from the Carpathian Basin from Javorina (Balázsvágás), Mošovce (Mosóc), Rovná hoľa-Luková (Lukó), sedlo Javorie (Jávori-hágó), Görgény (Gheorgheni), Nagyszeben (Sibiu), Fogarasi-havasok (Mt. Fagaras), Vöröstornyi-szoros, Tiszabogdány, Brebenyeszkul (Bogdan), Jičina, Tatranská Lomnica (Tátralomnic) – Štart, Sekule (Székelyfalva), Ivó: Ivó-patak (Izovare), Zeteváralja (Sub Cetatea): Szencsed patak and Tusnádfürdő.

Strongylogaster xanthoceros (Stephens, 1835): Fenyőfő, 03. 05. 1974, 1 male and one other male from the same place but on 04. 05. 1974. Also known from Darány and Tarany in Hungary. Further records from the Carpathian Basin: Mošovce (Mosóc), Ihelník, Magura, Nagyszeben (Sibiu) and Bálványosfüred (Baile Bálványos). Rare, Palaearctic species.

Apethymus cereus (Klug, 1818): [Fenyőfő:] Kék-hegy: 1 female and 1 male, collected on 27 October 1985. We have an other specimen from Budapest: Jánoshegy: 20-22 Sept. 1917. Other specimens from the Carpathian Basin: Vinosady (Csukárd-Terlény): 5 males and 2 females, 10 Oct. 1996, Ihelník: 1 male, 1 Nov. 1999, and Bratislava-Patrónka (Pozsony: Patrónka): 1 male, 15 October 1999. It is known from Austria, Czech Republic, Germany, Hungary, Italy, The Netherlands, Romania, Slovakia and Sweden (Central and Northern European species).

Athalia paradoxa Konow, 1886: Tihany: 1 female, 9 May 1968. Most of the specimens in the Carpathian Basin, were collected from Hungary. We have also specimens from Budaörs and Zamárdi-Felső. Other records from the Carpathian Basin: Trenčín (Trencsén), Békás (Izvoru Muntelui Mts.) and an indefinite 19th century record from Croatia. It is a rare, Central and South European species.

Empria hungarica (Konow, 1895): One male captured in Köveskál on 05. 05. 1992. Other records from Hungary: Simontornya, Hármashatár-hegy, Budakeszi, Ócsa, Jósvafő, Lébény and Ádánd. Also we have records from Neusiedler See, Štúrovo (Párkány), Devínska Kobyla (Pozsony: Dévény), Mehádia, Arad, Krassó-Szörény (Caras-Severin), Szenterzsébet (Gusterita), Tiszabogdány, Brebenyeszkul (Bogdan), Zeteváralja (Sub Cetatea): Szencsed-patak and Homoródfürdő (Baile Homorod). Rare, European species.

Monostegia analis (Konow, 1887): Zalaszántó: Tátika-erdő, 13. 08. 1966, 3 females; [Zirc:] Pintér-hegy, 04. 08. 1973, 1 female, Borzavár, 03. 08. 1979, 1 female. Collected by Sándor Tóth and László Berczi. New record for the Carpathian Basin. It was described from Croatia. Out of Croatia, it is reported only from Turkey.

Claremontia uncta (Klug, 1816): Királyszállás: Barok-völgy, 07. 05. 1974, 1 female and Fenyőfő, 01. 05. 1983, 1 female. Further Hungarian records available from Aggtelek, Dobogókő and Ócsa. Places of capture in the Carpathian Basin: Hriňová (Herencsvölgy),

Javorina (Balázsvágás), Limbach (Limpak), Mošovce (Mosóc), Štefanová (Istvánkirályfalva) Ihelník, Lúka (Vágluka), Bystrá (Szentiván)-sedlo Javorie (Jávori hágó), Rovná hoľa, Tiszabogdány, Brebenyeszkul (Bogdan), Trebusafejérpatak (Dilove) Pieniny Mts., Nový Jičín, Tatranská Lomnica (Tátralomnic) - Štart and Retyezát (Mt. Retezat). European species.

Stethomostus funereus (Klug, 1816): Kiliántelep: Balatonpart, 15. 08. 1974, 1 male. We have other records from Hungary from Darány, Aggtelek, Tákos, Fehértó, Látrány, Szeged, Pákozd and from the bank of River Zala. Further records from the Carpathian Basin: Leithagebirge, Číčov (Csicsó), Syarínske lúky (Liptóújvár: Svarín), Nagyszeben (Sibiu) and Mníchova lehota (Barátszabadi).

Hoplocampoides xylostei (Vallot, 1836): Bakonybél: Arborétum, galls were collected on 16. 06. 1964 on *Lonicera xylosteum*. Other records from the Carpathian Basin: Bystrá (Hegyesbisztra)-sedlo Javorie (Jávori-hágó): old galls, 21 June 2005, Svarínska dolina: old galls, 19 June 2005, Gleboka-Felsztyn: 15 May 1897-98, it is also reported from Dobšiná-ľadová jaskyňa env. and Hargita: Tolvajos patak. Evaluation: Food plants (several *Lonicera* species) are common in the Carpathian Basin; however distribution of *H. xylostei* is restricted to few submontane or montane localities. Distribution: Europe and Armenia.

Periclista (*Periclista*) *lineolata* (Klug, 1816): Zirc: forest, 18. 05. 1972, 1 female. Further records from Hungary: Simontornya, Cekeháza, Balk and Vése: Csöpröndi forest. Occurences in the Carpathian Basin: Ihelník, Ivano-Frankivska obl., Podcetrtek, Bílé Karpaty: National Reseve Čeretoryje, National Reserve Hutě. European species.

Profenusa thomsoni (Konow, 1886): Known from Csesznek: 1 female, 20 Aug. 1976, this is the only Hungarian specimen. Other records from the Carpathian Basin: Jeselnyica (Eselnita), Ogradena, Bezirk, Mehedinc (Mehedinti) and Radziechowy k. Zywca. Holarctic, rare species.

Metallus albipes (Cameron, 1875): Tihany: Csúcs-hegy, 22. 06. 1967, 1 female. Out of this specimen, it was captured only in Budapest: Kamara-erdő, Nagybugac and Kapuvár. Other records from the Carpathian Basin: Trojačka and Tatranska Lomnica (Tátralomnic). Palaearctic species.

Macrophya (*Macrophya*) *carinthiaca* (Klug, 1817): Porva: Páskom, 31. 05. 2008, 1 female. Sporadic in the Carpathian Basin, but rare in Hungary. We have records from Budapest, Visegrád, Őrszentmiklós, Csepel and Pilisszántó.

Rhogogaster (*Rhogogaster*) *punctulata* (Klug, 1817): Pénzesgyőr , 21. 05. 1974, 1 male and 1 female. It isn't rare in the Carpathian Basin, but in Hungary rare. Known places of capture in Hungary: Bükk Mts.: Nagymező, Bélapátfalva and Nagyvisnyó. Palaearctic.

Tenthredo (*Tenthredella*) *bipunctula* Klug, 1817: Sporadic in the Carpathian Basin, but rare in Hungary. We have one specimen from Németbánya: Vadászház, 29. 05. – 02. 06. 1967, 1 female. The other specimens from Hungary were collected from the Bükk Mountains: Németbánya, Miskolc, Nagyvisnyó, Szilvásvárad and Szalajka. European species.

Tenthredo (*Tenthredella*) *ferruginea* Schrank, 1776: Bakonybél: Hubertlak, 8-10. 06. 1964, 1 male. Out of this specimen, we have records from Tiszaalpár, Kőszegi hgs., Bükk: Moldva-völgy, Nagyvisnyó, Répáshuta and Szögliget. It is rare in Hungary and sporadic in the Carpathian Basin. Palaearctic species.

Tenthredo (*Tenthredella*) *moniliata* Klug, 1817: Out of the Bakony Mountains (Hidegkút), we have records from the Bükk Mountains (Miskolc, Nagyvisnyó) and from the Mátra Mountains (Gyöngyös: Kékes-tető). Sporadic in the Carpathian Basin, but rare in Hungary. Palaearctic species.

Tenthredo (*Elinora*) *sabariensis* (Mocsáry, 1880): Szombathely: 1 specimen from the 19th century, Tapolca: Szent György-hegy: 2 females, 10 Aug. 1993 and Tihany, 12. 07. 1978, 1 female. Rare species. So far, only these 3 specimens are known from Hungary. Further records from the Carpathian Basin: Záhorie: 1 female coll. in late 20th c., Zaleszczyki: 1 female, 11 July 1928, Alsókarácsonfalva (Carciunelu de Jos): 1 female, 31 May 1992; also known from Winden a. Neusiedlersee, Zurndorf, Tulcea, Mt. Rarau and Oniscani. Central and South Europaean species (Fig. 15).

Anoplonyx destructor Benson, 1952: Zirc: Pintér-hegy, 1 female, 15.05.1976. This is the only record from Hungary and also from the Carpathian Basin. Rare Palaearctic species. Further records from the Carpathian Basin: PR Vršatské bralá-Vrš. Podhradie (Oroszlánkő): 2 males and 1 female, 19 April- 8 May 2003, Tatranské Zruby (Tátraotthon): 1 male, 15 May 2007.

Anoplonyx ovatus (Zaddach, 1883): The only known Hungarian specimen: Bakony: Cuha-völgy, 1 female, 23.05.1957. Further records from the Carpathian Basin: PR Vršatské bralá-Vrš. Podhradie (Oroszlánkő): 2 males and 1 female, 19 April- 8 May 2003, Tatranské Zruby (Tátraotthon): 1 male, 15 May 2007. Rare, Palaearctic species.

Cladius (*Trichiocampus*) *ulmi* (Linné, 1758): Tihany: Kis erdő-tető, 26. 04. 1983, 1 female. From Hungary, it is known from Dunaörs, Simontornya, Lébény and Szigetköz. Other records from the Carpathian Basin: Jakubov (Nagyjakabfalva), Marosgombás (Gimbas), Nagyszeben (Hermannstadt), Sibiu, Mehádia, Nagylankás (Luncavita-Cetatuie), Krassó-Szörény (Caras-Severin), Tökös (Tikves), Stolarzówka-Pieniny and Jasenová (Jaszenova-Alsójeszenő). Palaearctic species.

Dineura stilata (Klug, 1816): [Bakony:] Gerence-völgy, 11. 05. 1958, 1 male, Bakony: Mogyorós-kert, 12. 05. 1957, 1 female. Other Hungarian records: Budapest: Hárs-hegy, Nagyvisnyó, Bálvány, Bükk. Also known from Devínska Kobyla (Pozsony: Dévény), Ihelník, Sambor region, Szvidovec hg., Podcetrtek, PR Vršatské bradlá (Oroszlánkő) and Veľký Blh (Vámosbalog). It is a rare, European species.

Nematus brischkei Zaddach, 1876 (= *Craesus brischkei* Zadd.): Eplény: Malomréti-völgy: 1 female, 8 May 1974; it is also reported from Simontornya, Herkulesfürdő and Krassó-Szörény (Caras-Severin). Known from Austria, Belgium, Croatia, Czech Republic, France, Germany, Great Britain, Hungary, Lithuania, Poland, Romania, Russia and Switzerland.

Euura fagi (Zaddach, 1876): Cserszegtomaj: Várvölgyi road, 22. 05. 1991, 1 female (HARIS 2019). From Hungary, this species is known from Ómassa, Börzsöny Mts.: Széna

patak and Bükk Mts.: Nagyvisnyó. It is also known from Limbach (Limpak), Nagyszeben (Sibiu), from the Ukrainian Carpaths, Nevicke, Mts. Sar: Brezovicza, Loučka, Jičina, NPR Šomoška (Somoska), PR Vršatské bradlá (Oroszlánkő) and Rača (Récse). European species.

Euura laeta (Brischke, 1883): Bakony (Ambrus 1978). Known Hungrian occurences: Sopron: galls, coll. in 1956-57, Bakony: Bakonybél: galls in July (no further data). From the other parts of the Carpathian Basin, it is reported only from Virful Nemira and Hodlsavice. This rare species known only from Austria, Czech Republic, Denmark, Germany, Poland and Russia.

Euura mucronata (Hartig, 1837): [Csesznek:] Bakony: Kő-árok, 1 female, 21. 05. 1957.; [Csesznek:] Gézaháza, 1 specimen, 15. 05. 1976 (Haris 2001) and we have an additional Hungarian record from Sopron (Ambrus 1958). Rare in Hungary, but we have numerous records from the Carpathian Basin. European species.

Euura venusta (Brischke, 1883): Fenyőfő, 6 males, 25-31. 05. 1965 and Zirc: Szarvaskút, 1 female, 06. 06. 1974 (Haris 2001). Out of the Bakony Mountains, only galls were collected in Sopron (Ambrus 1958). Further records from the Carpathian Basin: Kriváň Mt. env.-Jamy Mt., Brassó (Brasov), Zakarpatskaya oblast, Loučka, Bezkyd and Jičina. European species.

Euura trautmanni (Enslin, 1919) (= *Amauronematus trautmanni* Ensl.): [Csesznek:] Bakony: Kő-árok, 1 female, 21.05.1957.; Németbánya, 1 female, 21.05.1970. Rare in Hungary and also in the Carpathian Basin. Further records from Hungary: Bükk: Kurtabérc and Látrány. We also have some records from the Carpathian Basin, namely from Brebenyeszkul, Karst Mts., Tatranská Lomnica (Tátralomnic) – Štart and Zeteváralja (Sub Cetatea): Szencsed-patak. Central, Western and North European species.

Euura imperfecta (Zaddach, 1876)(=*Pachynematus imperfectus* Zadd.): Zirc: Pintérhegy, 1 female, 15 May 1976. In Hungary, recently an other sepcimen was also captured: Somogytúr: Túri-erdő, 15. 04. 2018, 1 female. Other records from the Carpathian Basin: Kozí chrbát-Poľana Mts (Kecskehát): 1 female, 11 May 1999, Királymező (Ust-Tschorna): 2 females, 4 May 1963. Rare, Palaearctic species, associated with *Larix* spp.

Euura oblita (Serville, 1823) (= *Phyllocolpa oblita* Serv.): Rare in Hungary, only galls were collected in the 60's from Gyenesdiás. Other records from the Carpathian Basin: Belušská Slatina-Rohatín Mt., Púchov-Váh env., Porúbka-Turský potok, Soblahov-Trenčín (Trencsén), Čičov (Csicsó), Demänovská slatina (Demén-völgy), Ukrainian Carpaths, Trojačka, Val. Meziříčí and Csetate Boli. European species.

Euura albipennis (Hartig, 1837) (= *Polynematus albipennis* (Hartig, 1837)): Records from the Carpathian Basin: Tihany: 3 females, Sept, 1929, Szolnok: Tisza (River Theis) bank: 1 female, 27-29 Aug. 1957, Szinaja (Sinaia): 1 male, 16 July 1963, Nagyenyed (Aiud): 1 male, early 20th c.; also known from Fehér (Alba), Arad, Prahova, Szucsáva (Suceava) counties and Budapest. It wasn't collected in the last 50 years.

Euura kriechbaumeri (Konow, 1901) (= *Pontania kriechbaumeri* Konow, 1901): We have indefinite records only from the Bakony Mts. (Ambrus 1978). This species was

also recorded in Tátra-Kotlina: Sutova near river Vág, Piešťany, Trenčín (Trencsén), Liptovský Ján, Svarínska dolina, Prahova, Polish Tatra, Val. Meziříčí and Királymező (Ust-Tschorna). Central and South European species.

Pristiphora biscalis (Förster, 1854): Márkó: Menyeke, 12. 05. 1963, 1 male; Tapolca: Szent György-hegy, 08. 05. 1979, 1 male. In the Carpathian Basin, it is reported from Gánt, Ivanka pri Dunaji (Pozsonyivánka), Devín-NPR Devínska Kobyla (Pozsony: Dévény), Hriňová (Herencsvölgy), Mošovce (Mosóc), Pernek, Sološnica (Széleskút), Štefanová (Istvánkirályfalva), Ihelník, Lúka (Vágluka), Magura (Magura-Sibiu) (Scobiola-Palade, 1968), Szeben (Sibiu), Jičina and Kremnica (Körmöcbánya). We have indefinite record from NE Croatia either.

Pristiphora cincta Newman, 1837: Bakony: Cuha-völgy, 23. 05. 1957, 1 male. Not rare in the Carpathian Basin, but it has never been reported from Hungary. Holarctic species.

Pristiphora punctifrons (Thomson, 1871): Bakony: Mogyorós, 22. 05. 1957, 1 female. We have further 3 specimens from Nagykovácsi and Bélapátfalva. Sporadic in Slovakia and Romania. Holarctic species.

Pristiphora thalictri (Kriechbaumer, 1884): Várpalota: Vár-völgy, 05. 04. 1983, 1 male. Other places of capture in the Carpathian Basin: Javorina: 1 male, 4 June 1992; also known from Hainburg, Simontornya, Munkács (Mukachevo) and Klastromalja. Palaearctic species.

Pristiphora fausta (Hartig, 1837): Balatongyörök: Bélap-völgy, 19. 04. 2019, 1 female; other records from the Carpathian Basin: Jakubov (Nagyjakabfalva): 1 female, 15 May 1994, Malacky (Malacka): 1 female, 15 May 1993, Ihelník: 1 female, 25 Apr.-3 May 1999, Pécel: 1 female, 19th c. and Noszvaj: Síkfőkút: 1 female. 13 May 1980. European species.

Cephus infuscatus C. G. Thomson, 1871: We have records from Ábrahámhegy and further Hungarian data from Jósvafő, Szeged and Inárcs. In the Carpathian Basin, this species occurs in Čičov (Csicsó), Malacky (Malacka), Šúr, NPR Devínska Kobyla (Pozsony: Dévény), PR Ostrov Kopáč, Sekule (Székelyfalva). Central and Southern Palaearctic species.

Trachelus tabidus (Fabricius, 1775): Bakonybél: Hubertlak environment, 8-10. 06. 1964, 1 female. From Hungary, it is also known from Egyek, Kiskundorozsma, Szirmabesenyő and Ohat. We have also records from Devínska Kobyla (Pozsony: Dévény), Piriul Doamnei, Voniesci and Bokroshát (Zlatna Greda). West Palaearctic species, it is also reported from the USA.

Tremex alchymista Mocsáry, 1886: Extremely rare species, known only from Hungary, Austria and Romania. Most of the specimens were collected from Hungary, mainly in the Bakony Mountains. These specimens: Rezi: Cseres: Postaút, 12. 05. 2002, 1 female; Balatonalmádi, 13. 06. 1987, 1 male; Várpalota: Vár-völgy, 06. 08. 1968, 1 female and Várpalota: Barok-völgy, May or June, 1969, 1 male. Other records from Hungary: Budapest, Budakeszi, Irsa and Törökkoppány (Fig. 11).

Tremex magus (Fabricius, 1787): Hévíz, 28. 05. 1967, 1 male. Other Hungarian records: Leányfalu, Szár, Irsa. Further records from the Carpathian Basin: Laxenburg, Jurský Šúr (Jurský Šúr) and Slovenské Nové Mesto (Újhely). Rare Central and Eastern European species.

Urocerus augur (Klug, 1803): Csopak, 22. 07. 1977, 1 female and Herend: Bányatelep, 30. 09. 1973, 1 female. So far, we had only one indefinite record from Hungary, therefore, the above mentioned 2 specimens are the first complete published data. From the Carpathian Basin, it was published from Stiffing NE Graz, Burgenland, Revúca (Nagyrőcze), Hronsek (Garamszeg), Varatec, Máramaros (Maramures), Panaci, Rarai, Lotru, Subcarpathia (Zakarpatie), Fuzine, NE Croatia, Spas and Szczyrzyce (Fig.: 10).

Orussus unicolor Latreille, 1812: Vállus, 28. 05. 1964, 1 female and Devecser: Székierdő, 20. 10. 2001, 1 male. Other places of capture in Hungary: Budakeszi, Fényi-erdő, Budapest, Valkó: Szent Pál-hegy. From the Carpathian Basin, we have records in Zádiel (Szádelő), Kamenica nad Hronom (Garamkövesd), Nagyzsuppány (Jupalnic), Herkulesfürdő (Baile Herculanea), Németbogsán (Bocsa Montana) and Oroszvár (Rusovce). Central and South European species, also reported from Algeria.

Deleted species from the fauna of the Bakony Mountains or from the fauna of Hungary and note on some species

Megalodontes laticeps Konow, 1897: Following the revisions of Taeger 1998 and 2002, these specimens (from Balatonalmádi and Szentkirályszabadja) run to *Megalodontes plagiocephalus* (Fabricius, 1804).

Sterictiphora furcata var. *melanocephala* Panzer, 1799: Invalid name, published by Zombori 1973. It is deleted from the list. These specimens are *Sterictiphora angelicae* (Panzer, 1799) following the revision of Koch 1988b.

Gilpinia laricis (Jurine, 1807): Havas (1897) reported the outbreak of *Gilpina laricis* in Sóly causing serious damage on *Pinus nigra* plantation (young forest). His description of larvae doesn't support the identity of this rare species. Therefore *Gilpinia laricis* (Jurine, 1807) is cancelled from the fauna of Bakony Mts.

Cimbex femorata var. *silvarum* Fabricius, 1793: Invalid name, published by Zombori 1973. Deleted from the list. It is a colour variation of *Cimbex femoratus* (Linné, 1758) and cannot be handled separately as distinctive taxon.

Tenthredo arcuata Förster, 1771: Ajka, Bakony: Cuha-völgy, Fenyőfő, [Ugod:] Somberek, Bakonybél, Pálihálás, Zirc (Zombori 1980). Note: All checked specimens from Hungary proved to be *T. notha* Kl. or *T. brevicornis* Knw. These specimens are cancelled from the list and moved to *T. notha* Kl. or *T. brevicornis* Knw.

Apethymus cerris (Kollar, 1850): [Fenyőfő:] Kék-hegy (Roller and Haris 2008) It is *Apethymus cereus* (Klug, 1818). The original identification is based on Zombori 1982a. After the reidentification, based on the revision of Koch (1988a), this specimen run to *A. cereus* Kl.

Monostegia cingulata (Konow, 1891). These specimens proved to be partly *Monostegia analis* (Konow, 1887) and partly *Monostegia nigra* (Konow, 1896) after the reidentification by using TAEGER (1987). The key of ZOMBORI shall be corrected according to this revision (TAEGER 1987).

