FOLIA HISTORICO NATURALIA MUSEI MATRAENSIS
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On the genus *Elma* H. Adams, 1866 (Mollusca, Streptaxiidae)

András Varga

Abstract: The predatory genus *Elma* is comprised of 9 species occurring in Taiwan, mainland China, and northern Vietnam. The present paper provides an assessment of the literature data relevant to these species and the description of a new species, *Elma matskasii* sp. nov., from northern Vietnam (type locality: Lao Cai Province, Co Xan).

Introduction

The species-rich carnivorous family of the Streptaxidae is widely distributed in the tropical regions of Asia and Africa (Thiele, 1931). Species of the endemic genus *Elma* H. Adams, 1866 inhabit limited ranges in Formosa, mainland China and northern Vietnam. Of the nine known taxa of this genus the last one was described from China more than 70 years ago. There is no information on the anatomy of any of the species. In the Mollusca material of the Hungarian Natural History Museum's 1971 Vietnam expedition I found two *Elma* samples, one of which proved to be a new species. The description of this species is appended with a list of the other *Elma* taxa and their known distribution data. To help the identification of the species, a figure combines the illustrations of the original descriptions, showing the depicted shells according to their size proportions.

Based on similarities of shell morphology, early authors have often used the name *Elma* for Streptaxidae species that are now classified with other genera. According to Tryon (1885), the following species belonged to the section *Streptosele (Elma)*: *S. (E.) fastigiata* Morelet, 1848 = *Streptopele fastigiata* (Edlinger, 1988); *S. (E.) incisa* Morelet, 1881 = *Pseudelma* – type species – (Kobelt, 1904); *S. (E.) auriculata* Morelet, 1881 = *Pseudelma (Marielma)* – type species – (Abdou *et al*., 2008); *S. (E.) martensiana* Morelet, 1881 = *Pseudelma (Marielma) martensiana* (Abdou *et al*., 2008); *S. (E.) nevilli* H. Adams, 1868 = *Streptostele (Stereostele*) – type species – (Pilsbry, 1919); *Stereostele nevilli* (Gerlach & Bruggen, 1999); *S. (E.) moreletiana* Dohrn, 1866 = *Streptostele (Tomostele) moreletiana* (Pilsbry, 1919); *S. (E.) swinhoei* H. Adams, 1866 = *Elma* type species (Zilch, 1960). Haas (1951): *Elma (Fultonelma)* (type species *Bulinus inconspicua* Morelet, 1881) = *Pseudelma (Fultonelma) inconspicua* (Abdou et al, 2008) and *Elma (Fultonelma) bisexigua* Haas, 1951 = *Pseudelma (Fultonelma) bisexigua* (Abdou et al, 2008).

The geographical distribution of the *Elma* species is as follows: In Taiwan one species: *Elma swinhoei* (H. Adams, 1866). In mainland China (Yen, 1939) four species: *Elma sinensis* (Möllendorff, 1886), *Elma oblongata* Yen, 1939, *Elma pachygyra* (Gredler, 1885), and *Elma mitis* Heude, 1890. In Vietnam (Schyleiko, 2011) five species: *Elma* (?) *fultoni* (Bavay & Dautzenberg, 1912), *Elma mansuyi* (Dautzenberg & Fischer, 1905), *Elma messageri* (Bavay & Dautzenberg, 1903), *Elma tonkiniana* (Bavay & Dautzenberg, 1903), and the species *Elma* (?) *microstoma* (Möllendorff, 1881) of uncertain systematic position, which used to be classified

(Yen, 1939) as *Synoennea microstoma*, and later (Yen, 1948) as *Ennea microstoma*. The assignment of the latter species to *Elma* appears incorrect, and it could be classified more appropriately with *Synoennea* or *Ennea*, as proposed by Yen. On the basis of its morphology, the systematic position of *Elma* (?) *fultoni* is also doubtful.

Systematics

Order Stylommatophora Schmidt 1855
Superfamily Streptaxoidea Gray 1860
Family Streptaxidae Gray 1860
Subfamily Enneinae Bourguignat 1883
Genus ***Elma*** H. Adams, 1866
Type species: *Ennea* (*Elma*) *swinhoei* H. Adams, 1866, by original designation (OD) – *Elma swinhoei* (H. Adams), subsequent designation (SD) by Zilch (1960, p. 567).

Elma swinhoei (H. Adams, 1866) (Fig. 3)
Adams, 1866: p. 317, Taf. 33, Fig. 18. (*Ennea* sect.). Type species – *Ennea* (*Elma*) *swinhoei*; OD. Loc.: (type locality): "Tamsui, Formosa".
Pfeiffer, 1876: p. 499, *Ennea swinhoei.*
Pfeiffer & Clessin, 1881: p. 18, *Ennea (Elma) swinhoei.*
Tryon, 1885: p. 109, Pl. 17, Fig. 30, *Streptostele (Elma) swinhoei*.
Kobelt, 1904: p. 123, Taf. 18. Fig. 7, *Ennea (Elma) swinhoei*.
Kobelt, 1910: p. 155, *Ennea* (*Elma*) *swinhoei.*
Zilch, 1960: p. 576, *Elma swinhoei*, SD.
Dimensions: H 16, D 5 mm.

Elma (?) ***fultoni*** (Bavay & Dautzenberg, 1912) (Fig. 4)
Bavay & Dautzenberg, 1912: p. 8, Pl. I, Fig. 12–13, *Ennea (Elma) fultoni*, OD. Loc.: northern Vietnam (type locality): Tring-Tuong.
Schileyko, 2011: p. 26, *Elma* (?) *fultoni,* SD.
Dimensions: H 9, D 3 mm.

Elma mansuyi (Dautzenberg & Fischer, 1905) (Fig. 5)
Dautzenberg & Fischer, 1905: p. 345, Pl. 8, Fig. 8–9, *Ennea* (*Elma*) *mansuyi*, OD. Loc.: (type locality): Tonkin, "Ha-Giang".
Schileyko, 2011: p. 26, *Elma mansuyi,* SD.
[http://www.discoverlife.org/mp/20q?search=Elma+mauseri&guide=Groups_Mollusca – sic! *Elma mauseri* (Dautzenberg and Fischer) = *Elma mansuyi* (Dautzenberg & Fischer, 1905)].
Dimensions: H 10, D 3 mm.

Elma matskasii sp. nov. (Figs 1–2, 6)

Material: Vietnam, Lao Cai Province, Co Xan, 400 msm (Map. 1), November 27, 1971, leg. István Matskási & György Topál. [Mészáros (1973): "Lao Cai. The environs of the town are

situated on the banks of the Red River, a hilly region of woods and agricultural lands."]. Holotype HNHM 98819/1, Paratypes HNHM 98820/7 = 3 ad., 4 juv.) (Hungarian Natural History Museum, Budapest).

Figs 1–2. *Elma matskasii* sp. nov., holotype (photo by L. Katona)

Map 1. The type locality of *Elma matskasii* n. sp. in Vietnam

Description (Figs 1–2, 6): The shell is elongate, conical, gradually tapering toward its tip. The 8.7 whorls are whitish, opaque, with a silky shine. The protoconch of 2.6 whorls is smooth. The suture is shallow, but well recognizable. The sculpture consist of rib-like wrinkles, which are stronger over the upper parts of the whorls toward the suture, but get smoothened downward. The navel is broad and deep. The last whorl is gradually pulled upward before reaching the peristome. The peristome of 6 × 4 mm is rounded at its base, but becomes narrowed toward its upper two-thirds. The columellar and upper palatal edges are connected by a thin, transparent callus. The peristome margin at the basis and the sides is deflexed. The columella is slightly widened near the navel, and then it is continued in a rounded basal margin toward the parietal edge. Upward the parietal margin becomes thinner, bending inward to form a sinulus (Fig. 2).

Measurements (holotype): shell height: 15.25 mm; shell width: 5.5 mm; aperture height: 6 mm; aperture width: 4 mm; paratypes: shell height: 15–15,1 mm; shell width: 4.75–5 mm; aperture height: 4.75–6 mm; aperture width: 3.6–3.7 mm.

Comments: Compared to the new species, the shells of *E. sinensis* and *E. messageri* are smaller, more compressed, their aperture is wider. *E. mansuyi* is smaller and more elongate. *E. mitis* has a smaller shell with wider central whorls. The shell of *E. oblongata* is larger, more robust, and its aperture is broader. *E. pachygyra* and the variable *E. tonkiniana* possess smaller, more compressed shells, with more dominant peristome and last whorl. *E. fultoni* is smaller, more slender. The shape of the last whorl and peristome raises doubts whether the classification of these species within *Elma* is justified.

Etymology: The new species is named after its collector, Dr. István Matskási, general director of the Hungarian Natural History Museum.

Elma messageri (Bavay & Dautzenberg, 1903) (Fig. 7)

Bavay & Dautzenberg, 1903: p. 205, Pl. 8, Fig. 3–4, *Ennea* (*Elma*) *messageri*, OD. Loc.: Tonkin (type locality): "Bac-Kan".

Dautzenberg & Fischer, 1905: p. 344, *Ennea* (*Elma*) *messageri*. Loc.: Tonkin: Ha Giang.

Kobelt, 1910: p. 155, *Ennea* (*Elma*) *messageri.*

Zilch, 1961: p. 90, *Elma messageri,* SD.

Schileyko, 2011: p. 26, *Elma messageri*. Loc: N Vietnam [Bãc Can, Phong Thô, Ha-Giang].

Dimensions: H 12, D 4 mm.

Elma mitis Heude, 1890 (Fig. 8)

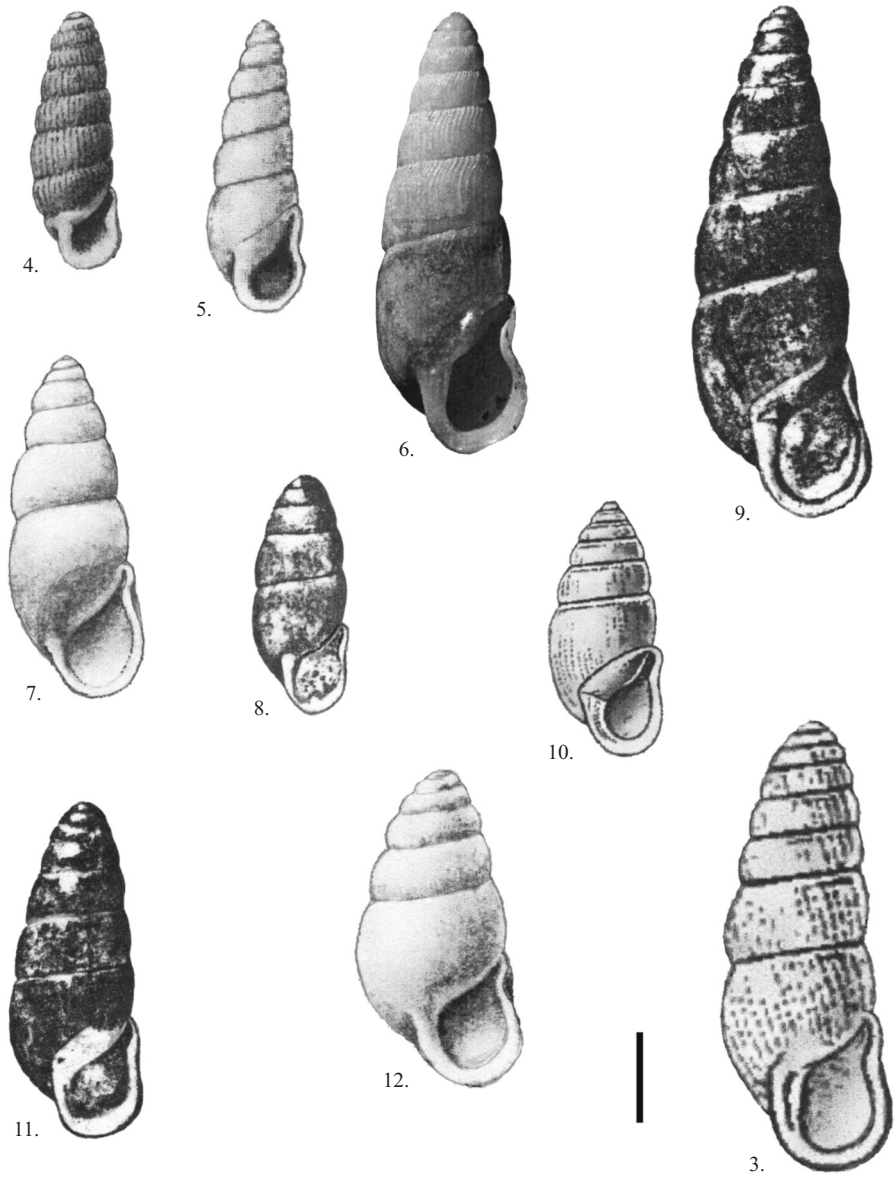
Heude, 1890: p. 152, Taf. 36. Fig. 16, *Elma mitis,* OD (in the figure legend: *Ennea mitis*!). Loc.: (type locality): Tchen-k'eou.

Kobelt, 1904: p. 124–125, Taf. 20, Fig. 25, *Ennea (Elma) mitis*.

Kobelt, 1910: p. 155, *Ennea* (*Elma*) *mitis.*

Yen, 1939: p. 160., Taf. 16. Fig. 34, *Elma mitis*. Loc.: Patung, Hupei = Fig. („Locus typicus: Tchen-kou, Szechwan.").

Dimensions: H 8, D 3 mm.



Figs 3–12. 3. *Elma swinhoei* (H. Adams, 1866) (after Adams, 1866: Taf., 33, Fig. 18.); 4. *Elma* (?) *fultoni* (Bavay & Dautzenberg, 1912) (after Bavay & Dautzenberg., 1912: Pl. I, Fig. 12.); 5. *Elma mansuyi* (Dautzenberg & Fischer, 1905) (after Dautzenberg & Fischer, 1905: Pl. 8, Fig. 8.); 6. *Elma matskasii* sp. nov. (holotype); 7. *Elma messageri* (Bavay & Dautzenberg, 1903) (after Bavay & Dautzenberg, 1903: Taf. 8, Fig. 3.); 8. *Elma mitis* Heude, 1890 (after Yen, 1939: Taf. 16. Fig. 34.); 9. *Elma oblongata* Yen, 1939 (after Yen, 1939, Taf. 16. Fig. 32.); 10. *Elma pachygyra* (Gredler, 1885) (after Kobelt, 1904: Taf. 18, Fig. 8.); 11. *Elma sinensis* Möllendorff, 1886 (after Yen, 1939: Taf. 16. Fig. 31.); 12. *Elma tonkiniana* (Bavay & Dautzenberg, 1903) (after Bavay & Dautzenberg, 1903: Taf. 8., Fig. 1.). Scale bar: 3 mm

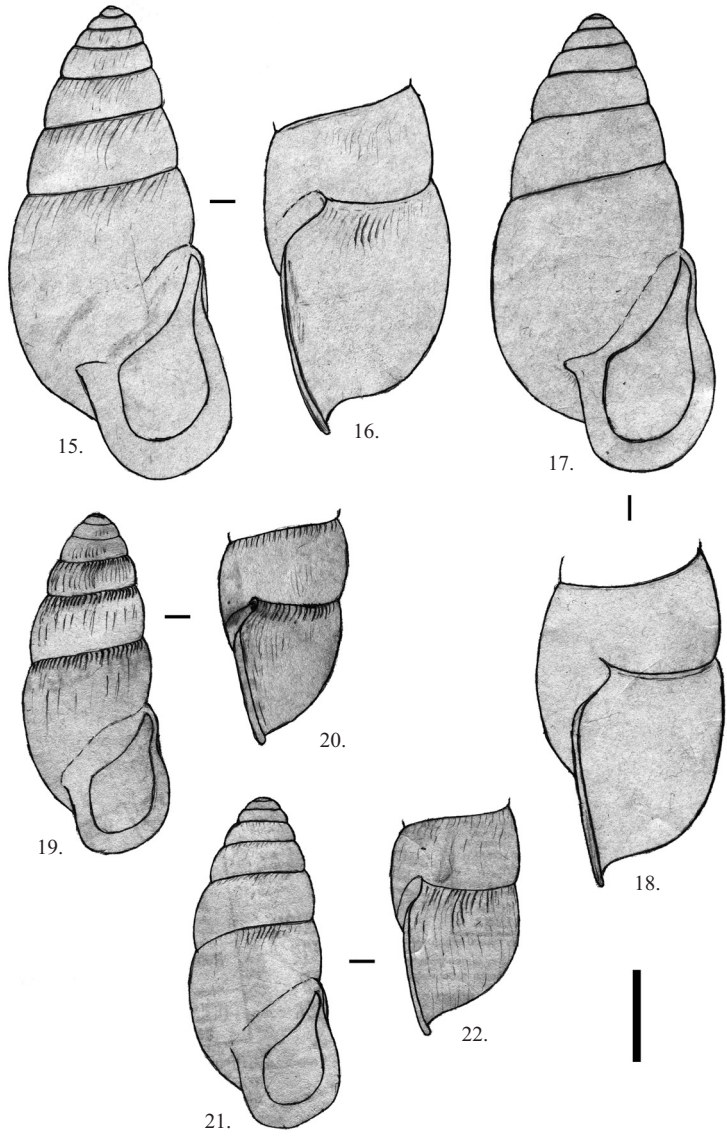
Elma oblongata Yen, 1939 (Fig. 9)
Yen, 1939: p. 160., Taf. 16. Fig. 32. Loc.: (Locus typicus) Lung-so-tan, Kwangtung.
Dimensions: H 18.2, D 6.2 mm.

Elma pachygyra (Gredler, 1885) (Fig. 10)
Gredler, 1885: p. 9, *Stenogyra pachygyra,* OD. Locus typicus: Heng-shan oder Umgebung von Heng-dshou-fu, Hunan.
Möllendorff, 1886: p. 181. Taf. 5. Fig. 13 a–c, *Ennea (Elma) pachygyra*.
Gredler, 1887: *Stenogyra pachygyra (Elma pachygyra).*
Kobelt, 1904: p. 124, Taf. 18, Fig. 8, *Ennea (Elma) pachygyra*. Loc. "Aufenthalt in der chinensischen Provinz Hunan – Beschreibung nach Gredler, Abbildung nach Möllendorff.".
Kobelt, 1910: p. 155, *Ennea* (*Elma) pachygyra*.
Yen, 1939: p. 159., Taf. 16. Fig. 33, *Elma pachygyra,* SD. Loc. Heng-shan-hsien, Hunan.
Dimensions: H 9, D 3.5 mm.

Elma sinensis Möllendorff, 1886 (Fig. 11)
Möellendorff, 1886: p. 179, Taf. 5. Fig. 12, *Ennea (Elma) sinensis,* OD. Loc.: (type locality): "ad oppidium Dau-dshou province sinensis Hunan".
Kobelt, 1904: p. 123–124, Taf. 18, Fig. 9, *Ennea (Elma) sinensis*.
Kobelt, 1910: p. 155, *Ennea* (*Elma) sinensis.*
Yen, 1939: p. 159, Taf. 16. Fig. 31, *Elma sinensis,* SD. Loc.: Dau-dshou, Hunan = Fig. (Locus typicus), Pe-shang, Hunan; Lung-so-tan, Kwangtung.
Dimensions: H 11.5, D 4.75 mm.

Figs 13–14. *Elma tonkiniana* (7.5 mm), Co Xan (photo by L. Katona)

Elma tonkiniana (Bavay & Dautzenberg, 1903) (Figs 12–22)
Bavay & Dautzenberg, 1903: p. 204, Pl. 8, Fig. 1–2, *Ennea* (*Elma*) *tonkiniana*, OD. Loc.: Tonkin (type locality): "Bac-Kan et Cho-Moi".
Dautzenberg & Fischer, 1905: p. 344, *Ennea* (*Elma*) *tonkiniana*. Loc.: "Tonkin: Ha Giang".
Dautzenberg & Fischer, 1908: p. 171, *Ennea* (*Elma*) *tonkiniana*. Loc.: Quang-Huyen.
Kobelt, 1910: p. 155, *Ennea* (*Elma) tonkiniana.*



Figs 15–22. *Elma tonkiniana*. 15–18. Phong-Tho, NHMW; 19–22. Ha Giang, NHMW. Scale bar: 3 mm

Bavay & Dautzenberg, 1912: p. 11, *Ennea* (*Elma*) *tonkiniana*.

Zilch, 1961: p. 91. *Elma tonkiniana,* SD.

Schileyko, 2011: p. 26, *Elma tonkiniana*. Loc: "N Vietnam [Bãc Can, Cho Moï, Quang Uyen, Ny Nham, Nui Moc (=Than Hoa), Ha Giang]. Type locality – "Bac-Kan et Cho-Moï".

Dimensions: Type material H 11, D 5.5 mm. Valiability, Bavay & Dautzenberg (1912), p. 11.: H 7–20, D 3–7.5 mm.

Material: Vietnam, Lao Cai Prov., Co Xan, 400 msm, November 27, 1971, leg. István Matskási & György Topál, HNHM 98817/2, Figs 13–14; Vietnam, Tonkin, Phong-Tho, NHMW (Naturhistorisches Museum Wien) (ex coll. W. Klemm no. 30558/2) Figs 15–18; Vietnam, Tonkin, Ha Giang, NHMW (ex coll. W. Klemm "*Ennea mansuyi*" no. 30553/2) Figs 19–22.

Future anatomical studies of *Elma* may alter the taxonomic status of the specicies that are currently classified within this genus. Shell morphologies of some Chinese species are considerably different from those of the group of the type species, indicating that a subgeneric division of the genus may be appropriate.

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Contribution to the macroinvertebrate fauna of the Hungarian Danube. VII. Isopods (Crustacea: Malacostraca: Isopoda)

Péter Borza

Abstract: In this part of the series the records of aquatic isopods in the collection of the Danube Research Institute (former Hungarian Danube Research Station) are presented. Two species (*Asellus aquaticus* and *Jaera sarsi*) have been identified in 379 samples collected between 1994–2009 at 195 sites of the Hungarian Danube section (main channel, side branches, and adjacent wetlands).

Introduction, materials and methods

To date, three epigean aquatic isopod species have been reported from Hungary. *Asellus aquaticus* (Linnaeus, 1758) and *Jaera sarsi* Valkanov, 1936 are common and widespread, whilst *Proasellus pribenicensis* Flasarová, 1977 occurs only in the North-Eastern region of the country (Kontschán 2001). A fourth species, *Jaera danubica* Brtek, 2003 has been described from the nearby Slovakian section of the River Danube (Brtek 2003); however, as pointed out by Borza (2012), this form cannot be regarded as a valid species.

Within the macroinvertebrate collection of the Danube Research Institute 379 samples from 195 locations along the Hungarian Danube section contained isopods. The 'List of species' section of the paper contains the code of the sampling site, code of the method, date of collection (year-month-day), and monograms of collectors (in parentheses), respectively. The detailed description of the material and methods can be found in Nosek (2007). The animals were identified following Gruner (1965/66).

Results

Two species have been identified in the material; *Asellus aquaticus* was found in 209 samples (133 sites), whilst *Jaera sarsi* occurred in 194 samples (81 sites). They showed conspicuously different habitat preferences; *A. aquaticus* occurred mostly in stagnant waters of wetlands (Szigetköz, Gemenc, and Béda-Karapancsa), and in the slow-flowing, regulated Ráckevei-Soroksári Danube-arm, whereas *J. sarsi* was found almost exclusively at eupotamic sites (main arm, Szentendrei-arm, Mosoni-arm). Co-occurrence was detected only at 16 sites (ADO1, DRE2, DUF4, DUH1, ERC1, GON2, LIP3, LIP4, MMO1, NOC1, RAC1, SCH2, VEN1, VEN3, ZAT1, ZAT4). On 3 sites (CSA1, CSA4, ZAT3) *J. sarsi* replaced *A. aquaticus* during the study period.

List of species

Asellus aquaticus (Linnaeus, 1758) – ADO1-HD: 2001.05.22. (BE, CsG, NJ, ON) – ARA1-K: 2003.07.24. (ME, NJ) – ARA3-K: 2003.05.30. (AS, BG, CsZ, NJ) – ASV5-K: 2003.05.29. (AS, BG, CsZ, NJ) – BAD1-K: 2004.08.27. (ME, NJ); 2005.07.21. (ME, NJ) – BAD2-K: 2004.08.27. (ME, NJ) – BAG1-D: 2003.07.26. (ME, NJ) – BAG3-K: 2004.07.26. (ME, NJ) – BDH1-K: 2004.08.28. (ME, NJ); 2004.09.28. (BG, CsZ, NJ, ON) – BDH2-K: 2004.09.28. (BG, CsZ, NJ, ON) – BDH3-K: 2004.08.28. (ME, NJ) – BEB1-K: 2004.08.28. (ME, NJ); 2004.09.28. (BG, CsZ, NJ, ON) – BEB3-K: 2004.09.28. (BG, CsZ, NJ, ON) – BEK1-C: 2004.08.28. (ME, NJ) – BFD1-K: 2004.08.26. (ME, NJ) – BFD2-K: 2005.07.21. (ME, NJ) – BOD1-K: 2003.05.29. (AS, BG, CsZ, NJ) – BOK1-K: 2004.08.28. (ME, NJ); 2004.09.28. (BG, CsZ, NJ, ON) – BTH1-K: 2004.09.30. (BG, CsZ, NJ, ON) – BTH2-K: 2005.06.16. (BG, CsZ, NJ, ON, VT) – BTH3-K: 1999.06.24. (NJ, ON) – BTH6-K: 1999.06.24. (NJ, ON) – CIK2-K: 1998.09.01. (NJ); 1999.07.13. (NJ); 2001.07.02. (NJ); 2003.05.29. 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(NJ, ON) – DUH5-D: 2005.09.14. (NJ, ON) – ERC1-H: 1998.06.11. (CsG, NJ, ON) – ERC1-HD: 2001.05.22. (BE, CsG, NJ, ON) – ERT2-K: 2004.09.29. (BG, CsZ, NJ, ON) – FEC2-K: 2004.08.26. (ME, NJ); 2005.07.21. (ME, NJ) – FEC3-K: 2005.07.22. (ME, NJ) – FEK2-K: 2003.05.28. (AS, BG, CsZ, NJ, VT) – FUZ1-K: 2004.08.27. (ME, NJ) – FUZ2-K: 2004.08.27. (ME, NJ) – GON2-HD: 2001.05.08. (BE, CsG, NJ, ON) – HED1-K: 2004.07.26. (ME, NJ) – HRZ1-K: 2005.06.15. (BG, CsZ, NJ, ON, VT) – HSI1-K: 2004.09.27. (BG, CsZ, NJ, ON) – HSI2-K: 2004.09.27. (BG, CsZ, NJ, ON) – HTV1-K: 2004.07.25. (ME, NJ) – KAC1-K: 2004.07.26. (ME, NJ) – KAD1-K: 2005.07.22. (ME, NJ) – KAD2-K: 2005.07.22. (ME, NJ) – KED1-K: 2005.06.16. (BG, CsZ, NJ, ON, VT) – KFC1-K: 2004.08.27. (ME, NJ); 2005.07.21. (ME, NJ) – KFC2-K: 2004.09.29. (BG, CsZ, NJ, ON) – KFC3-K: 2004.08.27. (ME, NJ) – KFC4-K: 2004.09.29. (BG, CsZ, NJ, ON) – KFC5-K: 2004.08.27. (ME, NJ) – KKL1-K: 2005.06.23. (NJ, ON); 2005.09.14. (NJ, ON) – KML3-K: 2003.07.24. 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(BG, CsZ, NJ, ON, VT) – SUF4-K: 2005.07.19. (ME, NJ) – SUG1-K: 2005.06.16. (BG, CsZ, NJ, ON, VT) – SUG2-K: 2004.08.29. (ME, NJ) – SUG3-K: 2004.08.29. (ME, NJ) – SVC1-K: 2004.07.25. (ME, NJ) – SZB2-K: 2005.06.23. (NJ, ON) – SZB3-K: 2005.06.23. (NJ, ON) – SZC1-D: 2003.07.22. (ME, NJ); 2003.09.10. (BG, CsZ, NJ, ON) – SZC1-K: 2003.07.22. (ME, NJ); 2003.09.10. (BG, CsZ, NJ, ON) – TAS2-D: 2005.09.15. (ON) – TAS2-H: 2001.05.23. (BE, CsG, NJ, ON) – TAS2-K: 2005.06.23. (NJ, ON); 2005.09.15. (ON) –

TKD1-K: 2005.06.15. (BG, CsZ, NJ, ON, VT) – VAJ2-K: 2000.07.12. (CsG) – VAJ4-K: 2000.07.12. (CsG) – VAJ5-K: 2000.07.12. (CsG) – VAJ7-K: 2005.06.16. (BG, CsZ, NJ, ON, VT) – VEN1-DC: 2001.05.07. (BE, CsG, NJ, ON) – VEN3-K: 2002.09.23. (NJ, ON) – ZAT1-D: 2003.07.23. (ME, NJ) – ZAT2-C: 1994.05.17. (NJ); 1996.07.30. (NJ); 1999.10.27. (NJ) – ZAT3-K: 1996.06.20. (NJ); 1996.07.30. (NJ); 1996.09.17. (NJ) – ZAT4-K: 1994.07.18. (NJ); 1996.06.20. (NJ); 1996.09.17. (NJ); 1997.07.28. (NJ); 1998.09.01. (NJ); 1998.10.14. (NJ); 1999.06.08. (NJ); 1999.07.13. (NJ); 1999.10.27. (NJ); 2001.07.02. (NJ); 2001.10.09. (NJ); 2002.07.09. (NJ); 2002.10.07. (NJ); 2003.05.27. (AS, BG, CsZ, NJ, VT); 2003.07.26. (ME, NJ); 2004.07.23. (ME, NJ) – ZAT7-K: 2003.09.09. (BG, CsZ, NJ, ON) – ZAT9-K: 2003.07.24. (ME, NJ); 2003.09.12. (BG, CsZ, NJ, ON) – ZSC1-K: 2003.07.24. (ME, NJ) – ZSC2-K: 2004.07.26. (ME, NJ)