Empria alector Benson, 1938: Veszprém (ZOMBORI 1979). This specimen proved to be *Empria liturata* (Gmelin, 1790) using the key of ZHELOCHOVTSEV 1988 and PROUS 2012. The key of Zombori shall be corrected according to the recent revisions.

Cephalcia alpina (Klug, 1808): [Csesznek:] Gézaháza (ZOMBORI 1973). Misidentification by ZOMBORI (ZOMBORI 1973). It is *Cephalcia arvensis* Panzer, 1803. This species is deleted from the Hungarian fauna either.

Pamphilius aurantiacus (Giraud, 1857): Királyszállás: Barok-völgy, Tés (ZOMBORI 1973). LACOURT revised this species. The specimens deposited in Zirc are all *Pamphilius ignymontiensis* Lacourt, 1973.

Tenthredo acerrima Benson, 1940: Synonym of *Tenthredo* (*Tenthredo*) *brevicornis* (Konow, 1886). Most of the specimen published by ZOMBORI 1980, proved to be *Tenthredo* (*Tenthredo*) *notha* Klug, 1817. This is the commonest *Tenthredo* species in Hungary and in the Bakony Mts. Identification follows the revision of TAEGER (1988).

Tenthredo schaefferi Klug, 1817: Valid species, unfortunately all specimen published by ZOMBORI (1980), proved to be *Tenthredo* (*Tenthredo*) *notha* Klug, 1817 and *Tenthredo* (*Tenthredo*) *brevicornis* (Konow, 1886).

Cladius difformis (Panzer, 1799): ZOMBORI (1982b) discusses this species separated from *Cladius pectinicornis* (Geoffroy, 1785), however these 2 species are synonyms therefore *Cladius difformis* (Panzer, 1799) is deleted from the species list, and the specimens moved to *C. pecitnicornis* Geoffr.

Priophorus pilicornis (Curtis, 1831): It is a synonym of *Cladius* (*Trichiocampus*) *ulmi* (Linné, 1758), therefore this species is deleted from the list, furthermore, this published *P. pilicornis* is a *Cladius* (*Priophorus*) *compressicornis* (Fabricius, 1804) (earlier *Priophorus pallipes* Lep.).

Amauronematus fasciatus Konow, 1897: These 2 specimens published by ZOMBORI (1982b) proved to be *Euura fagi* (Zaddach, 1876). *A. fasciatus* Knw. is cancelled from the list.

Euura testaceipes (Zaddach, 1883): The imagoes published by ZOMBORI (1982b) proved to be *Euura proxima* (Serville, 1823). Galls were published by AMBRUS 1964b.

Nematinus luteus (Panzer, 1805): All published specimens are *Nematinus bilineatus* (Klug, 1819). *N. luteus* is cancelled from the list.

Nematus brevivalvis Thomson, 1871: After revision, the specimen from Szarvaskút published in ZOMBORI (1982b) proved to be *Euura viridissima* (Möller, 1882). *N. brevivalis* Ths. is deleted from the fauna of Bakony Mts. (HARIS 2001).

Pachynematus montanus (Zaddach, 1883): The specimen published from North Cuha Valley proved to be *Pristiphora maesta* (Zaddach, 1876). *P. montanus* Zad. is deleted from the fauna of Bakony Mountains (Haris 2001).

Pachynematus kirbyi Dahlbom, 1835: It is synonym of *Euura clitellata* (Serville, 1823). Zombori (1982) listed *P. kirby* Dhlb. and *E. clitellatus* Serv. separately.

Pachynematus truncatus Benson, 1948: It is synonym of *Euura clitellata* (Serville, 1823). Zombori (1982) listed *P. truncatus* Bens. and *E. clitellata* Serv. separately.

Urocerus fantoma Fabricius, 1781: Csopak (Haris 1998). It is a misidentification, based on Móczár and Zombori (1973). After the reideintification of this specimen based on Quinlan and Gauld (1981), this specimen is *Urocerus augur* (Klug, 1803). The Hungarian key (Móczár and Zombori 1973) shall be corrected according to the latest revision.

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Töredékes égerligetek a Nyírségben (*Paridi quadrifoliae-Alnetum glutinosae* Kevey in Borhidi et Kevey 1996)

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Kevey, B. & Papp, L.: *Fragmentary alder gallery forests in the Nyírség.*
Abstract: During my vegetation research in the Nyírség, I collected vegetation samples of fragmentary alder dominated forests resembling alder gallery forests. In this paper, I present the results of my phytosociological analyses and describe the phytosociological characteristics of the studied stands using ten relevés. Because of their similarity to the association *Paridi quadrifiliae-Alnetum glutinosae* Kevey in Borhidi et Kevey 1996 described from the Szigetköz, and substantial difference from the *Aegopodio-Alnetum* Kárpáti V., Kárpáti I. et Jurko ex Šomšák 1961 distributed in the mountain ranges, they are identified with the former association.

Keywords: Syntaxonomy, alder gallery forests on sand, cluster analysis, ordinatio.

Bevezetés

Az *Alnus glutinosa* a Nyírségben többnyire ültetett formában található (Papp ined.). Ebből következik, hogy a természetszerű égerligetek is ritkák. Kutatásaink során mindössze három erdőben találtuk meg ezt az erdőtársulást, így a Terem melletti „Nagyfenék" nevű helyen, a Nyírábránynál levő „Mogyorósi-erdő"-ben, valamint Mérknél a „Vadaskerti-erdő"-ben. E három erdőből összesen tíz cönológiai felvételt sikerült készítenünk, s e felvételi anyag alapján jellemezzük a Nyírség töredékes égerligeteit.

Anyag és módszer

A cönológiai felvételeket a Zürich-Montpellier növénycönológiai iskola (Becking 1957, Braun-Blanquet 1964) hagyományos kvadrát-módszerével készítettük. A felvételek táblázatos összeállítását, valamint a karakterfajok csoportrészesedését és csoporttömegét az „NS" számítógépes programcsomag (Kevey – Hirmann 2002) segítségével végeztük. A felvételkészítés és a hagyományos statisztikai számítások módszerét Kevey (2008) korábban részletesen közölte. A Nyírség égerligeteit összehasonlítottuk a Szigetközből leírt *Paridi quadrifoliae-Alnetum* társulással (Kevey 2008), a Börzsönyből

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ismert *Aegopodio-Alnetum* társulással (Nagy 1997) , valamint a Nyírség tölgy-kőris-szil ligeteivel (Kevey et al. 2017). Az asszociációk összehasonlításánál a SYN-TAX 2000 programcsomag (Podani 2001) segítségével bináris adatokon alapuló hierarchikus osztályozást, cluster-analízist (hasonlósági index: Baroni-Urbani–Buser; osztályozó módszer: teljes lánc) és szintén bináris alapú ordinációt (hasonlósági index: Baroni-Urbani–Buser; ordinációs módszer: főkoordináta-analízis) készítettünk. A fajok esetében Király (2009), a társulásoknál pedig az újabb hazai nómenklatúrát (Borhidi – Kevey 1996, Kevey 2008, Borhidi et al. 2012) követjük. A társulástani és a karakterfaj-statisztikai táblázatok felépítése az újabb eredményekkel (Oberdorfer 1992, Mucina et al. 1993; Kevey 2008, Borhidi et al. 2012) módosított Soó (1980) féle cönológiai rendszerre épül. A növények cönoszisztematikai besorolásánál is elsősorban Soó (1964, 1966, 1968, 1970, 1973, 1980) Synopsis-ára támaszkodtunk, de figyelembe vettük az újabb kutatási eredményeket is (vö. Borhidi 1993, 1995, Horváth F. et al. 1995, Kevey 2008).

Eredmények

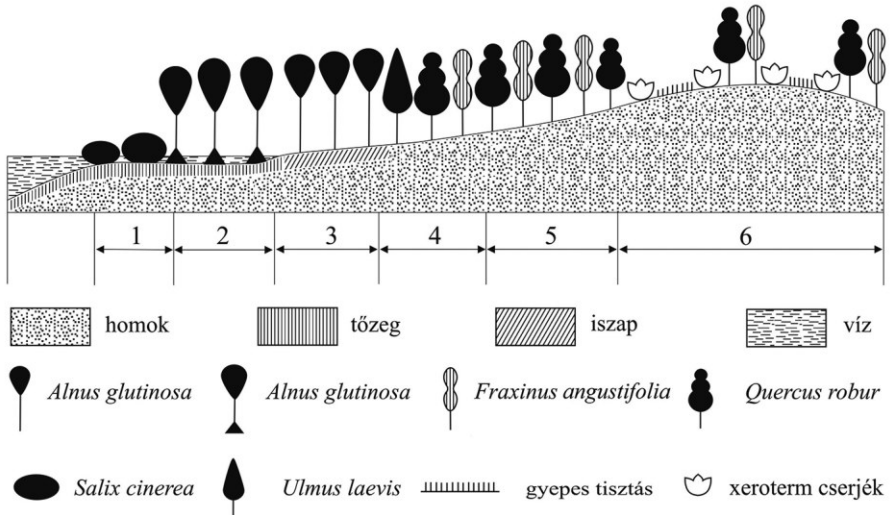
A Nyírség égerligeteiből 1994 és 2007 között 10 cönológiai felvételt készítettünk. Alább e felvételi anyag alapján adjuk meg a társulás jellemzését.

Termőhelyi viszonyok

A vizsgált égerligetek a Nyírség homokvidékén, 115-237 m tengerszint feletti magasságban találhatók. Az alapkőzetet savanyú homokos öntésföld képezi, amelyen kissé kotus öntés erdőtalaj alakult ki. A vizsgált állományok mikroklímája hűvös, párás, talajuk a félnedves-nedves vízgazdálkodási fokozatba sorolható. Ezen égerligetek (*Paridi quadrifoliae-Alnetum glutinosae*) általában a mélyebben fekvő magyar kőrises égerlápok (*Fraxino pannonicae-Alnetum glutinosae*) és a magasabb szinten kialakult tölgy-kőris-szil ligetek (*Fraxino pannonicae-Ulmetum*) között helyezkednek el (1. ábra).

Fiziognómia

A felső lombkoronaszint közepesen, vagy erősebben zárt, 65–80% borítást mutat, magassága pedig – az állomány korától függően – 20–25 méter. Az átlagos törzsátmérő ennek megfelelően 35 és 50 cm között változik. Egyetlen állandó (K V) és egyben tömeges (A-D 3-4) fája az *Alnus glutinosa* és a *Fraxinus angustifolia*. Ritkább elegyfái a következők: *Betula pendula*, *Cerasus avium*, *Populus alba*, *Populus nigra*, *Populus tremula*, *Quercus robur*, *Tilia tomentosa*, *Ulmus minor.* Az alsó lombkoronaszint általában gyengén, vagy közepesen fejlett. Borítása 20–40%, magassága pedig 13–18 m. Állandó (K IV-V) fái az *Alnus glutinosa* és a *Fraxinus angustifolia*. Nagyobb tömeget mutató fa ebben a szintben nem található. E szintet elérheti a fává nőtt *Corylus avellana* és a *Hedera helix* (1-2. táblázat).



1. ábra. Részlet a Nyírség vegetáció-keresztmetszetéből
1: fűzláp (*Calamagrostio-Salicetum cinereae*); 2: magyar kőrises égerláp (*Fraxino pannonicae-Alnetum glutinosae*); 3: égerliget (*Paridi quadrifoliae-Alnetum glutinosae*); 4: tölgy-kőrisszil liget (*Fraxino pannonicae-Ulmetum*); 5: gyöngyvirágos-tölgyes (*Convallario-Quercetum roboris*); 6: homokpusztai tölgyes (*Melampyro debreceniensi-Quercetum roboris*).

A cserjeszint közepesen, vagy erősen fejlett. Borítása 40–70%, magassága pedig 2,5–5 m. Állandó (K IV–V) fajai a következők: *Cornus sanguinea*, *Corylus avellana*, *Crataegus monogyna*, *Fraxinus angustifolia*, *Sambucus nigra*, *Ulmus minor*. Jelentősebb tömeget (A–D 3–4) csak a *Corylus avellana* és a *Sambucus nigra* ér el. Az újulat borítása 3–40%. Állandó (K IV–V) fajai az alábbiak: *Cornus sanguinea*, *Crataegus monogyna*, *Euonymus europaeus*, *Fraxinus angustifolia*, *Ligustrum vulgare*, *Rubus caesius*, *Sambucus nigra*, *Ulmus minor*, *Viburnum opulus*. Nagyobb tömegben csak a *Rubus caesius* fordul elő (1-2. táblázat).

A gyepszint borítása 70–90%. Viszonylag állandó (K IV–V) fajai a következők: *Aegopodium podagraria*, *Brachypodium sylvaticum*, *Chaerophyllum temulum*, *Circaea lutetiana*, *Cucubalus baccifer, Dactylis polygama*, *Festuca gigantea*, *Galium aparine*, *Geranium robertianum*, *Geum urbanum*, *Heracleum sphondylium*, *Humulus lupulus*, *Lapsana communis*, L*ysimachia nummularia*, *Milium effusum*, *Moehringia trinervia*, *Polygonatum latifolium*, *Stachys sylvatica*, *Torilis japonica*, *Urtica dioica*. Fáciest (A–D 3–4) az *Allium ursinum*, a *Brachypodium sylvaticum*, és a *Ranunculus ficaria* képez (1-2. táblázat).

Fajkombináció

Állandósági osztályok

A vizsgált égerligetekből – a tíz cönológiai felvétel alapján 22 konstans (K V) és 12 szubkonstans (K IV) faj került elő: – K V: *Alnus glutinosa, Brachypodium sylvaticum, Chaerophyllum temulum, Circaea lutetiana, Cornus sanguinea, Crataegus monogyna, Cucubalus baccifer, Euonymus europaeus, Festuca gigantea, Fraxinus angustifolia, Galium aparine, Geranium robertianum, Geum urbanum, Lapsana communis, Ligustrum vulgare, Lysimachia nummularia, Milium effusum, Moehringia trinervia, Sambucus nigra, Stachys sylvatica, Ulmus minor, Viburnum opulus*. – K IV: *Aegopodium podagraria, Corylus avellana, Dactylis polygama, Frangula alnus, Glechoma hederacea, Heracleum sphondylium, Humulus lupulus, Polygonatum latifolium, Quercus robur, Rubus caesius, Torilis japonica, Urtica dioica*. A felvételi anyagban ezen kívül 19 akcesszórikus (K III), 25 szubakcesszórikus (K II) és 60 akcidens (K I) faj is szerepel (1. táblázat; 2. ábra). A fenti adatok szerint tehát az akcidens (K I) fajok mellett a konstans (K V) elemeknél van egy-egy kiugró érték.

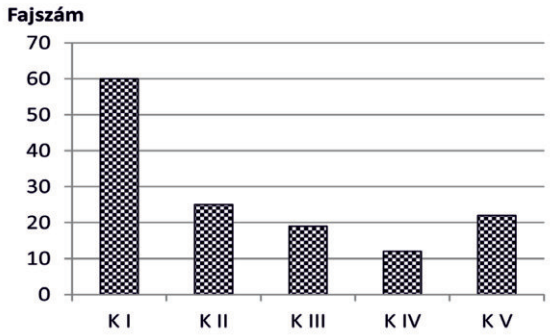
Karakterfajok aránya

A társulás felépítésében jelentős szerepet játszanak a mezofil lomberdei elemek, a Fagetalia fajok: – K V: *Circaea lutetiana, Milium effusum, Moehringia trinervia, Stachys sylvatica.* – K IV: *Aegopodium podagraria*. – K III: *Carex sylvatica, Listera ovata, Polygonatum multiflorum, Pulmonaria officinalis, Viola reichenbachiana*. – K II: *Allium ursinum*. – K I: *Anemone ranunculoides, Athyrium filix-femina, Cardamine bulbifera, Carpinus betulus, Cerasus avium, Corydalis cava, Dryopteris filix-mas, Epipactis helleborine* agg., *Galeopsis speciosa, Hedera helix, Lathraea squamaria, Lilium martagon.* A Fagetalia jellegű fajok 12,33% csoportrészesedést és 13,35% csoporttömeget mutatnak, arányuk a Börzsönyből ismert *Aegopodion-Alnetum*-nál jóval alacsonyabb (1. és 4. táblázat; 3. ábra).

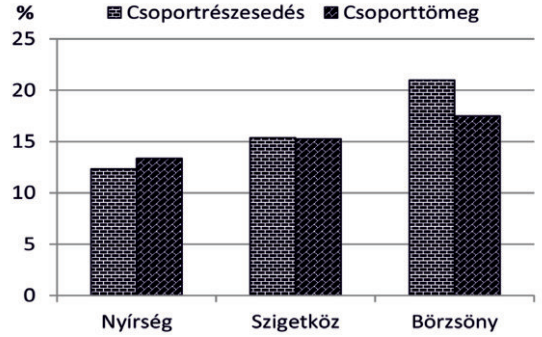
Ugyancsak jelentősek a keményfás ligeterdők karakterfajai, az *Alnion incanae* jellegű elemek: – K V: *Festuca gigantea, Fraxinus angustifolia, Viburnum opulus.* – K IV: *Frangula alnus.* – K II: *Carex remota, Elymus caninus, Populus alba, Rumex sanguineus, Ulmus laevis*. – K I: *Impatiens noli-tangere, Malus sylvestris, Oenanthe banatica, Ribes rubrum.* E növények 10,58% csoportrészesedést és 25,53% csoporttömeget mutatnak, arányuk tehát hasonló, mint a Szigetközben és a Börzsönyben (1. és 4. táblázat).

Figyelemre méltók a *Quercetea pubescentis-petraeae* jellegű elemek jelenléte, bár ezek többsége a *Querco-Fagetea* osztály karakterfajaival közös. Ilyen *Quercetea* (p. maj.p. *Querco-Fagetea*) jellegű fajok a következők: – K V: *Brachypodium sylvaticum, Crataegus monogyna, Euonymus europaeus, Ligustrum vulgare, Ulmus minor*. – K IV: *Corylus avellana, Dactylis polygama, Heracleum sphondylium, Polygonatum latifolium.* – K III: *Acer campestre, Fallopia dumetorum, Rhamnus catharticus, Viola mirabilis*. – K II: *Clinopodium vulgare, Convallaria majalis, Galeopsis pubescens, Rosa canina, Viola suavis.* – K I: *Bromus ramosus, Carex spicata, Euonymus verrucosus, Fragaria vesca, Platanthera bifolia, Poa nemoralis, Populus tremula, Prunus spinosa, Pulmonaria mollissima, Quercus cerris, Symphytum tuberosum, Veronica chamaedrys*. Az ilyen *Quercetea* jellegű növények 12,47% csoportrészesedést és 7,39% csoporttömeget mutatnak. Csoportrészesedésük a Nyírségben jóval nagyobb, mint a Börzsönyben (4. táblázat; 4. ábra).

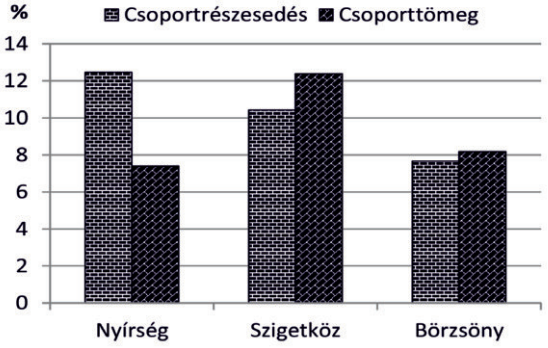
A másik kérdés az, hogy a Nyírség égerligetei mennyire különíthetők el a szomszédos tölgy-kőris-szil ligetektől (*Fraxino pannonicae-Ulmetum*)? A karakterfajok arányát tekintve az égerligetekben több a *Cypero-Phragmitea* (5. ábra), a *Salicetea purpureae* (6.



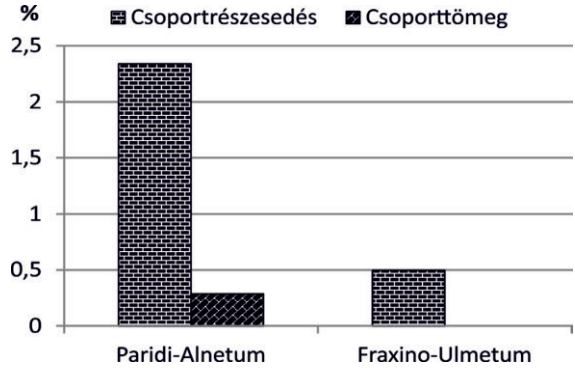
2. ábra: Állandósági osztályok eloszlása



3. ábra: *Fagetalia* fajok aránya a Nyírség, a Szigetköz és a Börzsöny égerligeteiben
Nyírség: *Paridi quadrifoliae-Alnetum glutinosae* (Kevey és Papp ined.: 10 felv.)
Szigetköz: *Paridi quadrifoliae-Alnetum glutinosae* (Kevey 2008: 25 felv.)
Börzsöny: *Aegopodio-Alnetum glutinosae* (Nagy 1997: 15 felv.)



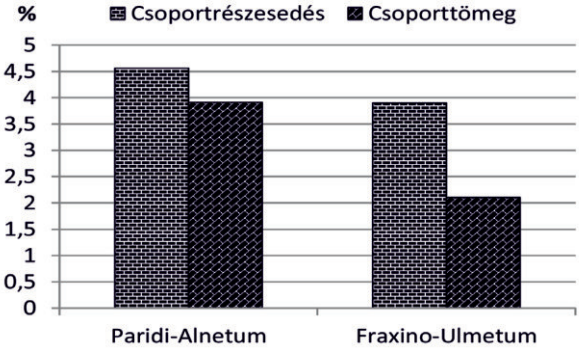
4. ábra: *Quercetea pubescentis-petraeae* fajok aránya a Nyírség,
a Szigetköz és a Börzsöny égerligeteiben
Nyírség: *Paridi quadrifoliae-Alnetum glutinosae* (Kevey és Papp ined.: 10 felv.)
Szigetköz: *Paridi quadrifoliae-Alnetum glutinosae* (Kevey 2008: 25 felv.)
Börzsöny: *Aegopodio-Alnetum glutinosae* (Nagy 1997: 15 felv.)



5. ábra: ***Cypero-Phragmitea*** **s.l. fajok aránya a Nyírség égerligeteiben és tölgy-kőris-szil ligeteiben**

Paridi-Alnetum: Paridi quadrifoliae-Alnetum glutinosae**, Nyírség (Kevey és Papp ined.: 10 felv.)**

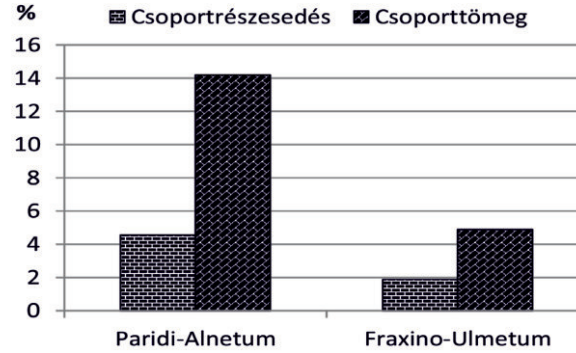
Fraxino-Ulmetum: Fraxino pannonicae-Ulmetum**, Nyírség (Kevey et al. 2017: 25 felv.)**



6. ábra: ***Salicetea purpureae*** **s.l. fajok aránya a Nyírség égerligeteiben és tölgy-kőris-szil ligeteiben**

Paridi-Alnetum: Paridi quadrifoliae-Alnetum glutinosae, **Nyírség (Kevey és Papp ined.: 10 felv.)**

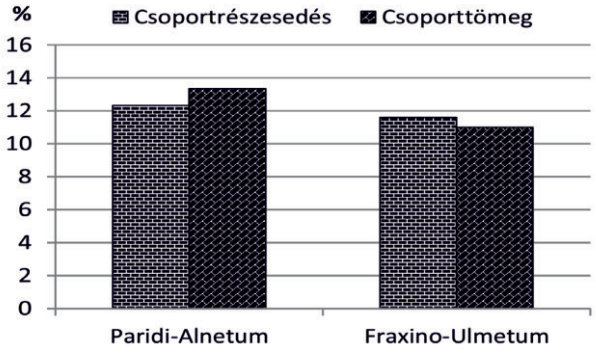
Fraxino-Ulmetum: Fraxino pannonicae-Ulmetum**, Nyírség (Kevey et al. 2017: 25 felv.)**



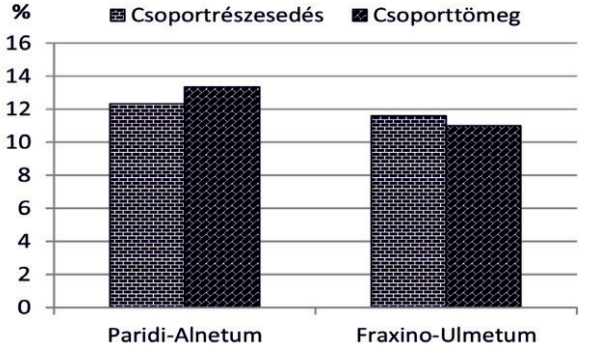
7. ábra: ***Alnetea glutinosae*** **s.l. fajok aránya a Nyírség égerligeteiben és tölgy-kőris-szil ligeteiben**

Paridi-Alnetum: Paridi quadrifoliae-Alnetum glutinosae**, Nyírség (Kevey és Papp ined.: 10 felv.)**

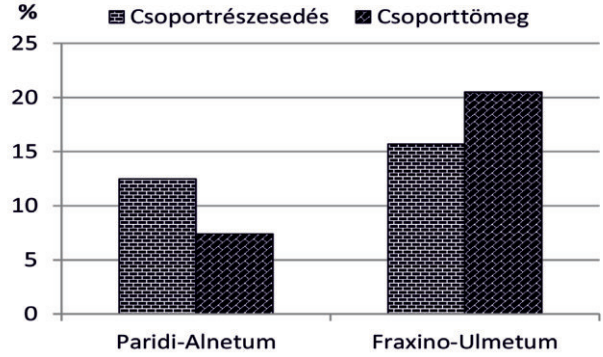
Fraxino-Ulmetum: Fraxino pannonicae-Ulmetum**, Nyírség (Kevey et al. 2017: 25 felv.)**



8. ábra: ***Fagetalia*** **fajok aránya a Nyírség égerligeteiben és tölgy-kőris-szil ligeteiben**
Paridi-Alnetum: Paridi quadrifoliae-Alnetum glutinosae**, Nyírség (Kevey és Papp ined.: 10 felv.)**
Fraxino-Ulmetum: Fraxino pannonicae-Ulmetum**, Nyírség (Kevey et al. 2017: 25 felv.)**



9. ábra: ***Alnion incanae*** **fajok aránya a Nyírség égerligeteiben és tölgy-kőris-szil ligeteiben**
Paridi-Alnetum: Paridi quadrifoliae-Alnetum glutinosae**, Nyírség (Kevey és Papp ined.: 10 felv.)**
Fraxino-Ulmetum: Fraxino pannonicae-Ulmetum**, Nyírség (Kevey et al. 2017: 25 felv.)**



10. ábra: ***Quercetea pubescentis-petraeae*** **fajok aránya a Nyírség égerligeteiben és tölgy-kőris-szil ligeteiben**
Paridi-Alnetum: Paridi quadrifoliae-Alnetum glutinosae, **Nyírség (Kevey és Papp ined.: 10 felv.)**
Fraxino-Ulmetum: Fraxino pannonicae-Ulmetum**, Nyírség (Kevey et al. 2017: 25 felv.)**

ábra), az *Alnetea glutinosae* (7. ábra), a *Fagetalia* (8. ábra) és az *Alnion incanae* (9. ábra) elem, viszont a *Quercetea pubescentis-petraeae* fajok a tölgy-kőris-szil ligetekben lényegesen nagyobb arányt mutatnak (10. ábra).

Differenciális fajok

A Nyírség égerligetei és tölgy-kőris-szil ligeterdei között számos olyan differenciális fajt sikerült kimutatni, amelyek a két asszociáció között legalább két állandósági fokozatnyi különbséget jeleznek. Az égerligeteknek így 25, a tölgy-kőris-szil ligeteknek pedig 22 ilyen differenciális fajuk került elő (5. táblázat).

Sokváltozós elemzések eredményei

A Nyírség (Kevey – Papp ined.), a Szigetköz (KEVEY 2008) és a Börzsöny (NAGY 1997) égerligeteinek összehasonlításával a dendrogramon (11. ábra) a nyírségi és a szigetközi anyag viszonylag közel áll egymáshoz, míg a börzsönyi felvételek jobban elkülönülnek. Hasonló összefüggés látható az ordinációs diagramon (12. ábra), bár itt a szigetközi és a börzsönyi felvételek hasonló távolságban helyezkednek el a nyírségiektől.

A Nyírség égerligeteinek és tölgy-kőris-szil ligeteinek összehasonlításával a felvételek két csoportba tömörülnek (13. ábra). Az elkülönülés azonban nem tökéletes, ugyanis a tölgy-kőris-szil ligetekből három felvétel az égerligetek csoportjába került. Ez olvasható le az ordinációs diagramról is (14. ábra).

Természetvédelmi eredmények

A Nyírség jelentős részét ma már kultúrerdők borítják. Ezek rengetegében a vizsgált égerligetek (*Paridi quadrifoliae-Alnetum glutinosae*) értékes mozaikként, mint oázisok különülnek el. Az égerligetekből ugyan csak 10 cönológiai felvételt sikerült készítenünk, de ezekből 6 védett növényfaj előkerült: K III: *Listera ovata*. – K I: *Dryopteris carthusiana, Epipactis helleborine agg., Lilium martagon, Platanthera bifolia, Veratrum album*. Mellettük említésre méltó még a Nyírségben elterjedésének északi határát elérő *Tilia tomentosa*, valamint az *Oenanthe banatica* lokális előfordulása.

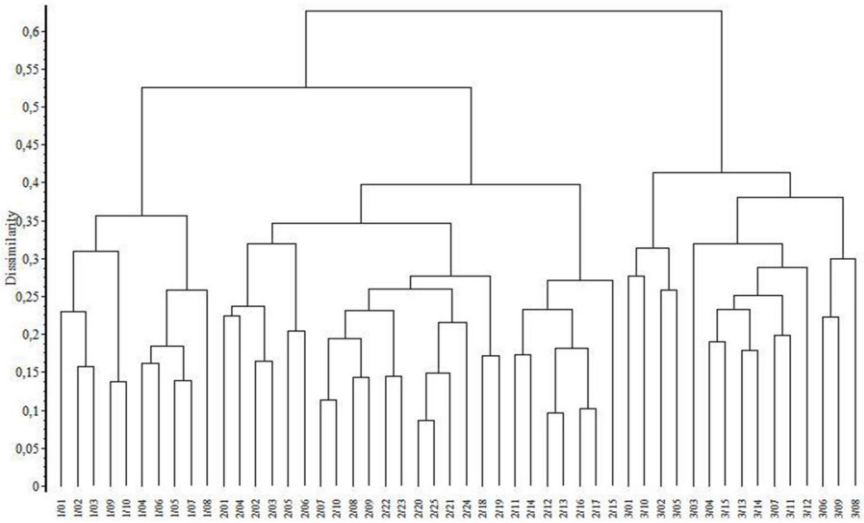
Dendrológiai értéket képeznek egyes fává nőtt cserjék (*Acer tataricum*, *Corylus avellana*), amelyek törzsátmérője helyenként a 40 cm-t is elérheti.

Flóraszennyező hatást fejtenek ki a felvételekben is szereplő egyes adventív növényfajok: K III: *Acer negundo, Celtis occidentalis*. – K II: *Fraxinus pennsylvanica*. – K I: *Juglans nigra, Morus alba, Populus × euramericana, Quercus rubra, Robinia pseudoacacia*.

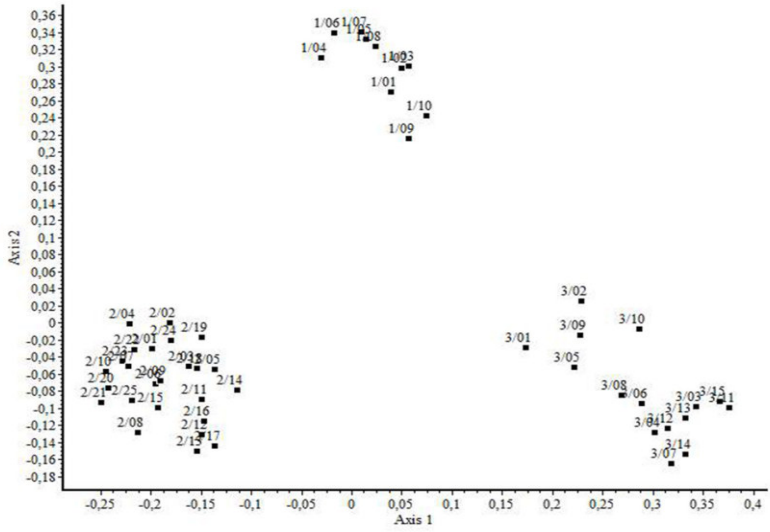
A Terem melletti „Nagyfenék” ma már Natura 2000 terület, a Nyírábrányhoz tartozó „Mogyorósi-erdő” pedig a Hajdusági Tájvédelmi Körzet része. Sajnos a Mérk melletti „Vadaskerti-erdő” mindeddig semmilyen védelemben nem részesült, pedig fokozott védelmet érdemelne (KEVEY et al. 2017.

Diszkusszió

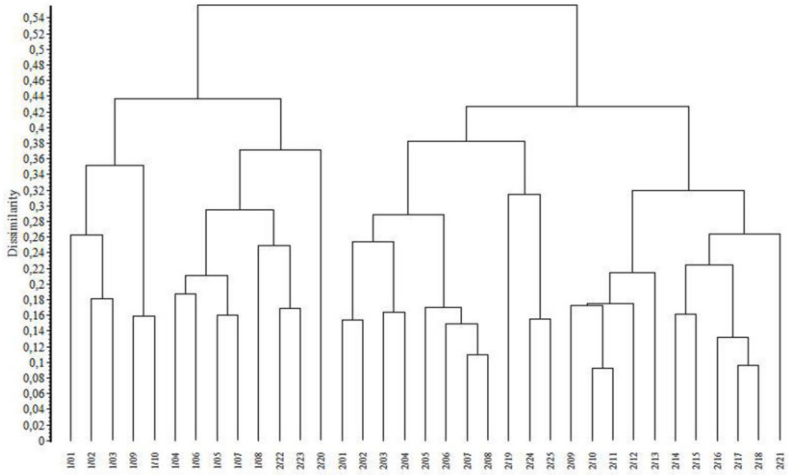
A három táj égerligeteinek összehasonlításakor az egyes paramétereknél eltérő adatokat kaptunk, viszont úgy tűnik, hogy a nyírségi anyag közelebb áll a szigetközihez, míg a Börzsöny felvételei viszonylag jól elkülönülnek az előbbi kettőtől. Erre jó példa, hogy a Börzsönyben van a legtöbb a *Fagetalia* (4. táblázat; 2. ábra) és a legkevesebb *Quercetea pubescentis-petraeae* (4. táblázat; 3. ábra) jellegű elem. Ennek magyarázata lehet az, hogy a Nyírség és a Szigetköz az Alföld része, míg a Börzsöny az Északi-



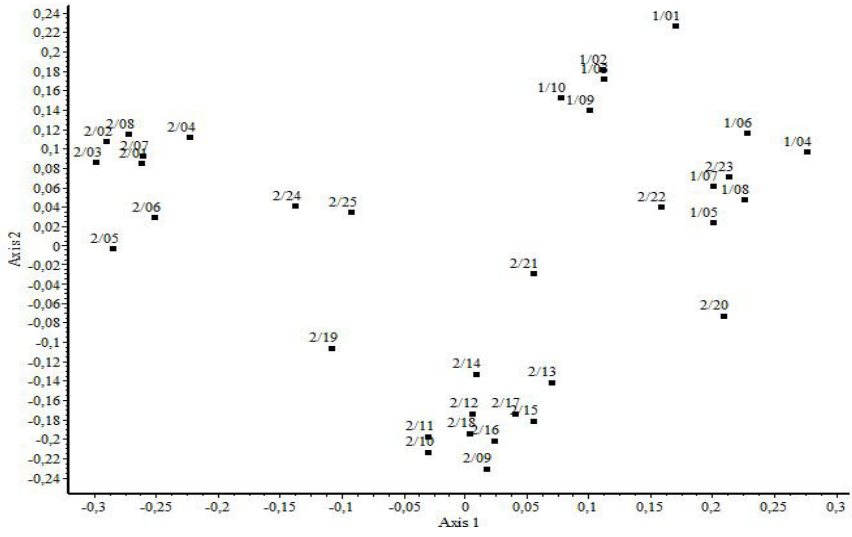
11. ábra: A Nyírség, a Szigetköz és a Börzsöny égerligeteinek dendrogramja (hasonlósági index: Baroni-Urbani–Buser; osztályozó módszer: teljes lánc)
1/1-10: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség (Kevey és Papp ined.)
2/1-25: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség (Kevey 2008)
3/1-15: *Aegopodio-Alnetum glutinosae*, Börzsöny (Nagy 1997)



12. ábra: A Nyírség, a Szigetköz és a Börzsöny égerligeteinek ordinációs diagramja (hasonlósági index: Baroni-Urbani–Buser; ordinációs módszer: főkoordináta-analízis)
1/1-10: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség (Kevey és Papp ined.)
2/1-25: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség (Kevey 2008)
3/1-15: *Aegopodio-Alnetum glutinosae*, Börzsöny (Nagy 1997)



13. ábra: A Nyírség égerligeteinek és tölgy-kőris-szil ligeteinek dendrogramja (hasonlósági index: Baroni-Urbani–Buser; osztályozó módszer: teljes lánc)
1/1-10: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség (Kevey és Papp ined.)
2/1-25: *Fraxino pannonicae-Ulmetum*, Nyírség (Kevey et al. 2017)



14. ábra: A Nyírség égerligeteinek és tölgy-kőris-szil ligeteinek ordinációs diagramja (hasonlósági index: Baroni-Urbani–Buser; osztályozó módszer: teljes lánc)
1/1-10: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség (Kevey és Papp ined.)
2/1-25: *Fraxino pannonicae-Ulmetum*, Nyírség (Kevey et al. 2017)

középhegységhez tartozik, ahol sokkal jobban érvényesül a szubmontán hatás. Az elkülönülést a sokváltozós elemzések is alátámasztják. Az ordinációs diagramon (11. ábra) ugyan a három táj felvételei még egymástól egyforma távolságra levő csoportot képeznek, a dendrogramon (10. ábra) viszont a Börzsöny felvételei szépen elkülönülnek a nyírségi és a szigetközi anyagtól.

A másik kérdés az, hogy a Nyírség égerligetei mennyire különíthetők el a szomszédos tölgy-kőris-szil ligetektől? A karakterfajok arányát tekintve az égerligetekben több a *Cypero-Phragmitea* (4. ábra), a *Salicetea purpureae* (5. ábra), az *Alnetea glutinosae* (6. ábra), a *Fagetalia* (7. ábra) és az *Alnion incanae* (8. ábra) elem, viszont a *Quercetea pubescentis-petraeae* (9. ábra) fajok lényegesen kisebb arányt mutatnak. Ennek magyarázata az, hogy az égerligetek mélyebb termőhelyen fordulnak elő, mint a tölgy-kőris-szil ligetek, ezért a fenti nedvesség igényű szüntaxonok (*Cypero-Phragmitea* s.l., *Salicetea purpureae* s.l., *Alnetea* s.l., *Fagetalia*, *Alnion incanae*) nagyobb arányban fordulnak elő, mint a tölgy-kőris-szil ligetekben. A két asszociáció közötti különbséget a differenciális fajok száma (5. táblázat), és a sokváltozós eredmények is alátámasztják. A dendrogramon és az ordinációs diagramon a két asszociáció felvételei két csoportba tömörülnek. Az elkülönülés azonban néhány átmeneti jellegű felvétel miatt nem tökéletes (12-13. ábra).

Összegezve a fentieket, a Nyírség fragmentális égerligete a Szigetközből leírt *Paridi quadrifoliae-Alnetum glutinosae* asszociációval azonosítható. Szüntaxonómiai helye az alábbi módon vázolható:

Divisio: **Querco-Fagea** Jakucs 1967
Classis: **Querco-fagetea** Br.-Bl. et Vlieger in Vlieger 1937 em. Borhidi in Borhidi et Kevey 1996
Ordo: ***Fagetalia sylvaticae*** Pawłowski in Pawłowski et al. 1928
Alliance: **Alnion incanae** Pawłowski in Pawłowski et al. 1928
Suballiance: ***Alnion glutinosae-incanae*** Oberdorfer 1953
Associatio: *Paridi quadrifoliae-Alnetum glutinosae* Kevey in Borhidi et Kevey 1996

Összefoglalás

Jelen tanulmány tíz cönológiai felvétellel mutatja be a Nyírség homokvidékének égerligeteit. Állományai a tölgy-kőris-szil ligetek (*Fraxino pannonicae-Ulmetum*), és a magyar kőrises égerlápok (*Fraxino pannonicae-Alnetum glutinosae*) között helyezkednek el. A felmért állományok a Szigetközből leírt *Paridi quadrifiliae-Alnetum glutinosae* Kevey in Borhidi et Kevey 1996 asszociációval azonosíthatók és elkülöníthetők a Magyar-középhegység *Aegopodio-Alnetum glutinosae* Kárpáti V., Kárpáti I. et Jurko ex Šomšák 1961 nevű társulástól.

Rövidítések

A1: felső lombkoronaszint; A2: alsó lombkoronaszint; Adv: Adventiva; AF: *Aremonio-Fagion*; Agi: *Alnenion glutinosae-incanae;* Ai: *Alnion incanae*; Alo: *Alopecurion pratensis*; APa: *Abieti-Piceea*; AQ: *Aceri tatarici-Quercion*; Ara: *Arrhenatheretali*a; Arc: *Arction lappae*; Ata: *Alnetalia glutinosae*; B1: cserjeszint; B2: újulat; Ber: *Berberidion*; Bia: *Bidentetalia*; Bon: *Bidention tripartiti*; C: gyepszint; CG: *Calluno-Genistion*; Cgr: *Caricenion gracilis*; Che: *Chenopodietea*; ChS: *Chenopodio-Scleranthea*; Cn: *Calystegion sepium*; Cp: *Carpinenion betuli*; Des: *Deschampsion caespitosae*; Epa: *Epilobietalia*; Epn: *Epilobion angustifolii*; F: *Fagetalia sylvaticae*; FBt: *Festuco-Brometea*; FiC: *Filipendulo-Cirsion oleracei*; FPi: *Festuco-Puccinellietalia*; Fru: *Festucion rupicolae*; GA: *Galio-Alliarion*; I: Indifferens; ined.: ineditum (kiadatlan közlés); Mag: *Magnocaricion*; Moa: *Molinietalia coeruleae*; MoA: *Molinio-Arrhenatherea*; Moa: *Molinio-Juncetea*; NA: *Nardo-Agrostion tenuis*; Onn: O*nopordion acanthii*; Pla: *Plantaginetalia majoris*; Pna: *Populenion nigro-albae*; PQ: *Pino-Quercion*; Prf: *Prunion fruticosae*; Pru: *Prunetalia spinosae*; Pte: *Phragmitetea*; Qc: *Quercetalia cerridis*; Qfa: *Quercion farnetto*; QFt: *Querco-Fagetea*; Qpp: *Quercetea pubescentis-petraeae*; Qr: *Quercetalia roboris*; S: summa (összeg); Sal: *Salicion albae*; SaS: *Sambuco-Salicion capreae* Sea: *Secalietea*; s.l.: sensu lato (tágabb értelemben); Spu: *Salicetalia purpureae*; Ulm: *Ulmenion*; VP: *Vaccinio-Piceete*a.