Jaera sarsi Valkanov, 1936 – ADO1-HD: 2001.05.22. (BE, CsG, NJ, ON) – ALF1-H: 2002.07.02. (AS, BG, NJ, VT); 2003.05.14. (ME, NJ) – ALM1-H: 2003.05.14. (ME, NJ) – ASV2-C: 2002.07.09. (NJ); 2002.09.17. (NJ) – BOD2-K: 2002.09.17. (NJ) – CIK1-D: 2004.07.23. (ME, NJ) – CIK3-C: 2003.07.26. (ME, NJ) – CSA1-C: 2003.07.25. (ME, NJ); 2004.07.23. (ME, NJ); 2008.09.24. (NJ, ME) – CSA2-CK: 1998.09.01. (NJ); 1999.07.13. (NJ); 1999.10.27. (NJ); 2002.07.09. (NJ); 2002.09.17. (NJ); 2003.05.26. (AS, BG, CsZ, NJ, VT); 2008.07.16. (NJ, ME) – CSA4-K: 2003.07.25. (ME, NJ); 2004.07.23. (ME, NJ); 2008.09.24. (NJ, ME) – CSA5-C: 2004.09.15. (NJ) – CSA6-C: 2004.09.15. (NJ) – CSA7-C: 2004.09.15. (NJ) – CSK1-K: 2004.09.15. (NJ) – DBO1-H: 2002.07.05. (CsG, ET, NJ, ON); 2002.09.25. (NJ, ON) – DBO1-H: 2003.05.13. (ME, NJ) – DBO1-HD: 2001.05.25. (BE, CsG, NJ, ON) – DFL1-HD: 2001.05.22. (BE, CsG, NJ, ON) – DKE1-H: 2002.07.05. (CsG, ET, NJ, ON) – DKI0-K: 1999.08.31. (NJ) – DKI1-H: 1998.06.22. (NJ); 2003.05.30. (AS, BG, CsZ, NJ); 2003.09.08. (BG, CsZ, NJ, ON) – DKI1-HDC: 2001.05.07. (BE, CsG, NJ, ON) – DKI2-C: 1998.09.01. (NJ); 1998.10.14. (NJ); 1999.06.08. (NJ); 1999.07.13. (NJ); 1999.08.31. (NJ); 1999.10.27. (NJ); 2001.10.09. (NJ); 2002.07.09. (NJ); 2002.10.07. (NJ); 2003.05.30. (AS, BG, CsZ, NJ); 2003.07.22. (ME, NJ); 2003.09.08. (BG, CsZ, NJ, ON); 2004.07.24. (ME, NJ); 2008.07.16. (NJ, ME); 2008.09.24. (NJ, ME) – DKI3-C: 1999.07.13. (NJ); 1999.08.31. (NJ) – DRE2-C: 1997.07.28. (NJ); 1997.09.09. (NJ); 1998.06.22. (NJ); 1999.06.08. (NJ); 1999.07.13. (NJ); 1999.08.31. (NJ); 1999.10.27. (NJ); 2001.09.05. (NJ); 2001.10.09. (NJ); 2002.06.11. (NJ); 2002.07.09. (NJ); 2002.09.17. (NJ); 2003.09.08. (BG, CsZ, NJ, ON); 2008.07.17. (NJ, ME); 2008.09.15. (NJ, ME) – DRE2-HC: 2001.05.07. (BE, CsG, NJ, ON) – DRE2-K: 2004.07.25. (ME, NJ) – DRE3-C: 2003.07.24. (ME, NJ) – DSG1-H: 2003.05.28. (AS, BG, CsZ, NJ, VT) – DUF0-C: 2001.09.05. (NJ); 2001.10.09. (NJ); 2003.09.08. (BG, CsZ, NJ, ON) – DUF0-K: 1996.07.30. (NJ) – DUF1-C: 2002.09.17. (NJ) – DUF1-K: 1995.09.13. (NJ); 1999.06.08. (NJ); 1999.07.13. (NJ); 1999.08.31. (NJ); 1999.10.27. (NJ) – DUF2-C: 1998.09.01. (NJ) – DUF2-K: 1997.09.09. (NJ) – DUF3-K: 1995.09.13. (NJ); 2002.06.11. (NJ); 2002.09.17. (NJ) – DUF4-C: 1999.10.27. (NJ); 2001.09.05. (NJ); 2002.06.11. (NJ); 2002.09.17. (NJ); 2003.09.08. (BG, CsZ, NJ, ON) – DUF5-HD: 2001.05.07. (BE, CsG, NJ, ON) – DUH1-HD: 2001.05.23. (BE, CsG, NJ, ON) – DUJ1-HD: 2001.05.22. (BE, CsG, NJ, ON) – ERC1-HD: 2001.05.22. (BE, CsG, NJ, ON) – ERM1-K: 2002.07.02. (AS, BG, NJ, VT) – ESZ1-H: 2002.07.03. (AS, BG, NJ, VT); 2002.09.24. (NJ, ON); 2003.05.13. (ME, NJ) – ESZ2-HD: 2001.05.08. (BE, CsG, NJ, ON) – FEK1-D: 2003.09.10. (BG, CsZ, NJ, ON) – FEK1-H: 2003.05.28. (AS, BG, CsZ, NJ, VT) – GOD1-H: 1999.08.17. (ON) – GOD1-H: 1999.09.07. (ON); 1999.09.28. (ON); 1999.10.19. (ON); 1999.11.09. (ON); 2000.04.18. (ON); 2000.05.09. (ON); 2000.05.30. (ON); 2000.07.10. (ON); 2000.08.22. (ON); 2000.09.12. (ON); 2000.10.03. (ON); 2000.10.24. (ON); 2000.11.14. (ON); 2000.12.05. (ON); 2000.12.27. (ON); 2001.01.16. (ON); 2001.02.06. (ON); 2001.03.01. (ON); 2001.04.11. (ON); 2001.05.02. (ON) – GON1-C: 1998.09.02. (NJ) – GON1-H: 1998.09.02. (NJ) – GON2-HD: 2001.05.08. (BE, CsG, NJ, ON) – GOS1-D: 2003.07.26. (ME, NJ) – HAM1-HC: 2001.05.07. (BE, CsG, NJ, ON) – HRT1-HD: 2001.05.23. (BE, CsG, NJ, ON) – KIM1-H: 2002.07.04. (AS, NJ, ON) – KIM1-HD: 2001.05.25. (BE, CsG, NJ, ON) – KML1-K: 2003.09.10. (BG, CsZ, NJ, ON) – KOP1-H: 2002.07.02. (AS, BG, NJ, VT); 2002.09.23. (NJ, ON); 2003.05.14. (ME, NJ) – LIP3-K: 1999.10.28. (NJ) – LIP4-K: 1997.07.28. (NJ); 2003.07.24. (ME, NJ) – LUP1-H: 2002.07.05. (CsG, ET, NJ, ON) – MED1-C: 1998.09.02. (NJ); 2002.07.01. (AS, BG, NJ, VT) – MED1-H: 1998.06.23. (CsG, NJ, ON); 1998.09.02. (NJ); 2001.05.07. (BE, CsG, NJ, ON) – MMO1-D: 2003.05.28. (AS, BG, CsZ, NJ, VT) – MMO1-K: 2003.05.28. (AS, BG, CsZ, NJ, VT) – NAG1-H: 2002.07.04. (AS, NJ, ON); 2003.05.13. (ME, NJ) – NAG2-H: 2002.07.04. (AS, NJ, ON) – NBA2-H: 2002.07.01. (AS, BG, NJ, VT) – NMM1-K: 2002.07.02. (AS, BG, NJ, VT) – NMM2-K: 2002.07.02. (AS, BG, NJ, VT) – NOC1-K: 2003.07.24. (ME, NJ) – PAK1-HD: 2001.05.22. (BE, CsG, NJ, ON) – PIL1-H: 1998.10.15. (NJ, ON); 2003.05.13. (ME, NJ) – RAC1-HD: 2001.05.23. (BE, CsG, NJ, ON) – RAJ2-C: 2003.05.28. (AS, BG, CsZ, NJ, VT) – RAJ2-D: 2003.05.28. (AS, BG, CsZ, NJ, VT) – RAJ2-H: 2003.05.28. (AS, BG, CsZ, NJ, VT) – SCH1-K: 2003.09.09. (BG, CsZ, NJ, ON) – SCH2-K: 1998.10.14. (NJ); 1999.10.27. (NJ); 2002.09.17. (NJ) – SUT1-H: 1998.06.09. (CsG, NJ, ON) – SZL2-H: 2002.07.04. (AS, NJ, ON) – SZM3-DH: 2001.05.25. (BE, CsG, NJ, ON) – SZN1-H: 2002.07.05.

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Ritka szaproxilofág álpattanóbogarak, pattanóbogarak és lárváik a Mátra és a Bükk területéről (Coleoptera: Cerophytidae, Elateridae)

Kovács Tibor & Németh Tamás

Abstract: (Rare saproxylic species of Cerophytidae and Elateridae and their larvae from the Mátra and Bükk Mountains (Coleoptera)) New records of *Cerophytum elateroides* and eight click beetle species (*Crepidophorus mutilatus*, *Elater ferrugineus*, *Hypoganus inunctus*, *Ischnodes sanguinicollis*, *Lacon querceus*, *Limoniscus violaceus*, *Megapenthes lugens*, *Pseudanostirus globicollis*) are given from the Mátra and Bükk Mountains, Hungary. *Crepidophorus mutilatus* is recorded from Hungary for the second time, preceded by a 70 years old specimen from Kőszeg (Western Hungary). *Limoniscus violaceus* and *Megapenthes lugens* are new to the Bükk Mountains. Host plants, rare beetle collected along with these species and biological observations are summarised. Images of the larvae are presented.

Bevezetés

A hazai szaproxilofág álpattanó- és pattanóbogarak kutatása az utóbbi néhány évben új lendületet kapott (Merkl & Mertlik 2005, Merkl & Vig 2009, Németh & Merkl 2009, Kovács et al. 2009, 2010, 2012). Ez részben a fajok természetvédelmi jelentőségének is köszönhető. Az alább közölt fajok közül a *Limoniscus violaceus* közösségi jelentőségű, Natura 2000 jelölőfaj (Council Directive 1992). A következők a szaproxilofág bogarak európai Vörös Listáján (Nieto & Alexander 2010) szerepelnek: *L. violaceus* – veszélyeztetett; *Cerophytum elateroides*, *Ischnodes sanguinicollis*, *Lacon querceus* – sérülékeny (ez utóbbi csak az Európai Unió 27 tagállamában sérülékeny, míg az előzőknél a státus Európa teljes területére vonatkozik). Hazánkban a *L. violaceus* fokozottan védett, az *Elater ferrugineus* és a *L. querceus* védett, 100, 50, illetve 10 ezer forint pénzben kifejezett természetvédelmi értékkel (Anonim 2012).

Bizonyos bogárfajok monitorozása hatékonyabb a lárvák segítségével, mert a lárvák egész évben gyűjthetők, és egyértelműen kötődnek a tápnövényhez. Jó példa erre a *Cucujus cinnaberinus* és a *Schizotus pectinicornis*. A lárvák elkülönítése Vávra & Drozd (2006) munkája alapján történt. A fajok adatainak megoszlása Kovács et al. (2009, 2010, 2012) cikkei alapján a lárvák könnyebb megtalálhatóságát bizonyítja: *Cucujus cinnaberinus* 46 adat – 35 lárva, 11 imágó; *Schizotus pectinicornis* 84 adat – 83 lárva, 1 imágó. Míg a xilofág fajokban gazdag Cerambycidae és Buprestidae családoknál hazai szinten is jól használható lárvahatározók találhatók (Švácha 2001, Švácha & Danilevsky 1987, 1988, 1989, illetve Bílý 1999), addig az Elateridae esetében a hasonló munka (Dolin 1978) fajkészlete csak részben fedi faunánkat. Mivel az alábbi ritka fajok lárváik alapján is jól azonosíthatók, érdemesnek láttuk a lárvák fotóinak közlését (a 70%-os etilalkoholban konzervált példányok a Mátra Múzeum gyűjteményében találhatók), továbbá a lárva- és imágóadatok számának fajonkénti megadását Kovács et al. (2009, 2010) és az itt közöltek alapján.

A *Cerophytum elateroides* és a *Pseudanostirus globicollis* kivételével az alább közölt fajok hazai lelőhelyadatait NÉMETH & MERKL (2009) összegezték, térképen bemutatva elterjedésüket.

Rövidítések: DG = Domboróczki Gábor, GyH = Győrfy Hunor, KA = Kotán Attila, KT = Kovács Tibor, KZ = Kaszab Zoltán, MG = Magos Gábor, NT = Németh Tamás, SzV = Székessy Vilmos, UL = Urbán László; L = lárva (larva), I = imágó (adult), + = elpusztult imágó (dead adult).

Eredmények

Általános tapasztalataink azt mutatják, hogy a közölt fajok lárvái a *Hypoganus inunctus* kivételével odúkban élnek, illetve odvakhoz kötődnek. Az odúlakók imágói is leggyakrabban a fejlődési helyként szolgáló odvakban találhatók, de alkalmanként el is hagyják azokat. A *Crepidophorus mutilatus*, az *Elater ferrugineus* és a *Pseudanostirus globicollis* lárvaként, a *Cerophytum elateroides* lárvaként és imágóként, míg a továbbiak imágóként telelnek. Az odvak számos generáció fejlődését biztosíthatják, éveken és valószínűleg évtizedeken keresztül is, így természetvédelmi szerepük kiemelkedő. Az itt közölt odúlakó fajok ökológiai igényeik hasonlóságának köszönhetően gyakran közösen fordulnak elő. Ezt mátrai adataink alapján az 1. táblázatban foglaltuk össze.

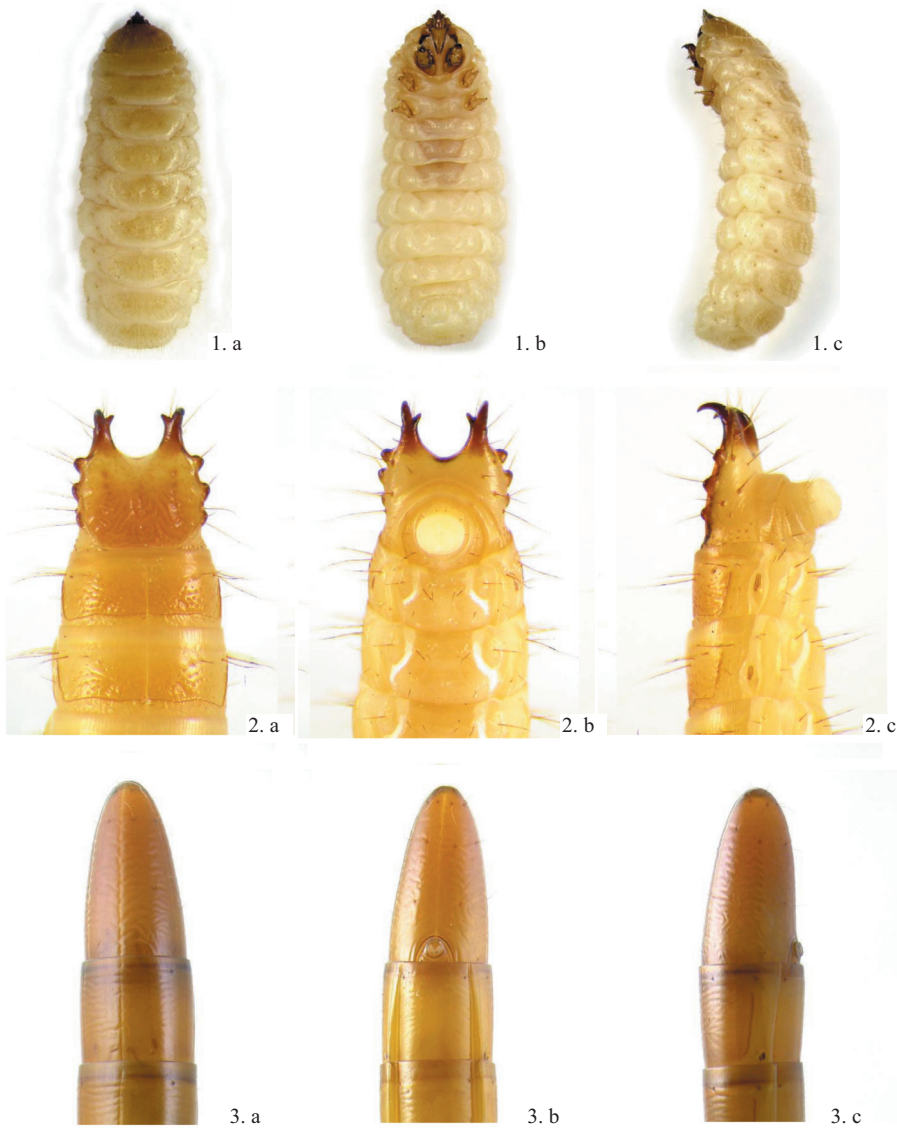
1. táblázat. Az odúlakó fajok közös előfordulása, szürke alapon az adott faj összes találási alkalma

	C. e.	*C. m.*	*E. f.*	*I. s.*	*L. q.*	*L. v.*	*M. l.*
C. elateroides	7			2			1
C. mutilatus		12	1	3			3
E. ferrugineus		1	22	2		3	1
I. sanguinicollis	2	3	2	23	1	5	1
L. querceus				1	6	1	
L. violaceus			3	5	1	20	2
M. lugens	1	3	1	1		2	11

Az odvak kialakulásában (tükörfolt>odú) jelentős szerepe van néhány cincérfajnak is. Közülük a leghatékonyabb a nagyméretű, viszonylag gyakori, széles tápnövény spektrumú és általában magas egyedszámú *Aegosoma scabricorne*. Tipikus tükörfolt- és odúlakó ritka fajok még a *Necydalis ulmi*, a *Rhamnusium bicolor* és a *Stictoleptura erythroptera*. Ezek és a további ritka odútárs bogarak a fajonkénti részben szerepelnek, nevük mögött zárójelben a közös előfordulási alkalmak számával – szintén mátrai megfigyelések alapján.

CEROPHYTIDAE LATREILLE, 1834

Cerophytum elateroides (Latreille, 1804) – 1. ábra a–c. A Dunától keletre eső lelőhelyeit KOVÁCS et al. (2010) összegezték, és a Mátrára új fajként két pontról közölték: Domoszló, Felső-Tarjánka; Recsk, Cserepes-tető. A Bükkből egy helyről ismert: Miskolc, Nyavajás (LUCHT & MERKL 1993), az adat nem közölt része: 681 m, 1954.06.09., KZ-SzV. Az odúkon kívül néha tükörfoltokban és ágcsonkokban is fejlődik. Hazai tápnövényei: *Acer pseudoplatanus* (KOVÁCS et al. 2010), illetve az itt közöltek: *A. campestre*, *A. pseudoplatanus*, *Aesculus hippocastanum*,



1–3. ábra. 1. *Cerophytum elateroides* lárvája, 2. *Crepidophorus mutilatus*, 3. *Elater ferrugineus* lárvájának potrohvége; a. felülről, b. alulról, c. oldalról

Fagus sylvatica; leggyakrabban *Acer pseudoplatanus*-ban volt: az adatok 50%-a. Egy SZÉL et al. (2010) által Mosonmagyaróváról közölt példány céduláin a következő publikálatlan információk szerepelnek: „1991.06.05., *Aesculus hippocastanum*, *Rhamnusium bicolor*-ral egy odúból, Kovács Tibor". Társfaja: *Ischnomera sanguinicollis*. A Nyikom (Pásztó) területén szeptember 6-án *A. pseudoplatanus* odú aljában levő frissen kelt, még kiszínezetlen egyede azt bizonyítja, hogy a lárva mellett (KOVÁCS et al. 2010) az imágó is áttelelhet. Lárvái a nedves de jó megtartású

farészben élnek, az odú aljában levő korhadékban és/vagy a talajban bábozódnak. Rajzó példányait május-júniusban figyeltük meg. Adataiból 1 lárvára, 8 pedig imágóra vonatkozik.

Új adatok. Gyöngyössolymos: Vérc-verés, 2011.05.22., I, KT-MG – Parád: Som-bokor, 2011.06.03., I, KA-KT-NT; 2012.03.25., +, *Fagus sylvatica*, KA-KT-MG-NT – Parádsasvár: Csórhegy, 2012.10.22., +, *Acer campestre*, KT-MG – Pásztó: Nyikom, 2012.09.06., I, +, *A. pseudoplatanus*, KT-MG-UL – Recsk: Védett gesztenyefasor, 2011.05.31., +, *Aesculus hippocastanum*, KT.

Elateridae Leach, 1815

Crepidophorus mutilatus (Rosenhauer, 1847) – 2. ábra a–c. Hazánkból csupán egy több mint 70 éves adata ismert Kőszegről (Csiki 1941). A Mátra két térségéből (Cserepes-tető és Som-bokor – Sor-kő) került elő, északi kitettségű bükkös régióból 705–822 m magasságból. Leggyakrabban – kilencszer – *Fagus sylvatica*-ban, kétszer *Acer pseudoplatanus*-ban és egyszer *Quercus petraea*-ban találtuk. Társfajai: *Denticollis rubens*, *Ischnomera sanguinicollis*, *Necydalis ulmi* (2), *Omoglymmius germari*, *Rhamnusium bicolor* (5). Élő imágót nem fogtunk, de egy esetben sikerült kinevelnünk. Lárvák az odú felső kemény farészében, valamint alsó, talajjal érintkező holt faanyagában is voltak. Valószínűleg rövid ideig rajzik, illetve az imágók ritkán jönnek ki az odúból – erre utalnak az odú alján talált imágó maradványok. Adataiból 2 lárvára, 8 pedig elpusztult imágóra vonatkozik.

Új adatok. Gyöngyös: Som-bokor, 2011.05.17., +, *Quercus petraea*, KT-MG-UL – Parád: Som-bokor, 2011.06.03., L, > 2012.06.28., I, *Fagus sylvatica*, KA-KT-NT; 2011.06.16., +, *F. sylvatica*, KT-MG-UL; 2011.07.01., +, *F. sylvatica*, KT-MG; 2012.03.25., L, +, *F. sylvatica*, KA-KT-MG-NT; Sor-kő, 2011.06.28., +, *F. sylvatica*, KT; 2011.07.01., +, *F. sylvatica*, KT-MG – Recsk: Cserepes-tető, 2010.11.04., +, *Acer pseudoplatanus*, KA-KT-MG-NT-UL; 2011.05.10., +, *A. pseudoplatanus*, KT.

Elater ferrugineus Linnaeus, 1758 – 3. ábra a–c. A Mátrából hét (Kovács et al. 2010, Németh & Merkl 2009, Németh et al. 2009) a Bükkből egy helyről (Bükkzsérc: Odor-hegy) (Somorjai & Ádám 1996) közölték. Hazai tápnövényei: *Salix alba*, *S. fragilis*, *Quercus robur*, *Quercus* sp. (Németh & Merkl 2009) – síkvidéki adatok; *Acer platanoides*, *Aesculus hippocastanum*, *Fagus sylvatica*, *Q. petraea* (Kovács et al. 2010), illetve az itt közöltek: *A. campestre*, *A. hippocastanum*, *F. sylvatica*, *Q. petraea*, *Quercus* sp., *Tilia cordata*, *T. platyphyllos* – hegyvidéki adatok. Mint láthatjuk, tápnövényeiben nem válogat, leggyakrabban – az adatok 30%-ában – *Q. petraea*-ban találták. Társfajai: *Aegosoma scabricorne* (2), *Aesalus scarabaeoides*, *Ampedus hjorti*, *Denticollis rubens*, *Gnorimus variabilis* (3), *Ischnomera sanguinicollis*, *Osmoderma eremita* (3), *Stictoleptura erythroptera*, *Tenebrio opacus* (7). Lárvái leginkább az odúk alsó, nedves, földdel érintkező faanyagának törmelékében találhatók, de előfordul a magasabb részekben is. Imágója nyáron alkonyatkor aktív, fényre repül, gyümölcs- és boroscsapdát is látogat (Németh & Merkl 2009). Adataiból 21 lárvára, 2 pedig elpusztult imágóra vonatkozik.

Új adatok. Cserépfalu: Apasoma, 2012.09.21., L, *Quercus* sp., *Tilia platyphyllos*, DG-GyH-KT-MG-UL – Domoszló: Oroszlánvár, 2011.05.10., L, +, *T. cordata*, KT; 2012.07.08., L, *Quercus petraea*, KT – Gyöngyössolymos: Vérc-verés, 2012.04.04., L, *Fagus sylvatica*, KT – Parád: Hagymáspuszta, Ilona-völgy, 2011.05.31., L, *Aesculus hippocastanum*, KT; Hársas-tető, 2011.05.06., L, *Q. petraea*, KT-MG; Som-hegy, 2011.05.06., +, *Q. petraea*, KT-MG;

Sor-kő, 2011.06.28., L, *F. sylvatica*, KT; Szállás-hegy, 2011.09.09., L, *Q. petraea*, KT-MG; Várhegy, 2011.05.06., L, *F. sylvatica*, *Q. petraea*, KT-MG – Parádsasvár: Bagolykő, 2012.04.04., L, *Q. petraea*, KT; Recsk: Cserepes-tető, 2012.07.08., L, *Acer campestre*, KT.

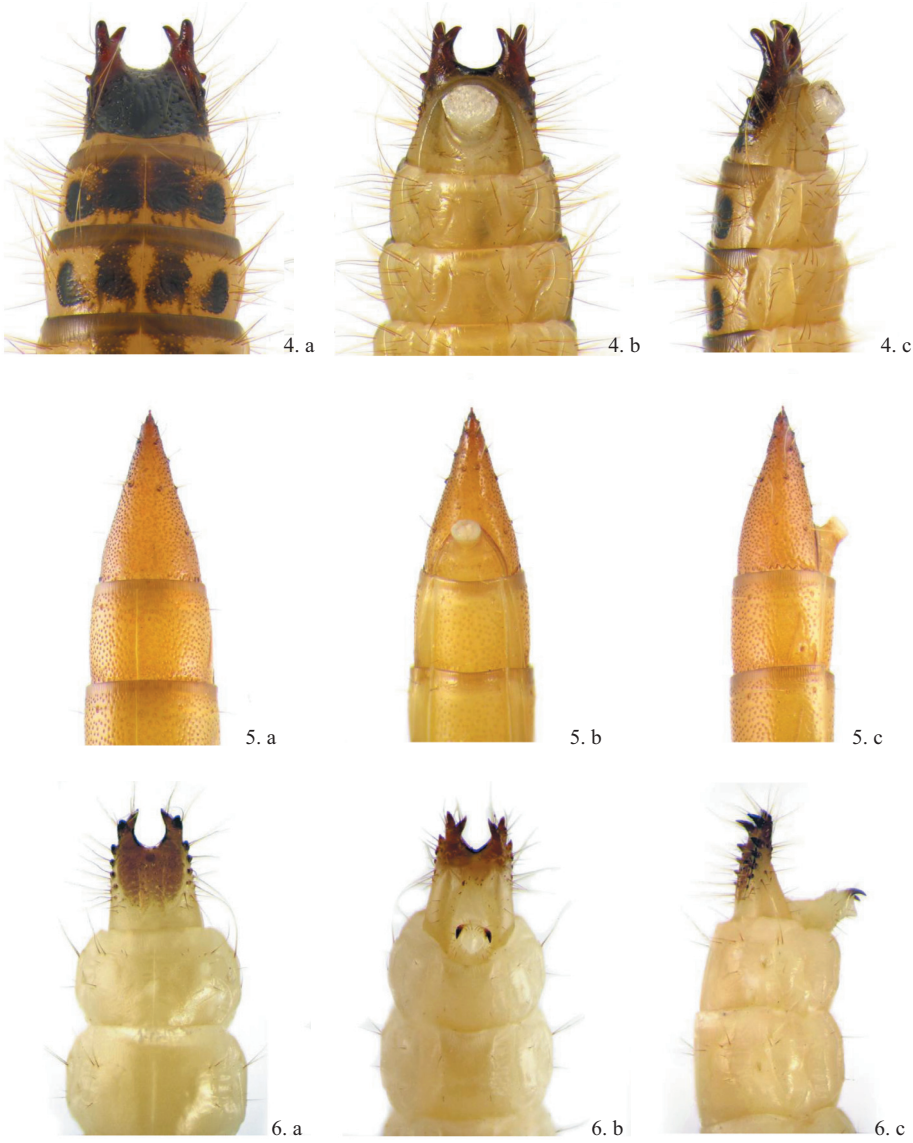
Hypoganus inunctus (Panzer, 1795) – 4. ábra a–c. A Mátrából 14 (Kovács et al. 2009, 2010, Németh & Merkl 2009) a Bükkből 5 helyről (Németh & Merkl 2009, Somorjai & Ádám 1996) közölték. Nem tipikus odúlakó, odvakban, de lábon álló elpusztult, illetve fekvő törzsekben is megtalálható. Hazai tápnövényei: *Carpinus betulus*, *Cerasus avium* („*Cerasus* sp." név alatt), *Pinus sylvestris* („fenyő" név alatt a soproni adatnál), *Quercus* sp. (Németh & Merkl 2009), *Acer pseudoplatanus*, *Acer* sp., *Alnus glutinosa*, *C. avium*, *Fagus sylvatica*, *Q. petraea*, *Quercus* sp. (Kovács et al. 2009, 2010), illetve az itt közöltek: *A. campestre*, *A. pseudoplatanus*, *F. sylvatica*; leggyakrabban – az adatok 36%-ában – *Q. petraea*-ban találták. Adataiból 2 lárvára, 20 pedig imágóra vonatkozik.

Új adatok. Gyöngyös: Vályús-kút-oldal, 2012.05.17., +, MG-UL – Parád: Som-hegy, 2011.05.06., I, KT-MG – Parádsasvár: Csór-hegy, 2012.10.22., I, KT-MG – Pásztó: Nyikom, 2012.09.06., L, *Fagus sylvatica*, +, *Acer pseudoplatanus*, KT-MG-UL – Recsk: Cserepes-tető, 2011.05.10., +, *A. campestre*, KT.

Ischnodes sanguinicollis (Panzer, 1793) – 5. ábra a–c. A Mátrából két helyről: Gyöngyöstarján, Ezerháztető; Hatvan, Kisgombosi-legelő (Kovács et al. 2010), a Bükkből három helyről: Eger; Miskolc, Lillafüred; Noszvaj, Síkfőkút (Németh & Merkl 2009, Németh et al. 2009, Somorjai & Ádám 1996) közölték. Hazai tápnövényei: *Acer* sp., *Fraxinus excelsior*, *Quercus cerris*, *Quercus* sp., *Tilia* sp., (Németh & Merkl 2009), *Q. cerris*, *Q. petraea* (Kovács et al. 2010), illetve az itt közöltek: *A. campestre*, *A. platanoides*, *A. pseudoplatanus*, *Aesculus hippocastanum*, *Cerasus avium*, *Fagus sylvatica*, *Q. cerris*, *Q. petraea*, *Q. pubescens*, *Ulmus glabra*; leggyakrabban – az adatok 43%-ában – *Q. cerris*-ben találták. Társfajai: *Camptorhinus statua*, *Cardiophorus gramineus*, *Denticollis rubens*, *Ischnomera sanguinicollis* (2), *Omoglymmius germari*, *Podeonius acuticornis*, *Rhamnusium bicolor* (2). Adataiból 9 lárvára, 16 pedig imágóra vonatkozik.

Új adatok. Cserépfalu: Apasoma, 2012.09.21., I, *Quercus pubescens*, DG-GyH-KT-MG-UL – Gyöngyöstarján: Szénégető, 2010.11.18., L, *Q. cerris*, KT – Hatvan: Kisgombosi-legelő, 2011.01.19., L, I, *Q. petraea*, KT-MG-UL – Markaz: Cseres-bérc, 2011.03.11., I, *Q. cerris*, KT-NT – Mátraszentimre: Ágasvár, 2011.04.06., L, *Acer campestre*, KT-MG; Csóka-kő, 2009.12.10., L, *Q. cerris*, KT-MG-UL – Parád: Hagymáspuszta, Ilona-völgy, 2011.05.31., L, *Aesculus hippocastanum*, KT; Som-bokor, 2011.05.17., +, *Fagus sylvatica*, *Ulmus glabra*, KT-MG-UL; Som-bokor, 2012.03.25., I, *F. sylvatica*, KA-KT-MG-NT; Sor-kő, 2011.05.17., +, *F. sylvatica*, KT-MG-UL; 2011.06.28., L, *F. sylvatica*, KT; Várhegy, 2011.05.06., +, *F. sylvatica*, KT-MG – Parádsasvár: Csór-hegy, 2012.10.22., L, I, *A. platanoides*, KT-MG – Pásztó: Nyikom, 2012.09.06., L, I, +, *A. pseudoplatanus*, +, *Cerasus avium*, KT-MG-UL; Nyikom-hegyese, 2012.09.06., +, *Q. petraea*, KT-MG-UL – Recsk: Cserepes-tető, 2011.05.10., L, *A. campestre*, I, *A. pseudoplatanus*, KT.

Lacon querceus (Herbst, 1784) – 6. ábra a–c. A Mátrából Kovács et al. (2010) közölte két helyről: Parád, Mraznica-tető; Recsk, Cserepes-tető. A Bükkben még nem találták (Németh & Merkl 2009). Hazai tápnövényei: *Cerasus avium* („*Cerasus* sp." név alatt), *Fagus sylvatica*, *Quercus sp.* (Németh & Merkl 2009), *Q. petraea* (Kovács et al. 2010), illetve az itt közöltek: *Acer pseudoplatanus*, *Q. petraea*; leggyakrabban *Q. petraea*-ban volt: az adatok



4–6. ábra. 4. *Hypoganus inunctus*, 5. *Ischnodes sanguinicollis*,
6. *Lacon querceus* lárvájának potrohvége; a. felülről, b. alulról, c. oldalról

50%-a. Társfajai: *Dendroleon pantherinus* /Myrmeleontidae/ (2), *Gnorimus variabilis*, *Tenebrio opacus* (2). A mátrai lelőhelyei 151–734 m magasságban találhatók (Kisgombosi-legelő, illetve Cserepes-tető). Általában szárazabb odúkban él, az ilyenekben akár számos példány is fejlődhet: a Kisgombosi-legelőn januárban 21 két korosztályú lárvát találtunk és egy imágót, míg a parádi Várhegyen májusban 19 imágót. A kirajzott állatok alkonyatkor aktívak (Németh & Merkl 2009). Adataiból 2 lárvára, 5 pedig imágóra vonatkozik.

Új adatok. Hatvan: Kisgombosi-legelő, 2011.01.19., L, I, *Quercus petraea*, KT-MG-UL – Parád: Várhegy, 2011.05.06., I, *Q. petraea*, KT-MG – Recsk: Cserepes-tető, 2011.05.10., I, *Acer pseudoplatanus*, KT.