1. táblázat: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség

Szüntaxon/Faj	Szint	1	2	3	4	5	6	7	8	9	10	A-D	K	K%
5. Querco-Fagea														
5.1. Salicetea purpureae														
5.1.1. Salicetalia purpureae														
Populus nigra	A1	-	-	+	-	-	-	-	-	-	-	+	I	10
5.1.1.1. Salicion albae														
Cucubalus baccifer (Cn, Ulm)	C	-	+	+	+	+	+	+	+	+	+	+	V	90
Humulus lupulus (Cn, Ata, Ai)	B1	+	+	-	-	-	-	-	-	-	-	+	I	20
	C	+	+	+	+	+	+	+	+	-	-	+	IV	80
	S	+	+	+	+	+	+	+	+	-	-	+	IV	80
Carduus crispus (Cn)	C	-	-	-	-	-	-	-	-	+	+	+	I	20
5.2. Alnetea glutinosae														
5.2.1. Alnetalia glutinosae														
Alnus glutinosa (Ai, Agi)	A1	4	4	3	4	3	4	4	4	3	4	3-4	V	100
	A2	1	-	1	1	-	1	1	-	1	2	1-2	IV	70
	B1	+	-	-	+	-	+	+	-	-	+	+	III	50
	B2	-	-	-	+	-	-	+	+	-	-	+	II	30
	S	4	4	3	4	3	4	4	4	3	5	3-5	V	100
Dryopteris carthusiana (F, Agi, Qr, VP)	C	-	-	+	-	-	-	-	-	-	+	+	I	20
5.3. Querco-Fagetea														
Brachypodium sylvaticum (Qpp)	C	+	+	1	2	2	2	3	1	2	+	+-3	V	100
Cornus sanguinea (Qpp)	B1	2	2	1	+	1	1	1	+	1	1	+-2	V	100
	B2	+	+	+	+	+	+	+	+	+	+	+	V	100
	S	2	2	1	+	1	1	1	+	1	1	+-2	V	100
Crataegus monogyna (Qpp)	B1	2	1	+	-	-	-	1	+	+	+	+-2	IV	70
	B2	+	+	+	+	+	+	+	+	+	+	+	V	100
	S	2	1	+	+	+	+	1	+	+	+	+-2	V	100
Euonymus europaeus (Qpp)	B1	+	1	-	-	-	-	-	+	+	+	+-1	III	50
	B2	1	+	+	+	+	+	+	+	+	+	+-1	V	100
	S	1	1	+	+	+	+	+	+	+	+	+-1	V	100
Geranium robertianum (Epa)	C	+	1	2	+	2	2	2	2	+	+	+-2	V	100
Geum urbanum (Epa, Cp, Qpp)	C	+	+	+	1	+	+	+	+	+	+	+-1	V	100
Lapsana communis (Qpp, GA, Epa)	C	+	+	+	+	+	+	+	+	+	+	+	V	100
Ulmus minor (Ai, Ulm, Qpp)	A1	-	-	-	-	1	-	-	-	-	-	1	I	10
	A2	-	-	-	-	-	-	-	-	+	1	+-1	I	20
	B1	+	2	+	-	-	1	-	+	+	+	+-2	IV	70
	B2	-	+	+	+	+	+	+	+	+	+	+	V	90
	S	+	2	+	+	1	1	+	+	1	1	+-2	V	100
Ligustrum vulgare (Cp, Qpp)	B1	1	+	+	-	+	+	+	-	-	-	+-1	III	60
	B2	+	+	+	+	+	+	+	-	+	+	+	V	90
	S	1	+	+	+	+	+	+	-	+	+	+-1	V	90
Corylus avellana (Qpp)	A2	-	-	-	-	-	-	-	-	1	1	1	I	20
	B1	-	2	1	+	+	+	+	-	3	4	+-4	IV	80
	B2	-	-	-	+	-	+	+	-	+	+	+	III	50
	S	-	2	1	+	+	+	+	-	3	4	+-4	IV	80
Heracleum sphondylium (Qpp, MoA)	C	+	+	-	+	+	+	+	+	-	+	+	IV	80
Quercus robur (Ai, Cp, Qpp)	A1	1	+	-	-	+	-	-	-	-	-	+-1	II	30
	A2	-	-	-	-	-	+	-	-	-	-	+	I	10
	B2	-	-	+	+	-	+	-	+	+	-	+	III	50
	S	1	+	+	+	+	+	-	+	+	-	+-1	IV	80
Dactylis polygama (Qpp, Cp)	C	+	-	-	+	+	+	+	-	+	+	+	IV	70

1. táblázat: ***Paridi quadrifoliae-Alnetum glutinosae*****, Nyírség folytatása**

Szüntaxon/Faj	Szint	1	2	3	4	5	6	7	8	9	10	A-D	K	K%
Polygonatum latifolium (Qpp)	C	-	-	+	-	+	2	+	+	1	+	+-2	IV	70
Acer campestre (Qpp)	A2	-	-	-	-	-	-	-	-	+	-	+	I	10
	B1	-	+	+	-	-	-	-	-	+	+	+	II	40
	B2	+	-	+	-	-	+	-	-	+	+	+	III	50
	S	+	+	+	-	-	+	-	-	1	+	+-1	III	60
Rhamnus catharticus (Qpp, Pru)	B1	-	-	-	+	-	+	+	-	-	-	+	II	30
	B2	+	-	-	-	+	+	+	+	-	-	+	III	50
	S	+	-	-	+	+	+	+	+	-	-	+	III	60
Viola mirabilis (F, Qpp)	C	+	+	+	-	-	+	-	-	+	+	+	III	60
Ajuga reptans (MoA)	C	+	+	1	-	-	-	-	-	1	+	+-1	III	50
Campanula trachelium (Epa, Cp)	C	-	-	-	+	+	+	+	+	-	-	+	III	50
Fallopia dumetorum (Qpp, GA)	C	-	+	-	-	+	+	+	-	+	-	+	III	50
Veronica sublobata	C	-	+	+	-	-	-	-	+	1	1	+-1	III	50
Galeopsis pubescens (Qpp, Epa)	C	-	+	-	-	-	-	+	+	+	-	+	II	40
Ranunculus ficaria	C	+	+	-	-	-	-	-	-	4	4	+-4	II	40
Scrophularia nodosa (GA, Epa)	C	-	-	-	+	-	-	-	+	+	+	+	II	40
Viola suavis s.l. (Qpp)	C	-	-	-	+	-	+	+	-	-	+	+	II	40
Convallaria majalis (Qpp)	C	-	-	-	+	1	+	-	-	-	-	+-1	II	30
Bromus ramosus agg. (Qpp)	C	+	-	-	-	-	-	-	-	-	+	+	I	20
Poa nemoralis (Qpp)	C	-	-	+	-	-	-	-	-	-	+	+	I	20
Populus tremula (Qr, Qc, Ber)	A1	-	-	-	-	-	+	-	-	-	-	+	I	10
	B1	-	-	-	-	-	+	-	-	+	-	+	I	20
	B2	-	-	-	-	-	+	-	-	-	-	+	I	10
	S	-	-	-	-	-	1	-	-	+	-	+-1	I	20
Carex divulsa	C	-	-	-	-	-	-	-	-	+	-	+	I	10
Carex spicata (Qpp, Epa)	C	-	-	-	-	-	+	-	-	-	-	+	I	10
Cruciata glabra	C	-	-	-	-	+	-	-	-	-	-	+	I	10
Fragaria vesca (Qpp, Epa)	C	+	-	-	-	-	-	-	-	-	-	+	I	10
Mycelis muralis	C	-	+	-	-	-	-	-	-	-	-	+	I	10
Platanthera bifolia (Qpp, PQ, NA, Moa)	C	+	-	-	-	-	-	-	-	-	-	+	I	10
Ranunculus auricomus agg. (MoA)	C	-	+	-	-	-	-	-	-	-	-	+	I	10
Symphytum tuberosum (Cp, Qpp)	C	-	-	+	-	-	-	-	-	-	-	+	I	10
Veronica chamaedrys (Qpp, Ara)	C	+	-	-	-	-	-	-	-	-	-	+	I	10
5.3.1. Fagetalia sylvaticae														
Circaea lutetiana (Ai)	C	+	+	1	2	+	1	+	2	+	1	+-2	V	100
Milium effusum	C	+	+	+	+	+	1	+	+	+	+	+-1	V	100
Moehringia trinervia	C	-	+	+	+	+	+	+	+	+	+	+	V	90
Stachys sylvatica (Epa)	C	+	+	1	1	+	-	1	2	+	+	+-2	V	90
Aegopodium podagraria (Ai, Cp)	C	2	1	+	+	1	2	-	+	-	-	+-2	IV	70
Polygonatum multiflorum (QFt)	C	+	+	+	-	-	+	-	-	+	+	+	III	60
Viola reichenbachiana	C	+	+	+	+	-	-	-	-	+	+	+	III	60
Carex sylvatica	C	+	+	+	-	-	-	-	-	+	+	+	III	50
Listera ovata (Ata, Ai)	C	+	+	+	-	-	-	-	-	+	+	+	III	50
Pulmonaria officinalis	C	1	+	1	-	-	-	-	-	1	1	+-1	III	50
Allium ursinum	C	5	5	5	-	-	-	-	-	-	-	5	II	30
Carpinus betulus (Cp)	A2	-	-	-	-	-	-	-	-	+	+	+	I	20
	B2	-	-	-	-	-	-	-	-	+	+	+	I	20
	S	-	-	-	-	-	-	-	-	+	+	+	I	20

1. táblázat: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség folytatása

Szüntaxon/Faj	Szint	1	2	3	4	5	6	7	8	9	10	A-D	K	K%
Cerasus avium (Cp)	A1	-	-	-	-	-	-	-	-	-	+	+	I	10
	A2	-	-	-	-	-	-	-	-	-	+	+	I	10
	B1	-	-	-	-	-	-	-	-	-	+	+	I	10
	B2	-	-	-	-	-	-	-	-	+	+	+	I	20
	S	-	-	-	-	-	-	-	-	+	1	+-1	I	20
Corydalis cava	C	-	-	-	-	-	-	-	-	+	+	+	I	20
Dryopteris filix-mas	C	-	+	+	-	-	-	-	-	-	-	+	I	20
Epipactis helleborine agg.	C	+	-	-	-	-	-	-	+	-	-	+	I	20
Hedera helix	A2	-	-	-	-	-	-	-	-	+	-	+	I	10
	B1	-	-	-	-	-	-	-	-	+	-	+	I	10
	B2	-	-	-	-	-	-	-	-	+	+	+	I	20
	S	-	-	-	-	-	-	-	-	1	+	+-1	I	20
Lathraea squamaria (Cp)	C	+	+	-	-	-	-	-	-	-	-	+	I	20
Anemone ranunculoides	C	+	-	-	-	-	-	-	-	-	-	+	I	10
Athyrium filix-femina (Qr, VP)	C	-	+	-	-	-	-	-	-	-	-	+	I	10
Cardamine bulbifera	C	-	-	-	-	-	-	-	1	-	-	1	I	10
Galeopsis speciosa (Epn, Ai)	C	-	-	1	-	-	-	-	-	-	-	1	I	10
Lilium martagon (QFt, Qpp)	C	-	-	-	-	-	+	-	-	-	-	+	I	10
5.3.1.1. Alnion incanae														
Festuca gigantea (Cn, Epa)	C	+	+	+	+	+	+	+	+	+	+	+	V	100
Fraxinus angustifolia ssp. danubialis (Ata)	A1	2	2	3	2	3	2	2	1	3	2	1-3	V	100
	A2	2	2	1	2	2	+	2	1	2	1	+-2	V	100
	B1	2	1	1	-	1	1	1	2	2	+	+-2	V	90
	B2	1	1	+	1	+	1	1	+	+	+	+-1	V	100
	S	3	3	3	3	4	2	3	2	4	2	2-4	V	100
Viburnum opulus (Ata)	B1	+	-	-	-	-	-	-	-	-	-	+	I	10
	B2	+	+	+	+	+	+	+	+	+	+	+	V	100
	S	+	+	+	+	+	+	+	+	+	+	+	V	100
Frangula alnus (Ata, Qr, PQ)	B1	+	-	-	+	-	-	+	-	+	-	+	II	40
	B2	-	+	+	+	-	+	-	+	-	-	+	III	50
	S	+	+	+	+	-	+	+	+	+	-	+	IV	80
Carex remota	C	+	-	-	-	-	-	-	+	1	+	+-1	II	40
Elymus caninus (Pna, Qpp)	C	-	-	-	-	+	+	+	+	-	-	+	II	40
Ulmus laevis (Sal, Ulm)	A2	2	2	2	-	-	-	-	-	-	-	2	II	30
	B1	1	2	+	-	-	-	-	-	+	-	+-2	II	40
	S	2	3	2	-	-	-	-	-	+	-	+-3	II	40
Populus alba (Sal, AQ)	A1	-	-	-	1	-	-	-	1	-	-	1	I	20
	A2	-	-	-	1	-	-	-	-	-	-	1	I	10
	B1	-	-	-	+	-	-	-	+	+	-	+	II	30
	B2	-	-	-	+	-	-	-	+	-	-	+	I	20
	S	-	-	-	2	-	-	-	1	+	-	+-2	II	30
Rumex sanguineus (Epa, Pna)	C	-	-	-	-	-	-	-	+	+	+	+	II	30
Impatiens noli-tangere (Sal)	C	-	-	-	-	-	-	-	-	+	+	+	I	20
Oenanthe banatica	C	-	-	-	-	-	-	-	-	+	+	+	I	20
Malus sylvestris (Qpp)	B1	-	+	-	-	-	-	-	-	-	-	+	I	10
Ribes rubrum	B1	-	+	-	-	-	-	-	-	-	-	+	I	10
5.3.1.2. Aremonio-Fagion														
Tilia tomentosa (Qfa)	A1	-	+	-	-	-	-	-	-	-	-	+	I	10
	A2	-	-	+	-	-	+	-	-	-	-	+	I	20
	B1	-	-	+	-	-	+	-	-	-	-	+	I	20
	B2	+	-	-	-	-	-	-	-	-	-	+	I	10
	S	+	+	+	-	-	+	-	-	-	-	+	II	40

1. táblázat: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség folytatása

Szüntaxon/Faj	Szint	1	2	3	4	5	6	7	8	9	10	A-D	K	K%
5.4. Quercetea pubescentis-petraeae														
Clinopodium vulgare	C	-	+	-	+	-	+	+	-	-	-	+	II	40
Rosa canina agg. (Pru, Prf)	B1	+	-	-	-	-	-	-	-	-	-	+	I	10
	B2	-	-	-	-	+	-	+	-	-	-	+	I	20
	S	+	-	-	-	+	-	+	-	-	-	+	II	30
Euonymus verrucosus (Pru)	B2	-	-	-	-	-	+	-	-	-	-	+	I	10
Prunus spinosa (Pru, Prf)	B2	-	-	-	+	-	-	-	-	-	-	+	I	10
Pulmonaria mollissima	C	-	-	-	-	-	+	-	-	-	-	+	I	10
Quercus cerris (Qr, PQ)	B2	-	-	-	-	-	-	-	-	-	+	+	I	10
5.4.1. Quercetalia cerridis														
5.4.1.1. Aceri tatarici-Quercion														
Acer tataricum (Qpp)	A2	+	-	-	-	-	-	-	-	-	-	+	I	10
1. Cypero-Phragmitea														
1.1. Phragmitetea														
Eupatorium cannabinum (Epa, Sal, Ata, Ai)	C	-	-	-	+	+	+	+	+	-	-	+	III	50
Carex acutiformis (Mag, Cgr, Moa, Sal, Ata)	C	-	-	-	+	-	-	+	+	+	-	+	II	40
Solanum dulcamara (Cn, Bia, Spu)	C	-	-	-	+	+	+	+	-	-	-	+	II	40
Lycopus europaeus (Moa, Cn, Bia, Spu, Ata)	C	-	-	-	+	-	+	-	-	+	-	+	II	30
Epilobium hirsutum (FiC, Cn, Bia)	C	-	-	-	-	+	-	-	-	-	-	+	I	10
Epilobium tetragonum (Mag, Des, Bia)	C	-	-	-	+	-	-	-	-	-	-	+	I	10
Equisetum palustre (Moa, Moa, Spu, Ata, Ai)	C	-	-	-	-	-	+	-	-	-	-	+	I	10
Galium palustre (Mag, Moa, FPi, Spu, Ata)	C	-	-	-	-	-	-	-	-	+	-	+	I	10
Myosotis nemorosa (Moa, Spu, Ata, Cn)	C	-	-	-	-	-	-	-	-	+	-	+	I	10
2. Molinio-Arrhenatherea														
Poa trivialis (Pte, Spu, Ata, Ai)	C	-	-	+	+	-	-	+	-	+	+	+	III	50
Lychnis flos-cuculi (Mag, Ata)	C	-	-	-	-	+	-	-	+	-	-	+	I	20
2.1. Molinio-Juncetea														
Deschampsia caespitosa (Des, Sal, Ata, Ai)	C	+	+	+	+	-	-	-	+	-	-	+	III	50
Cirsium rivulare (Mag, Ata, Ai)	C	-	-	-	+	-	+	+	-	-	-	+	II	30
Cirsium canum (Mag, Ata, Ai)	C	-	-	-	+	-	+	-	-	-	-	+	I	20
Symphytum officinale (Pte, Cn, Spu, Ata, Ai)	C	-	-	-	-	-	-	-	-	+	-	+	I	10
Veratrum album (Ata, Ai)	C	-	-	-	-	+	-	-	-	-	-	+	I	10
2.1.1. Molinietalia coeruleae														
Angelica sylvestris (Mag, Ata, Ai)	C	-	-	-	+	+	+	+	-	-	-	+	II	40
2.1.1.1. Filipendulo-Cirsion oleracei														
Filipendula ulmaria (Moa, Sal, Ata, Ai)	C	-	-	-	+	-	-	-	-	-	-	+	I	10
2.2. Calluno-Ulicetea														
2.2.1. Vaccinio-Genistetalia														
2.2.1.1. Calluno-Genistion														
Betula pendula (Qr, APa)	A1	-	-	+	-	-	-	-	-	-	-	+	I	10
	A2	-	+	-	-	-	-	-	-	-	-	+	I	10
	S	-	+	+	-	-	-	-	-	-	-	+	I	20

1. táblázat: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség folytatása

Szüntaxon/Faj	Szint	1	2	3	4	5	6	7	8	9	10	A-D	K	K%
3. Festuco-Bromea														
3.1. Festuco-Brometea														
3.1.1. Festucetalia valesiacae														
3.1.1.1. Festucion rupicolae														
Cynoglossum officinale (Onn)	C	-	-	-	-	-	+	-	-	-	-	+	I	10
4. Chenopodio-Scleranthea														
4.1. Chenopodietea														
Arctium minus (Arc, Bia, Pla)	C	-	-	+	+	+	-	-	-	-	+	+	II	40
Arctium lappa (Arc, Pla, Spu)	C	-	-	-	-	-	-	+	-	-	-	+	I	10
4.2. Galio-Urticetea														
4.2.1. Calystegietalia sepium														
4.2.1.1. Galio-Alliarion														
Chaerophyllum temulum	C	+	+	+	+	1	+	1	-	+	+	+-1	V	90
Alliaria petiolata (Epa)	C	-	+	+	-	-	-	+	+	-	+	+	III	50
4.2.1.2. Calystegion sepium														
Myosoton aquaticum (Pte, Spu, Ata, Ai)	C	-	-	-	-	-	-	-	-	+	-	+	I	10
4.3. Bidentetea														
4.3.1. Bidentetalia														
Persicaria dubia (Alo, Bon, Spu, Ai)	C	-	-	-	-	-	-	-	-	+	+	+	I	20
4.4. Epilobietea angustifolii														
4.4.1. Epilobietalia														
Galeopsis bifida (Cn)	C	-	-	-	+	+	-	-	-	+	+	+	II	40
6. Indifferens														
Lysimachia nummularia (Pte, Moa, Bia)	C	+	+	+	+	1	+	1	+	+	+	+-1	V	100
Sambucus nigra (Epa, SaS, QFt)	B1	1	2	3	2	2	2	+	2	1	+	+-3	V	100
	B2	-	-	-	1	1	+	+	1	+	+	+-1	IV	70
	S	1	2	3	2	2	2	+	2	1	+	+-3	V	100
Galium aparine (Sea, Epa, QFt)	C	-	1	2	+	+	+	+	2	1	+	+-2	V	90
Glechoma hederacea (MoA, QFt, Sal, Ai)	C	-	1	-	2	2	1	2	+	+	+	+-2	IV	80
Rubus caesius (Spu)	B2	3	3	2	+	-	+	1	-	1	2	+-3	IV	80
Urtica dioica (Arc, GA, Epa, Spu)	C	+	1	2	-	+	+	+	-	+	+	+-2	IV	80
Torilis japonica (Arc, GA, Epa, QFt)	C	+	-	+	-	+	+	+	+	-	+	+	IV	70
Equisetum arvense (MoA, Sea, Sal, Ata, Ai)	C	-	-	-	+	+	+	+	+	-	-	+	III	50
Stellaria media (ChS, QFt, Spu)	C	-	-	+	-	-	-	+	-	+	+	+	II	40
Mentha aquatica (Pte, Moa, Spu, Ata, Ai)	C	-	-	-	+	-	+	-	-	+	-	+	II	30
Taraxacum officinale agg. (MoA, ChS)	C	-	-	-	+	-	+	-	+	-	-	+	II	30
Anthriscus cerefolium (Arc, GA)	C	-	-	+	-	-	-	-	-	-	-	+	I	10
Chelidonium majus (Che, Arc, GA, Epa)	C	-	-	+	-	-	-	-	-	-	-	+	I	10
Ranunculus repens (Pte, MoA, ChS, Spu, Ata)	C	-	-	-	-	+	-	-	-	-	-	+	I	10
7. Adventiva														
Celtis occidentalis	A2	-	-	-	-	+	+	+	+	-	-	+	II	40
	B1	-	-	-	-	-	+	1	+	-	-	+-1	II	30
	B2	-	-	+	+	+	+	+	+	-	-	+	III	60
	S	-	-	+	+	+	1	1	1	-	-	+-1	III	60
Acer negundo	A1	-	-	-	-	1	-	-	-	-	-	1	I	10
	A2	-	-	-	2	2	+	1	2	-	-	+-2	III	50
	B1	-	-	-	2	2	1	2	1	-	-	1-2	III	50
	B2	-	-	-	+	+	+	+	+	-	-	+	III	50
	S	-	-	-	3	3	1	2	2	-	-	1-3	III	50

1. táblázat: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség folytatása

Szüntaxon/Faj	Szint	1	2	3	4	5	6	7	8	9	10	A-D	K	K%
Fraxinus pennsylvanica	A2	-	+	+	-	-	-	-	-	-	-	+	I	20
	B1	+	+	+	-	-	-	-	+	-	-	+	II	40
	S	+	+	+	-	-	-	-	+	-	-	+	II	40
Juglans nigra	A1	-	-	+	-	-	-	-	-	-	-	+	I	10
	A2	-	-	+	-	-	-	-	-	-	-	+	I	10
	B2	-	-	+	-	-	-	-	-	-	-	+	I	10
	S	-	-	1	-	-	-	-	-	-	-	1	I	10
Morus alba	B2	-	-	+	-	-	-	-	-	-	-	+	I	10
Populus × euramericana	A1	-	-	-	-	-	-	-	1	-	-	1	I	10
Quercus rubra	B2	-	-	-	-	-	-	-	-	-	+	+	I	10
Robinia pseudo-acacia	B2	-	-	-	-	+	-	-	-	-	-	+	I	10

2. táblázat: Felvételi adatok 1.