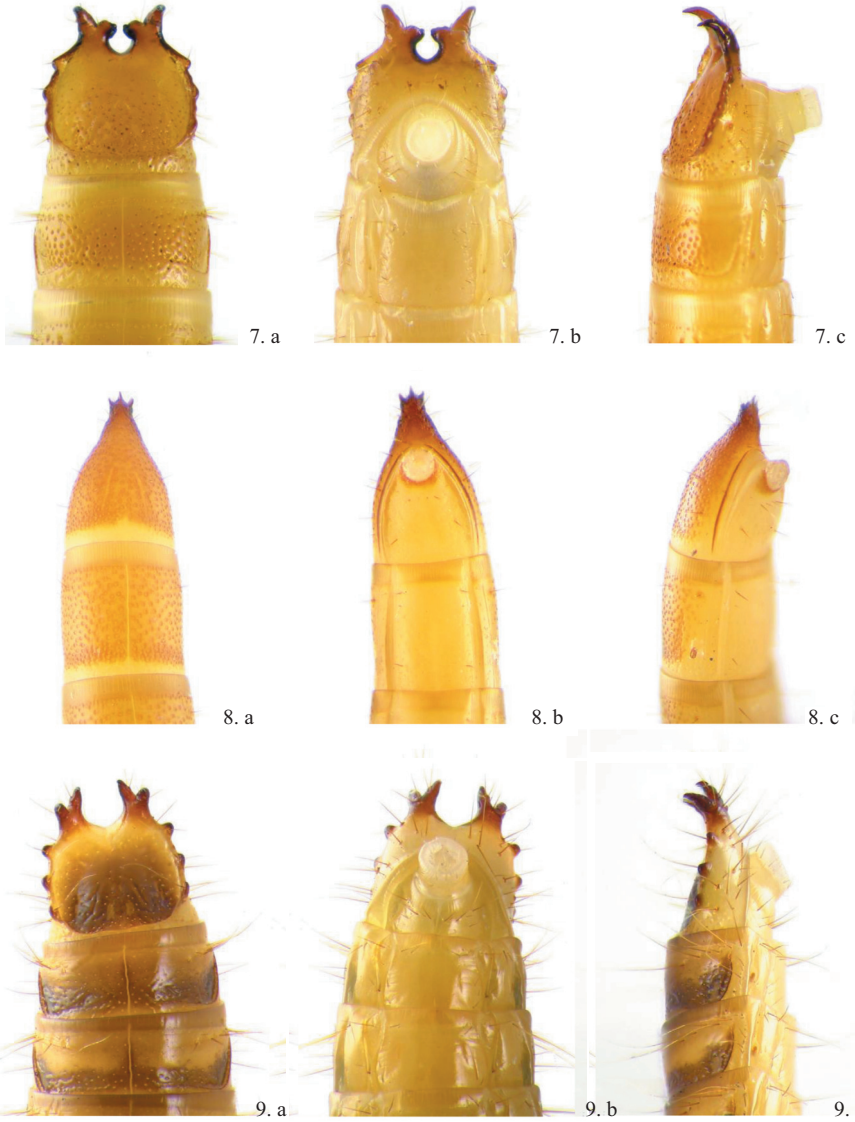
Limoniscus violaceus (P. W. J. Müller, 1821) – 7. ábra a–c. A Mátrából Kovács et al. (2009, 2010) 12 helyről közölte, itt további két gyűjtőhelye is szerepel: Ágasvár és Csór-hegy. Új a Bükk faunájában. Hazai tápnövényei: *Acer* sp., *Fraxinus* sp., *Quercus cerris*, *Quercus* sp., *Tilia* sp. (Németh & Merkl 2009), *A. campestre*, *Fagus sylvatica*, *Q. cerris*, *Q. petraea*, *Quercus* sp. (Kovács et al. 2009, 2010), illetve az itt közöltek: *A. campestre*, *A. platanoides*, *A. pseudoplatanus*, *Q. cerris*, *Q. petraea*, *Q. pubescens*; leggyakrabban – az adatok 45%-ában – *Q. cerris*-ben találták. Társfajai: *Aesalus scarabaeoides* (2), *Gnorimus variabilis*, *Necydalis ulmi*, *Osmoderma eremita*, *Stictoleptura erythroptera*, *Tenebrio opacus* (3). Egy odúban általában néhány állat fordul elő, a legmagasabb példányszám a Disznó-tetőn hét két korosztályú lárva és egy elpusztult imágó volt nagytermetű *Q. cerris*-ben. Az odú folyamatos – több évig tartó – „használatát" bizonyító leghosszabb adatsorunk: Cserepes-tető, *A. campestre*, 2009.03.25., imágó > 2012.07.08., két korosztályú lárva. Az imágó kétéves fejlődésmenetével számolva ez eddig 6 év. Adataiból 14 lárvára, 11 pedig imágóra vonatkozik.

Új adatok. Cserépfalu: Apasoma, 2012.09.21., L, *Quercus pubescens*, DG-GyH-KT-MG-UL – Markaz: Cseres-bérc, 2011.03.11., L, I, *Q. cerris*, KT-NT – Mátraszentimre: Ágasvár, 2011.04.06., L, *Q. cerris*, I, *Acer pseudoplatanus*, KT-MG – Parádsasvár: Csór-hegy, 2012.10.22., L, *A. platanoides*, KT-MG – Recsk: Cserepes-tető, 2011.05.10., I, *A. campestre*, KT; 2012.07.08., L, *A. campestre*, +, *Q. petraea*, KT.

Megapenthes lugens (L. Redtenbacher, 1842) – 8. ábra a–c. Az elmúlt 50 évben négy helyről közölték – Vác: Naszály, Porva (Németh & Merkl 2009); Parád: Disznó-tető, Recsk: Cserepes-tető (Kovács et al. 2010). Új a Bükk faunájában. Hazai tápnövényei: *Acer* sp. (Németh & Merkl 2009), *A. pseudoplatanus*, *Quercus cerris* (Kovács et al. 2010), illetve az itt közöltek: *A. platanoides*, *A. pseudoplatanus*, *Aesculus hippocastanum*, *Fagus sylvatica*, *Quercus cerris*, *Tilia cordata*, *T. platyphyllos*; leggyakrabban – az adatok 33%-ában – *Acer* sp.-ben találták. Társfajai: *Aegosoma scabricorne* (2), *Brachygonus megerlei*, *Ischnomera sanguinicollis*, *Necydalis ulmi*, *Omoglymmius germari*, *Rhamnusium bicolor* (4), *Stictoleptura erythroptera*, *Tenebrio opacus* (2). Talajjal érintkező és magasban levő odúkban is fejlődik. Adataiból 3 lárvára, 8 pedig imágóra vonatkozik.

Új adatok. Cserépfalu: Apasoma, 2012.09.21., +, *Tilia platyphyllos*, DG-GyH-KT-MG-UL – Gyöngyös: Farkasmály, Borpincék, 2010.11.13., L, I, *T. cordata*, KT – Mátraszentimre: Ágasvár, 2011.04.06., L, *Quercus cerris*, KT-MG – Parád: Som-bokor, 2011.06.16., +, *Fagus sylvatica*, KT-MG-UL; Som-hegy, 2011.05.06., +, *Acer platanoides*, KT-MG; Várhegy, 2011.05.06., +, *F. sylvatica*, KT-MG – Recsk: Cserepes-tető, 2011.05.10., I, *A. pseudoplatanus*, KT; Védett gesztenyefasor, 2011.05.31., L, > 07.31., I, *Aesculus hippocastanum*, KT.

Pseudanostirus globicollis (Germar, 1843) – 9. ábra a–c. Első hazai adatát „*Ludius alpestris* Mé. (*globicollis* Germ.)" név alatt Kuthy (1897) közölte: Budapest, Hárshegy, D. Kuthy. Ezt követően még Somorjai & Ádám (1996) számol be előkerüléséről a Bükk két pontjáról: Miskolc, Nyavajás (az adat publikálatlan része: 681 m, 1954.06.09., KZ-SzV), valamint Nagyvisnyó, Ágazat-bérc (az adat publikálatlan része: Nagybérc, 821 m, 1954.06.08-10., KZ-SzV). A Magyar Természettudományi Múzeum Bogárgyűjteményében található további három, publikálatlan adatú



7–9. ábra. 7. *Limoniscus violaceus*, 8. *Megapenthes lugens*,
9. *Pseudanostirus globicollis* lárvájának potrohvége; a. felülről, b. alulról, c. oldalról

példány céduláin a következők szerepelnek: Budapest; Budapest, Vöröskővár, 1929 és a legkésőbbi gyűjtés: Vérteskozma, Fáni-völgy, 1991.04.27., egyelés, Szederkényi Norbert. A Mátra egy térségében (Bagolykő – Vérc-verés – Csór-hegy) sikerült ráakadni, 666–717 m magasságú bükkös régióban. Az imágók közül 4 fekvő, holt bükktörzsön; 2 élő, álló bükktörzsön; 2 odús bükktörzs tövében a földön; 2 aljnövényzeten; 1 pedig fekvő, holt bükktörzs kéreg alatt volt. Két elpusztult imágót találtunk mezei juhar odúban (10. ábra) és egy lárvát ugyanezen odú bejáratánál

10. ábra. A *Pseudanostirus globicollis* lárvájának lelőhelye:
mezei juhar odújának bejárata a parádsasvári Csór-hegyen (717 m)

a nedves talajban, 5 cm mélységben. Ez azt valószínűsíti, hogy a nőstények idős odvas fák (*Acer campestre*, *Fagus sylvatica*) tövéhez petéznek és a lárvák, ha nem is az odúban, de annak közvetlen környezetében a nedves talajban fejlődnek (*Acer campestre*). Bár *Fagus sylvatica* tövében még nem találtunk lárvát, feltételezzük, hogy ez a faj is tápnövénye a gömbnyakú pattanónak, mivel a mezei juhar odvainak száma a területen alacsony az imágók megfigyelt példányszámához képest. Adataiból 1 lárvára, 6 pedig imágóra vonatkozik.

Új adatok. Gyöngyössolymos: Bagolykő, 2011.06.02., I, KT; 2011.06.03., I, KA-KT-NT; Vérc-verés, 2011.05.19., I, KT; 2011.05.22., I, KT-MG – Parádsasvár: Csór-hegy, 2012.07.12., +, *Acer campestre*, KT; 2012.11.18., +, L, *A. campestre*, KT.

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Irodalom

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FOLIA HISTORICO NATURALIA MUSEI MATRAENSIS
2012 36: 29–30

Two new host plant species of *Parmena bicincta* Küster, 1849 (Coleoptera: Cerambycidae)

Tibor Kovács

Abstract: Two new host plant species of *Parmena bicincta* representing new families are recorded: *Agave americana* (Agavaceae) and *Crihtmum maritimum* (Apiaceae). With two figures.

Kovács et al. (1999) published host plants of three *Parmena* species, i.e. *Parmena bicincta* Küster, 1849 from *Ficus carica*; *P. pubescens pilosa* Brullé, 1832 from *Crithmum maritimum* and *Euphorbia wulfenii*; *P. unifasciata* (Rossi, 1790) from *Ficus carica*, *Hedera helix*, *Juglans regia* and *Quercus* sp. Of these, *Ficus carica* was a new host plant for *P. bicincta*, while *Juglans regia* and *Quercus* sp. for *P. unifasciata* (cf. Bense 1995, Brelih et al. 2006, Sama 1984, 1985, 2002).

Known host plant species for *Parmena bicincta*: *Euphorbia wulfenii* (Bense 1995, Sama 1985) and *Ficus carica* (Kovács et al. 1999).

New host plant data: Croatia, Hvar, Hvar, Križni rat, N43°09'48.02", E16°26'44.95", 20 m, 26.07.2005.>22.06.2006, *Agave americana*, 1 adult female, Kovács, T. (Mátra Museum, Gyöngyös) – Rovanjska, N44°14'53.41", E15°32'16.40", 2 m, 05.05.2006>28.06.2006, 1 adult male, *Chritmum maritimum*, Kovács, T. (Mátra Museum, Gyöngyös).

Fig. 1. *Agave americana* with live and dead bloom.
Arrow indicating place of developing beetle in the plant (photo Dóra Kovács)

Rarity of *Parmena bicincta* may be the cause of the low number of known host plant species, since this beetle develops in both herbaceous (*Euphorbia wulfenii* – Euphorbiaceae) and woody plants (*Ficus carica* – Moraceae). One of its new host plants, *Chritmum maritimum* (Apiaceae)

is herbaceous, while the other is the monocotyledonous *Agave americana* (formerly Agavaceae, now Asparagaceae) (Fig. 1), which is introduced from Central America and established in the Mediterranean. The larva in *C. maritimun* bored in the base of the stem, first beneath the epidermis then deeper where pupation took place (Fig. 2a). In *A. americana* the larva bored in one of the stalks of dead inflorescence beneath the epidermis and pupated there (Fig. 2b). This type of larval burrowing is similar to those in woody host plant (*Ficus carica*).

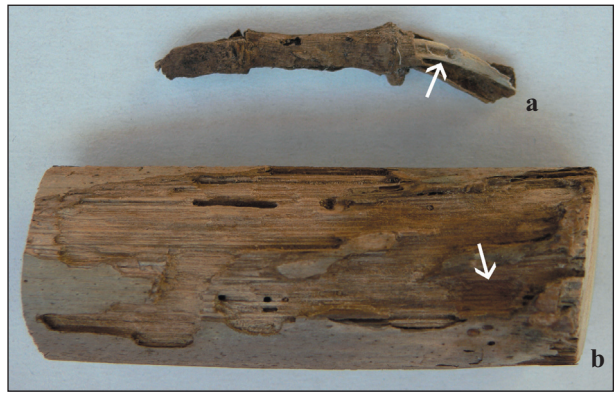

Fig. 2a–b. Burrows of *Parnena bicincta*, a = *Chritmum maritimum*, b = *Agave americana.* Arrows indicating place of pupation

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Ritka és természetvédelmi szempontból jelentős bogarak (Coleoptera) a Mátra és a Bükk területéről

Kovács Tibor, Magos Gábor & Urbán László

Abstract: (Rare and protected beetles (Coleoptera) in the area of the Mátra and the Bükk) This paper provides locality data of 66 beetle species from the Mátra and Bükk Mountains. Of them, six species are of community interest listed in the Habitats Directive (*Rhysodes sulcatus*, *Lucanus cervus*, *Osmoderma eremita*, *Cucujus cinnaberinus*, *Cerambyx cerdo*, *Rosalia alpina*); two species (*O. eremita*, *Eurythyrea quercus*) is strictly protected and 39 species are protected in Hungary.

Species interesting from faunistical point of view: *Rhysodes sulcatus*, *Osmoderma eremita*, *Isoriphis marmottani*, *Dictyoptera aurora*, *Melandrya barbata*, *Zilora obscura*, *Cerambyx welensii*, *Necydalis ulmi*, *Purpuricenus globulicollis*.

The following species are new to the Mátra Mountains: *Ctenicera virens*, *Anastrangalia dubia*, *Purpuricenus globulicollis* and the Bükk Mountains: *Eurythyrea quercus*, *Ampedus nigerrimus*, *Cerambyx welensii*.

The following natural habitats are especially valuable on the basis of their beetle fauna: Csór-hegy – Bagolykő – Vérc-verés (Gyöngyössolymos, Parádsasvár), Som-bokor – Sor-kő (Gyöngyös, Parád), Szállás-hegy (Parád), Várhegy (Parád) (Mátra Mountains); Apasoma (Cserépfalu), Cinegés (Cserépfalu), Közép-szék – Közép-szék-lápa (Cserépfalu), Cserepes-kő – Kis-Vörös-kő-bérc – Vörös-kő (Felsőtárkány, Szilvásvárad) (Bükk Mountains).

Bevezetés

A cikkben folytatódik a hazai (Anonim 2012, Merkl & Kovács 1997, Varga et al. 1989) és európai (Berni Egyezmény 1994, Corine 1991, Council Directive 1992, Good & Speight 1996, Iucn 1996, Nieto & Alexander 2010) védettségi listákon található xilofág és szaproxilofág bogarak, illetve egyéb ritka, védett bogarak lelőhelyeinek közlése (Kovács et al. 2009, 2010).

Rövidítések: CJ = Czikora János, DG = Domboróczki Gábor, GyH = Győrfy Hunor, IZ = Ilonczai Zoltán, KA = Kotán Attila, KT = Kovács Tibor, KTa = Korompai Tamás, MG = Magos Gábor, NT = Németh Tamás, UL = Urbán László; gy = gyűrűzött ág (ringed branch), L = lárva (larva), B = báb (pupa), I = imágó (adult), + = elpusztult imágó (dead adult).

A fajok faunisztikai adatai

Rhysodidae Laporte, 1840

Omoglymmius germari (Ganglbauer, 1891) – Recsk: Cserepes-tető, 2011.05.10., +, *Acer pseudoplatanus*, KT.
Rhysodes sulcatus (Fabricius, 1787) – Cserépfalu: Közép-szék, 2012.09.20., I, *Fagus sylvatica*, DG-GyH-KT-MG-UL.

Carabidae Latreille, 1802

Calosoma inquisitor (Linnaeus, 1758) – Pásztó: Somos-bérc, 2012.08.07., +, KT – Rózsaszentmárton: Tarcal-tető, 2012.05.03., +, MG-UL.

Calosoma sycophanta (Linnaeus, 1758) – Hatvan: Kisgombosi-legelő, 2011.01.19., +, KT-MG-UL.
Carabus coriaceus Linnaeus, 1758 – Gyöngyös: Teknő-völgy, 2012.08.16., +, KTa-UL.
Carabus granulatus Linnaeus, 1758 – Gyöngyös: Sár-hegy, 2011.01.16., I, KT; 2011.02.18., I, KT.
Carabus intricatus Linnaeus, 1761 – Cserépfalu: Apasoma, 2012.09.21., +, DG-GyH-KT-MG-UL; Bogár-hegy, 2012.09.21., I, DG-GyH-KT-MG-UL – Felsőtárkány: Csák-pilis-tető, 2012.09.21., I, DG-GyH-KT-MG-UL – Gyöngyös: Gondház-kő, 2012.05.10., +, KT; Kékes-laposa, 2012.05.10., +, KT; Sár-hegy, 2011.01.16., I, KT; Sár-hegy, Nagy-nyariska, 2011.05.03., I, KT – Gyöngyössolymos: Tarma, 2010.11.25., I, KT – Markaz: Negyvenhold, 2011.05.27., I, +, KT-MG-UL – Mátraszentimre: Ágasvár, 2011.04.06., +, KT-MG – Parád: Disznó-kő, 2012.08.16., +, KT; Saskő-tető, 2012.08.16., +, KT; Som-bokor, 2011.05.17., +, KT-MG-UL; 2011.06.16., +, KT-MG-UL; 2011.06.28., +, KT; 2011.07.01., +, KT-MG; Som-hegy, 2011.05.06., I, KT-MG; Várhegy, 2011.05.06., +, KT-MG – Parádsasvár: Bagolykő, 2012.10.22., I, KT-MG – Pásztó: Tót-hegyes, 2010.11.18., I, KT – Szilvásvárad: Cserepes-kő, 2011.04.17., +, KT-MG.
Cicindela sylvicola Dejean, 1822 – Gyöngyössolymos: Nagy-lápa-fő, 201.06.03., I, KA-KT-NT; Vérc-verés, 2012.05.22., I, KT-MG-UL.
Cychrus caraboides (Linnaeus, 1758) – Cserépfalu: Hangyás-bérc, 2012.09.20., +, DG-GyH-KT-MG-UL – Felsőtárkány: Kis-Vörös-kő-bérc, 2011.04.17., +, KT-MG – Parád: Saskő-bérc, 2012.08.16., +, KT – Pásztó: Nyikom, 2012.09.06., +, KT-MG-UL; Nyikom-hegyese, 2012.09.06., +, KT-MG-UL.

Lucanidae Latreille, 1804

Aesalus scarabaeoides (Panzer, 1794) – Cserépfalu: Apasoma, 2012.09.21., +, *Quercus* sp., DG-GyH-KT-MG-UL – Felsőtárkány: Kis-Vörös-kő-bérc, 2011.04.17., +, *Q. petraea*, KT-MG – Gyöngyös: Gondház-kő, 2012.05.22., +, *Fagus sylvatica*, KT-MG-UL – Parád: Som-bokor, 2012.03.25., +, *Q. petraea*, KA-KT-MG-NT; Tőkés-kút-tető, 2012.08.16., +, *Q. petraea*, KT – Parádsasvár: Bagolykő, 2012.10.22., I, *Q. petraea*, KT-MG.
Dorcus parallelipipedus (Linnaeus, 1758) – Bátonyterenye: Gaskó-alja, 2012.06.07., I, KTa-UL – Cserépfalu: Apasoma, 2012.09.20., +, *Fraxinus angustifolia*, *Quercus* sp., DG-GyH-KT-MG-UL; Közép-szék, 2012.09.20., I, *Acer* sp., +, *Fagus sylvatica*, *Q. petraea*, DG-GyH-KT-MG-UL – Gyöngyös: Menyecske-hegy, 2011.05.11., +, *Q. petraea*, MG-UL; Sár-hegy, Nagy-nyariska, 2011.05.03., I, *Q. petraea*, KT; Vályús-kút-oldal, 2012.05.17., +, *Q. petraea*, MG-UL – Gyöngyöspata: Eresztvény, 2011.07.01., +, *Q. cerris*, KT-MG-CJ; Szalajkás-tető, 2012.09.06., +, *Q. petraea*, KT-MG-UL – Gyöngyössolymos: Nagy-völgy, 2011.05.27., +, *Alnus glutinosa*, KT-MG-UL; Vérc-verés, 2012.05.22., +, *Q. petraea*, KT-MG-UL – Gyöngyöstarján: Szénégető, 2010.11.18., I, *Q. cerris*, KT – Hatvan: Kisgombosi-legelő, 2012.05.24., +, KTa-UL – Parád: Hársas-tető, 2011.05.06., I, *Q. petraea*, KT-MG; Kékes, 2011.05.17., I, *F. sylvatica*, KT-MG-UL; Som-bokor, 2011.06.16., L, *A. pseudoplatanus*, I, *F. sylvatica*, KT-MG-UL; Várhegy, 2011.05.06., I, *F. sylvatica*, *Q. petraea*, KT-MG – Parádsasvár: Bagolykő, 2012.10.22., +, *F. sylvatica*, KT-MG – Pásztó: Nyikom-hegyese, 2012.09.06., +, *F. sylvatica*, KT-MG-UL.
Lucanus cervus (Linnaeus, 1758) – Bátonyterenye: Semereg-szoba, 2012.06.07., I, KTa-UL – Cserépfalu: Apasoma, 2012.09.21., +, DG-GyH-KT-MG-UL; Cinegés, 2012.09.21., +, DG-GyH-KT-MG-UL; Közép-szék, 2012.09.20., +, DG-GyH-KT-MG-UL – Domoszló: Cserepes-tető, 2008.07.10., I, MG – Gyöngyös: Menyecske-hegy, 2011.04.07., +, MG; Sár-hegy, 2011.01.16., +, KT – Gyöngyöspata: Szalajkás-tető, 2012.09.06., +, KT-MG-UL – Gyöngyössolymos: Farkas-kő, 2012.09.18., +, MG; Vérc-verés, 2012.05.22., +, KT-MG-UL – Gyöngyöstarján: Ezerház-tető, 2012.08.23., +, UL; Káva, 2010.09.07., +, MG-UL – Hatvan: Kisgombosi-legelő, 2011.01.19., +, KT-MG-UL – Kisgyőr: Bogárzás-tető, 2012.08.09., +, IZ-MG – Kisnána: Bucsina, 2008.09.10., I, MG – Mátraszentimre: Ágasvár, 2011.04.06., +, KT-MG – Pálosvörösmart: Meleg-hegy, 2012.03.29., +, MG – Parád: Disznó-kő, 2012.08.16., +, KT; Hársas-tető, 2011.05.06., +, KT-MG; Saskő, 2012.08.16., +, KT; Som-bokor, 2012.03.25., +, KA-KT-MG-NT; Som-hegy, 2011.05.06., +, KT-MG; Szállás-hegy, 2011.09.06., I, CJ-MG; Tőkés-kút-tető, 2012.08.16., +, KT; Várhegy, 2011.05.06., +, KT-MG – Pásztó: Muzslapuszta, 2012.08.07., +, KT; Nyikom-hegyese, 2012.09.06., +, KT-MG-UL; Somos-bérc, 2012.08.07., +, KT – Szilvásvárad: Cserepes-kő, 2011.04.17., +, KT-MG.
Sinodendron cylindricum (Linnaeus, 1758) – Cserépfalu: Apasoma, 2012.09.20., +, *Acer platanoides*, *Quercus petraea*, DG-GyH-KT-MG-UL; Hangyás-bérc, 2012.09.20., +, *Fagus sylvatica*, DG-GyH-KT-MG-UL; Hór-völgy, 2012.09.20., L, *A. pseudoplatanus*, DG-GyH-KT-MG-UL; Közép-szék, 2012.09.20., +, *F. sylvatica*, DG-GyH-KT-MG-UL – Felsőtárkány: Csák-pilis-tető, 2012.09.21., +, *F. sylvatica*, *Q. petraea*, DG-GyH-KT-MG-UL – Gyöngyös: Gondház-kő, 2012.05.10., +, *F. sylvatica*, KT; Kékes, 2012.08.16., +, *F. sylvatica*, KT; Nagy-Hidas-völgy, 2012.05.22., +, *F. sylvatica*, KT-MG-UL; Som-bokor, 2011.06.16., +, *F. sylvatica*, KT-MG-UL; Szent László-völgy, 2012.05.22., +, *Q. petraea*, KT-MG-UL – Gyöngyössolymos: Nagy-lápa-fő, 2011.06.16., I, *Q. petraea*, KT-MG-UL;

Nagy-völgy, 2011.05.27., +, *Carpinus betulus*, KT-MG-UL; Vérc-verés, 2012.05.22., +, *Q. petraea*, KT-MG-UL – Gyöngyöstarján: Ezerház-tető, 2012.08.23., +, *F. sylvatica*, UL – Mátraszentimre: Ágasvár, 2011.04.06., +, *Cerasus avium*, KT-MG – Parád: Kékes, 2011.05.17., +, *F. sylvatica*, KT-MG-UL; 2012.08.16., +, *F. sylvatica*, KT; Kis-Saskő, 2012.08.16., +, *F. sylvatica*, KT; Saskő-bérc, 2012.08.16., +, *C. betulus*, KT; Saskő-tető, 2012.08.16., +, *F. sylvatica*, KT; Som-bokor, 2011.06.16., I, *F. sylvatica*, KT-MG-UL; 2012.03.25., I, *F. sylvatica*, KA-KT-MG-NT; Sor-kő, 2012.03.25., +, *A. platanoides*, KA-KT-MG-NT – Parádsasvár: Bagolykő, 2012.10.22., I, *Q. petraea*, KT-MG; Csór-hegy, 2012.10.22., L, *A. campestre*, KT-MG – Pásztó: Muzsla-tető, 2012.08.07., +, *F. sylvatica*, KT; Nyikom, 2012.09.06., I, *C. avium*, *F. sylvatica*, +, *C. betulus*, *C. avium*, *F. sylvatica*, KT-MG-UL; Nyikom-hegyese, 2012.09.06., +, *F. sylvatica*, KT-MG-UL; Somos-bérc, 2012.08.07., +, *F. sylvatica*, KT – Szilvásvárad: Kis-Vörös-kő-bérc, 2011.04.17., +, *F. sylvatica*, KT-MG.

Scarabaeidae Latreille, 1802

Lethrus apterus (Laxmann, 1770) – Dorogháza: Hegyes-föld, 2012.09.14., I, talajból kiásva, Barta Zoltán-Kosztolányi András-KT.
Gnorimus variabilis (Linnaeus, 1758) – Cserépfalu: Apasoma, 2012.09.21., +, *Quercus* sp., DG-GyH-KT-MG-UL – Felsőtárkány: Csák-pilis-tető, 2012.09.21., +, *Q. petraea*, DG-GyH-KT-MG-UL; Kis-Vörös-kő-bérc, 2011.04.17., +, *Q. petraea*, KT-MG; Vörös-kő, 2011.04.17., +, *Q. petraea*, KT-MG – Parád: Hársas-tető, 2011.05.06., +, *Q. petraea*, KT-MG; Mraznica-tető, 2012.08.16., +, *Q. petraea*, KT; Som-hegy, 2011.05.06., +, *Acer pseudoplatanus*, KT-MG; Szállás-hegy, 2011.09.09., +, *Q. petraea*, KT-MG; Várhegy, 2011.05.06., +, *Q. petraea*, KT-MG – Parádsasvár: Bagolykő, 2012.10.22., +, *Q. petraea*, KT-MG – Recsk: Cserepes-tető, 2012.07.08., +, KT.
Osmoderma eremita (Scopoli, 1763) – Cserépfalu: Közép-szék-lápa, 2012.09.20., +, *Acer campestre*, DG-GyH-KT-MG-UL – Kisgyőr: Bogárzás-tető, 2012.08.09., +, *Q. petraea*, IZ-MG – Parád: Mraznica-tető, 2012.08.16., +, *Q. petraea*, KT; Som-bokor, 2012.07.03., +, *Q. petraea*, KT; Som-hegy, 2011.05.06., +, *Q. petraea*, KT-MG; Szállás-hegy, 2011.09.06., +, *Q. petraea*, CJ-MG – Parádsasvár: Bagolykő, 2012.04.04., +, *Q. petraea*, KT.
Protaetia aeruginosa (Drury, 1773) – Gyöngyös: Menyecske-hegy, 2011.05.11., +, MG-UL; Peres-bérc, 2012.05.31., +, UL; Sár-hegy, 2011.02.18., +, *Quercus petraea*, KT – Parád: Hársas-tető, 2011.05.06., +, *Q. petraea*, KT-MG; Vár-hegy, 2011.05.06., +, *Q. petraea*, KT-MG.
Protaetia lugubris (Herbst, 1786) – Gyöngyöspata: Szalajkás-tető, 2012.09.06., +, *Quercus petraea*, KT-MG-UL – Jobbágyi: Szurdok-völgy, 2010.11.16., +, *Salix alba*, KT-MG-UL – Pásztó: Nyikom-hegyese, 2012.09.06., +, *Q. petraea*, KT-MG-UL.

Buprestidae Leach, 1815

Capnodis tenebrionis (Linnaeus, 1761) – Tarnaszentmária: Verpeléti Vár-hegy, 2012.04.19., I, KTa.
Coraebus fasciatus (Villers, 1789) – Abasár: Dobogó-tető, 2012.03.07., gy, *Quercus petraea*, MG; Hajnács-kő, 2012.05.17., gy, *Q. petraea*, MG-UL; Négyes-határ, 2012.05.17., gy, *Q. cerris*, *Q. petraea*, MG; Rónya-tető, 2012.04.07., gy, *Q. cerris*, *Q. petraea*, MG; Serpenyő, 2012.03.07., gy, *Q. petraea*, MG; Tekeres-erdő, 2012.04.07., gy, *Q. cerris*, *Q. petraea*, MG – Cserépfalu: Apasoma, 2012.09.20., gy, *Q. pubescens*, DG-GyH-KT-MG-UL; Közép-szék, 2012.09.20., gy, *Q. petraea*, DG-GyH-KT-MG-UL – Domoszló: Első-hegy, 2012.10.04., gy, *Q. petraea*, KTa-MG-UL; Felső-Rónya, 2012.07.30., gy, *Q. petraea*, MG; Hegyes-hegy, 2011.06.02., gy, *Q. petraea*, MG; Kis-erdő, 2012.04.19., gy, *Q. cerris*, *Q. petraea*, MG-UL; Kopec-oldal, 2012.10.04., gy, *Q. petraea*, KTa-MG-UL; Középső-hegy, 2012.10.04., gy, *Q. petraea*, KTa-MG-UL; Uszonka, 2012.07.30., gy, *Q. petraea*, MG – Felsőtárkány: Csák-pilis-tető, 2012.09.21., gy, *Q. petraea*, DG-GyH-KT-MG-UL – Gyöngyös: Dobogó, 2012.10.05., gy, *Q. cerris*, *Q. petraea*, MG; Kis-Körtvélyes, 2011.04.06., gy, *Q. petraea*, MG; Menyecske-hegy, 2012.03.17. gy, *Q. cerris*, *Q. petraea*, MG; Peres-bérc, 2012.10.05., gy, *Q. cerris*, *Q. petraea*, MG; Pogány-vár, 2012.05.17., gy, *Q. petraea*, MG-UL; Sár-hegy, 2011.01.16., gy, *Q. petraea*, KT; Tövis-tető, 2012.03.17. gy, *Q. cerris*, *Q. petraea*, MG – Gyöngyös-oroszi: Gazdák-erdeje, 2012.04.24., gy, *Q. petraea*, MG-UL; Gazdasági-Páskom, 2012.04.24., gy, *Q. petraea*, MG-UL – Gyöngyöspata: Havas, 2012.04.17., gy, *Q. pubescens*, MG-UL; Mész-völgy, 2012.04.17., gy, *Q. cerris*, MG-UL; Német-bérc, 2012.01.25., gy, *Q. petraea*, MG; Szalajkás-tető, 2012.09.06., gy, *Q. petraea*, KT-MG-UL; Szár-hegy-lapos, 2012.04.17., gy, *Q. cerris*, MG-UL; Zám-patak-völgye, 2012.01.25., gy, *Q. petraea*, MG – Gyöngyössolymos: Dobogó, 2012.10.05., gy, *Q. cerris*, *Q. petraea*, MG; Eremény-bérc, 2012.05.31., gy, *Q. petraea*, UL; Farkas-kő, 2012.09.18., gy, *Q. petraea*, MG; Gyalogoké, 2012.10.05., gy, *Q. petraea*, MG; Gyökeres-tető, 2012.04.06., gy, *Q. petraea*, MG; Körtvélyes, 2012.05.31., gy, *Q. petraea*, UL; Nyerges-bérc, 2012.03.28., gy, *Q. petraea*, MG;Tarma,

2012.05.31., gy, *Q. petraea*, UL – Gyöngyöstarján: János-vára, 2012.06.27., gy, *Q. cerris*, MG-UL; Káva, 2010.09.07., gy, *Q. pubescens*, MG-UL – Kisnána: Bartizál-tető, 2012.03.14., gy, *Q. cerris*, MG-UL – Markaz: Cseres-alja, 2012.04.10., gy, *Q. pubescens*, MG-UL; Cseresi-domb, 2012.04.10., gy, *Q. cerris*, *Q. pubescens*, MG-UL; Fenyves-tető, 2012.04.19., gy, *Q. cerris*, MG-UL; Gödrös-bérc, 2012.07.20., gy, *Q. petraea*, MG; Hatra-patak-tető, 2012.03.16., gy, *Q. petraea*, MG; Kis-erdő, 2012.04.19., gy, *Q. cerris*, *Q. petraea*, MG-UL; Veres-agyag-tető, 2012.04.19., gy, *Q. cerris*, MG-UL – Mátraszentimre: Ágasvár, 2011.04.06., gy, *Q. petraea*, KT-MG; Som-bérc, 2012.05.15., gy, *Q. petraea*, MG – Pálosvörösmart: Kőkunyhó-lapos, 2012.04.07., gy, *Q*, *petraea*, MG; Meleg-hegy, 2012.03.29., gy, *Q. cerris*, *Q. petraea*, MG; Német-kúti-oldal, 2012.06.28., gy, *Q. petraea*, MG; Rónya-bérc, 2012.04.07., gy, *Q*, *petraea*, MG; Rónya-tető, 2012.05.17., gy, *Q. pubescens*, MG-UL; Tekeres-oldal, 2012.04.07., gy, *Q. cerris*, *Q. petraea*, MG – Parád: Lapossás-domb, 2011.09.09., gy, *Q. petraea*, KT-MG; Szállás-hegy, 2011.09.09., gy, *Q. petraea*, KT-MG; Tőkés-kút-tető, 2012.08.16., gy, *Q. petraea*, KT – Pásztó: Mocsár-Bükk, 2012.09.06., gy, *Q. cerris*, KT-MG-UL; Nyikom, 2012.09.06., gy, *Q. petraea*, KT-MG-UL; Somos-bérc, 2012.08.07., gy, *Q. petraea*, KT; Széles-bükk, 2011.04.20., gy, *Q. petraea*, MG – Recsk: Csákány-kő, 2012.05.19.; gy, *Q. cerris*, *Q. petraea*, CJ-MG – Rózsaszentmárton: Tarcal-tető, 2012.05.03., gy, *Q. cerris*, MG-UL – Sirok: Paska-tető, 2012.04.05., gy, *Q. petraea*, UL – Tarnaszentmária: Nagy-Juss, 2012.03.14., gy, *Q. cerris*, MG-UL – Verpelét: Hangács-oldal, 2012.05.10., gy, *Q. petraea*, MG-UL; Macska-vár, 2012.05.10., gy, *Q. cerris*, MG-UL; Veres-part, 2012.03.14., gy, *Q. cerris*, MG-UL.

Dicerca berolinensis (Herbst, 1779) – Cserépfalu: Apasoma, 2012.09.21., +, *Carpinus betulus*, DG-GyH-KT-MG-UL; Hangyás-bérc, 2012.09.20., +, *C. betulus*, DG-GyH-KT-MG-UL; Közép-szék, 2012.09.20., +, *C. betulus*, DG-GyH-KT-MG-UL; Magas-tető, 2012.09.20., +, *C. betulus*, DG-GyH-KT-MG-UL – Domoszló: Első-hegy, 2012.10.04., +, *C. betulus*, KTa-MG-UL; Felső-Tarjánka, 2012.09.18., +, *C. betulus*, MG – Gyöngyös: Som-bokor, 2012.03.25., +, *Fagus sylvatica*, KA-KT-MG-NT – Parád: Lapossás-domb, 2011.09.09., +, *C. betulus*, KT-MG; Nagy-Szár-hegy, 2011.04.11., +, *C. betulus*, CJ-MG; Várhegy, 2011.05.06., +, *F. sylvatica*, KT-MG – Parádsasvár: Bagolykő, 2012.10.22., +, *C. betulus*, *F. sylvatica*, KT-MG – Pásztó: Nyikom, 2012.09.06., +, *C. betulus*, *F. sylvatica*, *Ulmus glabra*, KT-MG-UL; Somos-bérc, 2012.08.07., +, *C. betulus*, KT.

Eurythyrea quercus (Herbst, 1780) – Cserépfalu: Cinegés, 2012.09.21., +, *Quercus* sp., DG-GyH-KT-MG-UL – Felsőtárkány: Vörös-kő, 2011.04.17., +, *Q. petraea*, KT-MG – Gyöngyössolymos: Bagolykő, 2012.04.04., +, *Q. petraea*, KT – Parád: Hársas-tető, 2011.05.06., +, *Q. petraea*, KT-MG; Lapossás-domb, 2011.09.09., +, *Q. petraea*, KT-MG; Szállás-hegy, 2011.09.09., +, *Q. petraea*, KT-MG; Várhegy, 2011.05.06., +, *Q. petraea*, KT-MG – Szilvásvárad: Cserepes-kő, 2011.04.17., +, *Q. petraea*, KT-MG.

Eucnemidae Eschscholtz, 1829

Isoriphis marmottani (Bonvouloir 1871) – Gyöngyös: Honvédüdülő, Nagy-Hidas-völgy, 2012.07.03., I, KT.

Elateridae Leach, 1815

Ampedus cardinalis (Schiödte, 1865) – Hatvan: Kisgombosi-legelő, 2011.01.19., I, *Quercus petraea*, KT-MG-UL.

Ampedus elegantulus (Schönherr, 1817) – Jobbágyi: Szurdok-völgy, 2010.11.16., I, *Salix alba*, KT-MG-UL.

Ampedus nigerrimus (Lacordaire, 1835) – Cserépfalu: Apasoma, 2012.09.21., I, *Quercus* sp., DG-GyH-KT-MG-UL.

Ampedus praeustus (Fabricius, 1792) – Felsőtárkány: Hárs-kút-oldal, 2011.04.17., I, *Acer* sp., KT-MG – Gyöngyös: Sár-hegy, 2011.01.16., I, *Quercus petraea*, KT – Parád: Hársas-tető, 2011.05.06., +, *Q. petraea*, KT-MG; Mraznica-tető, 2011.03.11., I, *Q. petraea*, KT-NT; Várhegy, 2011.05.06., I, *Q. petraea*, KT-MG – Parádsasvár: Bagolykő, 2012.10.22., I, *Q. petraea*, KT-MG.

Brachygonus megerlei (Lacordaire, 1835) – Gyöngyös: Farkasmály, 2010.11.13., I, *Tilia cordata*, KT – Gyöngyöstarján: Szénégető, 2010.11.18., I, *Quercus petraea*, KT – Recsk: Cserepes-tető, 2011.05.10., I, *Acer pseudoplatanus*, KT; Oroszlánvár, 2012.06.18., I, fényre, KTa-MG-UL.

Ctenicera virens (Schrank, 1781) – Mátraszentimre: Péter-hegyese, 2011.05.19., I, KT – Parád: Hidas, 2011.05.17., I, KT-MG-UL; Som-bokor-árnyék, 2011.05.13., I, UL; 2011.06.03., I, KA-KT-NT.

Denticollis rubens Piller et Mitterpacher, 1783 – Markaz: Negyvenhold, 2011.05.27., I, KT-MG-UL – Parád: Kékes, 2011.05.17., B, > 05.22., I, *Fagus sylvatica*, KT-MG-UL; Sor-kő, 2011.06.28., +, *F. sylvatica*, KT – Szuha: Mátra-almás, Verbőczi-kút, Szuha-patak-völgye, 2012.05.22., I, KT-MG-UL.

Podeonius acuticornis (Germar, 1824) – Hatvan: Kisgombosi-legelő, 2011.01.19., I, *Quercus petraea*, KT-MG-UL.

Porthmidius austriacus (Schrank, 1781) – Parád: Disznó-tető, 2011.07.07., I, KT-MG-UL.

Procraerus tibialis (Lacordaire, 1835) – Domoszló: Oroszlánvár, 2011.05.10., +, *Tilia cordata*, KT – Gyöngyöstarján: Ezerház-tető, 2010.11.18., I, *Acer pseudoplatanus*, KT – Hatvan: Kisgombosi-legelő, 2011.01.19., I, *Quercus petraea*, KT-MG-UL – Jobbágyi: Szurdok-völgy, 2010.11.16., I, *Carpinus betulus*, *Salix alba*, KT-MG-UL – Parád: Hársas-tető, 2011.05.06., I, *Q. petraea*, KT-MG; Som-bokor, 2011.06.16., +, *Fagus sylvatica*, KT-MG-UL; Somhegy, 2011.05.06., +, *Q. petraea*, KT-MG.

Lycidae Laporte, 1836

Dictyoptera aurora (Herbst, 1874) – Gyöngyössolymos: Nagy Lipót-folyás, 2011.06.02., I, KT.
Erotides cosnardi (Chevrolat, 1839) – Markaz: Csanás, 2012.05.22., I, KT-MG-UL; Negyvenhold, 2011.05.27., I, KT-MG-UL – Parád: Kékes, 2011.05.17., I, KT-MG-UL – Szuha: Mátraalmás, Verbőczi-kút, Szuha-patak-völgye, 2012.05.22., I, KT-MG-UL.

Trogossitidae Latreille, 1802

Thymalus limbatus (Fabricius, 1787) – Gyöngyös: Gondház-kő, 2012.05.22., I, KT-MG-UL; Kékes, 2012.08.16., I, KT; Kékes-laposa, 2011.05.27., +, KT-MG-UL – Gyöngyössolymos: Vérc-verés, 2012.05.22., I, KT-MG-UL – Parád: Csiklósd, 2011.07.06., I, MG-UL; Macska-lyuk, 2011.05.31., L, KT; Saskő, 2012.08.16., I, KT; Som-bokor, 2011.06.16., I, KT-MG-UL; Várhegy, 2011.05.06., I, KT-MG – Pásztó: Külső-nyír-cser-dűlő, 2012.09.06., I, KT-MG-UL; Naszály-bérc, 2012.09.06., I, KT-MG-UL; Nyikom, 2012.09.06., I, KT-MG-UL.

Cucujidae Latreille, 1802

Cucujus cinnaberinus (Scopoli, 1763) – Cserépfalu: Apasoma, 2012.09.21., L, *Acer platanoides*, *Quercus pubescens*, DG-GyH-KT-MG-UL; Közép-szék, 2012.09.20., L, *Carpinus betulus*, DG-GyH-KT-MG-UL; Közép-szék-lápa, 2012.09.20., L, *Acer* sp., DG-GyH-KT-MG-UL – Felsőtárkány: Csák-pilis-tető, 2012.09.21., +, *Q. petraea*, DG-GyH-KT-MG-UL – Gyöngyös: Gondház-kő, 2012.05.10., +, *Fagus sylvatica*, KT; Jugó-kő, 2011.05.24., +, *F. sylvatica*, KT; Kékes, 2012.08.16., L, *F. sylvatica*, KT; Mátrafüred, Bukfenc-kút, 2012.03.23., +, *Populus tremula*, KT; Vályús-kút-oldal, 2012.05.17., L, *Q. petraea*, MG-UL – Gyöngyöspata: Zám-patak-völgye, 2011.07.01., L, *A. campestre*, KT-MG-CJ – Gyöngyössolymos: Mencsés-folyás, 2012.09.18., L, *F. sylvatica*, MG – Markaz: Kékestető-oldal, 2012.08.16., L, B, *A. campestre*, KT – Pálosvörösmart: Tekeres-völgy, 2012.04.07., I, *C. betulus*, MG – Parád: Kékes, 2011.05.17., L, *F. sylvatica*, *Salix caprea*, KT-MG-UL; 2012.03.25., L, *F. sylvatica*, *Tilia cordata*, KA-KT-MG-NT; Kőris-hegy, 2011.05.17., L, *Picea abies*, KT-MG-UL; Som-bokor, 2012.03.25., L, *T. cordata*, KA-KT-MG-NT; Sorkő, 2012.03.25., L, *F. sylvatica*, KA-KT-MG-NT; Várhegy, 2011.05.06., L, *Q. petraea*, KT-MG – Pásztó: Muzsla-tető, 2012.08.07., L, *A. platanoides*, KT; Nyikom, 2012.09.06., I, *P. tremula*, *T. cordata*, KT-MG-UL – Recsk: Pap-hegy, 2011.05.03., L, *F. sylvatica*, MG.

Mycetophagidae Leach, 1815

Mycetophagus ater (Reitter, 1879) – Parád: Macska-lyuk, 2011.05.31., I, KT; Som-bokor, 2011.06.28., I, KT; 2011.07.01., I, KT-MG; Várhegy, 2011.05.06., I, KT-MG.

Melandryidae Leach, 1815

Melandrya barbata (Fabricius, 1792) – Gyöngyössolymos: Vérc-verés, 2011.05.19., I, KT.
Melandrya dubia (Schaller, 1783) – Gyöngyössolymos: Bagolykő, 2011.05.19., I, KT; Vérc-verés, 2011.05.19., I, KT.
Zilora obscura (Fabricius, 1794) – Gyöngyössolymos: Nagy Lipót-folyás, 2011.05.19., I, közönséges lucfenyő gombás kérge alól, KT.

Zopheridae Solier, 1834

Endophloeus markovichianus (Piller et Mitterpacher, 1793) – Gyöngyös: Mátrafüred, Bukfenc-kút, 2011.08.30., I, közönséges bükk kérge alól, Kovács Rita-KT; Fehér-Köves, 2012.05.17., I, kocsánytalan tölgy kérge alól, MG-UL.
Rhopalocerus rondanii (Villa & Villa, 1833) – Recsk: Cserepes-tető, 2011.05.10., I, *Acer pseudoplatanus*, KT.

Tenebrionidae Latreille, 1802

Neomida haemorrhoidalis (Fabricius, 1787) – Cserépfalu: Apasoma, 2012.09.21., I, DG-GyH-KT-MG-UL.
Tenebrio opacus Duftschmid, 1812 – Cserépfalu: Apasoma, 2012.09.20., I, +, *Quercus petraea*, *Tilia platyphyllos*, DG-GyH-KT-MG-UL; Hangyás-bérc, 2012.09.20., +, *Q. petraea*, DG-GyH-KT-MG-UL; Magas-tető, 2012.09.20., I, *Q. petraea*, DG-GyH-KT-MG-UL – Domoszló: Oroszlánvár, 2011.05.10., +, *T. cordata*, KT – Felsőtárkány: Vörös-kő, 2011.04.17., +, *Q. petraea*, KT-MG – Kisgyőr: Bogárzás-tető, 2012.08.09., +, *Q. petraea*, IZ-MG – Parád: Disznó-kő, 2012.08.16., +, *Q. petraea*, KT; Hársas-tető, 2011.05.06., +, *Q. petraea*, KT-MG; Mraznica-tető, 2012.08.16., +, *Q. petraea*, KT; Som-hegy, 2011.05.06., +, *Q. petraea*, KT-MG; Szállás-hegy, 2011.09.09., +, *Q. petraea*, KT-MG; Tőkés-kút-tető, 2012.08.16., +, *Q. petraea*, KT; Várhegy, 2011.05.06., I, +, *Q. petraea*, +, *Fagus sylvatica*, KT-MG – Parádsasvár: Bagolykő, 2012.10.22., +, *F. sylvatica*, KT-MG – Szilvásvárad: Kis-Vörös-kő-bérc, 2011.04.17., +, *Q. petraea*, KT-MG.

Oedemeridae Latreille, 1810

Ischnomera sanguinicollis (Fabricius, 1787) – Parád: Hagymáspuszta, Ilona-völgy, 2011.05.31., I, *Aesculus hippocastanum*, KT; Pisztrángos-tó, 2011.05.17., I, KT-MG-UL; Som-bokor, 2011.06.16., +, *Fagus sylvatica*, KT-MG-UL – Recsk: Cserepes-tető, 2011.05.10., +, *Acer pseudoplatanus*, KT; Védett gesztenyefasor, 2011.05.31., +, *A. hippocastanum*, KT.

Pyrochroidae Latreille, 1807

Schizotus pectinicornis (Linnaeus, 1758) – Cserépfalu: Apasoma, 2012.09.20., L, *Acer platanoides*, *Quercus petraea*, DG-GyH-KT-MG-UL; Közép-szék, 2012.09.20., L, *Carpinus betulus*, DG-GyH-KT-MG-UL – Felsőtárkány: Csák-pilis-tető, 2012.09.21., L, *Fagus sylvatica*, DG-GyH-KT-MG-UL – Gyöngyös: Tölgyes-bérc, 2012.05.22., L, *F. sylvatica*, KT-MG-UL – Gyöngyöstarján: Szénégető, 2010.11.18., L, *Q. cerris*, KT – Mátraszentimre: Nárád-patak-völgye, 2012.05.22., L, *F. sylvatica*, KT-MG-UL – Parád: Vadszőlős, 2011.05.31., +, *F. sylvatica*, KT – Parádsasvár: Bánya-tető, 2012.06.02., L, *F. sylvatica*, MG – Pásztó: Nyikom, 2012.09.06., L, *A. campestre*, *Fraxinus excelsior*, *Populus tremula*, *Tilia cordata*, KT-MG-UL; Nyikom-hegyese, 2012.09.06., L, *F. sylvatica*, KT-MG-UL – Szuha: Mátraalmás, Szuha-patak-völgye, 2012.05.22., L, *F. sylvatica*, KT-MG-UL.

Cerambycidae Latreille, 1802

Aegosoma scabricorne (Scopoli, 1763) – Domoszló: Oroszlánvár, 2011.05.10., +, *Tilia cordata*, KT – Parád: Som-bokor, 2012.03.25., +, *Fagus sylvatica*, KA-KT-MG-NT; Várhegy, 2011.05.06., +, *F. sylvatica*, KT-MG.
Anastrangalia dubia (Scopoli, 1763) – Gyöngyössolymos: Lipót-oldal, 2011.06.02., I, KT.
Anoplodera sexguttata (Fabricius, 1775) – Recsk: Oroszlánvár, 2011.05.10., I, KT.
Aromia moschata (Linnaeus, 1758) – Gyöngyös: Síugró-sánc, 2012.07.19., +, *Salix caprea*, KT – Gyöngyössolymos: Gyökeres-tető, 2012.03.25., +, *S. caprea*, KA-KT-MG-NT.
Cardoria scutellata (Fabricius, 1792) – Gyöngyöspata: Úrráteszi-rész, 2011.04.19., I, KT; 2012.04.03., I, KT.
Cerambyx cerdo Linnaeus, 1758 – Abasár: Hajnács-kő, 2012.03.07., +, *Quercus petraea*, MG; Négyes-határ, 2012.03.07., +, *Q. petraea*, MG; Serpenyő, 2012.03.07., +, *Q. petraea*, MG – Cserépfalu: Apasoma, 2012.09.20., +, *Q. pubescens*, DG-GyH-KT-MG-UL; Cinegés, 2012.09.21., +, *Q. cerris*, DG-GyH-KT-MG-UL; Hangyás-bérc, 2012.09.20., +, *Q. petraea*, DG-GyH-KT-MG-UL; Közép-szék, 2012.09.20., L, *Q. petraea*, DG-GyH-KT-MG-UL; Magas-tető, 2012.09.20., +, *Q. petraea*, DG-GyH-KT-MG-UL; Oszla, 2012.09.20., +, *Q. cerris*, DG-GyH-KT-MG-UL – Domoszló: Felső-Rónya, 2008.09.10., +, *Q. petraea*, MG; Hegyes-hegy, 2011.06.02., +, *Q. petraea*, MG; Kopec-oldal, 2012.10.04., +, *Q. petraea*, KTa-MG-UL; Középső-hegy, 2012.10.04., +, *Q. petraea*, KTa-MG-UL – Felsőtárkány: Csák-pilis-tető, 2012.09.21., +, *Q. petraea*, DG-GyH-KT-MG-UL; Kis-Vörös-kő-bérc, 2011.04.17., +, *Q. petraea*, KT-MG; Vörös-kő, 2011.04.17., +, *Quercus petraea*, KT-MG – Gyöngyös: Eremény-tető, 2012.05.31., +, *Q. petraea*, UL; Gyökeres-tető, 2011.05.05., +, *Q. petraea*, MG; Menyecske-hegy, 2011.05.11., +, *Q. petraea*, MG-UL; 2012.05.17., +, *Q. petraea*, MG-UL; Sár-hegy, 2011.01.16., +, *Q. petraea*, KT; 2011.02.18., +, *Q. petraea*, KT; Sár-hegy, Nagy-nyariska, 2011.02.18., +, *Q. petraea*, KT; 2011.05.03., +, *Q. petraea*, KT; Tölgyfa-lapos, 2011.05.11., +, *Q. petraea*, MG; Tövis-tető, 2012.03.17., +, *Q. petraea*, MG – Gyöngyösoroszi: Gazdák-erdeje, 2012.04.24., +, *Q. petraea*, MG-UL – Gyöngyöspata: Eresztvény, 2011.07.01., L, *Q. cerris*, KT-MG-CJ; Német-bérc,

2012.01.25., +, *Q. petraea*, MG; Szalajkás-tető, 2012.09.06., +, *Q. petraea*, KT-MG-UL – Gyöngyössolymos: Gyalogoké, 2012.10.05., +, *Q. petraea*, MG; Nyerges-bérc, 2012.03.28., +, *Q. petraea*, MG; Tarma, 2010.11.25., L, +, *Q. cerris*, KT – Gyöngyöstarján: Káva, 2010.09.07., +, *Q. pubescens*, MG-UL; Világos-hegy, 2011.04.04., +, *Q. pubescens*, MG – Hatvan: Kisgombosi-legelő, 2011.01.19., +, *Q. petraea*, KT-MG-UL – Kisnána: Messzelátó-hegy, 2012.11.16., +, *Q. petraea*, MG – Markaz: Cseres-alja, 2012.04.10., +, *Q. pubescens*, MG-UL; Cseresi-domb, 2012.04.19., +, *Q. petraea*, MG-UL; Éva-kő-tető, 2011.09.12., +, *Q. petraea*, MG; Hatra-patak-tető, 2012.03.16., +, *Q. petraea*, MG; Saskő, 2012.08.16., L, *Q. petraea*, KT; Veres-agyag-tető, 2012.04.19., +, *Q. petraea*, MG-UL – Mátraszentimre: Ágasvár, 2011.04.06., +, *Q. petraea*, KT-MG; Bárány-kő, 2011.06.27., +, *Q. petraea*, MG; Csóka-kő, 2011.06.27., +, *Q. petraea*, MG; Som-bérc, 2012.05.15., +, *Q. petraea*, MG – Pálosvörösmart: Tekeres-oldal, 2012.05.16., +, *Q. petraea*, KT – Parád: Cserepes-oldal, 2011.10.19., +, *Q. petraea*, CJ-MG-UL; Disznó-kő, 2012.08.16., +, *Q. petraea*, KT; Hársas-tető, 2011.05.06., +, *Q. petraea*, KT-MG; Lapossás-domb, 2011.09.09., +, *Q. petraea*, KT-MG; Mraznica-tető, 2012.08.16., L, *Q. petraea*, KT; Saskő, 2012.08.16., L, +, *Q. petraea*, KT; Szállás-hegy, 2011.09.09., +, *Q. petraea*, KT-MG; Várhegy, 2011.05.06., +, *Q. petraea*, KT-MG – Pásztó: Külső-nyír-cser-dűlő, 2012.09.06., +, *Q. petraea*, KT-MG-UL; Muzslapuszta, 2012.08.07., L, *Q. petraea*, KT; Naszály-bérc, 2012.09.06., +, *Q. petraea*, KT-MG-UL; Nyikom-hegyese, 2012.09.06., L, +, *Q. petraea*, KT-MG-UL; Ólom-bérc, 2011.04.20., +, *Q. petraea*, MG; Somos-bérc, 2012.08.07., L, +, *Q. petraea*, KT; Széles-bükk, 2011.04.20., +, *Q. petraea*, MG – Sirok: Kalapos-tető, 2012.03.08., +, *Q. petraea*, MG; Két-völgy-tető, 2012.05.09., +, *Q. petraea*, CJ-MG; Kis-Cseresznyés, 2012.03.08., +, *Q. petraea*, MG; Paska-tető, 2012.04.05., +, *Q. petraea*, UL – Szilvásvárad: Cserepes-kő, 2011.04.17., +, *Q. petraea*, KT-MG – Verpelét: Hangács-oldal, 2012.05.10., +, *Q. petraea*, MG-UL, Macska-vár, 2012.05.10., +, *Q. cerris*, MG-UL.

Cerambyx scopolii Füsslin, 1775 – Domoszló: Cseres-tető, 2009.05.06., +, *Quercus petraea*, KT-MG-UL – Gyöngyös: Mátraháza, Szent László-forrás, 2009.02.17., +, *Fagus sylvatica*, Barta Dávid-KT-MG; Sár-hegy, Farkasmály, 2008.05.26., I, KT – Gyöngyöspata: Péterke-hegy, 2009.11.12., +, *Q. petraea*, KT-MG-UL – Gyöngyössolymos: Eremény-tető, 2009.04.29., I, KT; 2009.05.18-06.02., I, borcsapda, KT-MG-UL; Hatökör-ura, 2009.06.19., I, KT-MG-UL – Gyöngyössolymos: Nyerges-rét, 2010.05.24., I, KT-MG – Markaz: Cseres-bérc, 2009.04.01., +, *Q. petraea*, MG; Sas-kő, 2010.02.03., +, *Q. petraea*, KT-MG-UL – Mátraszentimre: Ágasvár, 2010.03.26., +, *Q. petraea*, KT-MG-UL; Som-tető, 2009.04.10., +, *Malus sylvestris*, *Pyrus pyraster*, KT-MG-UL – Parád: Nagy-Szár-hegy, 2009.04.24., +, *F. sylvatica*, KT-MG-UL – Recsk: Cserepes-tető, 2009.03.25., +, *Acer campestre*, *Carpinus betulus*, *F. sylvatica*, KT-MG-UL; Oroszlánvár, 2009.01.30., +, *Cerasus avium*, KT-MG-UL; Szederjes-tető, 2009.04.28., +, *C. avium*, KT-MG-UL.

Cerambyx welensii Küster, 1846 – Cserépfalu: Cinegés, 2012.09.21., +, *Quercus cerris*, DG-GyH-KT-MG-UL.

Cortodera holosericea (Fabricius, 1801) – Domoszló: Csurgó, 2011.05.18., I, UL – Gyöngyös: Mátrafüred, Benevár, 2011.05.24., I, KT.

Necydalis ulmi Chevrolat, 1863 – Cserépfalu: Cinegés, 2012.09.21., L, +, *Quercus cerris*, DG-GyH-KT-MG-UL – Parád: Som-bokor, 2011.06.28., +, *Fagus sylvatica*, KT; 2012.07.03., I, *F. sylvatica*, KT – Parádsasvár: Bagolykő, 2012.10.22., +, *F. sylvatica*, KT-MG.

Purpuricenus globulicollis Mulsant, 1839 – Recsk: Borostyán, 2011.07.06., I, MG-UL.

Rhamnusium bicolor (Schrank, 1781) – Cserépfalu: Apasoma, 2012.09.21., +, *Tilia platyphyllos*, DG-GyH-KT-MG-UL – Parád: Som-bokor, 2011.06.16., I, +, *Fagus sylvatica*, KT-MG-UL – Recsk: Cserepes-tető, 2012.07.08., +, *F. sylvatica*, KT; Védett gesztenyefasor, 2011.05.31., +, *Aesculus hippocastanum*, KT.

Rosalia alpina (Linnaeus, 1758) – Cserépfalu: Apasoma, 2012.09.21., +, *Acer campestre*, *A. platanoides*, *Fraxinus angustifolia*, DG-GyH-KT-MG-UL; Hangyás-bérc, 2012.09.20., +, *Fagus sylvatica*, DG-GyH-KT-MG-UL; Hór-völgy, 2012.09.20., +, *A. pseudoplatanus*, DG-GyH-KT-MG-UL; Közép-szék, 2012.09.20., +, *F. sylvatica*, DG-GyH-KT-MG-UL; Közép-szék-lápa, 2012.09.20., +, *F. sylvatica*, DG-GyH-KT-MG-UL – Domoszló: Oroszlánvár, 2012.07.08., I, KT – Felsőtárkány: Csák-pilis-tető, 2012.09.21., +, *F. sylvatica*, DG-GyH-KT-MG-UL – Gyöngyös: Gondház-kő, 2012.05.10., +, *F. sylvatica*, KT; Kékes-laposa, 2012.05.22., +, *F. sylvatica*, KT-MG-UL – Gyöngyössolymos: Bagolykő, 2012.07.12., L, *F. sylvatica*, KT; 2012.10.22., +, *A. campestre*, KT-MG; Vérc-verés, 2012.07.12., L, *F. sylvatica*, KT – Markaz: Kékestető-oldal, 2012.08.16., +, KT – Parád: Ilona-völgy, Szent István-forrás, 2011.05.31., +, *A. campestre*, KT; Kis-Saskő, 2012.08.16., +, *F. sylvatica*, KT; Marhád, 2012.08.29., +, *F. sylvatica*, CJ-UL; Saskő-bérc, 2012.08.16., +, *A. pseudoplatanus*, KT; Som-bokor, 2011.07.01., I, +, *F. sylvatica*, KT-MG; 2012.03.25., L, *F. sylvatica*, KA-KT-MG-NT; Szállás-hegy, 2011.09.09., +, KT-MG; Vadszőlős, 2011.05.31., +, *F. sylvatica*, KT; Várhegy, 2011.05.06., +, *F. sylvatica*, KT-MG – Parádsasvár: Hatökör-ura, 2011.10.19., +, *F. sylvatica*, MG; Kis-Hosszú-bérc, 2011.07.19., I, MG – Recsk: Cserepes-tető, 2012.07.08., I, KT – Szilvásvárad: Kis-Vörös-kő-bérc, 2011.04.17., +, *F. sylvatica*, KT-MG.

Saperda perforata (Pallas, 1773) – Gyöngyöstarján: Két-folyás-köze, 2009.12.04., +, *Populus tremula*, KT-UL.
Saperda scalaris (Linnaeus, 1758) – Bátonyterenye: Mátra-bérc, 2009.03.20., +, *Cerasus avium*, KT-MG-UL – Mátraszentimre: Ágasvári-rét, 2010.03.26., +, *Malus domestica*, KT-MG-UL; Som-hegy-oldal, 2009.04.10., +, *Pyrus pyraster*, KT-MG-UL – Pásztó: Nyikom, 2012.09.06., +, *C. avium*, KT-MG-UL – Recsk: Nagy-Zúgó-hegy, 2009.01.30., +, *C. avium*, KT-MG-UL; Oroszlánvár, 2009.01.30., +, *C. avium*, KT-MG-UL.
Stictoleptura erythroptera (Hagenbach, 1822) – Cserépfalu: Apasoma, 2012.09.21., +, *Tilia platyphyllos*, DG-GyH-KT-MG-UL – Domoszló: Oroszlánvár, 2011.05.10., +, *T. cordata*, KT – Mátraszentimre: Ágasvár, 2011.04.06., B, > 05.16., I, *Quercus cerris*, KT-MG.
Trichoferus pallidus (Olivier, 1790) – Parád: Várhegy, 2011.05.06., +, *Quercus petraea*, KT-MG.
Xylotrechus pantherinus (Savenius, 1825) – Gyöngyös: Síugró-sánc, 2011.05.27., +, *Salix caprea*, KT-MG-UL.

CURCULIONIDAE Latreille, 1802

Gasterocercus depressirostris (Fabricius, 1792) – Gyöngyössolymos: Tarma, 2010.11.25., +, *Quercus petraea*, KT – Parád: Várhegy, 2011.05.06., +, *Q. petraea*, KT-MG.

Eredmények, értékelés

A cikk 66 bogárfaj adatait közli, melyek közül 6 közösségi jelentőségű (Natura 2000 jelölőfaj) (*Rhysodes sulcatus*, *Cerambyx cerdo*, *Cucujus cinnaberinus*, *Lucanus cervus*, *Osmoderma eremita*, *Rosalia alpina*), 2 fokozottan védett (*O. eremita*, *Eurythyrea quercus*) és 39 védett.

Faunisztikai szempontból kiemelendő fajok: *Rhysodes sulcatus* – A Dunától keletre a Mátra, a Bükk és a Zempléni-hegység néhány pontjáról ismert (ÁDÁM 1994, SZÉL 1996). *Osmoderma eremita* – Újabb három területről került elő a Mátrából és újabb kettőről a Bükkből (KOVÁCS & NÉMETH 2010, KOVÁCS et al. 2009, 2010). *Isoriphis marmottani* – Hazánkban csak néhány hegy- és dombvidéki előfordulásáról tudunk (MERKL & VIG 2009). *Dictyoptera aurora* – A Dunától keletre egyszer fogták: Arló, Vajdavár ÉNy (KOVÁCS et al. 2009). *Melandrya barbata* – Két publikált hazai adata Fenyőfő, Kék-hegy (CZETŐ et al. 1985) és Látrány, Birkás-legelő (MERKL et al. 2003 sub nomen: *Melandrya dubia* (Schaller, 1783), revideálta Németh Tamás, 2012). A Magyar Természettudományi Múzeum Bogárgyűjteményében még két helyről találhatók példányai: Pilisszentlászló, Kopanyica, gyertyános-tölgyes, 2005.05.28., egyelés-kopogtatás, Merkl Ottó; Füzérradvány, kastélykert, 2012.05.10., *Platanus*-odúból, Kotán Attila, Németh Tamás. *Zilora obscura* – Eddigi két gyűjtőhelye Magyarországról Gödöllő (1950) és Isaszeg (2004) (Merkl 2006). *Cerambyx welensii* – A Dunától keletre három alkalommal mutatták ki: Parádról és Diósjenőről több mint egy évszázada közölte KUTHY (1897), míg a Debrecen melletti Halápon 1978-ban gyűjtötték (KOVÁCS et al. 1995). *Necydalis ulmi* – A Mátrából és a Bükkből egy-egy lelőhelye volt: Parád, Disznó-tető és Szilvásvárad, Gerennavár (KOVÁCS et al. 2010, MERKL et al. 1996). *Purpuricenus globulicollis* – Hazánkban nagyon ritka: Csömör (KUTHY 1897), Komló (HEGYESSY & KOVÁCS 2003), Nagyvisnyó (MERKL et al. 1996), Vérteskozma (MEDVEGY 2001).