Minta sorszáma	1	2	3	4	5	6	7	8	9	10
Minta felvételi sorszáma	6299	6300	5956	10867	10868	10869	10870	5933	15810	15811
Felvételi évszám 1.	1994	1994	2004	2005	2005	2005	2005	2004	2007	2007
Felvételi időpont 1.	04.03	04.03	04.27	08.20	08.20	08.20	08.20	04.26	04.23	04.23
Felvételi évszám 2.	1994	1994	2004	2007	2007	2007	2007	2004	2007	2007
Felvételi időpont 2.	07.01	07.01	06.23	04.21	04.21	04.21	04.21	06.26	08.11	08.11
Tengerszint feletti magasság	125	125	125	137	137	137	137	137	115	115
Lejtőszög (fok)	0	0	0	0	0	0	0	0	0	0
Felső lombkoronaszint borítása (%)	75	70	65	70	75	80	75	70	70	70
Felső lombkoronaszint magassága (m)	25	25	25	25	25	25	25	25	22	20
Átlagos törzsátmérő (cm)	40	40	45	50	45	45	40	45	35	35
Alsó lombkoronaszint borítása (%)	30	40	25	40	40	25	30	20	30	20
Alsó lombkoronaszint magassága (m)	13	18	18	18	15	16	16	17	17	15
Cserjeszint borítása (%)	60	70	50	40	40	40	40	50	60	70
Cserjeszint magassága (m)	3	4	2,5	2,5	3	2,5	2,5	2,5	3,5	5
Újulat borítása (%)	40	40	25	5	3	3	5	5	5	10
Gyepszint borítása (%)	90	90	90	80	70	80	80	80	90	85
Felvételi terület nagysága (m^2)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600

3. táblázat: Felvételi adatok 2.

Sorszám	Település	Dűlő	Alapkőzet	Talajtípus	Szerző
1	Terem	Nagyfenék	homok	kissé kotus erdőtalaj	Kevey
2	Terem	Nagyfenék	homok	kissé kotus erdőtalaj	Kevey
3	Terem	Nagyfenék	homok	kissé kotus erdőtalaj	Kevey és Papp
4	Nyírábrány	Mogyorósi-erdő	homok	kissé kotus erdőtalaj	Kevey
5	Nyírábrány	Mogyorósi-erdő	homok	kissé kotus erdőtalaj	Kevey
6	Nyírábrány	Mogyorósi-erdő	homok	kissé kotus erdőtalaj	Kevey
7	Nyírábrány	Mogyorósi-erdő	homok	kissé kotus erdőtalaj	Kevey
8	Nyírábrány	Mogyorósi-erdő	homok	kissé kotus erdőtalaj	Kevey és Papp
9	Mérk	Vadaskerti-erdő	homok	kissé kotus erdőtalaj	Kevey
10	Mérk	Vadaskerti-erdő	homok	kissé kotus erdőtalaj	Kevey

4. táblázat: Karakterfajok aránya
Nyírség: *Paridi quadrifoliae-Alnetum glutinosae* (Kevey és Papp ined.: 10 felv.),
Szigetköz: *Paridi quadrifoliae-Alnetum glutinosae* (Kevey 2008: 25 felv.)
Börzsöny: *Aegopodio-Alnetum glutinosae* (Nagy 1997: 15 felv.)

Szüntaxon	Csoportrészesedés			Csoporttömeg		
	Nyírség	Szigetköz	Börzsöny	Nyírség	Szigetköz	Börzsöny
Querco-Fagea	0,00	0,00	0,00	0,00	0,00	0,00
Salicetea purpureae	0,00	0,00	0,00	0,00	0,00	0,00
Salicetalia purpureae	1,72	2,25	1,60	2,21	3,23	0,53
Salicion albae	2,43	4,24	1,72	1,66	4,92	4,01
Populenion nigro-albae	0,41	0,17	0,57	0,04	0,02	0,09
Salicion albae s.l.	2,84	4,41	2,29	1,70	4,94	4,10
Salicetalia purpureae s.l.	4,56	6,66	3,89	3,91	8,17	4,63
Salicetea purpureae s.l.	4,56	6,66	3,89	3,91	8,17	4,63
Alnetea glutinosae	0,00	0,00	0,00	0,00	0,00	0,00
Alnetalia glutinosae	4,57	3,58	2,01	14,20	5,08	7,91
Alnion glutinosae	0,00	0,12	0,00	0,00	0,03	0,00
Alnetalia glutinosae s.l.	4,57	3,70	2,01	14,20	5,11	7,91
Alnetea glutinosae s.l.	4,57	3,70	2,01	14,20	5,11	7,91
Querco-Fagetea	16,65	13,14	12,92	15,94	15,58	14,70
Fagetalia sylvaticae	12,33	15,36	20,99	13,35	15,25	17,48
Alnion incanae	8,74	9,91	8,29	17,17	16,07	14,94
Alnenion glutinosae-incanae	0,65	0,88	2,16	7,18	5,70	12,17
Ulmenion	1,19	1,01	0,12	1,18	0,81	0,13
Alnion incanae s.l.	10,58	11,80	10,57	25,53	22,58	27,24
Fagion sylvaticae	0,00	0,00	0,00	0,00	0,00	0,00
Eu-Fagenion	0,00	0,00	0,98	0,00	0,00	0,72
Carpinenion betuli	2,99	2,42	4,61	0,87	1,63	6,56
Tilio-Acerenion	0,00	1,57	1,78	0,00	5,68	0,41
Fagion sylvaticae s.l.	2,99	3,99	7,37	0,87	7,31	7,69
Aremonio-Fagion	0,35	0,05	0,00	0,04	0,01	0,00
Fagetalia sylvaticae s.l.	26,25	31,20	38,93	39,79	45,15	52,41
Quercetalia roboris	0,74	0,23	0,93	0,10	0,03	0,41
Deschampsio flexuosae-Fagion	0,00	0,00	0,08	0,00	0,00	0,01
Quercion robori-petraeae	0,00	0,25	0,00	0,00	0,03	0,00
Genisto germanicae-Quercenion	0,00	0,00	0,00	0,00	0,00	0,00
Castaneo-Quercenion	0,00	0,00	0,00	0,00	0,00	0,00
Quercion robori-petraeae s.l.	0,00	0,25	0,00	0,00	0,03	0,00
Quercetalia roboris s.l.	0,74	0,48	1,01	0,10	0,06	0,42
Querco-Fagetea s.l.	43,64	44,82	52,86	55,83	60,79	67,53
Quercetea pubescentis-petraeae	12,47	10,42	7,66	7,39	12,38	8,18
Orno-Cotinetalia	0,00	0,00	0,00	0,00	0,00	0,00
Orno-Cotinion	0,00	0,07	0,00	0,00	0,01	0,00
Orno-Cotinetalia s.l.	0,00	0,07	0,00	0,00	0,01	0,00
Quercetalia cerridis	0,09	0,07	0,06	0,03	0,01	0,26
Quercion farnetto	0,35	0,00	0,00	0,04	0,00	0,00
Aceri tatarici-Quercion	0,26	0,39	0,08	0,24	1,13	0,04
Quercetalia cerridis s.l.	0,70	0,46	0,14	0,31	1,14	0,30
Prunetalia spinosae	0,67	0,42	0,43	0,07	0,05	0,06
Berberidion	0,09	0,01	0,06	0,03	0,00	0,26
Prunion fruticosae	0,23	0,12	0,36	0,02	0,01	0,05
Prunetalia spinosae s.l.	0,99	0,55	0,85	0,12	0,06	0,37
Quercetea pubescentis-petraeae s.l.	14,16	11,50	8,65	7,82	13,59	8,85
Querco-Fagea s.l.	66,93	66,68	67,41	81,76	87,66	88,92
Abieti-Piceea	0,12	0,01	0,00	0,01	0,00	0,00

4. táblázat: Karakterfajok aránya folytatása

Szüntaxon	Csoportrészesedés			Csoporttömeg		
	Nyírség	Szigetköz	Börzsöny	Nyírség	Szigetköz	Börzsöny
Vaccinio-Piceetea	0,06	0,00	0,69	0,01	0,00	0,58
Pino-Quercetalia	0,00	0,00	0,00	0,00	0,00	0,00
Pino-Quercion	0,44	0,25	0,35	0,05	0,03	0,07
Pino-Quercetalia s.l.	0,44	0,25	0,35	0,05	0,03	0,07
Vaccinio-Piceetea s.l.	0,50	0,25	1,04	0,06	0,03	0,65
Abieti-Piceea s.l.	0,62	0,26	1,04	0,07	0,03	0,65
Lemno-Potamea	0,00	0,00	0,00	0,00	0,00	0,00
Potametea	0,00	0,01	0,00	0,00	0,00	0,00
Potametalia	0,00	0,01	0,08	0,00	0,00	0,01
Potametea s.l.	0,00	0,02	0,08	0,00	0,00	0,01
Lemno-Potamea s.l.	0,00	0,02	0,08	0,00	0,00	0,01
Cypero-Phragmitea	0,00	0,00	0,00	0,00	0,00	0,00
Phragmitetea	1,52	3,35	2,60	0,21	0,57	0,50
Phragmitetalia	0,00	0,00	0,00	0,00	0,00	0,00
Phragmition	0,00	0,05	0,00	0,00	0,01	0,00
Phragmitetalia s.l.	0,00	0,05	0,00	0,00	0,01	0,00
Nasturtio-Glycerietalia	0,00	0,00	0,00	0,00	0,00	0,00
Glycerio-Sparganion	0,00	0,06	0,87	0,00	0,01	0,13
Nasturtio-Glycerietalia s.l.	0,00	0,06	0,87	0,00	0,01	0,13
Magnocaricetalia	0,00	0,00	0,00	0,00	0,00	0,00
Magnocaricion	0,70	0,85	0,21	0,07	0,22	0,05
Caricenion rostratae	0,00	0,02	0,00	0,00	0,00	0,00
Caricenion gracilis	0,12	0,34	0,10	0,01	0,16	0,04
Magnocaricion s.l.	0,82	1,21	0,31	0,08	0,38	0,09
Magnocaricetalia s.l.	0,82	1,21	0,31	0,08	0,38	0,09
Phragmitetea s.l.	2,34	4,67	3,78	0,29	0,97	0,72
Isoëto-Nanojuncetea	0,00	0,00	0,00	0,00	0,00	0,00
Nanocyperetalia	0,00	0,00	0,00	0,00	0,00	0,00
Nanocyperion flavescentis	0,00	0,09	0,30	0,00	0,01	0,06
Nanocyperetalia s.l.	0,00	0,09	0,30	0,00	0,01	0,06
Isoëto-Nanojuncetea s.l.	0,00	0,09	0,30	0,00	0,01	0,06
Montio-Cardaminetea	0,00	0,00	0,00	0,00	0,00	0,00
Montio-Cardaminetalia	0,00	0,00	0,17	0,00	0,00	0,03
Cardamini-Montion	0,00	0,00	0,06	0,00	0,00	0,03
Montio-Cardaminetalia s.l.	0,00	0,00	0,23	0,00	0,00	0,06
Montio-Cardaminetea s.l.	0,00	0,00	0,23	0,00	0,00	0,06
Cypero-Phragmitea s.l.	2,34	4,76	4,31	0,29	0,98	0,84
Oxycocco-Caricea nigrae	0,00	0,00	0,00	0,00	0,00	0,00
Scheuchzerio-Caricetea nigrae	0,00	0,00	0,00	0,00	0,00	0,00
Scheuchzerio-Caricetalia nigrae	0,00	0,17	0,19	0,00	0,03	0,03
Scheuchzerio-Caricetea nigrae s.l.	0,00	0,17	0,19	0,00	0,03	0,03
Oxycocco-Caricea nigrae s.l.	0,00	0,17	0,19	0,00	0,03	0,03
Molinio-Arrhenatherea	1,90	0,86	1,30	0,66	0,16	0,23
Molinio-Juncetea	1,12	1,32	0,72	0,17	0,29	0,15
Molinietalia coeruleae	0,41	0,88	0,59	0,04	0,23	0,16
Deschampsion caespitosae	0,22	0,96	0,03	0,02	0,20	0,00
Filipendulo-Cirsion oleracei	0,08	0,16	0,51	0,01	0,07	0,15
Alopecurion pratensis	0,07	0,05	0,03	0,01	0,01	0,01
Molinietalia coeruleae s.l.	0,78	2,05	1,16	0,08	0,51	0,32
Molinio-Juncetea s.l.	1,90	3,37	1,88	0,25	0,80	0,47

4. táblázat: Karakterfajok aránya folytatása

Szüntaxon	Csoportrészesedés			Csoporttömeg		
	Nyírség	Szigetköz	Börzsöny	Nyírség	Szigetköz	Börzsöny
Arrhenatheretea	0,00	0,00	0,00	0,00	0,00	0,00
Arrhenatheretalia	0,06	0,28	0,18	0,01	0,03	0,03
Arrhenatherion elatioris	0,00	0,03	0,04	0,00	0,00	0,01
Arrhenatheretalia s.l.	0,06	0,31	0,22	0,01	0,03	0,04
Arrhenatheretea s.l.	0,06	0,31	0,22	0,01	0,03	0,04
Nardo-Callunetea	0,00	0,00	0,00	0,00	0,00	0,00
Nardetalia	0,00	0,00	0,00	0,00	0,00	0,00
Nardo-Agrostion tenuis	0,03	0,05	0,00	0,00	0,01	0,00
Nardetalia s.l.	0,03	0,05	0,00	0,00	0,01	0,00
Nardo-Callunetea s.l.	0,03	0,05	0,00	0,00	0,01	0,00
Calluno-Ulicetea	0,00	0,00	0,00	0,00	0,00	0,00
Vaccinio-Genistetalia	0,00	0,00	0,00	0,00	0,00	0,00
Calluno-Genistion	0,12	0,01	0,00	0,01	0,00	0,00
Vaccinio-Genistetalia s.l.	0,12	0,01	0,00	0,01	0,00	0,00
Calluno-Ulicetea s.l.	0,12	0,01	0,00	0,01	0,00	0,00
Molinio-Arrhenatherea s.l.	4,01	4,60	3,40	0,93	1,00	0,74
Puccinellio-Salicornea	0,00	0,00	0,00	0,00	0,00	0,00
Festuco-Puccinellietea	0,00	0,16	0,00	0,00	0,02	0,00
Festuco-Puccinellietalia	0,03	0,12	0,04	0,00	0,01	0,01
Puccinellion limosae	0,00	0,00	0,00	0,00	0,00	0,00
Puccinellion peisonis	0,00	0,00	0,00	0,00	0,00	0,00
Juncion gerardi	0,00	0,00	0,00	0,00	0,00	0,00
Beckmannion eruciformis	0,00	0,00	0,00	0,00	0,00	0,00
Festuco-Puccinellietalia s.l.	0,03	0,12	0,04	0,00	0,01	0,01
Festuco-Puccinellietea s.l.	0,03	0,28	0,04	0,00	0,03	0,01
Puccinellio-Salicornea s.l.	0,03	0,28	0,04	0,00	0,03	0,01
Festuco-Bromea	0,00	0,00	0,00	0,00	0,00	0,00
Festucetea vaginatae	0,00	0,00	0,00	0,00	0,00	0,00
Festucetalia vaginatae	0,00	0,00	0,00	0,00	0,00	0,00
Festucion vaginatae	0,00	0,01	0,00	0,00	0,00	0,00
Festucetalia vaginatae s.l.	0,00	0,01	0,00	0,00	0,00	0,00
Festucetea vaginatae s.l.	0,00	0,01	0,00	0,00	0,00	0,00
Festuco-Brometea	0,06	0,09	0,15	0,01	0,01	0,02
Festucetalia valesiacae	0,00	0,00	0,00	0,00	0,00	0,00
Asplenio-Festucion pallentis	0,00	0,00	0,04	0,00	0,00	0,01
Festucion rupicolae	0,09	0,04	0,04	0,01	0,00	0,01
Festucetalia valesiacae s.l.	0,09	0,04	0,08	0,01	0,00	0,02
Festuco-Brometea s.l.	0,15	0,13	0,23	0,02	0,01	0,04
Festuco-Bromea s.l.	0,15	0,14	0,23	0,02	0,01	0,04
Chenopodio-Scleranthea	0,38	0,19	0,44	0,04	0,02	0,10
Secalietea	0,54	0,67	0,58	0,38	0,15	0,15
Secalietalia	0,00	0,00	0,00	0,00	0,00	0,00
Caucalidion platycarpos	0,00	0,01	0,00	0,00	0,00	0,00
Secalietalia s.l.	0,00	0,01	0,00	0,00	0,00	0,00
Secalietea s.l.	0,54	0,68	0,58	0,38	0,15	0,15
Chenopodietea	0,25	0,42	0,48	0,03	0,08	0,07
Onopordetalia	0,00	0,00	0,00	0,00	0,00	0,00
Onopordion acanthii	0,09	0,00	0,00	0,01	0,00	0,00
Onopordetalia s.l.	0,09	0,00	0,00	0,01	0,00	0,00

4. táblázat: Karakterfajok aránya folytatása

Szüntaxon	Csoportrészesedés			Csoporttömeg		
	Nyírség	Szigetköz	Börzsöny	Nyírség	Szigetköz	Börzsöny
Chenopodietea s.l.	0,34	0,42	0,48	0,04	0,08	0,07
Artemisietea	0,00	0,00	0,00	0,00	0,00	0,00
Artemisietalia	0,00	0,00	0,00	0,00	0,00	0,00
Arction lappae	0,83	0,53	0,52	0,22	0,12	0,20
Artemisietalia s.l.	0,83	0,53	0,52	0,22	0,12	0,20
Artemisietea s.l.	0,83	0,53	0,52	0,22	0,12	0,20
Galio-Urticetea	0,00	0,00	0,00	0,00	0,00	0,00
Calystegietalia sepium	0,00	0,00	0,00	0,00	0,00	0,00
Galio-Alliarion	3,57	1,20	1,82	0,70	0,49	0,40
Calystegion sepium	2,34	2,85	2,63	0,25	1,11	2,29
Calystegietalia sepium s.l.	5,91	4,05	4,45	0,95	1,60	2,69
Galio-Urticetea s.l.	5,91	4,05	4,45	0,95	1,60	2,69
Bidentetea	0,00	0,00	0,00	0,00	0,00	0,00
Bidentetalia	1,03	1,03	1,40	0,16	0,16	0,27
Bidention tripartiti	0,07	0,11	0,23	0,01	0,02	0,04
Bidentetalia s.l.	1,10	1,14	1,63	0,17	0,18	0,31
Bidentetea s.l.	1,10	1,14	1,63	0,17	0,18	0,31
Plantaginetea	0,00	0,00	0,00	0,00	0,00	0,00
Plantaginetalia majoris	0,22	0,44	0,08	0,02	0,09	0,01
Agropyro-Rumicion crispi	0,00	0,01	0,00	0,00	0,00	0,00
Plantaginetalia majoris s.l.	0,22	0,45	0,08	0,02	0,09	0,01
Plantaginetea s.l.	0,22	0,45	0,08	0,02	0,09	0,01
Epilobietea angustifolii	0,00	0,00	0,00	0,00	0,00	0,00
Epilobietalia	6,45	3,56	5,57	4,05	1,28	2,14
Epilobion angustifolii	0,06	0,07	0,39	0,04	0,01	0,06
Atropion bella-donnae	0,00	0,00	0,08	0,00	0,00	0,01
Epilobietalia s.l.	6,51	3,63	6,04	4,09	1,29	2,21
Epilobietea angustifolii s.l.	6,51	3,63	6,04	4,09	1,29	2,21
Urtico-Sambucetea	0,00	0,00	0,00	0,00	0,00	0,00
Sambucetalia	0,00	0,00	0,00	0,00	0,00	0,00
Sambuco-Salicion capreae	0,43	0,34	0,90	1,12	0,54	0,66
Sambucetalia s.l.	0,43	0,34	0,90	1,12	0,54	0,66
Urtico-Sambucetea s.l.	0,43	0,34	0,90	1,12	0,54	0,66
Chenopodio-Scleranthea s.l.	16,26	11,43	15,12	7,03	4,07	6,40
Indifferens	3,46	2,63	2,93	4,32	3,25	1,21
Adventiva	3,48	4,26	0,50	4,79	2,00	0,14

Nyírség: *Paridi quadrifoliae-Alnetum glutinosae* (Kevey és Papp ined.: 10 felv.)
Szigetköz: *Paridi quadrifoliae-Alnetum glutinosae* (Kevey 2008: 25 felv.)
Börzsöny: *Aegopodio-Alnetum glutinosae* (Nagy 1997: 15 felv.)

5. táblázat: Differenciális fajok

	PA	FrU
Konstans fajok		
Alnus glutinosa	V	I
Lysimachia nummularia	V	II
Milium effusum	V	II
Cornus sanguinea	V	III
Fraxinus angustifolia	V	III
Arctium minus	II	V
Elymus caninus	II	V
Veronica sublobata	III	V
Szubkonstans fajok		
Aegopodium podagraria	IV	I
Heracleum sphondylium	IV	I
Glechoma hederacea	IV	II
Humulus lupulus	IV	II
Convallaria majalis	II	IV
Galeopsis pubescens	II	IV
Akcesszórikus fajok		
Ajuga reptans	III	-
Campanula trachelium	III	I
Deschampsia caespitosa	III	I
Eupatorium cannabinum	III	I
Frangula alnus	III	I
Listera ovata	III	I
Poa trivialis	III	I
Pulmonaria officinalis	III	I
Viola mirabilis	III	I
Viola reichenbachiana	III	I
Gagea pratensis	-	III
Ornithogalum boucheanum	-	III
Pyrus pyraster	-	III
Salvia glutinosa	-	III
Carex divulsa	I	III
Cerasus avium	I	III
Chelidonium majus	I	III
Szubakcesszórikus fajok		
Allium ursinum	II	-
Cirsium rivulare	II	-
Lycopus europaeus	II	-
Mentha aquatica	II	-
Solanum dulcamara	II	-
Taraxacum officinale agg.	II	-
Acer platanoides	-	II
Anthriscus sylvestris	-	II
Arum orientale	-	II
Glechoma hirsuta	-	II
Impatiens parviflora	-	II
Lactuca quercina ssp. sagittata	-	II
Ornithogalum umbellatum	-	II
Padus serotina	-	II
Primula veris	-	II
Scilla vindobonensis	-	II
Differenciális fajok száma	**25**	**22**

PA: *Paridi quadrifoliae-Alnetum glutinosae*, Nyírség (Kevey és Papp ined.: 10 felv.)
FrU: *Fraxino pannonicae-Ulmetum*, Nyírség (Kevey et al. 2017: 25 felv.)