A faunisztikailag jól ismert csoportoknál a következők újak a Mátra faunájára: *Ctenicera virens* (Elateridae, vö. NÉMETH et al. 2009, Magyar Természettudományi Múzeum Bogárgyűjteménye); *Anastrangalia dubia*, *Purpuricenus globulicollis* (Cerambycidae, vö. KOVÁCS & HEGYESSY 1998); illetve a Bükk faunájára: *Eurythyrea quercus* (Buprestidae, vö. MUSKOVITS & HEGYESSY 2012); *Ampedus nigerrimus* (Elateridae, vö. NÉMETH & MERKL 2009); *Cerambyx welensii* (Cerambycidae, vö. MERKL et al. 1996).

39 faj esetében a tápnövényeket – csak a latin névvel írt fajok, számuk 23 – is megadtuk. A *Cucujus cinnaberinus* és *Schizotus pectinicornis* esetében a korábbihoz hasonló módon jártunk el (Kovács et al. 2009).

A következő természetközeli élőhelyek kiemelendők értékes bogárfaunájuk alapján (a Natura 2000 jelölő (Council Directive 1992), a fokozottan védett, illetve 50 000 Ft pénzben kifejezett természetvédelmi értékű (Anonim 2012) és a veszélyeztetett európai Vörös Listás szaproxilofág bogárfajok (Nieto & Alexander 2010) neve félkövérrel szedve). Néhány alább felsorolt faj adata részben (*Osmoderma eremita*), vagy egészében (*Cerophytum elateroides*, *Crepidophorus mutilatus*, *Elater ferrugineus*, *Hypoganus inunctus*, *Ischnodes sanguinicollis*, *Lacon querceus*, *Limoniscus violaceus*, *Megapenthes lugens*, *Pseudanostirus globicollis*) más publikációkban (Kovács & Németh 2010, 2012) szerepel.

Az előző részekben kiemelt élőhelyek a következő fajokkal gyarapodtak: Ágasvár – Ágasvár-oldal (Bátonyterenye, Mátraszentimre): *Coraebus fasciatus*, ***Ischnodes sanguinicollis***, ***Limoniscus violaceus***, *Megapenthes lugens*, *Stictoleptura erythroptera*. Cserepes-tető (Domoszló, Parád, Recsk): *Crepidophorus mutilatus*, ***Ischnodes sanguinicollis***, *Rhopalocerus rondanii*. Disznó-tető – Fekete-tó (Parád): *Porthmidius austriacus*. Ezerháztető – Szénégető – Tót-hegyes (Gyöngyöstarján): *Brachygonus megerlei*. Kisgombosi-legelő (Hatvan): ***Lacon querceus***. Mraznica-tető – Tőkés-kút-tető (Parád): *C. fasciatus*. Oroszlánvár (Domoszló, Recsk): *Anoplodera sexguttata*, *B. megerlei*, ***Elater ferrugineus***, *Procraerus tibialis*. Somhegy (Parád): *M. lugens*.

Az elmúlt két év legértékesebb élőhelyei: Mátra – Csór-hegy – Bagolykő – Vérc-verés (Gyöngyössolymos, Parádsasvár): *Aesalus scarabaeoides*, *Ampedus praeustus*, *Carabus intricatus*, *Cicindela sylvicola*, ***Cerophytum elateroides***, *Dicerca berolinensis*, *Dorcus parallelipipedus*, ***Elater ferrugineus***, ***Eurythyrea quercus***, ***Gnorimus variabilis***, *Hypoganus inunctus*, ***Ischnodes sanguinicollis***, ***Limoniscus violaceus***, ***Lucanus cervus***, *Melandrya barbata*, *Melandrya dubia*, ***Necydalis ulmi***, ***Osmoderma eremita***, *Pseudanostirus globicollis*, ***Rosalia alpina***, *Sinodendron cylindricum*, *Tenebrio opacus*, *Thymalus limbatus*.

Som-bokor – Sor-kő (Gyöngyös, Parád): *Aegosoma scabricorne*, *Aesalus scarabaeoides*, *Carabus intricatus*, ***Cerophytum elateroides***, *Crepidophorus mutilatus*, ***Cucujus cinnaberinus***, *Denticollis rubens*, *Dicerca berolinensis*, *Dorcus parallelipipedus*, ***Elater ferrugineus***, ***Ischnodes sanguinicollis***, *Ischnomera sanguinicollis*, ***Lucanus cervus***, *Megapenthes lugens*, *Mycetophagus ater*, ***Necydalis ulmi***, ***Osmoderma eremita***, *Procraerus tibialis*, *Rhamnusium bicolor*, ***Rosalia alpina***, *Sinodendron cylindricum*, *Thymalus limbatus*.

Szállás-hegy (Parád) – ***Cerambyx cerdo***, *Coraebus fasciatus*, ***Elater ferrugineus***, ***Eurythyrea quercus***, ***Gnorimus variabilis***, ***Lucanus cervus***, ***Osmoderma eremita***, ***Rosalia alpina***, *Tenebrio opacus*.

Várhegy (Parád) – *Aegosoma scabricorne*, *Ampedus praeustus*, *Carabus intricatus*, ***Cerambyx cerdo***, ***Cucujus cinnaberinus***, *Dicerca berolinensis*, *Dorcus parallelipipedus*, ***Elater ferrugineus***, ***Eurythyrea quercus***, *Gasterocercus depressirostris*, ***Gnorimus variabilis***, ***Ischnodes sanguinicollis***, ***Lacon querceus***, ***Lucanus cervus***, *Megapenthes lugens*, *Mycetophagus ater*, *Protaetia aeruginosa*, ***Rosalia alpina***, *Tenebrio opacus*, *Thymalus limbatus*, *Trichoferus pallidus*.

Bükk – Apasoma (Cserépfalu) – *Aesalus scarabaeoides*, *Ampedus nigerrimus*, *Carabus intricatus*, ***Cerambyx cerdo***, *Coraebus fasciatus*, ***Cucujus cinnaberinus***, *Dicerca berolinensis*, *Dorcus parallelipipedus*, ***Elater ferrugineus***, ***Gnorimus variabilis***, ***Ischnodes sanguinicollis***,

Limoniscus violaceus, ***Lucanus cervus***, *Megapenthes lugens*, *Neomida haemorrhoidalis*, *Rhamnusium bicolor*, ***Rosalia alpina***, *Schizotus pectinicornis*, *Sinodendron cylindricum*, *Stictoleptura erythroptera*, *Tenebrio opacus*.

Cinegés (Cserépfalu) – ***Cerambyx cerdo***, ***C. welensii***, ***Eurythyrea quercus***, ***Lucanus cervus***, ***Necydalis ulmi***. Közép-szék – Közép-szék-lápa (Cserépfalu) – ***Cerambyx cerdo***, *Coraebus fasciatus*, ***Cucujus cinnaberinus***, *Dicerca berolinensis*, *Dorcus parallelipipedus*, ***Lucanus cervus***, ***Osmoderma eremita***, ***Rhysodes sulcatus***, ***Rosalia alpina***, *Schizotus pectinicornis*, *Sinodendron cylindricum*.

Bogárzás-tető (Kisgyőr) – ***Lucanus cervus***, ***Osmoderma eremita***, *Tenebrio opacus*.

Cserepes-kő – Kis-Vörös-kő-bérc – Vörös-kő (Felsőtárkány, Szilvásvárad) – *Aesalus scarabaeoides*, *Carabus intricatus*, ***Cerambyx cerdo***, *Cychrus caraboides*, ***Eurythyrea quercus***, ***Gnorimus variabilis***, ***Lucanus cervus***, ***Osmoderma eremita***, ***Rosalia alpina***, *Sinodendron cylindricum*, *Tenebrio opacus*.

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Beetles new to Albania, Croatia and Serbia (Coleoptera: Elateridae, Cucujidae, Melandryidae, Cerambycidae)

Tibor Kovács, Tamás Németh & Ottó Merkl

Abstract: Five species of Coleoptera, *Actenicerus siaelandicus*, *Cardiophorus dolini*, *Dicronychus rubripes* (Elateridae), *Cucujus cinnaberinus* (Cucujidae), *Marolia purkynei* (Melandryidae) are recorded for the first time from Albania. *Agapanthia viti* (Cerambycidae) is recorded for the first time from Croatia and *Actenicerus siaelandicus* (Elateridae) is recorded for the first time from Serbia.

In 2012 the first author visited several times Albania, Croatia and Serbia, to investigate the fauna of aquatic insects (Ephemeroptera, Odonata, Plecoptera, Trichoptera) as in the case of the trips to Montenegro and Bulgaria in 2011 (Kovács et al. 2011). In this paper new country records of six species of beetles (Coleoptera) are presented.

The following species collected in 2012 in Albania proved to be new to the country: *Actenicerus siaelandicus*, *Cardiophorus dolini*, *Dicronychus rubripes* (cf. Cate 2007), *Cucujus cinnaberinus* (cf. Horák & Chobot 2009), *Marolia purkynei* (cf. Nikitsky & Pollock 2008). *Agapanthia viti* is new to Croatia (cf. Rapuzzi & Sama 2012) while *Actenicerus siaelandicus* is new to Serbia (cf. Cate 2007).

The species of Elateridae and *Marolia purkynei* were beaten from waterside plants (trees, shrubs, weeds), *Cucujus cinnaberinus* was collected from beneath bark of *Fagus sylvatica*, and *Agapanthia viti* was picked from *Dipsacus laciniatus*.

Abbreviations: FZ = Fehér, Zoltán, JP = Juhász, Péter, KT = Kovács, Tibor, MD = Murányi, Dávid, PG = Puskás, Gellért; HNHM = Hungarian Natural History Museum (Budapest), MM = Mátra Museum (Gyöngyös).

Elateridae Leach, 1815

Actenicerus siaelandicus (O. F. Müller, 1764) – Albania, Bulqizë district, Çermenikë Mts, open brook beneath Mt. Kaptinë, N41°23.212', E20°17.506', 1610 m, 21.06.2012, 1 specimen, FZ-KT-MD (HNHM); Tiranë district, Gropë Mts, Bizë, open stream W of the settlement, N41°20.096', E20°10.003', 1265 m, 20.06.2012, 1 specimen, FZ-KT-MD (HNHM). – Serbia, Zlatibor district, Zlatibor Mts, Crni Rzav Stream along the road No.21, N43°39.731', E19°42.575', 1010 m, 13.06.2012, 1 specimen, FZ-KT-MD (HNHM).

Cardiophorus dolini Mardjanian, 1985 – Albania, Pukë district, Mertur, Mertur Stream and its gorge at the influence to Koman Lake, N42°13.674', E19°54.423', 180 m, 18.06.2012, 2 specimens, FZ-KT-MD (HNHM).

Dicronychus rubripes (Germar, 1824) – Albania, Pukë district, Mertur, Mertur Stream and its gorge at the influence to Koman Lake, N42°13.674', E19°54.423', 180 m, 18.06.2012, 2 specimens, FZ-KT-MD (HNHM).

CUCUJIDAE Latreille, 1802

Cucujus cinnaberinus (Scopoli, 1763) – Albania, Tiranë district, Gropë Mts, beech forest at Shtyllë Pass, N41°22.232', E20°05.128', 1515 m, 20.06.2012, 2 larvae, *Fagus sylvatica*, FZ-KT-MD (MM).

MELANDRYIDAE Leach, 1815

Marolia purkynei Mařan, 1933 – Albania, Tiranë district, Gropë Mts, Shëngjergj, forest brook along the road to Elbasan, E of the village, N41°19.800', E20°08.739', 1315 m, 11.10.2012, 1 specimen, JP-KT-MD-PG (HNHM).

CERAMBYCIDAE Latreille, 1802

Agapanthia viti Rapuzzi et Sama, 2012 – Croatia, Osijek-Baranja county, Kapelna, oak forest edge, N45°40.975', E18°04.211', 100 m, 24.05.2012, 1 specimen, *Dipsacus laciniatus*, KT-PG (MM).

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Annotated checklist of the Iranian Coniopterygidae (Neuroptera)

György Sziráki & Alinaghi Mirmoayedi

Abstract: An annotated list of all the 24 Coniopterygidae species known at the present time from Iran is given. Five of them were described originally from this country, while *Aleuropteryx vartianorum* Aspöck & Aspöck, 1967, *Coniopteryx (C.) borealis* Tjeder, 1930, *C. (X.) arenicola* Sziráki, 2010, *C. (X.) kerzhneri* Meinander, 1971, *C. (X.) latigonarcuata* Meinander, 1972 and *Hemisemidalis hreblayi* Sziráki, 1999 are new to the fauna of Iran. The usually erraneously given geographical distribution of *Nimboa ashadeva* Rausch & Aspöck, 1978 is corrected.

Introduction

The first data on Iranian coniopterygids were given by Aspöck & Aspöck (1965), who reported the presence of two dusty lacewing species from this country. About fifteen years later this number increased to six due to the publishing activity of Austrian neuropterologists (Rausch & Aspöck 1978a,b, Asöck et al. 1980). An important advance was taken place by the establishment of the Iranian neuropterology in the nineties of the last century. As a result of the intensive collecting activity – among others – a significant number of coniopterygids was obtained from different territories of Iran. A part of this material was worked out and published already (Monserrat 1994, Meinander 1998, Mirmoayedi 1998, 2002, Mirmoayedi et al. 1998). An other part of the earlier determined specimens remained hitherto unpublished; in present work these are designed as „unpublished finding(s)". The more recently collected Iranian coniopterygids were identified in present study. Only these specimens are designed as „specimen(s) examined" in present paper.

Material and methods

The dusty lacewing specimens obtained in the framework of the entomological program carried out by the second author were captured by Malaise or light traps. In the latter case 200-W tungsten bulbs were employed. The material handled as „unpubished finding(s)" or „specimen(s) examined" is housed in Insect Collection of Department of Plant Protection, College of Agriculture, Razi University, Kermanshah, Iran.

List of the species

Aleuropteryginae Enderlein, 1905

Aleuropteryx ressli Rausch, Aspöck & Ohm, 1978
Described from Iran. Type locality: Iran, Fars Province, E of Kazerun, 29°35'N, 51°40'E (Rausch et al. 1978). Other published records from Iran: Kermanshah Province (West Iran), Kermashah (Monserrat 1994); Kermashah Province, Ridjab (Meinander 1998).

Unpublished finding from Iran: 2 ♂, Kermanshah Province, Ridjab, 34°36'N, 45°57'E, 650 m a. s. l., 15.07.1995, leg.: Mirmoayedi.

Geographical distribution: Iran.

Aleuropteryx vartianorum Aspöck & Aspöck, 1967
Described from Pakistan (Aspöck & Aspöck 1967).

Specimens examined: 2 ♂, Iran, Fars Province, Miyan Jangal Fasa, 15.07.2010, leg.: Mohammadi. New to the fauna of Iran.

Geographical distribution: Pakistan, Arabian Peninsula, Iran.

Helicoconis (Ohmopteryx) pseudolutea Ohm, 1965
Described from Switzerland (Ohm 1965). Published records from Iran: Hormozgan Province, Bandar Khamir (Monserrat 1994); Kermashah Province, Ridjab (Meinander 1998); Tehran Province, Darband, as *Helicoconis kurdica* (Ohm 1965).

Geographical distribution: Central Europe, Mediterranean territories, Iran, Iraq.

Coniopteryginae Burmeister, 1839

Nimboa ashadeva Rausch & Aspöck, 1978
Described from Iran. Type locality: Iran, Fars Province, Miyan Kotal, 29°30'N, 51°47'E, 2100 m a.s.l. (Rausch & Aspöck 1978a). Other published records from Iran: Hormozgan Province, Gazir; Kurdistan Province, Razab Marivan (Mirmoayedi 2002).

Geographical distribution: Iran.

Remark: There are not any concrete data concerning this species out of Iran. Therefore, „Turkey" (Meinander 1990), „Anatolia" (Aspöck et al. 2001), or „Asia Minor" (Sziráki 2004, 2011) were erraneously designed as territories, where this species is distributed.

Nimboa macroptera Aspöck & Aspöck, 1965
Described from Afganisthan (Aspöck & Aspöck 1965). Published record from Iran: Kermanshah Province, Ridjab (Meinander 1998).

Geographical distribution: Afganisthan, Arabian Peninsula, Iran, Lebanon, Canary Islands, Egypt, Sudan, Crete.

Coniopteryx (Coniopteryx) borealis Tjeder, 1930
Described from Denmark, Finland, Scotland and Sweden (Tjeder 1931).

Unpublished finding from Iran: 1 ♂, Golestan Province, Golestan National Park, Sharlegh, 190 m a. s. l., 10.08.1996, leg.: Mirmoayedi. New to the fauna of Iran.

Geographical distribution: Europe, Morocco, Tunisia, Azerbaijan, Georgia, Iran.

Coniopteryx (Holoconiopteryx) drammonti Rousset, 1964

Described from France (Rousset 1964, cit. Meinander 1972a). Published record from Iran: Hamadan Province, Dehpayien Serkan (Mirmoayedi 2002).

Unpublished finding from Iran: 1 ♂, Hamadan Province, Dehpayien Serkan, 34°22'N, 48°27'E, 2031 m a. s. l., 17.09.1996, leg.: Mirmoayedi.

Geographical distribution: South and Central Europe, Morocco, Asia Minor, Georgia, Iran.

Coniopteryx (Metaconiopteryx) lentiae Aspöck & Aspöck, 1964

Described from Austria (Aspöck & Aspöck 1964). Published record from Iran: Kermanshah Province, Ridjab (Meinander 1998).

Geographical distribution: Europe, Asia Minor, Near and Middle East.

Coniopteryx (Xeroconiopteryx) arenicola Sziraki, 2010

Described from United Arab Emirates (Sziráki 2010).

Specimens examined: 2 ♂, Iran, Hormozgan Province, Minab, 20-30.03.1995, leg.: Mirmoayedi. New to the fauna of Iran.

Geographical distribution: United Arab Emirates, Iran.

Coniopteryx (Xeroconiopteryx) atlasensis Meinander, 1963

Described from Morocco (Meinander 1963). Published record from Iran: Occurence of this species in Iran is mentioned and showed in a map just South of the Caspian Sea by Aspöck et al. (1980) – without exact locality.

Unpublished finding from Iran: 1 ♂, Golestan Province, Golestan National Park, Almeh, 37°21'N, 56°00'E, 150-170 m a. s. l., 17.09.1996, leg.: Mirmoayedi.

Geographical distribution: Morocco, Canary Islands, Central Asia (including Afghanistan and Northeastern Iran), Turkey, Crete, Iberian Peninsula.

Coniopteryx (Xeroconiopteryx) deserta Meinander, 1979

Described from Saudi Arabia (Meinander 1979). Published records from Iran: Hormozgan Province, Bandar Khamir (Monserrat 1994); Kermanshah Province, Ridjab (Mirmoayedi 1998).

Geographical distribution: Arabian Peninsula, Iran.

Coniopteryx (Xeroconiopteryx) hastata Meinander, 1998

Described from Iran. Type locality: Iran, Hormozgan Province, Gazir (Meinander 1998).

Geographical distribution: Iran, Arabian Peninsula.

Coniopteryx (Xeroconiopteryx) kerzhneri Meinander, 1971

Described from Mongolia (Meinander 1971).

Specimens examined: 2 ♂, Iran, Fars Province, Miyan Jangal Fasa, 28º56'N, 53º39'E, 1130 m a. s. l., 15.07.2010, dry mountain bushland, with wild pistachio trees, Malaise trap, leg.: Mohammadi; 1 ♂, Iran, West Azerbaijan Province, Khoy, ?.07.2008. New to the fauna of Iran.

Geographical distribution: Central Asia, Iran, Yemen, North Africa, Spain.

Coniopteryx (Coniopteryx) latigonarcuata Meinander 1972
Described from Mongolia (MEINANDER 1972b).

Specimen examined: 1 ♂, Iran, West Azerbaijan Province, Navayi Khoy, 45°03'E, 38°34'N, 1891 m a. s. l., mountain bushland, with wild pistachio trees and *Thymus – Artemisia* steppe, 15.05.2009, leg.: ERADATI. New to the fauna of Iran.

Geographical distribution: Mongolia, Iran, Jammu and Kashmir.

Coniopteryx (Xeroconiopteryx) loipetsederi Aspöck, 1963
Described from Croatia (ASPÖCK 1963). Published record from Iran: Golestan Province, Golestan National Park, Almeh (MIRMOAYEDI et al. 1998).

Geographical distribution: South Europe, Algeria, Iran, Slovakia.

Coniopteryx (Xeroconiopteryx) manka Aspöck & Aspöck, 1965
Described from Iraq (ASPÖCK & ASPÖCK 1965). Published record from Iran: Fars Province, Shiraz (MIRMOAYEDI 2002).

Geographical distribution: Iraq, Iran.

Coniopteryx (Xeroconiopteryx) martinmeinanderi Sziráki, 2004
Described from Israel as *Coniopteryx (X.) furcata* (MEINANDER 1998). Published record from Iran: Khorasan Province, Shahinghaleh Mashad – as *C. (X.) furcata* (MIRMOAYEDI 2002).

Geographical distribution: Israel, Arabian Peninsula, Iran.

Coniopteryx (Xeroconiopteryx) orba Rausch & Aspöck, 1978
Described from Iran. Type locality: Iran, Laristan Province, 22 km N of Bandar Abbas, 27°12'N, 56°15'E (RAUSCH & ASPÖCK 1978b).

Unpublished findings from Iran: 1 ♂, Golestan Province, Golestan National Park, Sharlegh, 190 m a. s. l., 24.07.1996; 1 ♂, North Khorasan Province, Golestan National Park, Mirzabaylou, 190 m a. s. l., 20.07.1996, leg.: MIRMOAYEDI.

Geographical distribution: Iran, Oman.

Coniopteryx (Xeroconiopteryx) unicef Monserrat, 1996
Described from Yemen (MONSERRAT 1996). Published record from Iran: Hormozgan Province, Gazir (MEINANDER 1998).

Geographical distribution: Yemen, Iran.

Coniopteryx (Xeroconiopteryx) venustula Rausch & Aspöck, 1978
Described from Iran. Type locality: Iran, Laristan Province, Bandar Abbas, 27°12'N, 56°15'E (RAUSCH & ASPÖCK 1978b). Collecting sites of paratypes: Iran, Laristan Province, 13 km N of Bandar Abbas, and 40 km N of Bandar Abbas (RAUSCH & ASPÖCK 1978). Other published record from Iran: Hormozgan Province, Gazir (MEINANDER 1998).

Unpublished finding from Iran: 1 ♂, Hormozgan Province, Minab, 15.03.1997, leg.: MIRMOAYEDI.

Specimen examined: 1 ♂, Iran, Hormozgan Province, Minab**,** markaz tahghighat Keshavarzi, 20-30.03.1995, leg.: MIRMOAYEDI.

Geographical distribution: Iran, Arabian Peninsula, Pakistan, Sri Lanka.

Hemisemidalis hreblayi Sziráki, 1999
Described from Jammu and Kashmir (Sziráki 1999).

Specimen examined: 1 ♂, Iran, Fars Province, Miyan Jangal Fasa, 28º56'N, 53º39'E, 1130 m a. s. l., mountain dry bushland, with wild terebinth trees, Malaise trap, 15. 07. 2010. New to the fauna of Iran.

Geographical distribution: Jammu and Kashmir, Iran.

Hemisemidalis kasyi Aspöck & Aspöck, 1965
Described from Afghanistan (Aspöck & Aspöck 1965). Published records from Iran: Kermashah Province, Kermanshah (Mirmoayedi 1998); Kermanshah Province, Ridjab (Meinander 1998, Mirmoayedi 1998).

Geographical distribution: Afghanistan, Arabian Peninsula, Iran, Lebanon.

Hemisemidalis pallida (Withycombe, 1924)
Described from Egypt (Withycombe 1924). Published records from Iran: Golestan Province, Golestan National Park, Sharlegh (Mirmoayedi et al. 1998); Hormozgan Province, Gazir; Kurdistan Province, Razab Marivan (Mirmoayedi 2002); Razavi Khorasan Province, Meshed; Razavi Khorasan Province, 20 km E of Salzawar; Tehran Province, Darband (Derbend) (Aspöck & Aspöck 1965).

Unpublished findings from Iran: 1 ♂, Golestan Province, Golestan National Park, Tang Gol, 17.07.1996, leg.: Mirmoayedi; 1 ♂, North Korasan Province, Golestan National Park, Mirzabaylou, 24.07.1996, leg.: Mirmoayedi.

Geographical distribution: Mediterraneum, Central Asia (including Afghanistan), Near and Middle East.

Semidalis aleyrodiformis (Stephens, 1836)
Described from England (Stephens 1836). Published record from Iran: Hormozgan Province, Minab (Mirmoayedi 1998).

Geographical distribution: Europe, Asia, North Africa.

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Seven new species in the *Chaetopteryx rugulosa* species group: applying the phylogenetic species concept and the sexual selection theory (Trichoptera: Limnephilidae)

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Abstract: Emerging perspectives of the phylogenetic species concepts and of the sexual selection theory were reviewed in order to apply these new findings to separate species in the obscured *Chaetoptery rugulosa* species group. Species is no longer considered as a stage in the lineage divergence. All the separately evolving metapopulation lineages represent species, from initial separation to extinction. Species is not a taxonomic rank, but a level of biological organisation. There are newly born and there are dying species. There are no subspecies as there are no "subindividuals" in the hierarchy of the biological organisation. Stable initial split criterion became a dominating practical guide to separate and describe species. That means that finding reliable separating morphological characters remains the central target in taxonomy and faces a challenge to taxonomist. Intense recent sexual selection processes both in the sexually antagonistic coevolution and in the cryptic female choice have produced stable diversity on the intromitten region of the edaeagus and on the female anal tube in the *C. rugulosa* species group. The male lateral subapical processes on the aedeagus and the female anal tube were applied to describe new species in this group: *C. giuliensis* Oláh & Kovács sp. n., *C. idriensis* Oláh & Urbanič sp. n., *C. kamnikensis* Oláh & Urbanič sp. n., *C. papukensis* Oláh & Szivák sp. n., *C. pohorjensis* Oláh & Urbanič sp. n., *C. prealpensis* Oláh sp. n., *C. zalaensis* Oláh sp. n. Based on male and female genital characters and applying the phylogenetic species concept we have raised subspecies rank to species rank with three new combinations: *Chaetopteryx mecsekensis* Nogradi, 1986 comb. nov., *Chaetopteryx schmidi* Botosaneanu, 1957 comb. nov., *Chaetopteryx noricum* Malicky, 1976 comb. nov., and have established three new species subgroups in the *C. rugulosa* species group: *C. schmidi*, *C. rugulosa*, *C. irenae*. In the *C. rugulosa* new species subgroup we have erected two new species clusters: *C. noricum*, *C. rugulosa*.

Introduction

The first member of this species group, the nominate species *Chaetopteryx rugulosa* Kolenati, 1848 was described from a single holotype of uncertain origin (Malicky et al. 1986). The holotype is in good condition and is deposited in the Naturhistorischen Museum Wien. The next species, *C. clara* McLachlan, 1876 was described from two specimens with localities Krain and Görz probably from around the region of Ljubljana (Malicky et al. 1986). The third species, *C. schmidi* Botosaneanu, 1957 was described from Romania, Southern Carpathian Mts. Cerna Valley. The fourth taxon, as a subspecies, *C. schmidi noricum* Malicky, 1976 was described from Austria. These species were revised and the *Chaetopteryx rugulosa* species group established with the description of three new species: *C. euganea* Moretti & Malicky, 1986, *C. goricensis* Malicky & Krušnik, 1986, *C. irenae* Krušnik & Malicky, 1986 and with one new subspecies: *C. schmidi mecsekensis* Nogradi, 1986 (Malicky et al. 1986). Later the subspecies construction was modified by Malicky (2005) into the present taxonomic state: *C. rugulosa mecsekensis*, *C. rugulosa noricum*, *C. rugulosa rugulosa*, *C. rugulosa schmidi*.

Traditional classification of several species in the group was painfully hindered by the extremely great variation of the periphallic structures inside the same populations or metapopulations.

These genital structures are the cerci, the paraproct and the gonopods which are commonly used in trichopterology to separate species. After a detailed examination of the fine structure of the phallic organ as well as the female anal tube in 192 populations we have detected the paramere spines pattern, the intromitten region of the aedeagus as well as the apicaodorsal profile of the female anal tube rather stable and reliable to differentiate among species. Especially the head of the aedeagus prooved to be rather stable. We have detected small ranges of variation only in the populations of the two widely distributed and probably ancestral species of *C. schmidi* Botosaneanu, 1957 and *C. prealpensis* sp. n. The diversification of the inseminating and stimulating intromittent phallic organ refers to the intense ongoing processes of sexual selection. At the same time the high variability of the male periphallic structures inside populations refers to intense recent speciation processes. We have summerized briefly both the applicable species concept and the theory of sexual selection in order to apply these recent findings to separate and describe species in the obscured *Chaetopteryx rugulosa* species group.

Material and methods

The adults were collected with singling, beating sheet or with sweeping net. All material is stored in 70-80% ethanol.

We have applied the methods described by Oláh (2011).

Depositories: HNHM = Hungarian Natural History Museum, Budapest, Hungary, MM = Mátra Museum, Gyöngyös, Hungary, MPC = Hans Malicky Private Collection, Lunz am See, Austria, OPC = János Oláh Private Collection presently under National Protection of the Hungarian Natural History Museum, Hungary, PMS = Slovenian Museum of Natural History, Ljubljana, Slovenia as indicated in the examined material.

Theoretical part

Species concept

Darwin (1859) reformulated the old concept of species and formulated the evolutionary species concept of the lineage segment in the formula that species are "branches in the lines of descent". However, he has compromised and retained the old taxonomic tradition that the species category is a rank in the taxonomic hierarchy. This basic conflict remained a permanent controversy and the forthcoming progress was simplified just to develop more objective ranking criteria. Placing discrete boundaries on the continuous process of diversification produced endless debate and developed over 22 species concepts (Mayden 1997) to overcome the limits of the old biological species concept (Mayr 1942). This widespread and dominating concept is not in accordance with the new findings that reproductive barriers are semipermeable to gene flow and species can differentiate despite ongoing interbreeding (Hausdorf 2011). In the new unified species concept the species category is being decoupled from the hierarchy of taxonomic ranks and transferred to the hierarchy of biological organisation (de Queiroz 2011). In the old concepts the species as a rank was accepted only if its lineage had reached a particular stage in the process of divergence. Lineages that had not yet reached that stage were ranked as subspecies. The conceptualization of species as population lineages is common to all species concepts. Dropping

the various species ranking criteria as well as stopping to treat the species as a taxonomic rank the species is no longer considered as a stage in the lineage divergence. All the separately evolving metapopulation lineages represent species. Species are species during their entire life span, from initial separation to extinction. Commonly spoken there are newly born and there are dying species. There are no subspecies as there are no "subindividuals" in the hierarchy of the biological organisation. Therefore the firm and stable initial split criterion became a dominating practical guide to separate and describe species. Time is here to understand that species is not a taxonomic rank, but a level of biological organisation. The species is transferred from the hierarchy of taxonomic rank to the hierarchy of biological organisation. This phylogenetic species concept successfully unifies two roles of species serving (1) as entity of evolution theory understanding the organisation of living world and (2) describing diversity reflecting the pattern of the organised life. The new theory of sexual selection helps us to understand how to develop and apply stable initial split criterion to separate species in particular groups of living creatures.

Sexual selection

How novel ecological strategies evolve in organisms that are already adapted to their ecological niche? How natural and sexual selection drive evolution? Natural selection opposes divergence from established niche-exploitation strategies and empirical studies have yielded little evidence that genetic drift plays an important role in morphological evolution. At the same time sexual selection could carry populations through fitness valleys of maladaptive intermediate phenotypes between alternative niches on the fitness landscape. This is realised by initiating reproductive isolation and resulting in ecological divergence through genetic drift or local adaptation (Bonduriansky 2011). In these days sexual selection is getting appreciation to understand speciation processes, especially in species complexes composed of closely related species. We understand that many of the so called "widely distributed and highly variable species" are subject to these sophisticated studies and we will be able to unlock these "black boxes" with fine structural studies and to demonstrate that they contain several closely related species.

Three hypotheses have been developed to explain the evolution of the extraordinary diverse male genitalia: (1) Under the lock-and-key hypothesis, selection for preinsemination reproductive isolation is predicted to favour male genitalia, that provides an exact mechanical fit to female genitalia. (2) The pleiotropy hypothesis suggests that variation in genitalic morphology is selectively neutral and that male genitalia evolve via pleiotropic effects of genes that code for both genital and general characters. (3) The sexual selection hypothesis proposes that fertilization success in postinsemination processes is nonrandom with respect to genital morphology (Oláh & Johanson 2008). Sexual selection occurs if differences among male genitalia are related to sensory manipulation in mating, to the ability of removing rival sperm in sperm competition, to control fertilization in sexual conflict between male and female, and to induce post-copulatory preferential sperm utilization in cryptic female choice (Arnqvist 1997).

Sexual selection is clearly supported by the fact that genitalia diversify much more rapidly in insect characterized by polyandrous mating systems compared with monoandry. Genital evolution is more than twice as divergent in taxa in which females mate many times in polyandry (Arnqvist 1998). The lock-and-key hypothesis still popular among taxonomists suggests that genitalia evolve by pre-insemination hybridization avoidance. In contrast, the sexual selection hypothesis proposes that divergent evolution of genitalia is dominated by sexual selection in postinsemination processes.

Darwin developed the idea of female preference for male ornaments when distinguished direct male-male battle and female choice, but failed to recognise or appreciate that male-male competition and sexual selection continue after copulation has begun (Eberhard 2009). Long known that selection in the insects continues after copulation by sperm competition (Parker 1970). These male-male battles together with cryptic female choice occur within the female's body. Undoubtedly an incomplete list of 24 female controlled processes and mechanisms has been exemplified in biasing paternity if female mates with more than a single male (Eberhard 2010a). Females are able to influence even where the sperm is stored, how it is dispensed or displaced.

Female defensive coevolution with males, the sexually antagonistic coevolution in the sexual conflict results that female genitalia coevolve and diversify together with the species specific aspect of the male genitalia. Females defend her interest against male coercion resulting in diverse female genitalia. Species specificity of female genitalia was demonstrated recently in dipteran Sepsidae (Puniamoorthy et al. 2010) and mecopteran Panorpidae (Ma et al. 2012) families. In contrast if cryptic female choice dominates the processes in sexual selection the male genital morphology will rapidly diversify and external female genital morphology will often not vary. When female are screening males in cryptic female choice by stimuli they coevolve rather with their sense organs (Eberhard 2010b).

Sexual selection in *Chaetopteryx rugulosa* species group

Members of the cool-adapted Chaetopterygini tribe have very long lasting copulation. Female and male spend several days in copula, at least in experimentally isolated condition when the copulating pairs are held in separate boxes (Malicky & Pauls 2012). This long duration may function like a living copulatory plug. However it seems that coupling or fitting mechanism of the male and female genitalia in this group is not sophisticated enough to hold the copulating female and male together long in a fixed position. The intromittent structure of the phallic organ, the aedeagus is without any significant withholding sclerotic structure. Moreover the female genital chamber, the vagina is very short. The only withholding structures on the aedeagus are the subapical lateral processes and the erectile, usually trilobed endophallic membranous head. These highly inflatable apical structures are probably fitting and, when erected filling the entire internal profile of the membranous vagina. This erectile condition could hold the copula together, but not for several days. We have observed that in most of the freshly collected copula the aedeagus is almost fully withdrawn from the vagina and only the paraproct-anal tube coupling mechanism keeps the copulating female and male together. The paraproct with its more or less serrated apical curving hooks performs a grasping function anchoring into the internal sclerites inside the female anal tube. Instability of coupling is indicated by field observations. Competing males are frequently present near around the copulating pairs. It appears that species of the space-limited spring-dwelling *Chaetopteryx rugulosa* species group with high density of competing males around are especially subject to strong sexual selection. Reproductive concurrence in the space-limited environment may produce intense selection mechanisms of both the preinsemination and postinsemination male-male battles as well as the cryptic female choice within female body.

We have found stable diagnostic traits in the length and shape of the female anal tube serving as substrate for anchor, but we have found the species-specificity of male paraproct functioning as the anchor, not stable enough. Other male periphallic structures, the cerci and the gonopods

are also highly varying. This finding suggests that preinsemination mating preferences enforced by the morphological fit of male and female genital structures may change the reproductive compatibilities rapidly in speciation events. Changing compatibility will define the new species boundaries. Males vary more in their reproductive success than females (Rodriguez-Munoz et al. 2010). Dominating female interest in polyandry may alter the condition of stabilizing selection for species mate recognition and modifies the morphological fit of male and female structures. It seems that females initiate and even direct the birth of the new species. Variability and flexibility of paraproct and other periphallic structure are tactile male responses to this change and refers to very recent speciation with lowered rate of stabilizing selection. Compared to periphallic structures the male paramere spine pattern is more stable. Their high diversity among species is a result of their stimulatory function on supragenital plate and in the deeper region of the upper vulvar lip. The selection of the spine pattern evolved probably in cryptic female choice. The most diverse and most stable male genital structure is the aedeagus. Having inseminating and stimulatory functions their high diversity is produced probably in various processes of the cryptic female choice. Its apical region evolved rather stable and highly species-specific in the form of the lateral subapical processes. The male lateral subapical processes and the female anal tube were applied to differentiate between the species in the obscured species complex of the *C. rugulosa* species group.

Mixed and/or interbreeding populations

Without a systematic survey we have found mixed or interbreeding populations in several habitats of the following species. *Chaetopteryx kamnikensis* Oláh & Urbanič sp. n. together with *C. prealpenis* Oláh sp. n.: Slovenia: Golovec Mts, Rakovnik District; Kamnik Mts, Volovljek; Litija, Janče, stream Gostinca. *C. schmidi* Botosaneanu, 1957 together with *C. papukensis* Oláh & Szivák sp. n.: Croatia: Psunj Mts; Bosnia & Herzegovina: Kozara Mts.

Genital structure and copulatory function

Male

Tergite VIII armed with a pair of apicomesal slightly elevated spinate (microtrichial spinule-covered) protuberances, separated by bare band. Their surfaces packed with peg-like setae and may have both sensory and stimulatory functions in copulatory processes. They behave like enantiomeres (optical isomers) of chirality by sensing and stimulating male and female orientation.

Segment IX elongated on pleural region, reduced to narrow strip dorsad and medium long ventrad.

Segment X structured into a membranous pouch-like double concavity divided by short mesal septum framed and enforced laterad by pairs of associated cerci and ventrad by paraprocts; this double pouched concavity spread deep anterad under tergite VIII and receives the female anal tube during copulation. Segment X concavity, cerci and paraprocts are fused and they form together a *superanal genital complex* (Vshivkova 2007).

Cerci (superior appendages) setose, serving sensory function during coupling operation in the copulatory mechanisms; their height (low, medium, high) has diagnostic value in distinguishing species subgroups.

Paraproct (intermediate appendages) heavily sclerotized pair of structures located above and around the anal (proctal) opening; tripartite: composed of the apical hook formation, the connecting middle section and the variously laterad turning basal triangle frame; dorsomesal edges or surfaces on the apical hooks finely serrated; during copulation the apical hooks penetrate deep into the female anal tube and their dorsally serrated edges anchor against the internal sclerites and along its membranous margin. The pair of the enlarged basal triangles function like a fulcrum to hold the paraproct clasping movement stable.

Gonopods fused to segment IX with discernible suture, cumbuliform with mesal concavity, directed oblique vertical; length and shape has diagnostic value in the formation of species subgroup; gonopods have orientation and locking functions during copulation. *Apical flap of gonopods* variously developed on the free, not fused portion somehow similarly to the "apparent harpago" of the genus *Allogamus*; this lobulate portion is variously turned mesad and also variously into transversal plane giving a rather significant range of apparent variability of gonopod apex in lateral view: (blunt, single pointed, double pointed). *Apical margin of gonopods* forming various profiles in lateral view: (convex, straight, concave, undulate: double concave).

Phallic organ consists of the very short ring-like phallic apodeme, the medium long phallotheca and endotheca (together phallobase) as well as the aedeagus and a pair of parameres.

Aedeagus forms a sclerotized tube with membranous head. Composed inside of the discernible ejaculatory duct, apical eversible endophallus with gonopore and armed outside with subapical processes. The lateral subapical processes are variously sclerotized and developed as a pair of gemmiform, digitiform, filiform, aliform, platiform processes with various lengths directed horizontal or upward oblique. If lateral lobes are not sclerotized a pair of ventrolateral or apical supporting sclerites are developed to power the evagination rate of endophallus and the free opening of the gonopore. The membranous endophallic head of the aedeagus when everted usually have well-visible lateral and median upward projecting lobes. These lobes are visible protruded only when the endophallus is fully erected. The membranous head of the aedeagus together with the lateral processes frequently developed into elaborated lobe structures with significant lateral and dorsal extensions fitting into the internal profile of the short vagina (genital chamber) and giving a coupling and/or stimulating mechanism during copulation.

Paramere each composed of sclerotized shaft and various numbers of apical spines. Length and shape of *paramere shaft* has diagnostic value: (short, medium, long; rod-shaped, broad, triangular).

Paramere spine pattern characterized by the number, length, thickness and position of spines present on paramere tips; the pattern of these characters together is a rather stable diagnostic structure to separate species in spite of the ranges of variations in the individual characters. There are species with primary, secondary and tertiary spines. *Primary spine*: the dominating spine stout and usually single, (short, medium, long, straight or curved). *Secondary spines*: slender with various lengths from very short to almost as long as the primary lines. *Tertiary spines*: almost peg-like, stout and very short.

Female

The closed *anal tube* is formed by the almost completely fused tergite IX and segment X. Its apparent upper lip is the apical dorsum of tergite IX and its apparent lower lip developed from the segment X. *Internal sclerite* inside the anal tube forms an internal second dorsal wall

inside the tube representing the vestigium of tergite X and more or less fused to the dorsum of tergite IX and forming together an important diagnostic character: the *apical pattern of the upper lip* of the anal tube. The internal sclerite (tergite X) is variously connected laterad to the lower lip of the anal tube, forming together the partially fused and vestigial segment X. Setose *ventroapical lobes* may be present on tergite IX; its presence or absence has diagnostic value in the separation of the species subgroups. Sternite IX present as a pair of lateral setose lobes connected by the setaless glabrous mesal surface, the supragenital plate. NIELSEN (1980) relates the supragenital plate or upper lip of the genital opening, (the vulva) to the ventrum of segment X taking part in the formation of the dorsal wall of the genital chamber. The lower lip of the genital opening (vulva), that is the usually trilobed vulvar scale is formed by the vestigial gonopods of segment IX (pair of lateral lobes) and by the vestigial gonopds of segment VIII (single mesal lobe). The internal parts of the vulvar scale have connections to the spermathecal sclerite forming together the vaginal sclerite complex.

Variability of the genital structures

Both the male and females genital structures vary to a great extent. Especially the periphallic structures: cerci, paraprocts, gonopods on the males and the protruding rate of the internal sclerites as well as the development of the ventrolateral processes of the tergite IX on the females. The parameres, the non-intromittent component of the phallic organ exhibit a smaller range of variation both in the shape and length of the shaft and in the number and length of the spines. Most stable is the aedeagus, the inseminating substructure that is the intromittent component of the phallic organ: especially the subapical lateral processes; the ventrolateral supporter sclerites, the shape of endophallic membranous erectile head. However the erectile head has low diagnostic value, because it is very rare to have specimens with fully erected endophallic head, and it is impossible to estimate the rate of erection of a particular aedeagus.

Variability of paramere spines

Spine pattern (number, length, position) on the paramere has important diagnostic value in distinguishing species in spite of its variability. Without a systematic survey examining 192 populations we have detected higher variability in spine pattern at smaller population and/or at the distributional peripheries of the species. This finding is supported by experimental results on polyandrous seed beetle released from sexual selection. Over 18-21 generations male genital spines evolved reduced length in artificially imposed random monogamy (CAYETANO et al. 2011). This supports the sexually antagonistic or simply stimulatory role of the male genital spines. In *Chaetopteryx rugulosa* species group paramere spines seems to remain outside the vagina during copulation, and positioned on the supragenital plate or deeper along the upper vulvar lip. This position suggests that they have function to guide the aedeagus into the female genital opening and produce harm or stimulatory effect on female. Variability of spine pattern under condition of released sexual selection appears by shortening or elongating the length which is accompanied by alternate increase or decrease in spine number. Frequently both variations occur in the same population.

"Variability" of genital drawings

The plane or the angle of the view that is the aspect of drawing may change considerably the form and the ratio of structural elements in the final drawings as was demonstrated by

MALICKY (1988). Working with structures which are firmly fixed to segment IX and are symmetric it is possible to produce the correct lateral view by shifting the position until the corresponding structures of both sides are covering each others. It is more difficult to get the correct dorsal, ventral or caudal views even if the structure is fixed to segment IX. In these viewing aspects there are no symmetric couples to orientate our view. Those genital structures create more difficulties to produce representative and comparable drawings which are functionally moving independent. To produce comparable drawings of the paraproct is especially difficult in caudal view. The caudal outline of this very complex tripartite tree-dimensional structure is very sensitive to viewing aspects. It is impossible to find the correct caudal position, because it does not exist. Paraproct has several working position, this is the reason why drawings are so much varying in caudal view in publications.

Systematics

Chaetopteryx rugulosa species group

Species in the *C. rugulosa* species group are characterized by pale colour, very blunt forewing with rounded apex and covered with strong and very long erect setae and with a tendency to brachyptery. Male genitalia: segment IX with bridled dorsum; segment X forming a thin-walled anterad spreading double pouch; apical hook formation of paraproct large foliform with dorsad turning serrated apex; cerci cumbuliform fused basally to the pouch of segment X; the pouche-forming segment X, the cerci and the paraproct fusing together the superanal genital complex; gonopods medium long with mesad turning apical flap; aedeagus with subapical lateral

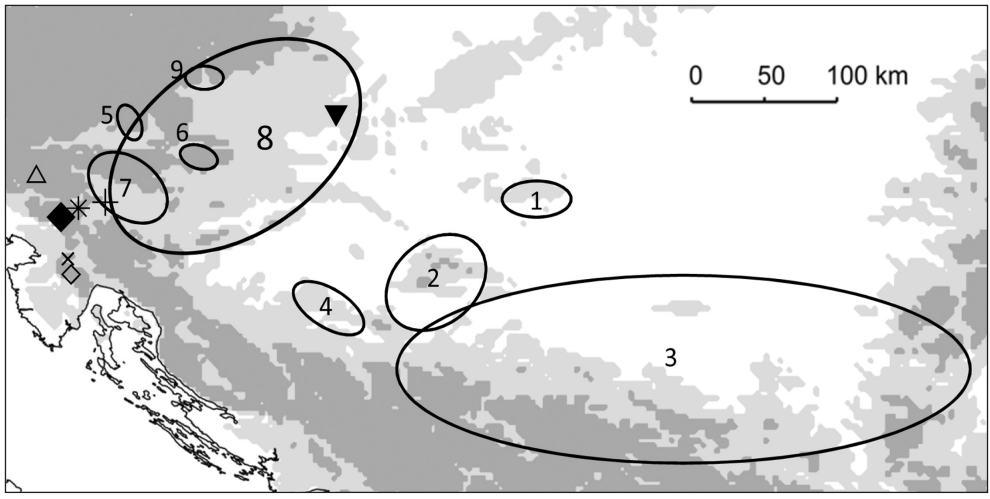


Fig. 51. Distribution of *Chaetopteryx rugulosa* species group. Ellipses with numbers indicate the following species: 1 = *C. mecsekensis*, 2 = *C. papukensis* sp. n., 3 = *C. schmidi*, 4 = *Chaetopteryx* sp. n., 5 = *C. noricum*, 6 = C. *pohorjensis* sp. n., 7 = *C. kamnikensis* sp. n., 8 = *C. prealpensis* sp. n., 9 = *C. rugulosa*, and symbols mark the following species: ▼ = *C. zalaensis* sp. n., + = *C. clara*, △ = *C. giuliensis* sp. n., ◆ = *C. goricensis*, ✳ = *C. idriensis* sp. n., × = *C. irinae*, ◇ = *C. marinkovicae*

processes, and with membranour erectile as well as protrudable endophallic head comprised of variously spread lobes; simple short parameres with a few apical spines. Female genitalia: closed anal tube with upper and lower lips; tergite IX with or without setose lateral lobes; variously formed setaless supragenital plate (upper vulvar or vaginal lip) and uniform vulvar scale (lower vulvar or vaginal lip); vagina uniform and short. Based on male and female genital characters and applying the phylogenetic species concept we have raised subspecies rank to species rank with three new combinations: *Chaetopteryx mecsekensis* Nogradi, 1986 **comb. nov.**, *Chaetopteryx schmidi* Botosaneanu, 1957 **comb. nov.**, *Chaetopteryx noricum* Malicky, 1976 **comb. nov.**, and have established three new species subgroups in the *C. rugulosa* species group: *C. schmidi*, *C. rugulosa*, *C. irenae*. In the *C. rugulosa* new species subgroup we have erected two new species clusters: *C. noricum*, *C. rugulosa*. The distribution of the *C. rugulosa* species group is presented on the map (Fig. 51).

***Chaetopteryx schmidi* new species subgroup**

Characterized by males having medium high cerci, paramere spines short, primary spine stout. Female tergite IX without setose lateral lobes. Four species belong to this species subgroup: the widely distributed ancestral *C. schmidi* Botosaneanu, 1957, and three descendant parapatric or peripatric species: *C. mecsekensis* Nogradi, 1986, *C. papukensis* Oláh & Szivák sp. n., *Chaetopteryx* sp. n. (Kučinić et al. 2013).

Chaetopteryx mecsekensis Nogradi, 1986 **comb. nov.**

Chaetopteryx schmidi mecsekensis Nogradi, 1986 – Malicky et al. (1986): 8–10.

Chaetopteryx rugulosa mecsekensis Nogradi, 1986 – transferred by Malicky (2005): 573.

Material examined – **Hungary**: Magyaregregy, Iharos-kút, 327 m, N46°13'21.90", E18°20'06.80", 06.11.2009, I. Szivák, Á. Uherkovich (2♂, OPC). Magyaregregy, Máré-forrás, N46°13'39.98", E18°19'19.39", 06.11.2009, I. Szivák, Á. Uherkovich (♂♀ in copula, OPC). Magyaregregy, Vár-völgy, Réka-forrás, N46°13'39", E18°19'19", 06.11.2011, S. Nógrádi, Á. Uherkovich (6♂, 2♀, OPC; 1♂, 1♀, MM). Mecsek Mts, Hosszúhetény, Hidasi-völgy, Csurgó, 11.11.1984, Á. Uherkovich (2♂, 2♀, OPC). Mecsek Mts, Hosszúhetény, Takanyó-völgy, 24.10.1984, Á. Uherkovich (2♂, 2♀, OPC). Mecsek Mts, Kisújbánya [Hosszúhetény], Pásztor-forrás, 436 m, N46°13'04", E18°21'27", 07.12.1983, Á. Uherkovich (7♂, 1♀, OPC); 10.12.1983, Á. Uherkovich (4♂, OPC); 26.12.1983, S. Nógrádi (4♂, 1♀, OPC); 01.01.1984, S. Nógrádi (3♂, OPC). 12.11.1986, S. Nógrádi (3♂, 1♀, OPC); 06.11.2009, I. Szivák, Á. Uherkovich (3♂, 1♀, OPC); 05.11.2010, singled, I. Szivák, J. Oláh, Á. Uherkovich (11♂, 11♀, OPC). Mecsek Mts, Mánfa, Kőlyuk, 12.11.1985, S. Nógrádi (8♂, 1♀, OPC). Mecsek Mts, Mánfa, Nagy-Mély-völgy, Cserkész-forrás, N46°08'56.73", E18°12'38.08", 14.11.2009, I. Szivák (4♂, OPC). Mecsek Mts, Pécs, Meleg-mány, 22.10.1983, S. Nógrádi (5♂, 5♀, OPC); 20.12.1983, Á. Uherkovich (1♂, 3♀, OPC); 01.01.1985, S. Nógrádi (5♂, 3♀, OPC); 28.10.1987, Á. Uherkovich (10♂, 5♀, OPC). Mecsek Mts, Pécs, Melegmányi-völgy, Anyák-kútja, N46°08'08.55", E18°13'31.46", 14.11.2009, I. Szivák (2♂, 1♀, OPC). Mecsek Mts, Pécs, Melegmányi-völgy, Mésztufa lépcső, 352 m, N46°08'12.89", E18°13'29.92", 14.11.2009, I. Szivák (3♂, OPC). Mecsek Mts, Pécs, Nagy-Mély-völgy, Kánya-forrás, 347 m, N46°08'05.16", E18°12'43.75", 14.11.2009, I. Szivák (3♂, 1♀, OPC). Mecsek Mts, Pécs, Nagy-Mély-völgy, Sziklás-forrás, N46°08'26.7", E18°12'39.96", 14.11.2009, I. Szivák (3♂, OPC). Vékény, Vár-völgy, Iharos-forrás, 28.10.1983, S. Nógrádi (3♂, 2♀, OPC); 12.11.1986, S. Nógrádi (4♂, 1♀, OPC).

Distinguishing traits – Male: cerci higher than at *C. schmidi* and *C. papukensis*; apical flap of gonopod less developed, resulting in gonopod apex rounded in lateral view, not with pointed or projected blunt apex like at *C. schmidi* and *C. paukensis*; dorsal hook of paraproct medium turned, less turned at *C. papukensis*, highly turned at *C. schmidi*; aedeagus with long, almost filiform lateral processes, not gemmiform of *C. schmidi* or short digitiform of *C. papukensis*; paramere shaft short rod-shaped with medium long straight primary spine, not short straight

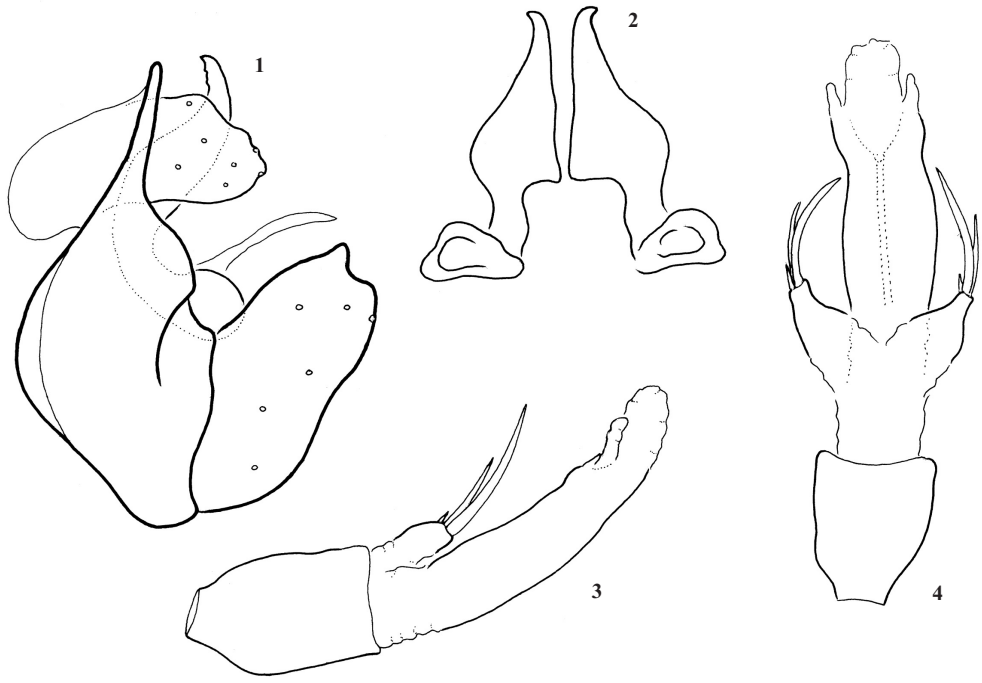
of *C. schmidi* or long curved of *C. papukensis*. Female: anal tube medium long; supragenital plate very sharp triangular in ventral view.

***Chaetopteryx papukensis* Oláh et Szivák sp. n.** (Figs 1–7)

Diagnosis – This new species belongs to the *C. schmidi* New Species Subgroup of the *C. rugulosa* species group. Most close to *C. mecsekensis* but differs by having cerci lower than at *C. mecsekensis*, apical flap of gonopod present, not lacking; the well developed flap producing gonopod apex with pointed or blunt projection in lateral view, not rounded like at *C. mecsekensis*; dorsal hook of paraproct less turned, medium turned at *C. mecsekensis*, highly turned at *C. schmidi*; aedeagus with medium digitiform lateral processes, not long filiform of *C. mecsekensis* or gemmiform of *C. schmidi*; paramere shaft triangular, not digitate; primary spine long curved, not short straight of *C. schmidi* or long straight of *C. mecsekensis*. Anal tube of female is long.

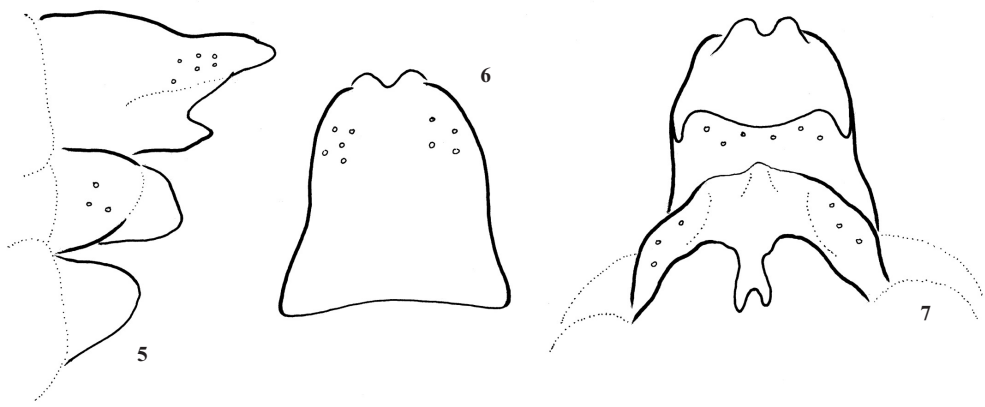
Description – Male and female (in alcohol). Light brown medium-sized animal with light body appendages and with yellowish-testaceous wings. Anterior wing with rounded apex and with very long erect spine-like setae present both on the membrane and on the veins; setae on the veins usually stronger. Tibial spur formula of male is 033 and that of female is 133. Forewing length of male is 9 mm, and that of allotype female is 11 mm.

Male genitalia (Figs 1–4). Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII and its mesal light band well developed. Segment IX with short, bridle-like



Figs 1–4. *Chaetopteryx papukensis* Oláh & Szivák sp. n. holotype male: 1 = male genitalia without phallic organ in left lateral view; 2 = paraproct in caudal view; 3 = phallic organ in lateral view; 4 = phallic organ in dorsal view

dorsum and longer ventrum; anterior margin rounded convex with long antecosta; posterior margin concave, midlateral sclerotized angle of tergite IX pronounced. The pouch-like concavity of segment X long. Cerci medium high. Apical hook of the paraproctal complex with narrowing pointed apex and lateral angle, middle connecting section long, basal triangle exposed monolobe in lateral view. Membranous subanal lobe short. Gonopods short with apical flap developed and turning mesad resulting in a single short pointed apex in lateral view. Phallic organ composed of short rim-like phallic apodeme, short tube of phallotheca, short endotheca, well-developed aedeagus and medium long triangular parameres; paramere with stout curving primary spine, 1-2 secondary spines and 0-2 tertiary spines; aedeagus supplied with a pair of digitate lateral processes directed oblique upward, the very basal part of the lateral process sclerotized and membranous after; ejaculatory duct ending with gonopore opening into a large trilobed endophallic membranous structure.



Figs 5–7. *Chaetopteryx papukensis* Oláh & Szivák sp. n. allotype female: 5 = female genitalia in left lateral view; 6 = anal tube in dorsal view; 7 = female genitalia in ventral view

Female genitalia (Figs 5–7). Anal tube formed by the fusion of tergite IX and X is medium long and broad, not narrowing posterad; apical margin forming rounded lateral lobes and mesal excision in dorsal view; this dorsal apical profile is created entirely by tergite X; the internal sclerites, the remnant tergite X protruding, and taking part in the formation of the apical profile. Setose ventroapical lobes of tergite IX lacking. Supragenital plate of segment X triangular in ventral view. Median lobe of the vulvar scale (lower vulvar lip) half long as the lateral lobes. Vaginal chamber medium sized reaching to the middle of sternite VIII. Vaginal sclerite pattern clearly visible.

Type material – Holotype. **Croatia**: Papuk Mts, Slatinski Drenovac, Jankovac, Jankovac spring, 45°31'08.1", 17°41'11.9", 510 m, 06.11.2012, T. Kovács, G. Magos (1♂, OPC). Allotype. Same as holotype (1♀, OPC). Paratypes. Same as holotype (14♂, 10♀, OPC, 5♂, 3♀, MM). Krndija Mts, 3 km N of Kutjevo, Velika rijeka, small tributary, 424 m (YL23), N45°27'55", E17°52'37", 04.11.2011, I. Szivák (1♂, OPC). Krndija Mts, 6 km N of Kutjevo, Velika rijeka, springs, 580 m, N45°28'59", E17°51'33", 04.11.2011, I. Szivák, Á. Uherkovich (4♂, 4♀, OPC); 06.11.2012, T. Kovács, G. Magos (9♂, 9♀, OPC). Krndija Mts, Kutjevo, Mala rijeka, 402 m (YL23), N45°27'48", E17°51'53", 04.11.2011, I. Szivák, Á. Uherkovich

(4♂, 1♀, OPC). Papuk Mts, forest brook below the Slatinski Drenovac – Velika road, 45°29'32.4", 17°39'10.9", 480 m, 06.11.2012, T. Kovács, G. Magos (7♂, 10♀, OPC). Papuk Mts, Jankovac, 13.10.1986, B. Horvat, I. Sivec (2♂, 2♀, PMS). Papuk Mts, Jankovac spring, cave and the surrounding beech forest, 456 m, N45°31.126', E17°41.198', 01.10.2007, L. Dányi, J. Kontschán, D. Murányi (7♂, HNHM). Papuk Mts, Slatinski Drenovac, 1.5 km S, Jankovac stream, 350 m, N45°32'01", E17°42'08", 19.10.2012, Á. Uherkovich (1♀, OPC). Papuk Mts, Slatinski Drenovac, Jankovac, Jankovački potok, 351 m (YL14), N45°31'31", E17°41'25", 04.11.2011, I. Szivák (3♂, 1♀, OPC). Papuk Mts, Slatinski Drenovac, Kovačica Potok, 541 m, N45°31'08", E17°39'54", 03.11.2012, Á. Uherkovich (1♂, OPC). Psunj Mts, Šumetlica Strmac, Creek on sandstone, 663 m, N42°22'32", E17°21'40", 23.10.2012, Á. Uherkovich (1♂, OPC). Psunj Mts, Šumetlica Strmac, small creek on crystalline rock, 722 m, N42°22'43", E17°22'04", 23.10.2012, Á. Uherkovich (2♀, OPC). Velika, Sastavi, Zagradska rijeka, 482 m, N45°29'33", E17°39'11", 03.11.2012, Á. Uherkovich (1♂, OPC). **Bosnia & Herzegovina**: Banja Luka region, Kozara Mts, forest brook below the Vrbaška – Kozarac road, N45°02.480', E16°54.266', 560 m, 07.11.2012, T. Kovács, G. Magos (1♂, OPC). Banja Luka region, Kozara Mts, forest edge spring 1 km S of peak Lisina, N44°57.773', E16°58.342', 680 m, 07.11.2012, T. Kovács, G. Magos (5♂, 6♀, OPC).

Etymology – The new species is named after the Papuk Mts, where the type locality is found.

Remarks – Some specimens from the populations collected in Kozara and Psunj Mts have mixed characters. Few specimens have abbreviated subapical lateral lobes of aedeagus, character of *C. schmidi* and some female have abbreviated anal tube, characters of both *C. schmidi* and *C. mecsekensis*.

Chaetopteryx schmidi Botosaneanu, 1957 **comb. nov.**

Chaetopteryx schmidi Botosaneanu, 1957 – Botosaneanu (1957): 190–193.

Chaetopteryx rugulosa schmidi Botosaneanu, 1957 – transferred by Malicky (2005): 573.

Material examined – **Bosnia & Hercegovina**: Blagojevići Sivecek, Ozren Planina, 390 m, 12.10.1990, B. Horvat, I. Sivec (1♀, PMS). Čuništa, River Krivaja, 450 m, 15.10.1990, B. Horvat, I. Sivec (1♂, 1♀, PMS). Kamensko, River Krivaja, 15.10.1990, B. Horvat, I. Sivec (2♂, PMS). Kravica, Zvornik, 05.10.1986, B. Horvat, I. Sivec (1♂, PMS). Dobrovci,Gračanica, 430 m, 11.10.1990, B. Horvat, I. Sivec (4♀, PMS). Skender Vakuf, 820 m, 19.10.1990, B. Horvat, I. Sivec (2♂, PMS). **Romania**: 13 km from Baile Herculane, upper section of a small tributary to River Cerna, N44°59'10.34", E22°30'46.91", 13.11.2010, singled, Á. Ecsedi, I. Szivák (8♂, 1♀, OPC); N44°59'13.12", E22°30'49.76", 13.11.2010, singled, Á. Ecsedi, I. Szivák (4♂, OPC). 24 km from Baile Herculane, spring area of a small tributary to River Cerna, N45°02'32.14", E22°35'3.36", 13.11.2010, singled, Á. Ecsedi, I. Szivák (2♂, 2♀, OPC). 24 km from Baile Herculane, a small tributary to River Cerna, N45°02'35.05", E22°35'07.67", 13.11.2010, singled, Á. Ecsedi, I. Szivák (4♂, OPC). 30 km from Baile Herculane, a small tributary to River Cerna, N45°02'56.68", E22°37'32.09", 13.11.2010, singled, Á. Ecsedi, I. Szivák (8♂, 3♀, OPC, 3♂, 1♀, MM). **Serbia**: Đerdap Mts, Dobra, Reka Pesača, beech forest with stream, 386 m, N44°34.670', E21°59.250', 28.10.2010, L. Dányi, J. Kontschán, Zs. Ujvári, D. Murányi (2♂, 1♀, HNHM). Đerdap Mts, Donji Milanovac, Grgeci spring and its outlet in a beech forest, 500 m, N44°28', E22°02', 13.10.2006, L. Dányi, J. Kontschán, D. Murányi (1♂, 1♀, ♂♀ in copula, HNHM). Đerdap Mts, Golubinje, stream valley with young forest, N of the village, 88 m, N44°30'59.6", E22°12'41.5", 13.10.2006, L. Dányi, J. Kontschán, D. Murányi (6♂, HNHM). Miroč, Donji Milanovac, Stream Supljanka, 08.10.1984, Brancelj (1♀, PMS). Pesača, Donji Milanovac, 09.10.1986, B. Horvat, I. Sivec (1♂, PMS). Popadija, Donji Milanovac, 09.10.1986, B. Horvat, I. Sivec (1♂, PMS).