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A faunistic contribution to the butterfly fauna of Oman (Lepidoptera: Diurna)

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Schmidt, P., Simonyi, S. J., Ábrahám, L., Sáfián, Sz. & Ilniczky, S.: *A faunistic contribution to the butterfly fauna of Oman (Lepidoptera: Diurna).*

Abstract: During five entomological field expeditions between 2008 and 2019, butterfly speciemens were collected in Oman, and a total of 492 specimens of 46 species were documented. Faunistic and distribution data for each species is presented, along a short overview of the physical geography of Oman and biogeographical notes of the butterfly fauna. With 30 figures.

Keywords: butterfly, faunistic, distribution, Oman.

Introduction

The Sultanate of Oman is located at the southeastern coast of the Arabian Penninsula. The country's landscape is divided into two major ecoregions, (1) Temperate grasslands, savannas, and shrublands, (2) Deserts and xeric shrublands. The former includes the higher regions of the rocky, 650 km long Al Hajar Mountain range from the tip of the Musandam peninsula to Ra's Al Had. The rest of the country falls in the second group, but is not homogeneous and further subdivided into five subregions. The Gulf of Oman desert and the semi-desert subregion stretches 270 km long in the Batinah Plain, an inland strip running along the southwest of the Al Hajar Mountains. The Arabian Desert and East Saharo-Arabian xeric shrublands are part of the Arabian Desert that dominates the peninsula and also extends to Oman. The Arabian Peninsula coastal fog desert, which is a narrow coastal stretch of land along the southeastern and southwestern coast of the peninsula. Perhaps the most special area is found in Southwest Oman. The Southwestern Arabian foothills savannah in the Qara Mountain Range (or the Dhofar Mountains) is the most unique due to permanent influence of subtropical monsoon climate (Burgess et al. 2004).

Studies of the butterfly fauna of the Arabian Peninsula date back to the first half of the 19th century (Klug 1829-32). However, the research of Lepidoptera fauna in Oman intensified only much later in the second half of the 20th century. The area's first cata-

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logue of butterfly fauna was compiled in the 1980s, which already included an insight of the zoogeography of Oman's butterflies (LARSEN & LARSEN 1980, LARSEN 1984b).

Further publications on butterflies were presenting results of research on the biology, ecology or occurrences of various species (COCK 2009, FEULNER 2007, GILLET 1995, GILLET & NASSER 2005, NASSER 2005, FRIC et al. 2019), also reporting checklists recorded over short faunistic surveys (POLAK & VEROVNIK 1998, 2009). Most recently COWAN & COWAN (2019) composed the checklist of the butterfly fauna of Dhofar based on LARSEN (1983), listing 63 species from the area.

This paper serves as a further faunistic work that provides accurate biotic information on the butterfly species collected on five field trips between 2005 and 2019, including geo-referenced distribution records and an up to date taxonomic review.

Material and methods

Between 2008 and 2019, five insect collecting expeditions were organized by Hungarian entomologists in Oman. The members of the expeditions mainly collected beetles, butterflies and moths, lacewings and other group of insects. The voucher specimens of butterflies are deposited in the private reference collections of Sándor Jenő Simonyi and Sándor Ilniczky (Budapest) and in the scientific collection of the Rippl-Rónai Museum (Kaposvár). Butterflies were sampled in conventional methods using a hand-held butterfly net.

Sampling dates and collectors:
15-30. 04. 2008 - S. Ilniczky, S. J. Simonyi
10-16. 10. 2009 - S. Ilniczky, S. J. Simonyi
02-17. 07. 2010 - S. Ilniczky, S. J. Simonyi
27.10.-04.11. 2018 - L. Ábrahám, S. Ilniczky, S. J. Simonyi
25.04.-08. 05. 2019 - L. Ábrahám, S. Ilniczky, G. Körtési

The two main collecting sites of butterflies in Oman were the Al Hajar Mountain range in the north and the Qara Mountain range in the southwest. In all other sites, due to the species-poor fauna, data collection was more occasional.

The higher taxonomy and generic order follow WILLIAMS (2015). The majority of distribution data and foodplant records are retrieved from LARSEN & LARSEN (1980), LARSEN (1991, 2005) and WILLIAMS (2019).

Results and discussion

Papilionidae Latreille, 1802
Papilionini Latreille, [1802]
Papilio demodocus (Esper, 1798)

Material examined: 12 exx. / OMAN, Gov. Dhofar / 7 km W of Mirbat / N17°01.578' E54°39.322' / 31 m seashore, sand dunes / 30. 04.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Fig. 1: Temperate grasslands, savannas, and shrublands in the Al Hajar Mountain range, shrublands in the Jabal al Akhdar (Green Mountain) near Misfah

Fig. 2: Desert and the semi-desert ecoregion in the Batinah Plain with *Acacia* trees and scrubs

Fig. 3: The Al Hajar Al Gharbi montane woodlands ecoregion, the vegetation dominated with *Acacia* trees

Fig. 4: The Arabian Desert and East Saharo-Arabian xeric shrublands ecoregion, sand desert with *Prosopis* trees near Mughshin.

Fig. 5: The Southwestern Arabian foothills savanna ecoregion in the Qara Mountain Range near Mughsayl

Fig. 6: The Qara Mountain Range dry forested area near Mugurah

Fig. 7: The Qara Mountain Range wadi near Rakhyuth

Fig. 8: The Qara Mountain Range, the Jabal Samhan foothill savannah with *Boscia* trees

Distribution: It is an Afrotropical species, contrary to the closely related *P. demoleus* (Linnaeus, 1758), which was also recorded in Oman. *P. demodocus* is distributed in the whole sub-Saharan Africa, including the majority of Atlantic and Indian Ocean Islands (WILLIAMS 2019). It is found also in the coastal zone of the Arabian Peninsula. In Oman, it occurs only in Dhofar, where it is locally common.

Remarks: Originally, both *P. demodocus* and *P. demoleus* were woodland butterflies where they utilized indigenous species of Rutaceae, but both adopted various cultivated *Citrus* as a larval food plants. As potential pest species, they occasionally cause agricultural damages (LARSEN & LARSEN 1980). *P. demodocus* was reported feeding on *Haplophyllum tuberculatum* (Rutaceae) in its natural habitats in Dhofar (LARSEN 1982).

Papilio demoleus (Linnaeus, 1758)

Material examined: 2 exx. / OMAN, Reg. Al Batinah South, Ar Rustaq, / N23°24.903' E57°25.517' 339 m, oasis,/ 16.04.2008 /leg. S. Ilniczky, S. J. Simonyi.

Distribution: The Lime Swallowtail is a well-known Oriental-Indo-Australian papilionid butterfly, that had three largely disjunct distribution areas from Arabia to Australia, but from the 1950's it extended its range widely to the whole tropical and subtropical parts of Asia and the Indonesian territories, as it became a renowned economic pest on *Citrus* and also an invasive species (LARSEN & LARSEN 1980). In Oman, it can be found in Northern Oman. Currently, the range of *P. demoleus* does not overlap with that of *P. demodocus*.

Remarks: It was introduced to the New World in 2004 (Hispaniola, Dominican Republic (GUERRERO 2004)), and was found in South-Portugal in 2012, for the first time on the mainland of Europe (MORGUN & WIEMERS 2012). The larvae also feed on *Citrus* on agricultural areas, different Rutaceae and Fabaceae (Australia) in natural circumstances. This species can be found in forests but is normally associated with more open habitats ranging from semi-desert to Acacia scrub, savannah and woodland mosaics, parks and gardens (GUERRERO 2004).

Hesperiidae Latreille, 1809
Coeliadinae Evans, 1937
Pyrrhiades anchises jucunda (Butler, 1881) (Fig. 13-14)

Material examined: 1 ex. OMAN, Jabal al Akhdar, 2 km W of Al Ulya N23º11.257' E57º35.527' 763 m rocky wadi with sparse bushy, 16.04.2008 leg. S. Ilniczky, S. J. Simonyi; 2 exx. OMAN, Jabal al Akhdar, Balad Seet, N23º11.794' E57º13.426' 914 m, gorge below the willage with spring and oasis, 17.04.2008 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, Jabal al Qamar, seashore below Mugurah, N16º45.768' E53º30.661' 16 m, 05.10.2009. leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl, N16º51.243' E53º43.189' 496 m 07.07.2010 leg. S. Ilniczky, S. J. Simonyi; 2 exx. OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl, N16º51.243' E53º43.189' 496 m, 06.07.2010 leg. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, Jabal al Qamar, seashore below Mugurah, N16º45.930' E53º30.811' 42 m, 09.07.2010 leg. S. Ilniczky, S. J. Simonyi; 30 exx. / OMAN, Reg. Al Dakhiliyah / Misfah, Jabal Shams / N23°14.154' E57°08.987' / 1400 m rocky wadi / 05.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési; 9 exx. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Taxonomic note: With its Malagasy relative *Pyrrhiades pansa* (Hewitson, [1867]), *P. anchises* for a long time was included in the genus *Coeliades* Hübner, [1818], but was moved to *Pyrrhiades* Lindsey & Miller, 1965 by CHIBA (2009) in his revision of the

Coeliadinae subfamily, based on morphological characters, including antennal length, wing venation and male genitalia.

Distribution: *P. anchises anchises* (Gerstaecker, 1871) can be found sporadically in Southern and Eastern Africa, also reported from Yemen on the Arabian Peninsula. The population of this characteristic butterfly on the Island of Socotra differs from the African ones and is considered as a distinct, endemic subspecies *jucunda* Butler, 1881. The same subspecies was reported also from southern Oman (LARSEN & LARSEN 1980, LARSEN 1984), however, according to Steve Collins (pers.comm.) these more jucunda-looking specimens could be a result of historic interbreeding between the Southern Arabian *P. anchises anchises* and specimens of *P. anchises jucunda* occasionally blown over from Socotra, where the latter is generally very common.

Remarks: Currently, the taxon is treated as endemic subspecies of Oman and Socotra. It flies extremely fast, similar to other skippers, in relatively low altitude of the mountainous wadis of Northern Oman. In the Arabian Peninsula, the larvae feed on *Acridocarpus orientalis*. Specimens could be most easily observed around the blooming food plants, where they spend hours feeding on nectar, particularly at dusk and at dawn. During the day, male specimens could be seen mud-puddling in wadis, along small creeks. According to the sampled specimens, the imagoes are on the wing between April and July.

Pyrginae Burmeister, 1878
Sarangesa phidyle (Walker, 1870)

Material examined: 1 ex. / OMAN, Gov. Dhofar / 3 km W of Rakhyuth / N16°45.225' E53°23.905' / 36 m wadi / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / 20 km W of Al Mughsayl / N16°50.051' E53°42,552' / 34 m seashore, dry rocky vegetation / 01.11.2018 / leg. L. Ábrahám, S. Ilniczky.

Distribution: The Small Elfin is distributed in most parts of southern and southwestern Africa, in northwestern Africa, and it is also present in drier savannah habitats across sub-Saharan Africa. It reaches the southern part of the Arabian Peninsula (Oman, Yemen) as well.

Remarks: It is obviously the most widely distributed species of the *Sarangesa* genus, also the only that occurs in Arabia. In Oman, it is widespread but quite local in Dhofar, it was found only in the narrow, coastal zone. The larvae feed on different Acanthaceae species (LARSEN & LARSEN 1980). According to the samples collected, the imagos fly during autumn (October-November).

Nymphalidae Rafinesque 1815
Danainae Boisduval, 1833
Danaus chrysippus (Linnaeus, 1758) (Figs. 15-16)

Material examined: 1 ex. / OMAN, Reg. Al Batinah South, Ar Rustaq / N23°24.003' E57°25.517' 339 m, oasis/ 16.04.2008 / leg. S. Ilniczky, S. J. Simonyi; 2 exx. OMAN, Gov. Dhofar, Jabal al Qamar, below Mugurah, N16º45.768' E53º30.661' seashore, 16 m, 15-16.10.2009. leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Jabal al Akhdar, Balad Seet, N23º11.794' E57º23.476' 914 m, rocky gorge below the village, spring, oasis, 17.04.2009 leg. S. Ilniczky, S. J. Simonyi; 18 exx. / OMAN, Gov. Dhofar, / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m, seashore / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 3 exx. / OMAN, Gov. Dhofar / 7 km W of Mirbat / N17°01.578' E54°39.322' / 31 m seashore, sand dunes / 30.04.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési; 14 exx. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Fig. 13: ***Pyrrhiades anchises jucunda*** **(Butler, 1881) male upper side**

Fig. 14: ***Pyrrhiades anchises jucunda*** **(Butler, 1881) male under side**

Fig. 15: ***Danaus chrysippus*** **(Linnaeus, 1758) male upper side**

Fig. 16: ***Danaus chrysippus*** **(Linnaeus, 1758) f.** ***dorippus*** **male upper side**

Distribution: The Plain Tiger or African Monarch butterfly has an enormous distribution range, that covers the Canary Islands, most of the coastal area of the Mediterranean Sea (excluding the Adriatic coastline), most of Africa, certain parts of Arabia, the Middle East, the subtropical and tropical parts of Asia and also Australia.

Remarks: It is a good flier and migrant species, but in Arabia this phenomenon is insignificant. Rather common in Oman, especially around oases. The larval host plants are various Asclepiadaceae, mostly *Calotropis procera* in Oman (LARSEN & LARSEN 1980). The form *dorippus* is sometimes considered a different species (SMITH et al, 2005). It occurs in Oman as well, 16 of the 38 specimens are the representative of this form.

Hypolimnas misippus (Linnaeus, 1764)

Material examined: 1 ex. OMAN, Gov. Dhofar, W of Al Mughsayl, N16º51.824', E53º43.217' 76 m, rocky gorge across the main road, 13.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m, seashore / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky.

Distribution: It is a widespread species, that is distributed in huge territories of tropical and subtropical Africa, Asia and Central-America (LARSEN 2005, WILLIAMS 2019).

Remarks: Although a widespread species, it is not a common butterfly in Oman. The males are unmistakable but the appearance of the females is completely different. As one of the well-known examples of female-limited Batesian mimetic polymorphism, where the different forms of non-toxic female *H. misippus* closely resemble the various forms of the poisonous *Danaus chrysippus* (eg. SMITH 1973, GORDON 1987, KUNTE 2009).

Satyrinae Boisduval, 1833

Hipparchia parisatis (Kollar, 1849) (Figs. 17-18)

Material examined: 1 ex. OMAN, Jabal al Akhdar, Balad Seet, N23º11.794' E57º23.476' 914 m, rocky gorge below the village, spring, oasis, 04.17.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Reg. Al Dakhiliyah / Jabal Shams / N23°15.339' E57°13.092' / 2138 m rocky and bushy vegetation / 05.06.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési; 1 ex. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: It is distributed from Eastern Turkey, through most of the Middle East to Northwestern India and Western China. H. parisatis has an isolated population in the mountainous areas of Northern Oman.

Remarks: Although it has a limited range in Arabia, the species is relatively common on the peninsula. In contrary to most of Omani butterflies, it is single-brooded with the imagos flying in May and June, then, after aestivation, they re-appear also in the autumn (LARSEN & LARSEN 1980). The larval host plants could be different Poaceae.

Ypthima asterope (Klug, 1832)

Material examined: 1 ex. OMAN, Jabal al Akhdar, 2 km W of Al Ulya, N23º11.287' E57º35.536', rocky wadi, 04.16.2008 leg. S. Ilniczky, S. J. Simonyi; 2 exx. /Oman, Gov. Dhofar / N of Mirbat, N17º01.518' E54º47.723' 59 m 15-24.04.2008 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Gov. Dhofar, Jabal al Quamar / below Mugurah, 42 m, seashore / N16°45.550' E53°30.811' /07.09.2010 / leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar / Jabal al Qara W of Al Mughsayl / N16º50.535' E53º43.349' 50 m, grassy foothill, 30.10.2018 leg. L. Ábrahám, S. Ilniczky, S. J. Simonyi, 10 exx. / OMAN, Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / dry forest 02.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési; 1 ex. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Fig. 17: ***Hipparchia parisatis*** **(Kollar, 1849) male upper side**

Fig. 18: ***Hipparchia parisatis*** **(Kollar, 1849) male under side**

Distribution: *Y. asterope* occurs mainly in Africa, the Middle East, and Arabia. In the Mediterranean, it is also found along the southern Turkish coast, in some islands of the East Egean (northwards to Samos Island) and in Cyprus (TSHIKOLOVETS 2011). It can be found in all parts of Oman.

Remarks: This species is widespread and common in most parts of Oman, especially in the Dhofar Region. The host plants of this small Satyridae butterfly are various Poaceae, such as *Poa annua* (TSHIKOLOVETS 2011).

Charaxinae Guenée, 1865

Charaxes hansali arabica Riley, 1931 (Figs. 18-19)

Material examined: 2 exx. OMAN, Gov. Dhofar, Jabal al Qamar, near Mugurah, N16º47.463' E53º28.364' 896 m, forested hillside, 22.04.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, Wadi Darbat, N17º05.152' E54º26.815' 190 m, bushy pasture, 11.07.2010 leg. S. Ilniczky, S. J. Simonyi; 9 exx. OMAN, Gov. Dhofar / 8 km S of Mugurah / N16°46.246' E53°28.488' / 480 m dry forested area / 29.04.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The nominate subspecies is endemic to the Horn of Africa (Ethiopia, Somalia), while further subspecies are found in other arid areas in East Africa. In the Arabian Peninsula, two subspecies occur with allopatric distribution: *C. hansali arabica* and *C. h. yemeni* Turlin, 1998, with the latter being endemic to Yemen (WILLIAMS 2019).

Remarks: Altogether 186 *Charaxes* Ochsenheimer, 1816 species are known to occur in the Afrotropical region with many similar species in various species groups. *C. hansali arabica* occurs only in Dhofar, where it is moderately common in suitable habitats: foothill savannah and scrubland. The possible host plant of this remarkable butterfly is *Salvadora persica*.

Charaxes varanes bertrami (Riley, 1931)

Material examined: 2 exx. / OMAN, Gov. Dhofar, Jabal al Qamar, below Mugurah, N16º45.950' E53º30.811' 42 m, seashore with spring and grove, 07.09.2010 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Gov. Dhofar / 3 km W of Rakhyuth / N16°45.225' 53°23.905' / 36 m wadi / 2018.10.31. / leg. L. Ábrahám, S. Ilniczky.

Distribution: The nominate subspecies is confined to Southern Africa, while the distribution of ssp. *vologeses* covers almost the rest of mainland sub-Saharan Africa (WILLIAMS 2019). It is among the most widespread *Charaxes* species. *C. varanes bertrami*, occurring only in Dhofar, was the only population known from Arabia for a very long time, but another population was found in Yemen, which is considered to belong to *C. varanes vologeses* (LARSEN 1982).

Remarks: It is a quite common butterfly in the woodlands and the coastal wadis there. Both *C. hansali arabica* and *C. varanes bertrami* are attracted to rotten-fermented fruit and dung.

Nymphalinae Rafinesque, 1815

Junonia hierta cebrene (Trimen, 1870)

Material examined: 1 ex. / OMAN, Gov. Dhofar, Jabal al Qamar / seashore below Mugurah, 42 m / N16°45.550' E53°30.811' / 09.07.2010 / leg. S. Ilniczky, S. J. Simonyi; 3 exx. / OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl / N16º51.243' E53º43.149' 496 m, grassy hillside / 10.07.2009 / leg. S. Ilniczky, S. J. Simonyi; 2 exx. / OMAN, Gov. Dhofar / 3 km N of Quiroon Hairitti / N17°16.362' E54°04.949' 813 m dry

Fig. 18: ***Charaxes hansali arabica*** **Riley, 1931 male upper side**

Fig. 20: ***Charaxes hansali arabica*** **Riley, 1931 male under side**

grassland / 28.10.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / 3 km W of Rakhyuth / N16°45.225' E53°23.905' / 36 m wadi / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / 386 m dry forest / 01.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési; 1 ex. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The subspecies *cebrene* (Trimen, 1870) occurs in all over sub-Saharan Africa, north to Lebanon and the Arabian Peninsula. The nominate subspecies is distributed in the tropical and subtropical areas of Asia, eastward to Indo-China. The African subspecies is common in most of Oman, except the north, where it is quite local and rare.

Remarks: Both *Junonia hierta cebrene* and the following species *J. orithya here* species share similar habitats, biology, and behaviour. They usually fly close to the ground, often land on leaves, bushes and even on bare ground to sunbathe, they are attracted to flowers. Males of both species are often seen protecting their territories in open areas but not usually in hilltop position. They also express similar courtship and mating flight, flying very high and rapidly in a spiral line (LARSEN & LARSEN 1980). Both have a migratory habit (LARSEN 2005) or they rather extend their breeding range temporarily into wetter tropical areas during the dry season (Sáfián pers. obs.). The main host plants of *J. hierta cebrene* are *Asteracantha* and *Barleria* species (LARSEN & LARSEN 1980).

Junonia orithya here Lang, 1884

Material examined: 2 exx. OMAN, Gov. Dhofar, Jabal al Qamar, E of Mugurah, N16º45.768' E53º30.661' 16 m, seashore,15-16.10.2009 leg. S. Ilniczky, S. J. Simonyi; 2 exx. OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl N16º51.243' E53º43.149' 496 m 07.07.2010 leg. S. J. Simonyi, S. Ilniczky; 2 exx. / OMAN, Gov. Dhofar / 3 km N of Quiroon Hairitti / N17°16.362' E54°04.949' 813 m dry grassland / 28.10.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / 7 km W of Mirbat / N17°01.578' E54°39.322' / 31 m seeshore, sand dunes / 03.11.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Al Dakhiliyah / Misfah, Jabal Shams / N23°14.154' E57°08.987' / 1400 m rocky wadi / 05.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The nominate subspecies spread from the Middle East to India, across Southeast Asia to North Australia. *J. orithya* ssp. *madagascariensis* Guenée, 1865 is distributed widely in sub-Saharan Africa and Madagascar. It is one of the few species, which is distributed in almost the whole Arabian Peninsula, including Oman (POLAK & VEROVNIK 2009).