Distinguishing traits – Male: cerci lower than at *C. mecsekensis*, apical flap of gonopod developed, resulting in gonopod apex with pointed or blunt projection in lateral view, not

rounded like at *C. mecsekensis*; dorsal hook of paraproct very turned, medium turned at *C. mecsekensis*, less turned at *C. papukensis*; aedeagus with short gemmiform sclerotized lateral processes, not medium long digitiform of *C. papukensis* or long filiform of *C. mecsekensis*; paramere shaft rod-shaped with short straight primary spine, not long curved of *C. papukensis* or long straight of *C. mecsekensis*. Female: anal tube very short; supragenital plate blunt triangular in ventral view, not sharp triangular like at *C. mecsekensis*.

Chaetopteryx sp. n.

Material examined – **Bosnia & Hezegovina**: Una-Sana Canton, Mrazovac, Svetinja Spring, N45°03.118', E16°06.324', 300 m, 07.11.2012, T. Kovács, G. Magos (14♂, 11♀, OPC; 5♂, 3♀, MM). **Croatia**: Banovina Region, Hrvatski Čuntić, 21-22.11.2009, M. Kučinić, I. Vučković (15♂, 8♀, OPC). Banovina Region, Petrinja, Kri Spring, 07.11.2009, M. Bučar, M. Kučinić (4♂, 13♀, OPC); 08.12.2009, M. Bučar, M. Kučinić (8♂, OPC). Banovina Region, Pecki Spring, 21.11.2009, M. Kučinić, I. Vučković (3♂, 2♀, OPC); 15.12.2009, M. Bučar, M. Kučinić (12♂, 7♀, OPC). Banovina Region, Slabinja Spring, Šuplji Kamen, 29.11.2009, M. Kučinić, I. Vučković (1♂, OPC).

Remarks – This is a new species to be described by KUČINIĆ et al. (2013).

Chaetopteryx rugulosa **new species subgroup**

Characterized by males having medium low cerci, paramere spines medium or long, primary spine not stout, less enlarged. Female tergite IX with setose lateral lobes. In the *C. rugulosa* new species subgroup we have established two new species clusters: *C. noricum*, *C. rugulosa*.

Chaetopteryx noricum **new species cluster**

Species belonging to this small cluster have aedeagus with subapical lateral structures which are fully membranous aliform and erectile along their entire length. These horizontal or slightly upward directed processes are accompanied below by a pair of supporting sclerites in the form of elongated ventrolateral ridges. Two species belong to this cluster: *C. noricum* Malicky, 1976, *C. pohorjensis* Oláh & Urbanič sp. n.

Chaetopteryx noricum Malicky, 1976 **comb. nov.**

Chaetopteryx schmidi noricum Malicky, 1976 – MALICKY (1976): 98–99.

Chaetopteryx rugulosa noricum Malicky, 1976 – transferred by MALICKY (2005): 573.

Material examined – **Austria**: Carinthia, Saualpe ob Wieting, 1600 m, 28.09.1988, H. Malicky (3♀, OPC from MPC). Katschbach, STMKz, 03.11.2000, W. Graf (1♂, OPC). Saualpe, Geierkogel Klippitztörl, springs of stream Klippitzbach, 1584 m, N46°55'53.8", E14°40'49.3", 21.11.2009, A. Déry, I. Szivák (5♂, OPC). Saualpe, Hinterberg Löllinggraben, a spring in the middle reach of stream Löllingbach, 802 m, N46°54'38", E14°34'03", 21.11.2009, A. Déry, I. Szivák (4♂, OPC; 2♀, MM). Saualpe, Klieningbach, middle reach of stream Klieningbach, 932 m, N46°56'49.4", E14°46'24.2", 21.11.2009, A. Déry, I. Szivák (1♂, OPC).

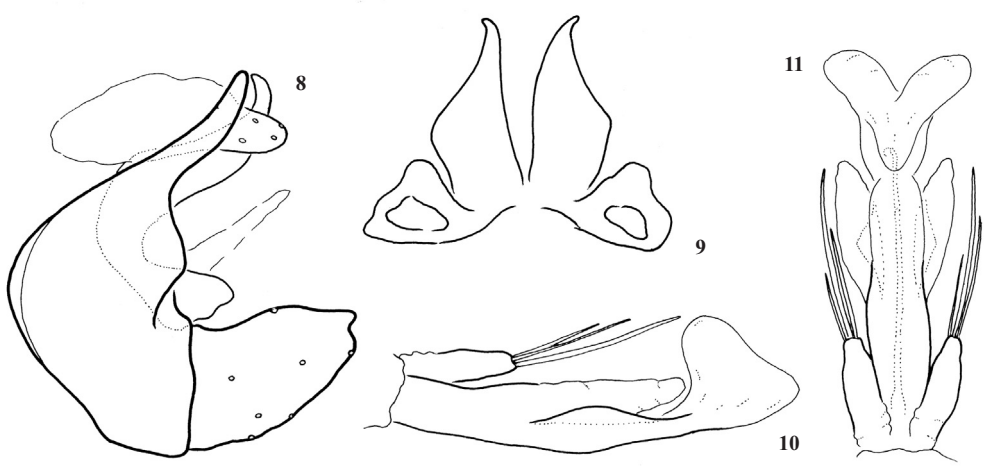
Chaetopteryx pohorjensis **Oláh et Urbanič sp. n.** (Figs 8–14)

Diagnosis – Described and drawn, but not named by MALICKY et al. (1986). Failed to relate it clearly to any of the known taxa. This new species belongs to the *C. rugulosa* species group, *C. rugulosa* subgroup and *C. noricum* species cluster. Close to *C. noricum* sp. n. but differs by having paraproct wide and angled laterad, not narrow in caudal view; paramere shaft shorter than at *C. noricum*; number of paramere spines usually 3; position of paramere spines nested, not with a tendency to be arranged in horizontal row with laterad located primary spine and gradually mesad shortening secondary spines. There are significant differences in the genital

structures of the females: the lower lip of the anal tube is shorter than the upper lip, not equal as at the *C. noricum*; the dorsal apical profile of the anal tube characterized by deep V-shaped excision due to the highly protruded position of the internal scerites.

Description – Male and female (in alcohol). Light brown medium-sized animal with light body appendages and with yellowish-testaceous wings. Anterior wing with rounded apex and with very long erect spine-like setae present both on the membrane and on the veins; setae on the veins usually stronger. Tibial spur formula of male is 033 and that of female is 133. Forewing length of male is 8 mm, and that of allotype female is 9 mm.

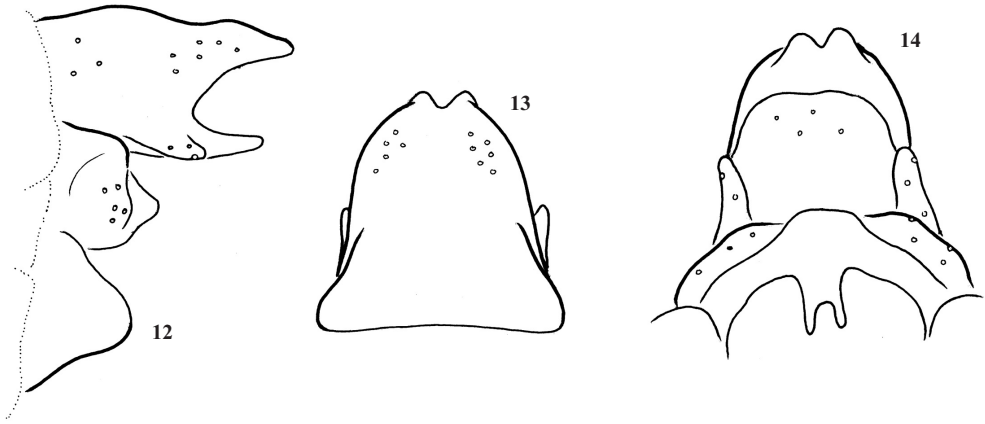
Male genitalia (Figs 8–11). Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII and its mesal light band well developed. Segment IX with short, bridle-like dorsum and longer ventrum; anterior margin rounded convex with nwell-developed antecosta; posterior margin concave, midlateral sclerotized angle of tergite IX pronounced. The pouch-like concavity of segment X long. Cerci low. Apical hook of the paraproctal complex with narrowing pointed apex and lateral angle, middle connecting section longt, basal triangle exposed monolobe in lateral view. Membranous subanal lobe narrow. Gonopods long with apical flap variously developed and turning mesad. Phallic organ composed of short rim-like phallic apodeme, short tube of phallotheca, short endotheca, well-developed aedeagus and medium long parameres; primary spine of paramere is accompanied by 1-2 secondary spines; aedeagus supplied with a pair of horizontal aliform fully membranous lateral processes, pair of short erection supporter sclerites with low triangular shape; ejaculatory duct ending with gonopore opening into a large



Figs 8–11. *Chaetopteryx pohorjensis* Oláh & Urbanič sp. n. holotype male:
8 = male genitalia without phallic organ in left lateral view; 9 = paraproct in caudal view; 10 = phallic organ in lateral view; 11 = phallic organ in dorsal view

trilobed endophallic membranous structure.

Female genitalia (Figs 12–14). Anal tube formed by the fusion of tergite IX and X is medium long, not narrowing posterad; internal sclerites protruding and forming a V-shaped excision. Setose ventroapical lobes of tergite IX present in variously developed form. Supragenital plate of segment X well-developed from triangular to blunt triangular both in lateral and ventral view.



Figs 12–14. *Chaetopteryx pohorjensis* Oláh & Urbanič sp. n. allotype female: 12 = female genitalia in left lateral view; 13 = anal tube in dorsal view; 14 = female genitalia in ventral view

Median lobe of the vulvar scale (lower vulvar lip) half long as the lateral lobes. Vaginal chamber medium sized reaching to the middle of sternite VIII. Vaginal sclerite pattern clearly visible.

Type material – Holotype. **Slovenia**: Pohorje Mts, below Pesek, spring area of river Oplotnica, 1345 m, N46°28'24.8", E15°20'55.9", 08.11.2012, T. Kovács, G. Magos, I. Sivec (1♂, OPC). Allotype. Same as holotype (1♀, OPC). Paratypes. Same as holotype (2♂, 6♀, OPC; 1♂, 1♀, MM). Same locality as holotype: 20.10.1981, I. Sivec (2♂, 2♀, OPC); 15.10.1984, B. Horvat, I. Sivec (16♂, 9♀, PMS); 27.09.2008, I. Sivec (1♂, 1♀, OPC); 10.11.2008, I. Sivec (3♂, 1♀, OPC); 28.09.2012, I. Sivec (1♂, OPC); 19.10.2012, B. Horvat, I. Sivec (18♂, 7♀, OPC); 08.11.2012, I. Sivec (3♂, 1♀, OPC). Dravograd, Ogleja puša, Vrački stream, 1170 m, N38°08'09", E15°05'24,30", 04.10.2012, I. Sivec, G. Urbanič (4♂, 1♀, OPC). Kamnik, Volovljek, N46°18'59.7", E14°42'03.1", 14.11.2010, I. Sivec (1♀, OPC). Kozji Vrh nad Dravogradom, sidestream of stream Brelejev potok, 1530 m, N46°38'26.35", E15°04'52.35", 04.10.2012, I. Sivec, G. Urbanič (3♂, OPC). Kozji Vrh nad Dravogradom, sidestream of stream Velka, 570 m, N46°37'26.0", E15°04'16.4", 04.10.2012, I. Sivec, G. Urbanič (7♂, OPC); 07.11.2012, G. Urbanič (1♀, laboratory reared, OPC). Kozji Vrh nad Dravogradom, stream Brelejev potok, 1170 m, N46°38'39.25", E15°02'52.41", 04.10.2012, I. Sivec, G. Urbanič (5♂, 1♀, OPC). Litija, Konjski graben, 16.10.1985, I. Sivec (1♀, PMS). Mislinja, Mislinjski jarek, 29.10.2010, I. Sivec (2♂, 2♀, OPC). Pohorje Mts, Pesek, 28.10.1989, B. Horvat, I. Sivec (1♂, PMS). Pohorje Mts, Pesek, N46°28'26.3" E15°20'55.9", 09.10.2010, I. Sivec (2♂, OPC).

Etymology – The new species is named after the Pohorje Mts, where the type locality is found.

***Chaetopteryx rugulosa* new species cluster**

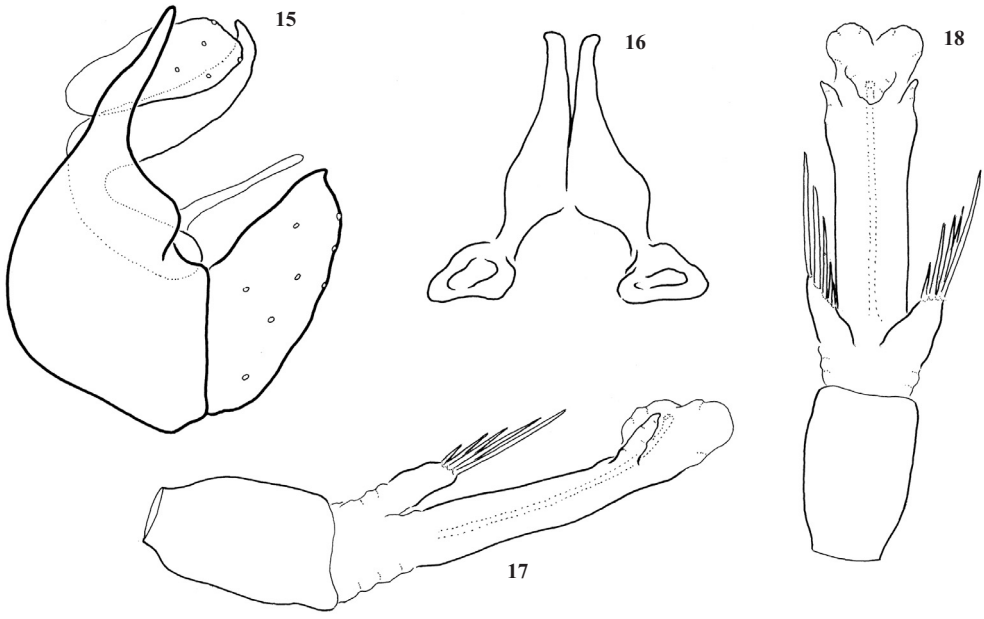
Species belonging to this cluster have aedeagus with gemmiform, digitiform or spatulate subapical lateral structures. Their basal region partially sclerotized and erectile only afterwards. The lateral processes are not accompanied below by a pair of supporting sclerites like at *C. noricum* new species cluster. Four species belong to this cluster: the widely distributed ancestral *C. prealpensis* Oláh sp. n. and three descendant parapatric or peripatric species: *C. kamnikensis* Oláh & Urbanič sp. n., *C. rugulosa* Kolenati, 1848, *C. zalaensis* Oláh sp. n.

***Chaetopteryx kamnikensis* Oláh et Urbanič sp. n.** (Figs 15–21)

Diagnosis – Described and drawn, but not named by MALICKY et al. (1986). Due to insufficient material failed to relate it clearly to any of the known taxa. This new species belongs to the *C. rugulosa* species group, *C. rugulosa* subgroup and *C. rugulosa* species cluster. Close to *C. prealpensis* sp. n. but differs by having subapical lateral processes on the aedeagus digitiform, not platiform; 5-6 parameter spines present and gradually decreasing in length from apicad to subapicad in sagittal plane, not 2-3 spines nested. The anal tube of the female with rounded apical lobes and rounded mesal excision formed by the tergite IX, not triangular and created by the protruded segment X.

Description – Male and female (in alcohol). Light brown medium-sized animal with light body appendages and with yellowish-testaceous wings. Anterior wing with rounded apex and with very long erect spine-like setae present both on the membrane and on the veins; setae on the veins usually stronger. Tibial spur formula of male is 033 and that of female is 133. Forewing length of male is 9 mm, and that of allotype female is 10 mm.

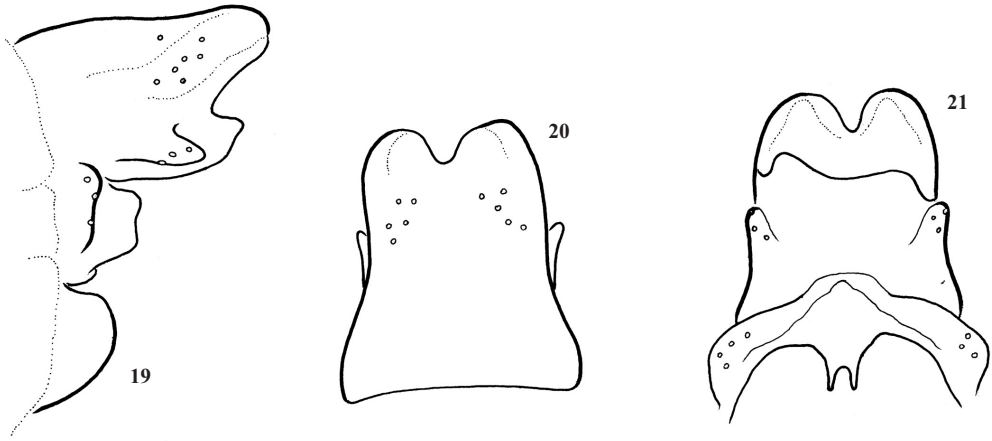
Male genitalia (Figs 15–18). Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII and its mesal light band well developed. Segment IX with short, bridle-like dorsum and longer ventrum; anterior margin rounded convex with long antecosta; posterior margin concave, midlateral sclerotized angle of tergite IX pronounced. The pouch-like concavity of segment X long. Cerci medium low. Apical hook of the paraproctal complex with narrowing pointed apex and less developed lateral angle, middle connecting section long, basal triangle exposed monolobe in lateral view. Membranous subanal lobe short. Gonopods short with apical



Figs 15–18. *Chaetopteryx kamnikensis* Oláh & Urbanič sp. n. holotype male:
15 = male genitalia without phallic organ in left lateral view; 16 = paraproct in caudal view; 17 = phallic organ in lateral view; 18 = phallic organ in dorsal view

flap developed and turning mesad resulting in a single short pointed apex in lateral view. Phallic organ composed of short rim-like phallic apodeme, short tube of phallotheca, short endotheca, well-developed aedeagus and medium long parameres; 5-6 paramere spines rather stout, arranged in a decreasing line from apicad to subapicad in vertical position; aedeagus supplied with a pair of long digitate lateral processes directed oblique upward, the very basal part of the lateral process sclerotized and membranous after; ejaculatory duct ending with gonopore opening into a large trilobed endophallic membranous structure.

Female genitalia (Figs 19–21). Anal tube formed by the fusion of tergite IX and X is medium long and broad, not narrowing posterad; apical margin forming rounded lateral lobes and mesal excision in dorsal view; this dorsal apical profile is created entirely by tergite IX, internal sclerites, the remnant tergite X not protruding and not taking part in the formation of the apical profile. Setose ventroapical lobes of tergite IX well developed. Supragenital plate of segment X triangular to blunt triangular in ventral view. Median lobe of the vulvar scale (lower vulvar lip) half long as the lateral lobes. Vaginal chamber medium sized reaching to the middle of sternite VIII. Vaginal sclerite pattern clearly visible.



Figs 19–21. *Chaetopteryx kamnikensis* Oláh & Urbanič sp. n. allotype female: 19= female genitalia in left lateral view; 20 = anal tube in dorsal view; 21 = female genitalia in ventral view

Type material – Holotype. **Slovenia**: Tržič, Bistrica, Blajšnica stream, 689 m, N46°21'50.02", E14°16'55.70", 03.12.2011, A. Déry, I. Szivák (1♂, OPC). Allotype. Same as holotype (1♀, OPC). Paratypes. Same as holotype (1♂, OPC). Same locality as holotype: 13.10.2011, A. Déry, I. Szivák (1♂, OPC). Dolž, Gorjanci, stream Klampfer, 660 m, 25.10.1990 B. Horvat, I. Sivec (1♀, OPC). Golovec, brooklet near Rakovnik distinct (Ljubljana), 335 m, N46°02'27.49", E14°31'46.12", 05.12.2011., A. Déry, I. Szivák (4♂, 1♀, OPC); 08.11.2012, T. Kovács, G. Magos (1♂, 1♀, MM). Ig. Želimlje, potok Želimeljščica, 330 m, N45°53'35", E14°35'43", 27.10.1989, B. Horvat, I. Sivec (1♀, PMS). Kamniške alpe, Črna pri Kamniku, Volovljek, 1016 m, N46°24'50", E14°54'10", 26.10.2012, B. Horvat, I. Sivec (10♂, 4♀, OPC); 1028 m, N46°16'13,5", E14°41'20,8", 26.10.2012, B. Horvat, I. Sivec (11♂, 6♀, OPC). Litija, Janče, stream Gostinca, 350 m, N46°03'39.19", E14°40'48.46", 12.10.2012, G. Urbanič (2♂, 1♀, OPC). Rakovnik at Ljubljana, 20.10.1983., C. Krušnik (1♂, 1♀, MPC). Šklendrovec, Podkum,

stream Šklendrovec, 493 m, N46°04'52.6", E15°01'10.5", 25.10.2012, B. Horvat, I. Sivec (2♂, 2♀, OPC). Tržič, Brezje at Tržič, stream Blajšnica, 646 m, N46°21'46.06", E14°17'00.31", 16.11.2012, B. Horvat, I. Sivec (4♂, 5♀, OPC). Tržič, Grahovše, potok Lomščica, 860 m, N45°22'00", E14°22'03", 01.10.1990, B. Horvat, I. Sivec (1♀, PMS). Tržič, Hudi Graben, stream Hudi Graben, 683 m, N46°21'41.35", E14°15'46.64", 16.11.2012, B. Horvat, I. Sivec (1♂, 1♀, OPC).

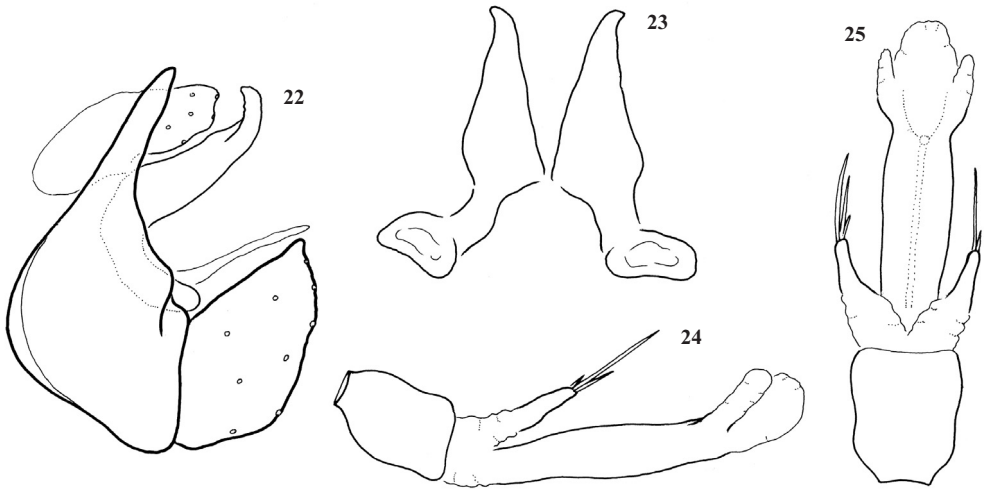
Etymology – The new species is named after the town Kamnik, the type locality is not far away.

***Chaetopteryx prealpensis* Oláh sp. n.** (Figs 22–29)

Diagnosis – Specimens of this widely distributed species collected from several populations in Austria, Bosnia & Herzegovina, Croatia, Hungary and Slovenia formerly were determined as *C. rugulosa*. However it clearly differs from the holotype of *C. rugulosa* Kolenati, 1848. This new species belongs to the *C. rugulosa* species group, *C. rugulosa* subgroup and *C. rugulosa* species cluster. Close to *C. rugulosa* Kolenati, 1848 but differs by having subapical lateral processes on the aedeagus platiform and directed oblique upward, not digitiform and not horizontal. The anal tube of the female broad, not slender.

Description – Male and female (in alcohol). Light brown medium-sized animal with light body appendages and with yellowish-testaceous wings. Anterior wing with rounded apex and with very long erect spine-like setae present both on the membrane and on the veins; setae on the veins usually stronger. Tibial spur formula of male is 033 and that of female is 133. Forewing length of male is 8 mm, and that of allotype female is 9 mm.

Male genitalia (Figs 22–25). Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII and its mesal light band well developed. Segment IX with short, bridle-like dorsum and longer ventrum; anterior margin rounded convex with long antecosta; posterior margin concave, midlateral sclerotized angle of tergite IX pronounced. The pouch-like concavity

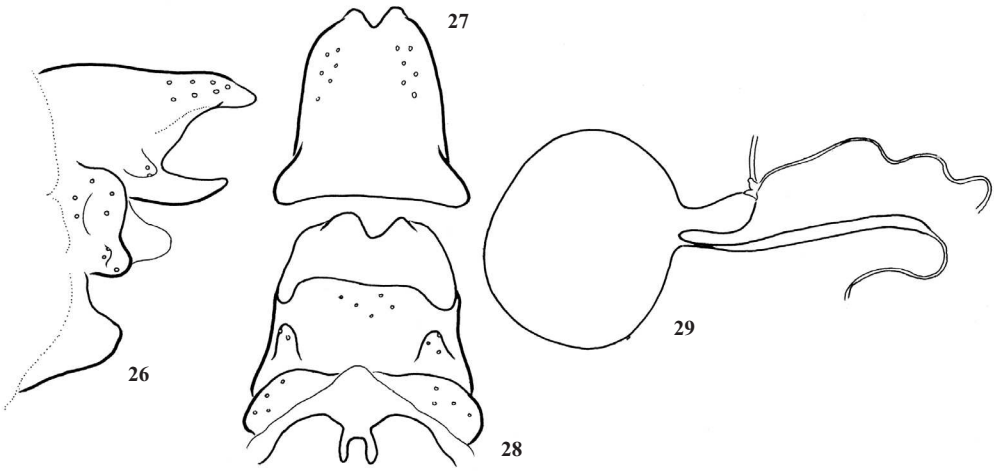


Figs 22–25. *Chaetopteryx prealpensis* Oláh sp. n. holotype male:
22 = male genitalia without phallic organ in left lateral view; 23 = paraproct in caudal view; 24 = phallic organ in lateral view; 25 = phallic organ in dorsal view

of segment X long. Cerci medium low. Apical hook of the paraproctal complex with narrowing pointed apex and less developed lateral angle, middle connecting section long, basal triangle exposed monolobe in lateral view. Membranous subanal lobe short. Gonopods short with apical flap developed and turning mesad resulting in a single pointed apex in lateral view. Phallic organ composed of short rim-like phallic apodeme, short tube of phallotheca, short endotheca, well-developed aedeagus and medium long parameres; primary spine of paramere is accompanied by 1-2 secondary spines; aedeagus supplied with a pair of long spatulate lateral processes directed oblique upward, the very basal part of the lateral process sclerotized and membranous after; ejaculatory duct ending with gonopore opening into a large trilobed endophallic membranous structure.

Female genitalia (Figs 26–29). Anal tube formed by the fusion of tergite IX and X is medium long, not narrowing posterad; internal sclerites protruding and forming a V-shaped excision. Setose ventroapical lobes of tergite IX present in variously developed form. Supragenital plate of segment X well-developed from triangular to blunt triangular both in lateral and ventral view. Median lobe of the vulvar scale (lower vulvar lip) half long as the lateral lobes. Vaginal chamber medium sized reaching to the middle of sternite VIII. Vaginal sclerite pattern clearly visible.

Type material – Holotype. **Hungary**: Kőszeg Mts, Hörmann-forrás, 18.10.1986, Á. Uherkovich (1♂, OPC). Allotype. Same as holotype (1♀, OPC). Paratypes. Same as holotype (4♂, 2♀, OPC; 1♂, 1♀, MM). **Austria**: Ausserneuwald, stream, 817 m, N47°34'01.9", E16°01'10.5", 19.11.2009, A. Déry, I. Szivák (1♂, 1♀, ♂♀ in copula, OPC). Gleinalpe, GH Krautwaschl & Gleinalm Sulmhütte, 1100–1300 m, 08.10.2012, D. Stradner (1♂, 2♀, OPC). Hochegg bei Grimmenstein, spring and its outlet, 621 m, N47°36'44", E16°05'52.7", 19.11.2009, A. Déry, I. Szivák (3♀, OPC). Koralpe, Handalm, springs near Gösler Hütte (Weinebene), 1784 m, N46°50'35.89", E15°01'18.53", 21.10.2012, J. Oláh, I. Szivák (13♂, 7♀, OPC). Koralpe, St. Oswald, Wildbach, 30.09.2007, D. Stradner (4♂, 2♀, OPC). Lafnitz Quelle, 16.10.2012,



Figs 26–29. *Chaetopteryx prealpensis* Oláh sp. n. allotype female:
26= female genitalia in left lateral view; 27 = anal tube in dorsal view; 28 = female genitalia in ventral view; 29 = spermathecal complex

W. Graf (1♂, 1♀, OPC). Mitterneuwald, Hermann spring, 956 m, N47°32'56.3", E15°58'56.1", 19.11.2009, A. Déry, I. Szivák (2♂, OPC). Packalpe, spring near Knödelhütte, 1440 m, N46°59'31.20", E14°56'20.02", 20.10.2012, J. Oláh, I. Szivák (2♂, 3♀, OPC). Sommeralm, upper reach of stream Mixnitz Bach, 1327 m, N47°20'57", E15°32'56.5", 20.11.2009, A. Déry, I. Szivák (1♂, 1♀, ♂♀ in copula, OPC). Styria, 14 km above restaurant Krautwaschl, Gleinalm, N47°12'16", E15°08'47", 1187 m, 25.09.2011, D. Stradner (2♂, OPC). Styria, NW Stainz, near Marhof, N46°54', E15°13', 10.11.2006, W. Graf (1♀, OPC). **Croatia**: Ivanščica Mts, Potok Slugovina, 15.12.2002, K. Žganec (1♀, OPC). Medvednica Mts, Bliznec, pilana, stream, 09.12.2009, M. Kučinić (1♀, OPC). Medvednica Mts, Izvor Mrzlak, 18.11.2006, A. Popijač (3♂, 2♀, OPC). 18.11.2008, A. Popijač (1♂, 1♀, OPC). Medvednica Mts, Kraljičin Zdenac, 19.11.2009, M. Kučinić, I. Vučkavić (1♀, OPC). Medvednica Mts, Veliki Potok, N45°51'28.52" E15°56'08.19", 18.10.2011, A. Previšić (1♂, OPC). Žumberačka Mts, small stream near River Slapnica, 03.11.2012, M. Kučinić (2♂, 1♀, OPC). Žumberačka Mts, Vlašić Brdo, River Slapnica, N45°42'35.7", E15°29'40.1", 215 m, 07.11.2012, T. Kovács, G. Magos (1♂, 1♀, OPC). Žumberačka Mts, Žumberak, River Slapnica, 28.10.2009, M. Kučinić (1♀, OPC). **Hungary**: Kőszeg Mts, Hörmann-forrás, 694 m, N47°27'34.2", E16°27'34.2", 18.11.2009, I. Szivák (2♂, 1♀, OPC). Kőszeg Mts, Stajer-házak, 05.10.1991, Á. Uherkovich (2♂, OPC); 18.10.1986, Á. Uherkovich (1♂, 1♀, OPC). Velem, Borha-forrás, 04.11.1984, S. Nógrádi (1♂, 1♀, OPC). **Slovenia**: Brdo, Kranj, brooklet to the pond IX, 14.10.2003, G. Urbanič (2♂, PMS). Kališe, Črna pri Kamniku, 13.10.1990, I. Sivec (1♂, 3♀, PMS). Kamniška Bistrica, 27.11.1969, B. Horvat, I. Sivec (1♂, 1♀, PMS). Kamniške alpe, Črna pri Kamniku, Volovljek, 1016 m, N46°24'50", E14°54'10", 04.10.2012, I. Sivec, G. Urbanič (3♂, 3♀, OPC). Kozje, stream Bistri graben, 01.10.1986, B. Horvat, I. Sivec (1♂, PMS). Ljubno, Smrekovec, potok Pod Krumpaško Planino, 1390 m, 10.09.1997, B. Horvat, I. Sivec (1♀, PMS). Ljubno, Smrekovec, potok Robanšek, Pod Komnom, 1200 m, N46°24'41", E14°51'02", 25.09.1997, B. Horvat, I. Sivec (1♂, PMS). Ljubno, Smrekovec, stream below Kugovnik, N46°25'13", E14°52'20", 1450 m, 25.09.1997, B. Horvat, I. Sivec (2♂, PMS). Lukovica, Trnjava, stream Drtijščica, 340 m, 12.11.1996, B. Horvat, I. Sivec (1♂, PMS). Moravče, Vinje, stream Drtijščica, 360 m, 12.11.1996, B. Horvat, I. Sivec (4♂, 1♀, PMS). Pečice, Brežice, stream Močnik, 15.10.1988, B. Horvat, I. Sivec (1♂, 1♀, PMS). Pohorje Mts, brooklet near Rogla, 1350 m, N46.448280°, E15.339671°, 03.12.2011, A. Déry, I. Szivák (1♂, 1♀, OPC). Pohorje Mts, brooklet near Snežinka (Rogla), 1097 m, 46.435143 N, 15.368489 E, 03.12.2011., A. Déry, I. Szivák (3♂, 1♀). Pohorje Mts, Padeški vrh, source of Gradiški graben, 1020 m, N46°25'54.1", E15°22'18.0", 08.11.2012, T. Kovács, G. Magos, I. Sivec (1♂, OPC). Pohorje Mts, Pesek, N46°28'26.3", E15°20'55.9", 10.11.2008, I. Sivec (1♀, OPC); 12.09.2009, I. Sivec (1♀, OPC); 09.10.2010, I. Sivec (1♂, OPC). Pohorje Mts, Vel. Vrh, Osankarica, 1300 m, 04.11.1984, D. Šere (1♂, 1♀, PMS). Pri koritu Ob Litijski cesti, 50 m, pod hišo Sp. Besnica 1, 25.11.1984, B. Horvat, I. Sivec (2♂, PMS). Smrekovec Mts, below Krumpaška planina, 1390 m, N46°24'50", E14°54'10", 26.09.2012, I. Sivec, G. Urbanič (4♂, OPC); 05.10.2012, B. Horvat, I. Sivec (2♂, 3♀, OPC). Smrekovec Mts, Tračka Planina, source of stream Žep, 11.09.1987, B. Horvat, I. Sivec (1♀, PMS). Tepe, Zagorje ob Savi, 16.10.1985, B. Horvat, I. Sivec (1♀, PMS). Zg. Velka, spring of the Ščavnica River, 01.10.1998, G. Urbanič (1♂, 1♀ pupae, PMS); 01.12.1998, G. Urbanič (1♂, PMS).