Remarks: On the species' behaviour see notes above in J. hierta cebrene. The host plants of *J. orithya* in Asia are *Barleria* and *Justicia* species, also *Blepharis ciliaris*, *Lippia nodiflora, Convulvulus arvensis* (TSHIKOLOVETS 2011). In Africa larvae of ssp. *madagascariensis* feed on various Convolvulaceae, Scrophulariaceae and Acanthaceae (LARSEN 1991, 2005), no specific information is known for the Arabian subspecies.

Melitaea deserticola Oberthür, 1909

Material examined: 3 exx. / OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl N16º51.243' E53º43.149' 496 m, grassy hillside with shrubs 13.10.2009 leg. S Ilniczky, S. J. Simonyi.

Distribution: This species occurs in Northern Africa (from Morocco to Lybia), certain parts of the Middle East and the Arabian Peninsula. In Oman, it is restricted to Dhofar.

Remarks: In Dhofar, it is local, not so common. The host plants are probably *Kickxia* species (LARSEN & LARSEN 1980). The taxonomy status of this species is rather problematic. The populations in the Middle East and Arabia are considered a different subspecies, *M. deserticola macromaculata* Belter, 1934 but even the Omani and Yemeni populations are sometimes also reckoned to belong to other subspecies, *M. deserticola scotti* Higgins, 1941. To make the case even interesting, the southwestern Arabian populations were thought to belong to *M. abyssinica* Oberthür 1909 for a long time (LARSEN & LARSEN 1980, LARSEN 1982).

Vanessa cardui (Linnaeus, 1758)

Material examined: 3 exx. / OMAN, Reg. Al Dakhiliyah / Misfah, Jabal Shams / N23°14.154' E57°08.987' / 1400 m rocky wadi / 05.05.2019. / leg. L. Ábrahám, S. Ilniczky, G. Körtési; 2 exx. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The Painted Lady is a cosmopolitan butterfly. It is one of the most widespread insects of the world: it ranges all continent, excepting Antarctica, though it is very limited in Australia (only the southwestern coastal area) and South-America (only in Venezuela) (TSHIKOLOVETS 2011). It is a great flier and an exceptional migrant species, that can reach enormous territories of the world. Although, in Europe, it can breed and survive the winter only in the Mediterranean Region and North Africa, where the butterflies populate the continent every year. In the Arabian Peninsula, the case is exactly the opposite: they can breed permanently only in the more temperate areas. In Oman, it is a rather scarce butterfly, but the abundance of it strongly depends on the weather conditions and the migration waves.

Remarks: The larvae feed on different *Carduus, Cirsium, Urtica*, and *Malvae* species, depending on the territory, in Oman, mostly *Carduus* and *Malvae* (LARSEN & LARSEN 1980).

Biblidinae Boisduval, 1833

Byblia ilithyia (Drury, 1773) (Figs. 20-21)

Material examined: 1 ex. / OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl, N16º51.824' E53º43.217' 76 m 13.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl, N16º51.243' E53º43.149' 496 m, grassy escarpment with many shrubs above the high road, 13.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl, N16º50.450' E53º41.648' 644 m, grassy hillside, 07.07.2010 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Gov. Dhofar, Jabal al Qamar / seashore below Mugurah, 42 m / N16°45.550' E53°30.811' / 09.07.2010 / leg. S. Ilniczky, S. J. Simonyi; 2 exx. / OMAN, Gov. Dhofar / 11 km W of Al Mughsayl / N16º50.535' E53º43.349' 50 m, foothill, bushy / 29.10.2018 / leg. L. Ábrahám, S. Ilniczky, S. J. Simonyi; 3 exx. / OMAN, Gov. Dhofar / 3 km W of Rakhyuth / N16°45.225' E53°23.905' / 36 m, wadi / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / 18 km from roadside between Sadah and Mirbat / N17°9.542' E54°52.774' / 529 m dry rocky vegetation / 02.11.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / 386 m dry forest / 01.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The Joker occurs in dry habitats of sub-Saharan Africa, in southwestern Arabia, and also in the western part of India, including Sri Lanka. A closely related taxon, *B. anvatara acheloia* (Wallengren, 1857) can be found also in Arabia, but it was recorded only in Yemen and Saudi Arabia (south-west) (LARSEN 1982). *B. ilithyia* has stable populations in Dhofar, but seems to be absent in other regions of Oman.

Fig. 21: ***Byblia ilithyia*** **(Drury, 1773) female upper side**

Fig. 22: ***Byblia ilithyia*** **(Drury, 1773) female under side**

Remarks: In Dhofar, *B. ilithyia* is a rather common species. The larvae of the species probably feed on various Euphorbiaceae (WILLIAMS 2019).

Pieridae Swainson, 1820
Coliadinae Swainson, 1821
Eurema hecabe solifera (Butler, 1875) (Fig. 23)

Material examined: 1 ex. OMAN, Reg, Al Batinah South, Ar Rustaq, N23º24.003' E57º25.517' 339 m, 04.16.2008 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, Jabal al Qamar, E of Mugurah, N16º45.768' E53º30.661' seashore, 16 m 16.10.2009 leg. S. J. Ilniczky, S. J. Simonyi; 2 exx. OMAN, Gov. Dhofar, Jabal al Quamar below Mugurah, N16°45.550' E53°30.811' seashore, 42 m, 09.07.2010 leg. S. J. Simonyi, S. Ilniczky; 21 exx. / OMAN, Gov. Dhofar, / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m, seashore / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 2 exx. OMAN, Gov. Dhofar, Rakhyut, wadi N16º45.225', E53º23.905' 36 m leg. L. Ábrahám. S. Ilniczky, S. J. Simonyi.

Distribution: The nominate subspecies is Asian, while ssp. *solifera* (Butler, 1875) ranges across Africa, south of the Sahara, also in certain areas of the Arabian Peninsula: mostly southern and southwestern coastal territories. In Oman, it is limited to the Dhofar Region.

Remarks: In Dhofar, the species is quite local. It prefers wet and moist habitats, coastal wadis, scarps. Although it is a weak and fluttering flier, sometimes specimens migrate significant distances. The host plants are Leguminosae, *Hypericum* and *Cassia* species (LARSEN 1991, 2005).

Fig. 23: *Eurema hecabe solifera* (Butler, 1875) male upper side

Catopsilia florella (Fabricius, 1775)

Material examined: 1 ex. OMAN, Gov. Dhofar, Jabal al Qamar, seashore below Mugurah, N16º45.768' E53º30.461' 16 m, 16.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. Reg. Al Batinah South, Hubrah, N23º36.097' E57º50.252' 172 m, oasis, 17.07.2010 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Gov. Dhofar / 3 km W of Rakhyuth / N16°45.225' E53°23.905' / 36 m wadi / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 4 exx. / OMAN, Gov. Dhofar / 18 km of roadside between Sadah and Mirbat / N17°9.542' E54°52.774' / 529 m dry rocky vegetation / 02.11.2018 / leg. L. Ábrahám, S. Ilniczky; 2 exx. / OMAN, Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / 386 m dry forest / 01.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The African Migrant is one of the most commonly encountered butterflies on the African continent, although only migrants reach north to the Sahara. It is distributed most part of this continent, also the Arabian Peninsula and certain parts of India and China. The Asian records probably refer to the very similar and hardly distinguishable relative species *C. pyranthe* (Linnaeus, 1758). During the last decades, *C. florella* became established in Madeira and also in the Canary Islands (AGUIAR & WAKEHAM-DAWSON 2001). In Oman, it is a moderately common, but permanent species.

Remarks: The larval food plants are variously cultivated and wild *Cassia* species (TSHIKOLOVETS 2011).

Pierinae Swainson, 1820

Nepheronia buquetii buchanani (Rothschild, 1921)

Material examined: 1 ex. OMAN, Gov. Dhofar, Jabal al Qamar, S of Mugurah N16º45.768' E53º30.663', seashore, 16.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Gov. Dhofar, / 8 km S of Mugurah / N16°45.858' E53°28.547' / 475m dry, forested area / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 2 exx. / OMAN, Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / 386 m dry forest / 01.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Taxonomic note: Larsen doubts the validity of the subspecies *buchanani*, but he did not formally invalidate it (LARSEN 2005).

Distribution: The global distribution of this species covers most arid areas of sub-Saharan Africa. It occurs also in the southwestern part of the Arabian Peninsula, including the Dhofar Region (POLAK & VEROVNIK 2009). It was not found in other parts of Oman so far.

Remarks: *N. buquetii* is an incredibly fast flier. In-flight, it is nearly impossible to distinguish from the slightly larger males of *Catopsilia florella*. Rather common in Dhofar, where its larval host plant is *Salvadora persica* and other Salvadoraceae and Capparaceae (WILLIAMS 2019).

Colotis antevippe zera (Lucas, 1852)

Material examined: 1 ex. OMAN Prov. Dhofar,Mughsayl N26°50.969' E53°02.569' 110m foothill, bushy 27.04.2019 leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The nominate subspecies is West African, occurring between Mauritania ad Northern Cameroon. Subspecies *gavisa* (Wallengren, 1857) is distributed from South Africa to Central Tanzania. Subspecies *zera* (Lucas, 1852) is found from Northern Tanzania, across Kenya, Uganda and Sudan to the Horn of Africa and also to Southern Arabia (LARSEN 2005, WILLIAMS 2019).

Remarks: It belongs to the scarcer *Colotis* species. In Oman, it is restricted to the Dhofar Region, but it also flies in certain parts of Yemen. The larval food plants are unknown in Dhofar, through they feed on various Capparidaceae in Africa (LARSEN & LARSEN 1980).

Colotis calais (Cramer, 1775)

Material examined: 3 exx. OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl, N16º51.243' E53º43.149' 496 m, grassy escarpment with many shrubs above the high road, 13.10.2009 leg. S. Ilniczky, S. J. Simonyi; 11 exx. / OMAN, Gov. Dhofar / 3 km W of Rakhyuth / N16°45.225' E53°23.905' / 36 m wadi / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 9 exx. / OMAN, Gov. Dhofar, / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m, seashore / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 9 exx. / OMAN, Gov. Dhofar / 20 km W of Al Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry rocky vegetation with shrubs/ 01.11.2018 / leg. L. Ábrahám, S. Ilniczky, S. J. Simonyi.

Taxonomic note: *C. calais* was treated for a long time as the Afrotropical subspecies of *C. amata* (Fabricius 1775), but according to NAZARI et al. (2011), the two are not conspecific, *C. amata* being purely Asian, and the subspecies *calais* became the valid specific name of the African taxon.

Distribution: The Small Salmon Arab is distributed from South Africa through the eastern part of the continent along the northern Sahel zone to Mauritania and also the Arabian Peninsula.

Remarks: It is a common butterfly in the Dhofar Region and occurs, but much scarcer in the northern areas of Oman. It inhabits open dry savannahs and arid shrubby areas. The larval food plant is *Salvadora persica* and Capparaceae species (WILLIAMS 2019). In suitable habitats, it can be found in vast numbers (LARSEN & LARSEN 1980).

Colotis danae eupompe (Klug, 1829)

Material examined: 6 exx. OMAN, Gov. Dhofar, Jabal al Qamar, below Mugurah, N16º45.950' E53º30.811' 42 m, seashore with spring and grove, 09.07.2010 leg. S. Ilniczky, S. J. Simonyi; 3 exx. / OMAN, Gov. Dhofar, / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m, seashore / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / 386 m dry forest / 01.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The nominate subspecies is Asian, while subspecies *eupompe* (Klug, 1829) ranges from Mauritania, through the sub-Saharan Sahel and Sudan savannah zone to the Horn of Africa and Arabia (LARSEN 2005, WILLIAMS 2019). A few isolated populations occur also in Egypt and Jordan. It is widespread and rather common in Dhofar, but very local in Northern Oman.

Remarks: Habitats of this species include sparse dry woodlands, forest edges, savannah, open grasslands and even semi-desert (WILLIAMS 1973). The main host plants are *Cadaba* and *Capparis* species (TSHIKOLOVETS 2011, WILLIAMS 1973) and also *Boscia senegalensis* (LARSEN 2005).

Colotis daira daira (Klug, [1829])

Material examined: 1 ex. OMAN, Dhofar, Jabal al Qamar, below Mugurah, N16º45.950' E 53º30.811' 42 m, seashore with spring and grove, 09.07.2010 leg. S. J. Simonyi, S. Ilniczky.

Distribution: The nominate subspecies is confined to the southern and western parts of the Arabian Peninsula while other subspecies are distributed in the northern dry zone of sub-Saharan Africa and in the Horn of Africa to Northern Kenya (WILLIAMS 2019).

Remarks: In Dhofar, it obviously belongs to the scarcer *Colotis* species (BALLETTO & LARSEN 1985). The main larval host plants are most likely *Cadaba* species (LARSEN & LARSEN 1980).

Colotis evarne (Klug, [1829])

Material examined: 3 exx. OMAN, Dhofar, Jabal al Qamar, below Mugurah, N16º45.950' E53º30.811' 42 m, seashore with spring and grove, 09.07.2010 leg. S. J. Simonyi, S. Ilniczky; 1 ex. 11 km W of Al Mughsayl / N16º50.535' E53º43.349' 50 m, foothill, bushy / 29.10.2018 / leg. L. Ábrahám, S. Ilniczky; 3 exx. / OMAN Prov. Dhofar, / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m seashore / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 14 exx. / OMAN Prov. Dhofar / 20 km W of Al Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry rocky vegetation / 01.11.2018 / leg. L. Ábrahám, S. Ilniczky.

Taxonomic note: *C. evarne* (Klug, [1829]) was previously listed as a subspecies of *C. eucharis* (Fabricius, 1775). However, the latter is an Asian species and *C. evarne* was listed as a valid species in NAZIRI et al. (2011).

Distribution: *C. evarne* is distributed widely in the northern dry zone of sub-Saharan Africa between Mauritania and Tanzania, it also reaches Southern Arabia in the north-east. In Oman, the species can be found commonly in Dhofar, only a few specimens are known from the northern part of the country.

Remarks: In Dhofar, it is rather common around *Cadaba* bushes, the main host plant of this species (LARSEN & LARSEN 1980, LARSEN 1991). They prefer bushy and open, dry areas.

Colotis fausta vi (Swinhoe, 1884) (Fig. 24)

Material examined: 1 ex. / OMAN, Gov. Dhofar / 20 km W of Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry rocky vegetation / 01.11.2018 / leg. Ábrahám L. S. Ilniczky, S. J. Simonyi; 2 exx. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: Currently the populations in the southern Arabian Peninsula are recognized as subspecies *vi* (Swinhoe, 1884), while the nominate form flies Israel via Syria to Afganistan and India, but WILLIAMS (2019) lists also from Chad, which is highly improbable, given its biogeographic distinction and LARSEN (2005) also does not list the species from West Africa. The subspecies *mijurtenia* Carpenter, 1951 is known to occur only in the Horn of Africa (WILLIAMS 2019). In Oman, it is a scarce and rarely seen species.

Remarks: The larval host plants are like in other *Colotis* species: *Capparis* species, mostly *C. spinosa* and *C. mucronifolia* in Arabia (LARSEN & LARSEN 1980).

Colotis halimede (Klug, [1829]) (Fig. 25)

Material examined: 6 exx. / OMAN, Gov. Dhofar, W of Al Mughsayl, N16º51.824', E53º43.217' 76 m, rocky gorge across the main road,13.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, Jabal Samhan, Wadi Shaboun, N17º3.283' E54º3.678' 389 m, rocky forest, 13.07.2010 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Gov. Dhofar / 20 km W of Al Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry rocky vegetation / 01.11.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / 18 km from roadside between Sadah and Mirbat / N17°9.542' E54°52.774' / 529 m dry rocky vegetation / 02.11.2018 / leg. L. Ábrahám, Ilniczky S.

Distribution: The distribution of this species covers the northern dry savannah and Sahel zone in sub-Saharan Africa from Senegal, across Central Africa to the southwest-

Fig. 24: ***Colotis fausta vi*** **(Swinhoe, 1884) male upper side**

Fig. 25: ***Colotis halimede*** **(Klug, [1829]) male upper side**

ern part of Arabia. It occurs in distinct populations in Kenya (ssp. *restricta* Talbot, 1939) and Tanzania (*australis* Talbot, 1939). In Oman, *C. halimede* is limited to the Dhofar region.

Remarks: It prefers dry savannah habitats, but in Dhofar they can be found mostly in the wadis, where it is moderately common. These populations were discovered only in 1977 (LARSEN & LARSEN 1980). The larval host plants are *Cadaba* species (LARSEN 2005).

Colotis liagore (Klug, 1829)

Material examined: 2 exx. / OMAN, Reg. Ad Dakhiliya, E of Al Hamra, N23º03.978', N57º22.687', 653 m, roadside, 28.04.2008 / leg. S. J. Simonyi, S. Ilniczky; 3 exx. / OMAN, Reg. Ad Dakhiliya, 2 km W of Al Hamra / N23°07.927' E57°25.020' stony pasture (almost without grasses) 28.04.2008 leg. S. J. Simonyi, S. Ilniczky; 6 exx. OMAN, Reg. Al Batinah South, Ar Rustaq, N23º24.003' E57º25.517' oasis, 339 m, 16.04.2009 leg. S. J. Simonyi, S. Ilniczky; 6 exx. / OMAN, Reg.. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: In sub-Saharan Africa, *C. liagore* is distributed in the Sahel zone between Mauritania and Somalia. It occurs also in the Arabian Peninsula reaching in Pakistan (Balochistan) as its eastern limits (LARSEN 2005). It is also found in North Africa with records in Algeria (TENNENT 1996) and Morocco (VEROVNIK et al. 2018). In Oman, it can be found in Northern Oman and in Dhofar.

Remarks: In Northern Oman, the Desert Orange Tip is a relatively common species. It was first reported from Dhofar by POLAK & VEROVNIK (2009). The larval host plants in Oman are *Maerua crassifolia* and *Capparis cartilaginea* (LARSEN & LARSEN 1980, LARSEN 1982).

Colotis phisadia (Godart, 1819)

Material examined: 11 exx. / OMAN, Reg. Ad Dakhiliya, E of Al Hamra / N23°03.978' E57°22.687' 653 m, bushy along the road, 28.04.2008 / leg. S. Ilnitzky, S. J. Simonyi; 1 ex. / OMAN, Reg. Al Batinah South, Nakhl oasis, N23º25.151' E57º49.244' 244 m, 11.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Gov. Dhofar, Jabal al Qara, / 20 km W of Al Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry rocky vegetation with shrubs/ 01.11.2018 / leg. L. Ábrahám, S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The species is distributed across the sub-Saharan Sahel zone between Mauritania and Ethiopia through the Arabian Peninsula to the driest, the northernmost part of India (LARSEN 2005). In the north, it reaches also the Sinai Peninsula and Egypt.

Remarks: It is a common butterfly in the Dhofar region and also in Northern Oman. It inhabits open dry savannah and arid bushy areas and is an occasional migrant (LARSEN & NAKAMURA 1983). The larval food plant is *Salvadora persica* (TSHIKOLOVETS 2011).

Fig. 26: *Teracolus eris contractus* (Gabriel, 1954) male upper side

Teracolus eris contractus (Gabriel, 1954) (Fig. 26)

Material examined: 1 ex. / OMAN Prov. Dhofar / 20 km W of Al Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry rocky vegetation / 01.11.2018 / leg. L. Ábrahám, S. Ilniczky; 5 exx. OMAN, Dhofar, Jabal Samhan, N17º9.542' E54º52.774' 529 m, dry, rocky hillside 03.11.2018 leg. S. J. Simonyi, S. Ilniczky; 8 exx. / OMAN Prov. Dhofar / 18 km from roadside between Sadah and Mirbat / N17°9.542' E54°52.774' / 529 m dry rocky vegetation / 02.11.2018 / leg. L. Ábrahám, S. Ilniczky.

Taxonomic note: The species was published under various generic names, described in *Pontia* Fabricius, 1807 (Klug, [1829-45]), but was most often referred to as a species of *Colotis* (incl. LARSEN 1985), until NAZARI et al. 2011. have moved a small group of fast-flying species with distinctively acute forewing apex to *Teracolus* Swainson, [1833], based on molecular evidence.

Distribution: T. eris eris occurs throughout the sub-Saharan savannah zone, south to South Africa (LARSEN 2005). The subspecies *contractus* (Gabriel, 1954) is endemic to Yemen and Oman. In Oman, it can be found only in the Dhofar Region.

Remarks: The distribution of the Banded Gold Tip reaches its northern edge in Dhofar, Oman. Here, it is local and rather scarce. The populations are limited to the localities, where the host plant, *Boscia* species can be found (LARSEN & LARSEN 1980).

Pinacopteryx eripha tritogenia (Klug, [1829]) Fig. 27)

Material examined: 2 exx. OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl, N16º51.243' E53º43.149' 496 m, grassy escarpment, 13.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Dhofar, Jabal Samhan, N17º3.83' E54º38.78' 389 m, dry, rocky hillside and valley 13.07.2010 leg. S. Ilniczky, S. J. Simonyi; 5 exx. /

Fig. 27: *Pinacopteryx eripha tritogenia* (Klug, [1829]) male upper side

OMAN, Gov. Dhofar, Jabal al Qamar / 3 km W of Rakhyuth / N16°45.225' E53°23.905' / 36 m wadi / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky S. J. Simonyi; 3 exx. / OMAN, Gov. Dhofar, Jabal al Qara, / 20 km W of Al Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry rocky vegetation / 01.11.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar, Jabal Samhan, / 18 km of roadside between Sadah and Mirbat / N17°9.542' E54°52.774' / 529 m dry rocky vegetation / 2018.11.02. / leg. L. Ábrahám, S. Ilniczky.

Distribution: The nominate subspecies occurs in Southern Africa, ssp. *tritogenia* is distributed across the sub-Saharan arid zone from Mauritania to northern Ethiopia and the southern part of Arabia. Other subspecies are found in East Africa and Madagascar (WILLIAMS 2019). In Oman, it is limited only to the Dhofar Region.

Remarks: It is a very variable species, with different seasonal, geographical and sexual variations. In Dhofar, it was discovered only in the middle of the 20th century, and quite a few populations are known so far (LARSEN & LARSEN 1980). The main host plants are various species of Capparaceae: *Maerua, Cadaba* and *Boscia* species (WILLIAMS 2019).

Belenois aurota (Fabricius, 1793)

Material examined: 1 ex. OMAN, Jabal al Akhdar, Birkat Al Sharaf, 2000 m, N23º11.933' E57 20.394', 23.04.2008 leg. S. Ilniczky, S. J. Simonyi; 3 exx. OMAN, Reg. Ad Dakhiliyah, near Al Hamra N23º3.978' E57º22.687' 653 m, 18.04.2008 leg. S. Ilniczky, S. J. Simonyi; 6 exx. OMAN, Reg, Ad Dakhiliyah, near Al Hamra, N23º3.978' E57º22.687' 653 m 28.04.2008 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl, N16º51.243' E53º43.149' 496 m, 16.10.2009 leg. S. Ilniczky, S. J. Simonyi; 2 exx. OMAN, Gov. Dhofar, Jabal al Qamar, seashore E of Mugurah, 16 m N16°45.768', E53°30.661' 15-16.10.2009 leg. S. J. Simonyi, S. Ilniczky; 1 ex. OMAN, Gov. Dhofar Jabal al Qara, W of Al Mughsayl, N16º51.243' E53º43.149' 496 m, 07.07.2010 leg. S. J. Simonyi, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m, seashore / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 8

exx. / OMAN, Gov. Dhofar / 3 km W of Rakhyuth / N16°45.225' E53°23.905' / 36 m wadi / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 6 exx. / OMAN, Gov. Dhofar / 18 km of roadside between Sadah and Mirbat / N17°9.542' E54°52.774' / 529 m dry rocky vegetation / 02.11.2018 / leg. L. Ábrahám, S. Ilniczky; 11 exx. / OMAN, Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / dry forest / 02.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési; 35 exx. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési; 6 exx. / OMAN, Reg. Al Dakhiliyah / Jabal Shams / N23°15.339' E57°13.092' / 2138 m rocky and bushy vegetation / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The Brown-veined or Caper White is distributed throughout tropical Africa, Arabia, the Near and the Middle East to the Indian subcontinent and is a regular migrant (WILLIAMS 2019). In Oman, *B. aurota* has permanent populations, but immigrants from mainland Africa also regularly reach the Arabian Peninsula and interbreed with the locally bred butterflies (LARSEN & LARSEN 1980).

Remarks: The wet-season form of this species has stronger black markings along the veins and vivid creamy yellow ground colour on the underside of the hindwing. It is a great flier and a regular migrant. During migrations, specimens can reach as far north as Malta (TSHIKOLOVETS 2011). The larvae feed on different species of *Boscia, Capparis* and *Maerua* genus (WILLIAM 2019).

Pontia glauconome (Klug, 1829)

Material examined: 2 exx. / OMAN, Gov. Dhofar / 3 km N of Quiroon Hairitti / N17°16.362' E54°04.949' 813 m, dry grassland / 28.10.2018 / leg. L. Ábrahám, S. Ilniczky, S. J. Simonyi; 9 exx. / OMAN Prov. Dhofar, / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m, seashore / 31.10.2018 / leg. L. Ábrahám, S. J. Simonyi, S. Ilniczky; 1 ex. / OMAN Prov. Dhofar / 7 km W of Mirbat / N17°01.578' E54°39.322' / 31 m seashore, sand dunes / 30.04.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The global distribution of this species covers the desert and semi-desert areas of North Africa, across the Middle East and the Arabian Peninsula, east to Pakistan and Tajikistan. The Desert White is a rather common butterfly across all parts of Oman.

Remarks: The larval host plants are various *Reseda* and *Ochradenus* species. The pupas of this species are able to survive the extreme weather condition even in the worse years. They can stay in this status for several years, waiting for the right conditions to hatch (LARSEN & LARSEN 1980). This species is probably a vicariant of the closely related *P. daplidice*, which colonises the more temperate habitats, and only occasionally co-occur in the same biotopes (LARSEN 1982).

Lycaenidae Leach, 1815
Aphnaeinae Distant, 1884
Axiocerces harpax kadugli (Talbot, 1935)

Material examined: 1 ex. / OMAN, Gov. Dhofar, / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m, seashore / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky.

Taxonomic note: ssp. *kadugli* (Talbot, 1935) could be considered as an extreme dry area ecological form of *A. harpax* distributed in the northern Sahel zone across the continent, rather than a subspecies (LARSEN 2005), but it was not formally invalidated.

Distribution: The nominate subspecies is distributed in large territories of the northern savannah zone of Western Africa, with further subspecies in Central and Eastern Africa.

It also penetrates into the Guinea-Congolian forest zone. In Oman, ssp. *kadugli* occurs in the Dhofar Region, where it is moderately common, though it was discovered only in 1977 (LARSEN 1977).

Remarks: The main host plants of the Common Scarlet are *Acacia* species (LARSEN & LARSEN 1980).

Cigaritis acamas (Klug, 1834)

Material examined: 1 ex. / OMAN, Al Batinah South, Ar Rustaq / N23°24.003' E57°25.517' 339 m, oasis/ 16.04.2008 / leg. S. Ilniczky, S. J. Simonyi.

Taxonomic note: In many publications, the species appears in the genus *Apharitis* Riley, 1925, however, the genus was first synonymized with *Spindasis* Wallengren, 1857 (HEATH 1997), which was later synonymized with *Cigaritis* Donzel, 1848 (HEATH et al. 2002)

Distribution: Its distribution range covers the Central Sahara Region, in the north it reaches South Algeria, South Lybia, most of coastal parts of the Middle East, South Turkey, Cyprus, the Arabian Peninsula and Pakistan in the east (TSHIKOLOVETS 2011). In Oman, it was found only in a few locations.

Remarks: It is a rare and local butterfly in Oman.

Polyommatinae Swainson, 1827

Anthene amarah (Guérin-Méneville, 1847)

Material examined: 1 ex. / OMAN, Gov. Dhofar / 3 km W of Rakhyuth / N16°45.225' E53°23.905' / 36 m wadi / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky.

Distribution: It occurs in certain areas of the Middle East (coastal parts of Red and Dead Sea), across most of Arabia, also across sub-Saharan Africa. It is widespread in Oman, but much more common in Dhofar, than other regions of the country.

Remarks: It is the most widespread species of its genus, that ranges up to almost the Mediterranean Sea, also the only *Anthene* species found in Oman so far. The main host plants of this butterfly are *Acacia* (primarily *A. tortilis* in Oman) and *Citrus* species (TSHIKOLOVETS 2011). Like many other Lyceanidae species, *A. amarah* is associated with ants (MILTON 1990).

***Chilades trochylu*s** (Freyer, 1845)

Material examined: 3 exx. / OMAN, Region Al Batinah, N of Hubrah, N23º29.005' E57º49.988' 194 m, oasis 11.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. OMAN, Gov. Dhofar, W of Al Mughsayl N16º51.243' E53º43.149' 496 m, grassy hillside 13.10.2009 leg. S. Ilniczky, S. J. Simonyi; 2 exx. OMAN, Gov. Dhofar, W of Al Mughsayl N16º51.243' E53º43.149' 496 m, grassy hillside 06.07.2010 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Gov. Dhofar / 3 km W of Rakhyuth / N16°45.225' E53°23.905' / 36 m wadi / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / 20 km W of Al Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry rocky vegetation / 01.11.2018 / leg. L. Ábrahám, S. Ilniczky.

Taxonomic note: The species listed in the genus *Freyeria* Courvosier, 1920 in numerous earlier publications (e.g. LARSEN 1991, ACKERY et al. 1995), however, its status was re-assessed and it was moved into *Chilades* Moore, [1881] by LEES et al. (2003).

Distribution: The Grass Jewel has a wide distribution, contrary to the fact that it is one of the smallest butterflies in the world: most of Africa, excluding north, the Middle East, through Arabia and India to Australia. In Europe, it reaches up north to the Greek islands, to mainland sourthern Greece and Southeastern Bulgaria (Burgas) (TSHIKOLOVETS 2011). It is widespread in Oman as well.

Remarks: It prefers dry stony areas with sparse vegetation, also near cultivated fields. In Arabia, the host plants are *Heliotropium* and *Indigofera*, in Europe mostly *Heliotropium hirsutissimum, Andrachne telephioides* (TSHIKOLOVETS 2011).

Lampides boeticus (Linnaeus, 1767)

Material examined: 3 exx. / OMAN Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / 386 m, dry forest / 01.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: It is distributed in the whole Old World, in the subtropical and tropical zones of Africa, Asia, Indo-China, Australia, also introduced to Hawaii (LOHMAN et al 2008). It has strong migratory tendencies, so it sometimes wanders up from the Mediterranean coast to the line of the southern coasts of the British Isles, to northern France, to Slovakia, and to the South Urals (TSHIKOLOVETS 2011). In Oman, it can be found almost everywhere.

Remarks: It is a rather common species in all parts of Oman. The host plants are different Fabaceae: *Colutea, Crotalaria, Cytisus, Lathyrus* in Europe (TSHIKOLOVETS 2011), mainly *Sesbania, Taverniera* and *Medicago* species in Arabia. The larvae also feed on cultivated pea species, occasionally causing agricultural damages (LARSEN & LARSEN 1980).

Leptotes pirithous (Linnaeus, 1758)

Material examined: 8 exx. / OMAN Reg. Al Batinah South, N of Hubrah N13º29.005' E57º49.988' 194 m, oasis, 11.10.2009 leg. S. Ilniczky, S. J. Simonyi; 2 exx. / OMAN, Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / 386 m dry forest / 01.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: A pan-African migratory species, which could be found in all kinds of habitat across the continent (LARSEN 2005). It is a rare migrant in most of Western and Central Europe, however, permanent and semi-permanent colonies could be found in the Mediterranean coast in Europe and Turkey, distributed across the Middle East, in the Arabian Peninsula to the Indian subcontinent (TSHIKOLOVETS 2011). It was first recorded in 1977 from the Dhofar Region (LARSEN 1977).

Remarks: It is a rather local species in Dhofar. The main hostplants are Leguminosae (*Indigofera, Rynchosia, Vigna, Melilotus*) (LARSEN & LARSEN 1980).

Tarucus rosaceus (Austaut, 1885)

Material examined: 12 exx. Oman, Jabal al Akhdar, Wadi Tanuf, N23º04.564' E57º29.736' 768 m, rocky gorge with sparse grove and shrubs, 29.04.2008 leg. S. Ilniczky, S. J. Simonyi; 2 exx. OMAN, Reg. Al Batinah South, N of Hubrah, N23º29.005' E57º49.988' 194 m, oasis 11.10.2009 leg. S. Ilniczky, S. J. Simonyi; 1 ex. / OMAN, Gov. Dhofar / 18 km from roadside between Sadah and Mirbat / N17°9.542' E54°52.774' / 529 m dry rocky vegetation / 02.11.2018 / leg. L. Ábrahám, S. Ilniczky.

Distribution: Its range covers the northern coastal parts of Africa, also arid areas in the sub-Saharan part of the continent. The butterfly flies also in the Arabian Peninsula, through the Middle East to Pakistan. It can be found throughout Oman.

Remarks: The host plants are different *Zizyphus* species, such as *Z. lotus, Z. spina-christi, Z. jujuba*. Two further *Taurucus* species occurs also in Oman: *T. balkanicus* and *T. theophrastus*, all are closely related and very similar. *T. rosaceus* is a most common one, while *T. theophrastus* is known in a single population from Dhofar (LARSEN & LARSEN 1980).

Zizeeria knysna (Trimen, 1862)

Material examined: 1 ex. / OMAN, Gov. Dhofar / 7 km W of Mirbat / N17°01.578' E54°39.322' / 31 m seashore, sand dunes / 03.11.2018 / leg. L. Ábrahám, S. Ilniczky.

Distribution: A pan-African species, which is present also in Northern Morocco and Northern Algeria, the Canary Islands, also the western part of the Arabian Peninsula. In Europe, it occurs much more sporadically in the southern half of the Iberian Peninsula and was also recorded on some Mediterranean islands (Sicily, Malta, Crete) (TSHIKOLOVETS 2011). In Oman, this species occurs only in Dhofar. In the northern part of the country, an Oriental sister species, *Z. karsandra* (Moore, 1865) replaces *Z. knysna*. So far, the sympatric occurrence was not detected (LARSEN & LARSEN 1980).

Remarks: The adults of this species are fond of lucerne-fields, also habitats with some kind of permanent water (wells, water pipes, drains, etc.). The larvae feed on various *Medicago, Melilotus, Armeria* and Leguminosae species (LARSEN & LARSEN 1980).

Zizula hylax (Fabricius, 1775)

Material examined: 1 ex. / OMAN, Gov. Dhofar / 2 km E of Rakhyuth / N16°44.968' E53°26.256' / 22 m seashore / 31.10.2018 / leg. L. Ábrahám, S. Ilniczky; 2 exx. / OMAN, Gov. Dhofar / 20 km W of Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry rocky vegetation / 01.11.2018 / leg. L. Ábrahám, S. Ilniczky; 1 ex. / OMAN, Gov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / 386 m dry forest / 01.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: It is distributed across sub-Saharan Africa, through Arabia and Asia to eastern and southern Australia. In the Arabian Peninsula, its distribution is limited to the Dhofar region in Oman. It was discovered recently on the island of Socotra in 2013 (FRIC & HULA 2013).

Remarks: According to the literature, *Z. hylax* is a moderately common butterfly in Dhofar. Host plants include various members of the families Oxalidaceae and Acanthaceae (LARSEN & LARSEN 1980).

Azanus jesous (Guérin, 1847)

Material examined: 1 ex. / OMAN, Gov. Dhofar, Jabal al Qara W of Al Mughsayl / N16º51.243' E53º43.149' 496 m, grassy hillside / 20.04.2008 / leg. S. Ilniczky, S. J. Simonyi; 2 exx. / OMAN Prov. Dhofar / Wadi Shaboun / N17°32.83' E54°38.78' / 386 m dry forest / 01.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: It is widespread in the dry tropical African countries, occurring also in Morocco, Cyprus and in Middle East, through Arabia to India and Sri Lanka. The African Babul Blue can be found in all parts of Oman.

Remarks: A rather common species across the country. Two further closely related *Azanus* species also occur in Oman, but they are much scarcer and found only from Dhofar with certainty. All three *Azanus* are found in dry grassy habitats ranging from deserts, savannahs and thorn scrub, to clearings in the drier forests. The larval foodplants are *Acacia* (mostly *A. tortilis* and *A. ehrenhergiana* in Oman) and *Entida* species (LARSEN & LARSEN 1980, TSHIKOLOVETS 2011).

Azanus ubaldus (Stoll, 1782)

Material examined: 3 exx. / OMAN, Gov. Dhofar, Jabal al QaraW of Al Mughsayl / N16º51.243' E53º43.149' 496 m, grassy hillside 06.07.2010 / leg. S. Ilniczky, S. J. Simonyi.

Distribution: It is distributed in the dry tropical parts of Africa, excluding North Africa, including the Eastern Canary Islands, the Middle East, Arabia to India and Sri Lanka. In Oman, so far only populations from Dhofar are known.

Remarks: Habitat use as in A. jesous. The host plants are probably various *Acacia* species, such as *A. etbaica, A. tortilis* and *A. ehrenhergiana* (LARSEN & LARSEN 1980).

Azanus moriqua (Wallengren,1857)

Material examined: 1 ex. / OMAN, Gov. Dhofar, Jabal al Qara, W of Al Mughsayl / N16º51.243' E53º43.149' 496 m, grassy hillside / 20.04.2008 / leg. S. Ilniczky, S. J. Simonyi.

Distribution: *A. moriqua* is widely distributed in the savannah zone of Africa, all the way to South Africa, and it occurs also in the Arabian Peninsula. It is widespread in Yemen, but in Oman, it is known only from Dhofar, by a handful of specimens (LARSEN 1982).

Remarks: It is a very scarce species in Oman. The host plants are rather likely *Acacia* species (LARSEN & LARSEN 1980).

Euchrysops osiris (Hopffer, 1855) (Figs. 28-29)

Material examined: 4 exx. / OMAN, Gov. Dhofar / 20 km W of Al Mughsayl / N16°50.051' E53°42.552' / 34 m seashore, dry, rocky vegetation / 01.11.2018 / leg. L. Ábrahám, S. Ilniczky.

Distribution: The Osiris Smokey Blue occurs in most of the African continent, south of the Sahara, including Madagascar. Its range reaches also the southern part of the Arabian Peninsula and here, the species is restricted to Dhofar in Oman.

Remarks: The host plants are Becium (*B. filamentosum*), *Vigna* and probably *Ocimum* species (LARSEN & LARSEN 1980). The Oriental sister species of this butterfly, *E. cnejus*, was found in Northern Oman in 2019. Oman is the only country, where both of these Oriental and Afrotropical *Euchrysops* species are known to occur (FRIC et al. 2019).

Theclinae Swainson, 1830 (1820)

Deudorix livia (Klug, 1834)

Material examined: 11 exx. OMAN, Jabal al Akhdar, Balad Seet, N23º11.794' E57º23.476', bushy roadside above the village, 03.07.2010 leg. S. Ilniczky, S. J. Simonyi; 2 exx. / OMAN Reg, Al Dakhiliyah / Jabal Shams / N23°15.339' E57°13.092' / 2138 m rocky and bushy vegetation / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Taxonomic note: In 2005, a subspecies, *D. livia barnetti* (Libert, 2005) was described from Jebel Akjdar Mountains, Northern Oman (LIBERT 2005) but the authors could not properly examine the subspecies status of the collected specimens, they are therefore listed collectively under *D. livia*.

Distribution: It is distributed in the northern arid zone of Africa, reaching South Algeria, Egypt, the Middle East, and most Arabia. The species was recorded also from Cyprus, and in mainland Greece in 2004 (MÜLLER et al. 2005). In Oman, it is relatively

Fig. 28: ***Euchrysops osiris*** **(Hopffer, 1855) female upper side**

Fig. 29: ***Euchrysops osiris*** **(Hopffer, 1855) female under side**

Fig. 30: *Myrina silenus* (Fabricius, 1775) male upper side

common in Dhofar, but a specimen was caught in Northern Oman too. The latter might belong to the above mentioned ssp. *barnetti*.

Remarks: It is mentioned as an occasional migrant in LARSEN (1991), this implies that the butterfly can be found in various countries and habitats. In its natural habitats, the main host plants are *Acacia ehrenbergiana, A. farnesiana*, although the larvae can feed on cultivated pomegranate (*Punica granatum*), loguat (*Eriobortya japonica*) and also dates (*Phoenix dactylifera*) (LARSEN & LARSEN 1980).

Myrina silenus (Fabricius, 1775) (Fig. 30)

Material examined: 6 exx. / OMAN, Gov. Dhofar, Wadi Darbat, N17º05.152' E54º16.015' 198m, bushy pasture, 11.07.2010 leg. S. Ilniczky, S. J. Simonyi; 6 exx. / OMAN, Reg. Al Batinah South / Balad Seet / N23°11.794' E57°23.426' / 914 m oasis, spring / 06.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési; 1 ex. OMAN Reg. Al Batinah South / Al Muladdah / N23°42.134' E57°32.503' / 38 m / 07.05.2019 / leg. L. Ábrahám, S. Ilniczky, G. Körtési.

Distribution: The distribution of this unmistakable species consist of most of Africa, south of the Sahara, also the southern part of the Arabian Peninsula. In Oman, it occurs in Dhofar and Northern Oman as well.

Remarks: Hence the host plants of the species are common across Oman, *M. silenus* is a moderately frequent butterfly in the area. The larvae of the Common Fig-tree Blue develop on various *Ficus* species, such as *F. salicifolia, F. carica, F. cordata, F. sur* (LARSEN & LARSEN 1980).

Table 1. Distribution of the faunal elements of the Omani butterflies based on the recent survey

Biogeographic region	Number of species	Percentage (%)
Afrotropic	19	41
Paleartic	15	33
Eremic	8	17
Oriental	3	7
Ubiquitous	1	2
Altogether	**46**	**100%**

During the five insect collecting expeditions in Oman, altogether 485 specimens of 46 butterfly (Diurna) species were collected. The Omani butterfly fauna is considered to be rather species-poor; the first catalogue listed 72 species (LARSEN & LARSEN 1980), since then only two furher species, *Melanitis leda* (Linnaeus, 1758) (COWAN & COWAN 2019) and *Euchrysops cnejus* (Fabricius, 1798) (FRIC et al. 2019) were recorded as new for the country. So, 74 butterfly species are known from Oman so far, however, it further discoveries in the near future are not unlikely. All in all, 62% of the species of the Omani butterfly fauna was collected during the expeditions between 2008 and 2019.

The reason behind the relatively low species-diversity is clear; influenced by the arid climate and homogenous landscape, as the majority of the country is extremely dry, desert territory. Most part of the country is extremely dry, desert territory. Only two areas differ significantly, providing more diverse landscape and habitats, those consist of more varied habitats, thereby suitable for higher species diversity and density. These are the Northern Omani mountain regions (the Al Hajar Mountains), and the southwestern, more humid areas, known as the Dhofar Region (the Qara Mountains) where the majority of collecting also took place.

The biogeographic composition of the species collected corresponds that of LARSEN's (1980, 1984), confirming the dominance of the Afrotropical species in the butterfly fauna of Oman (41%). Most of these species are confined to the southern part of Oman, especially the Dhofar Region. Relatively high proportion of the species is Palaearctic (33%), the majority of them are restricted to the northern part of Oman. The desert-dweller Eremic species (18%) are distributed mostly in the dry, inner territories, and the eastern, Oriental species (7%) also occur mostly in the northern mountainous areas.

The butterfly fauna of Oman is lacking endemic species. Although several subspecies are considered as endemic to the southwestern part of the Arabian Peninsula (eg. *Teracolus eris contractus, Colotis daira daira*), or to Oman (for instance *Pyrrhiades anchises jucunda* (also on the Island of Socotra)), or in a few occasions, restricted to Dhofar Region (eg. *Charaxes hansali arabica* and *Charaxes varanes bertrami*). These taxa are of high biogeographical interest and could be of conservation concern. Besides these, a few other species have to be mentioned, because these have a relatively small or sporadic global distribution (eg. *Melitaea deserticola*) or their populations are strongly isolated (eg. *Hipparchia parisatis*), though these local populations are still not considered to belong to a different subspecies. It would be an urgent task to re-assess the status of most Afrotropical taxa occurring on the Arabian Peninsula and Oman using molecular techniques for the proper conservation assessment of the fauna.

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