Etymology – The new species is named after the Prealpine region, where this widely distributed ancestral species lives.

Variability – Similarly to most species in *C. rugulosa* species group the non-intromittent periphallic structures, the cerci, the paraprocts and the gonopods are highly variable. The number and length of paramere spines are less variable; the spine pattern varies especially in peripherial area with two tendencies: (1) reducing spine number down to the single primary spine that is accompanied by 1–2 very short, almost tertiary spines; (2) shortening the primary spine with increasing number of secondary spines up to 3–4. The intromittent part of the phallic organ, that is the aedeagus, and especially its head with the spatulate, platiform lateral processes is rather stable even in populations of peripherial area: Žumberačka Mts in Croatia and Kőszeg Mts in Hungary.

Chaetopteryx rugulosa Kolenati, 1848

Material examined – **Austria**: Gleinalpe, springs and springbrook 1.4 km above restaurant Krautwaschl, 1172 m, N47°12'15.31", E15°08'22.14", 22.10.2012, J. Oláh, I. Szivák (3♂, 6♀, OPC). Plenzengreith, upper reach of stream Schöcklbach, 954 m, N47°12'37.2", E15°29'00.8", 20.11.2009, A. Déry, I. Szivák (2♂, 1♀, OPC). Stiftingtal, Graz, 19.10.1998, W. Graf (1♂, 1♀, OPC); 25.09.2005, W. Graf (3♂, 1♀, 7 pupae, OPC); 10.2006, W. Graf (6♂, 8♀, OPC; 2♂, 1♀, MM).

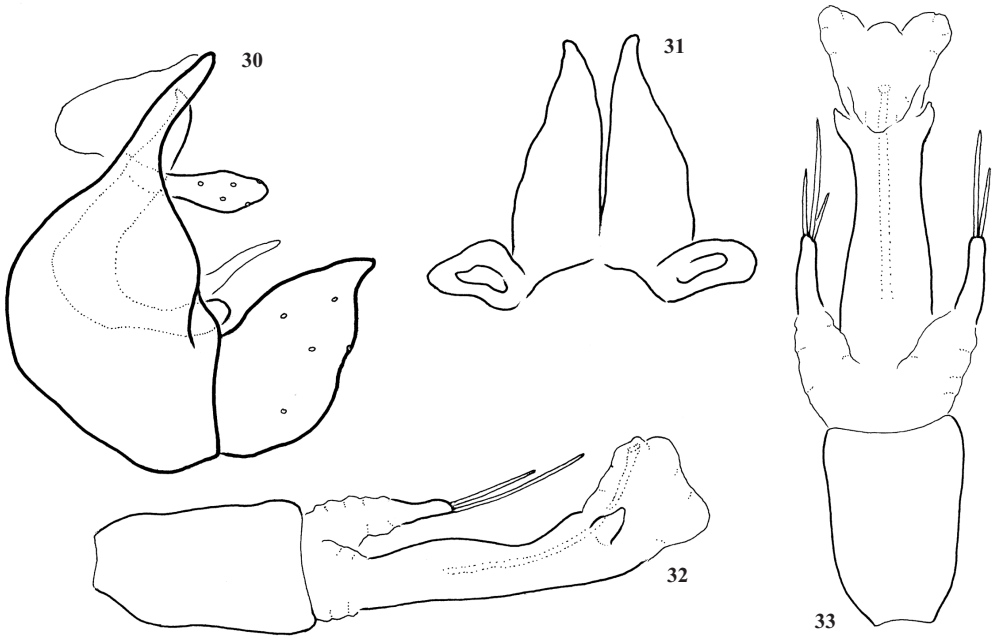
Remarks – Specimens from Austria, Bosnia & Herzegovina, Cratia, Hungary and Slovenia were determined as *C. rugulosa*, however we have found that specimens from only a very small area in Austria has the aedeagal structure identical with the aedeagus of the holotype, other specimens belong to four species: *C. schmidi* from Bosnia & Herzegovina, *C. kamnikensis* sp. n. from Slovenia, *C. zalaensis* sp. n. from Hungary and to the widely distributed *C. prealpensis* sp. n.

***Chaetopteryx zalaensis* Oláh sp. n.** (Figs 30–36)

Diagnosis – This new species belongs to the *C. rugulosa* species group, *C. rugulosa* subgroup and *C. rugulosa* species cluster. Close to *C. rugulosa* Kolenati, 1848 but differs by having subapical lateral processes on the aedeagus short and pointed gemmiform, not long digitiform; cerci stalked, not parallel-sided. The anal tube of the female very long and slender, almost tapering apicad.

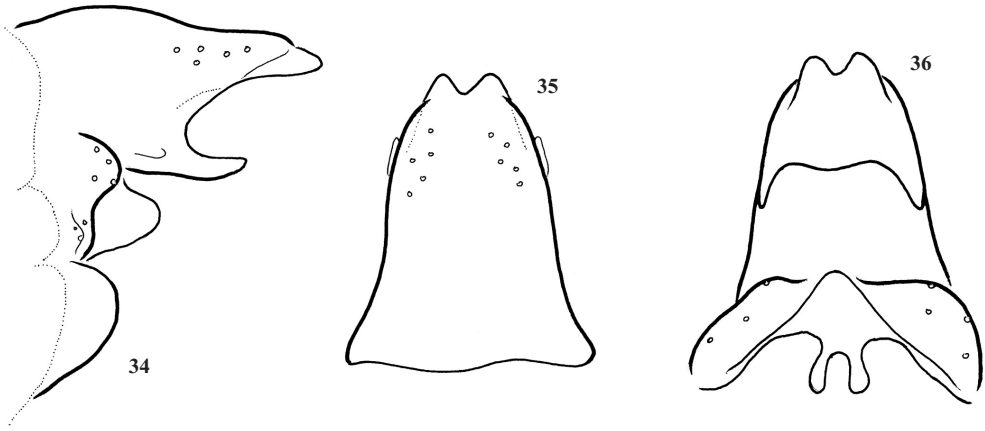
Description – Male and female (in alcohol). Light brown medium-sized animal with light body appendages and with yellowish-testaceous wings. Anterior wing with rounded apex and with very long erect spine-like setae present both on the membrane and on the veins; setae on the veins usually stronger. Tibial spur formula of male is 033 and that of female is 133. Forewing length of male is 9 mm, and that of allotype female is 10 mm.

Male genitalia (Figs 30–33). Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII and its mesal light band present. Segment IX with short, bridle-like dorsum and longer ventrum; anterior margin rounded convex with long antecosta; posterior margin concave, midlateral sclerotized angle of tergite IX pronounced. The pouch-like concavity of segment X long. Cerci very low and stalked. Apical hook of the paraproctal complex with narrowing pointed apex and less developed lateral angle, middle connecting section long, basal triangle exposed monolobe in lateral view. Membranous subanal lobe short. Gonopods short with apical flap developed and turning mesad resulting in a single short pointed apex in lateral view. Phallic organ composed of short rim-like phallic apodeme, short tube of phallotheca, short endotheca, well-developed aedeagus and medium long parameres; 2-3 nested paramere spines present; aedeagus supplied with a pair of pointed short gemmiform lateral processes directed oblique upward, the very basal part of the lateral process sclerotized and membranous after; ejaculatory duct ending with gonopore opening into a large trilobed endophallic membranous structure.



Figs 30–33. *Chaetopteryx zalaensis* Oláh sp. n. holotype male:
30 = male genitalia without phallic organ in left lateral view; 31 = paraproct in caudal view; 32 = phallic organ in lateral view; 33 = phallic organ in dorsal view

Female genitalia (Figs 34–36). Anal tube formed by the fusion of tergite IX and X is long and narrowing posterad; apical margin forming triangular lateral lobes and mesal excision in dorsal view by the protruded internal sclerites, the vestigial tergite X. Setose ventroapical lobes of tergite IX reduced, just visible. Supragenital plate of segment X triangular in ventral



Figs 34–36. *Chaetopteryx zalaensis* Oláh sp. n. allotype female:
34 = female genitalia in left lateral view; 35 = anal tube in dorsal view; 36 = female genitalia in ventral view

view. Median lobe of the vulvar scale (lower vulvar lip) half long as the lateral lobes. Vaginal chamber medium sized reaching to the middle of sternite VIII. Vaginal sclerite pattern clearly visible.

Type material – Holotype. **Hungary**: Hegyhátszentjakab, Vadása-tó, források, N46°52'32", E16°33'03", 04.11.2010, singled, J. Oláh, Á. Uherkovich (1♂, OPC). Allotype. Same as holotype (1♀, OPC). Paratypes. Same as holotype (15♂, 11♀, OPC; 3♂, 1♀, MM). Vas Megye, Szőce, 05.11.1985, Á. Uherkovich (12♂, 7♀, OPC); 17.10.1986, Á. Uherkovich (10♀, OPC).

Etymology – The new species is named after the Zala region, where the type locality is found.

***Chaetopteryx irenae* new species subgroup**

Male genitalia is characterized by very high, broad cerci, by the presence of supplementary digital processes on the superanal complex and by the highly undulating apical margin of the gonopods; a pair of supporting sclerites present on aedeagus subventrad or apicad. Female genitalia is characterized by the very developed ventroapical processes on the tergite IX. Seven species belong to this species subgroup: *C. clara* McLachlan, 1876, *C. euganea* Moretti & Malicky, 1986, *C. giuliensis* Oláh & Kovács sp. n., *C. goricensis* Malicky & Krušnik, 1986, *C. idriensis* Oláh & Urbanič sp. n., *C. irenae* Krušnik & Malicky, 1986, *C. marinkovicae* Malicky & Krušnik, 1988.

Chaetopteryx clara McLachlan, 1876

Material examined – **Slovenia**: Bormes, stream Grabnarica, 21.10.1995, B. Horvat (1♂, PMS). Ljubljana, Mostec, 1989, H. Malicky (2♂, 2♀, OPC from MPC). Ljubljana, Mostec, Pržanec stream, 293 m, N46°03'44.3", E14°28'49.3", 06.12.2009, A. Déry, I. Szivák (5♂, OPC; 2♀, MM). Medvode, Osolnik, 440 m, N46°07'24.5", E14°20'54.8", 25.11.2012, I. Sivec (1♂, OPC).

Remarks – Its species group position needs further studies. The supplementary digitiform processes on the superanal complex is vestigial. Paraproct spine pattern rather peculiar; characterized by the presence of primary, secondary and tertiary spines arranged in anteriad shortening row in sagittal plane; primary spine slender and undulate; location and number of peg-like tertiary spines variable.

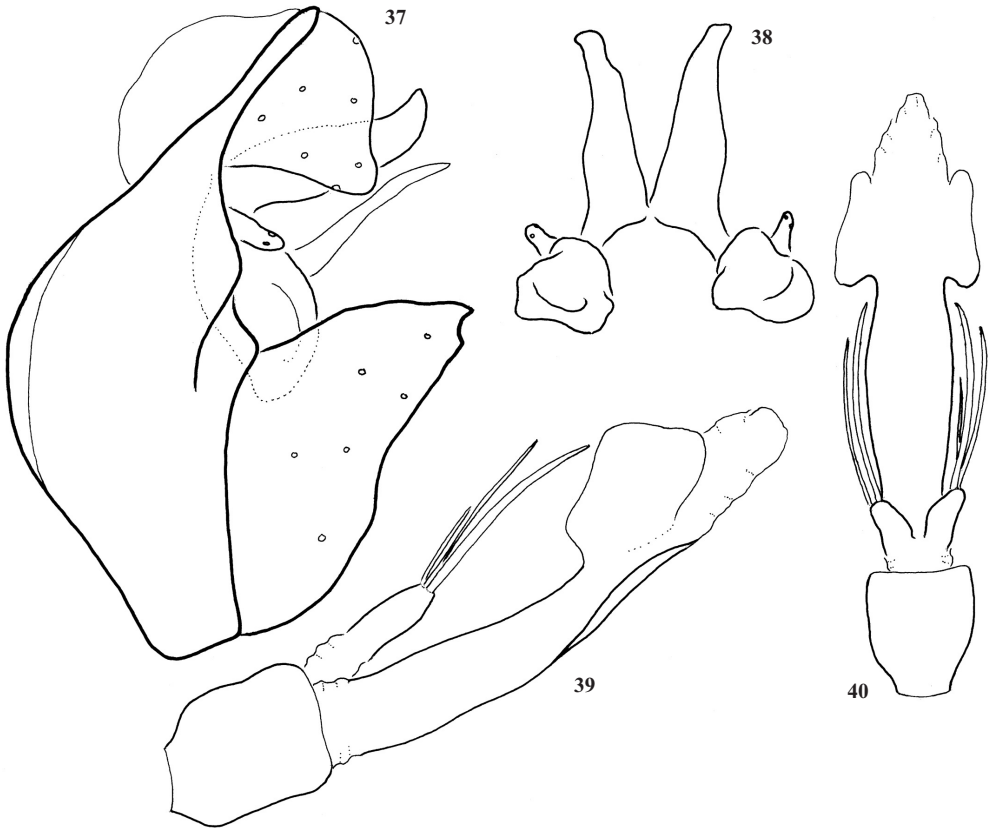
Chaetopteryx euganea Moretti & Malicky, 1986 (MALICKY et al. 1986)

Material examined – **Italy**: Colli Euganei, 19.10.1987, H. Malicky (2♂, 2♀, OPC from MPC).

***Chaetopteryx giuliensis* Oláh et Kovács sp. n.** (Figs 37–43)

Diagnosis – This new species belongs to the *C. rugulosa* species group, *C. irenae* new species subgroup. Close to *C. irenae* Krušnik & Malicky, 1986 but differs by having cerci downward directed ventroapicad; paraproct more slender in apical view; supplementary processes free, not fused to the paraproctal triangle; gonopods with apical margin less undulate; lateral subapical processes platiform, not digitifom; supporting sclerite broad, almost semicircular, not long and narrow. Female has apical profile of the anal tube angulate, not rounded in dorsal view.

Description – Male and female (in alcohol). Light brown medium-sized animal with light body appendages and with yellowish-testaceous wings. Anterior wing with rounded apex and with very long erect spine-like setae present both on the membrane and on the veins; setae on the veins usually stronger. Tibial spur formula of male is 033 and that of female is 133. Forewing length of male is 11 mm, and that of allotype female is 10 mm.



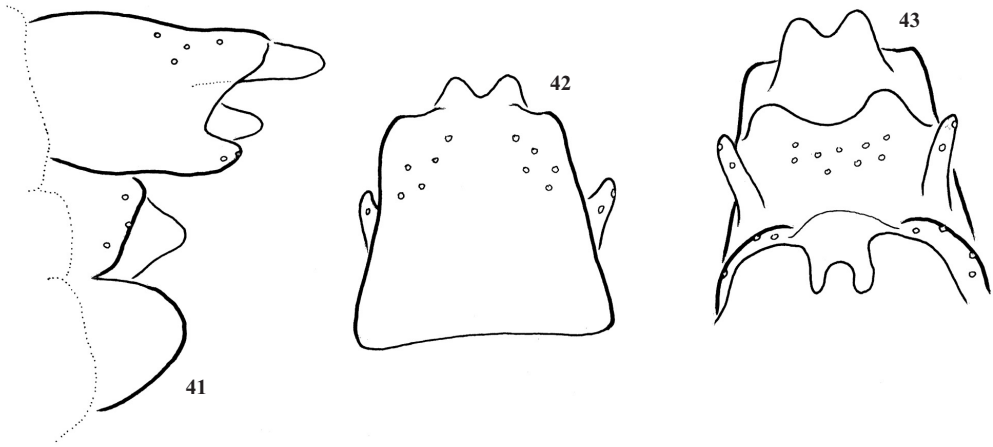
Figs 37–40. *Chaetopteryx giuliensis* Oláh & Kovács sp. n. holotype male:
37 = male genitalia without phallic organ in left lateral view; 38 = paraproct in caudal view; 39 = phallic organ in lateral view; 40 = phallic organ in dorsal view

Male genitalia (Figs 37–40). Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII and its mesal light band present. Segment IX with short, bridle-like dorsum and longer ventrum; anterior margin rounded convex with long antecosta; posterior margin concave, midlateral sclerotized angle of tergite IX pronounced. The pouch-like concavity of segment X short. Cerci high with downward curving ventroapical corner. Apical hook of the paraproctal complex narrow with less pointed apex and less developed lateral angle, middle connecting section long, basal triangle exposed monolobe in lateral view. Supplementary pair of setose processes of the cercal-paraproctal complex digitate. Membranous subanal lobe short. Gonopods long with apical flap developed and turning mesad resulting in a single short pointed apex in lateral view, apical margin slightly undulate. Phallic organ composed of short rim-like phallic apodeme, short tube of phallotheca, short endotheca, well-developed aedeagus and medium long parameres; 2-3 nested paramere spines present, single stout primary and 2 secondary slender and shorter; aedeagus supplied with a pair of platiform lateral processes directed upward; supporting sclerite in the form of broad semicircular horizontal ridge present; ejaculatory duct ending with gonopore opening into a large trilobed endophallic membranous structure.

Female genitalia (41–43). Anal tube formed by the fusion of tergite IX and X is medium long; apical margin forming rounded lateral lobes and triangular mesal excision in dorsal view shaped by the protruded internal sclerites and by the angled apicolateral corner of tergite IX. Setose ventroapical lobes of tergite IX long. Supragenital plate of segment X rounded in ventral view. Median lobe of the vulvar scale (lower vulvar lip) half long of the lateral lobes. Vaginal chamber medium sized reaching to the middle of sternite VIII. Vaginal sclerite pattern clearly visible.

Type material – Holotype. **Italy**: Alpi Giulie, Sella Carnizza, spring area of River Uccea, N46°20'11.4", E13°19'46.8", 1105 m, 09.11.2012, T. Kovács, G. Magos (1♂, OPC). Allotype. Same as holotype (1♀, OPC). Paratypes. Same as holotype (2♂, OPC; 1♂, MM). Alpi Giulie, between Uccea and Resia, left side brook of River Uccea, N46°18'54.2", E13°23'37.6", 725 m, 09.11.2012, T. Kovács, G. Magos (1♂, 1♀, OPC). Sorgente del T. Uccea (1050 m), Parco Naturale delle Prealpi Giulie, Com Resia prov. Udine, crenal, 09.10.1999, S. Paradisi, F. Stoch (1♂, OPC).

Etymology – The new species is named after the Alpi Giulie, where the type locality is found.



Figs 41–43. *Chaetopteryx giuliensis* Oláh & Kovács sp. n. allotype female:
41 = female genitalia in left lateral view; 42 = anal tube in dorsal view; 43 = female genitalia in ventral view

Chaetopteryx goricensis Malicky & Krušnik, 1986 (MALICKY et al. 1986)

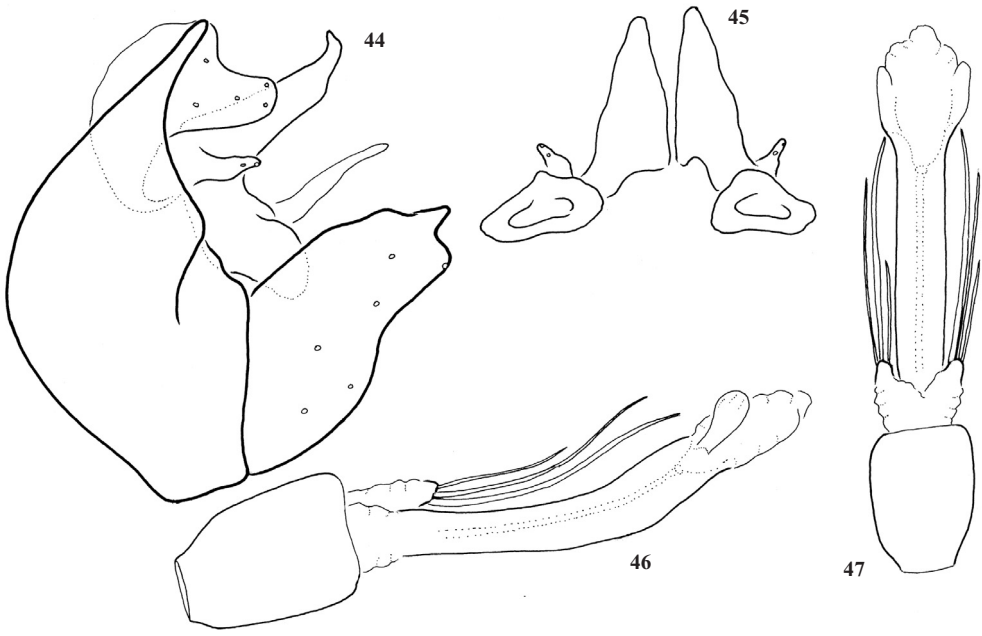
Material examined – **Slovenia**: Ajdovščina, Predmeja, one spring of Lokavšček stream, 695 m, N45°56'21.8", E13°52'17.8", 06.12.2009, A. Déry, I. Szivák (9♂, OPC; 1♂, MM). Ajdovščina, Predmeja, stream Lokavšček, 15.10.1992, B. Horvat, I. Sivec (1♂, PMS). Čekovnik, Blašk, spring, brooklet, 631 m, N45°59'04.6", E13°58'11.0", 05.12.2009, A. Déry, I. Szivák (4♂, OPC). Čekovnik, Hleviše, spring, brooklet, 640 m, N45°58'48.18", E13°59'9.52", 05.12.2009, A. Déry, I. Szivák (1♂, OPC). Deskle, 1986, H. Malicky (2♂, 2♀, OPC).

***Chaetopteryx idriensis* Oláh et Urbanič sp. n.** (Figs 44–50)

Diagnosis – This new species belongs to the *C. irenae* new species subgroup of the *C. rugulosa* species group. Close to *C. goricensis* Malicky & Krušnik, 1986 but differs by having cerci differently shaped; paraproct broader in apical view; gonopods longer; paramere spines tripled, not single; lateral subapical processes slender, not broad both in lateral and dorsal view. Female has ventrolateral setose processes differently shaped; internal sclerite of the anal tube protruding and producing lateral lobes blunt, not acute triangular; supragenital plate blunt, not pointed.

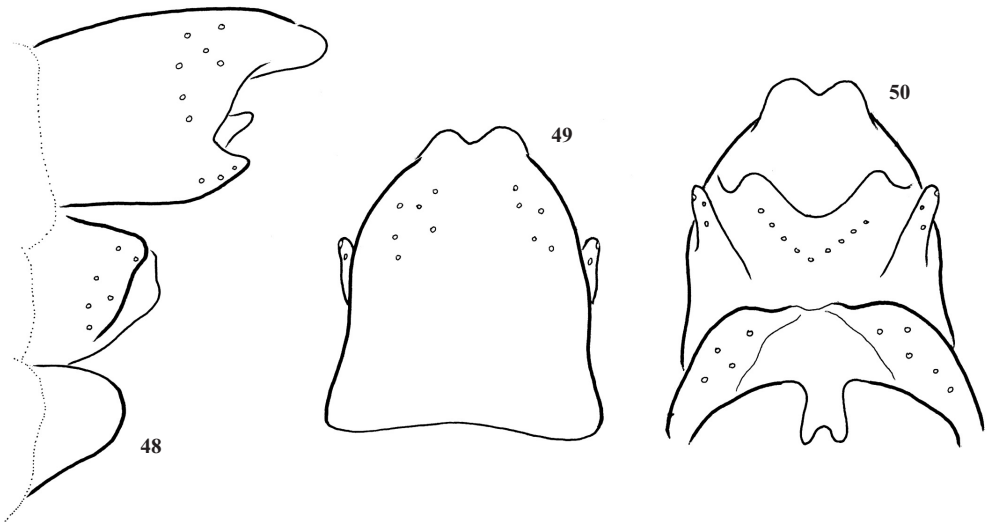
Description – Male and female (in alcohol). Light brown medium-sized animal with light body appendages and with yellowish-testaceous wings. Anterior wing with rounded apex and with very long erect spine-like setae present both on the membrane and on the veins; setae on the veins usually stronger. Tibial spur formula of male is 033 and that of female is 133. Forewing length of male is 9 mm, and that of allotype female is 10 mm.

Male genitalia (Figs 44–47). Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII and its mesal light band present. Segment IX with short, bridle-like dorsum and longer ventrum; anterior margin rounded convex with long antecosta; posterior margin concave, midlateral sclerotized angle of tergite IX pronounced. The pouch-like concavity of segment X short. Cerci high, L-shaped. Apical hook of the paraproctal complex broad with narrowing pointed apex and less developed lateral angle, middle connecting section long, basal triangle exposed monolobe in lateral view. Supplementary pair of processes on the cercal-paraproctal (superanal genital) complex digitate. Membranous subanal lobe short. Gonopods long with apical flap developed and turning mesad resulting in a single short pointed apex in lateral view, apical margin undulate with two excisions. Phallic organ composed of short rim-like phallic apodeme, short tube of phallotheca, short endotheca, well-developed aedeagus and medium long parameres; 3 nested paramere spines present, stout primary and 2 secondary slender and shorter; aedeagus supplied with a pair of clavate spatulate lateral processes directed oblique upward, the very basal part of the lateral process sclerotized and membranous after; ejaculatory duct ending with gonopore opening into a large trilobed endophallic membranous structure.



Figs 44–47. *Chaetopteryx idriensis* Oláh & Urbanič sp. n. holotype male:
44 = male genitalia without phallic organ in left lateral view; 45 = paraproct in caudal view; 46 = phallic organ in lateral view; 47 = phallic organ in dorsal view

Female genitalia (Figs 48–50). Anal tube formed by the fusion of tergite IX and X is medium long; apical margin forming rounded lateral lobes and triangular mesal excision in dorsal view by the protruded internal sclerites that is the vestigial tergite X. Setose ventroapical lobes of tergite IX long. Supragenital plate of segment X blunt triangular in ventral view. Median lobe of the vulvar scale (lower vulvar lip) third long of the lateral lobes. Vaginal chamber medium sized reaching to the middle of sternite VIII. Vaginal sclerite pattern clearly visible.



Figs 48–50. *Chaetopteryx idriensis* Oláh & Urbanič sp. n. allotype female: 48 = female genitalia in left lateral view; 49 = anal tube in dorsal view; 50 = female genitalia in ventral view

Type material – Holotype. **Slovenia**: Idrijsko hribovje, Čekovnik, Blašk, spring, brooklet, N45°59'04.6", E13°58'11.0", 650 m, 09.11.2012, T. Kovács, G. Magos (1♂, OPC). Allotype. Same as holotype (1♀, OPC). Paratypes. Same as holotype (2♂, OPC; 1♂, MM). Same locality as holotype: 04.12.2011, A. Déry, I. Szivák (10♂, OPC); 05.12.2009, A. Déry, I. Szivák (4♂, OPC). Idrijsko hribovje, Čekovnik, Hleviše, spring, brooklet, 640 m, N45°58'48.18", E13°59'9.52", 05.12.2009, A. Déry, I. Szivák (1♂, OPC). Idrijsko hribovje, Krekovše, spring, brooklet at the Idrijca River, N45°59'01.4", E13°56'57.4", 460 m, 31.10.2003, G. Urbanič (1♀, MPC); 08.10.2002, G. Urbanič (1♂, MPC).

Etymology – The new species is named after town Idrija, located nearby the type locality.

Chaetopteryx irenae Krušnik & Malicky, 1986 (Malicky et al. 1986)

Material examined – **Slovenia**: Artviže stream Brusnica, 18.10.2000, G. Urbanič (1♂, reared in the laboratory, PMS). Misliče, upper reach of Sušica stream, 617 m, N45°37'14.8", E14°02'16.7", 06.12.2009, A. Déry, I. Szivák (13♂, OPC); 04.12.2011, A. Déry, I. Szivák (6♂, 2♀, OPC; 2♂, 1♀, MM).

Chaetopteryx marinkovicae Malicky & Krušnik, 1988

Material examined – **Croatia**: Istria, Kompanj, 1989, H. Malicky (2♂, 2♀, OPC). Istria, Kompanj, Klobasi, N45.39111°, E14.07111°, 14.11.2009, M. Kučinić (4♂, 9♀, OPC; 1♂, 1♀, MM). **Slovenia**: Vala Zelenica, Loka, Črni kal, 17.10.1990, I. Sivec (2♂, 1♀, PMS).

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New records of Chaetopterygini species (Trichoptera: Limnephilidae)

János Oláh & Tibor Kovács

Abstract: This paper provides 244 data of 30 Chaetopterygini species (34 taxon) from 15 European countries (Albania, Austria, Bosnia & Herzegovina, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Macedonia, Montenegro, Romania, Serbia, Slovakia, Slovenia, Spain).

Introduction

The last revision of Chaetopterygini tribe was published long ago with 24 species (Schmid 1952). The taxonomic structure and systematic position of the tribe, especially its relation to tribe Stenophylacini became more obscure when four new genera have been erected and altogether 58 new species described. The present number of species in the tribe is 82 including the one new *Annitella* (Oláh & Kovács 2012), and nine new *Chaetopteryx* species (Oláh 2011a, Oláh 2011b, Oláh et al. 2012).

In 1998 the first author has started a systematic collection project for these autumnal flying insects in order to gather material for a long needed revision. Both the field and laboratory research were financed by Sakertour, The Birdwatching and Hide Photography Company. Here we publish all the collected species excluding those published in separate papers (Oláh 2011a, Oláh 2011b, Oláh & Kovács 2012, Oláh et al. 2012).

Material and methods

Adults were collected by beating vegetation above umbrella along stream and spring area as well as by sweep netting, manual singling and light trapping methods.

We have applied the methods described by Oláh (2011b).

Depositories: HNHM = Hungarian Natural History Museum, Budapest, Hungary, MM = Mátra Museum, Gyöngyös, Hungary, OPC = János Oláh Private Collection presently under National Protection of the Hungarian Natural History Museum, Hungary.

Results

Annitella Klapalek, 1907

Annitella amelia Sipahiler, 1998 – **Spain**: Rio San Lázaro (Cabeza de Manzaneda), N42°16.631', E7°16.815', 1405 m, 28.09.2011, M. Sainz-Bariáin (1♂, 1♀, OPC).

Annitella apfelbecki (Klapálek, 1899) – **Croatia**: Kupica spring, N45°25'44.74", E14°51'01.41", 15.10.2008, I. Sivec (5♂, 1♀, OPC). **Montenegro**: Durmitor Mts, Donja Bukovica, Šuškovac, N43°00'39.1", E19°09'36.8", 1330 m,

06.11.2011, T. Kovács, G. Magos (6♂, 5♀, OPC). Durmitor Mts, Polje Perovića, Glava Bukovice, N43°03'25.3", E19°06'43.6", 1350 m, 06.11.2011, T. Kovács, G. Magos (10♂, 3♀, OPC; 4♂, 1♀, MM). Komovi Mts, Kolašin – Lijeva Rijeka, Cucevica, Veruša, N42°40'31.6", E19°31'22.5", 1145 m, 08.11.2011, T. Kovács, G. Magos (11♂, 7♀, OPC). Komovi Mts, Mateševo – Bare Kraljske, Nesirenski potok, N42°45'04.6", E19°34'23.2", 1030 m, 08.11.2011, T. Kovács, G. Magos (13♂, 5♀, OPC). Komovi Mts, Verusa N 2 km, on the Kolašin – Lijeva Rijeka road, Cucevica, Veruša, N42°40.527', E19°31.375', 1133 m, 13.10.2008, L. Dányi, Z. Fehér, J. Kontschán, D. Murányi (7♂, HNHM). Savino Polje E 1 km, Dalovica klisura, Bistrica River, N43°04.244', E19°51.687', 609 m, 13.10.2008, L. Dányi, Z. Fehér, J. Kontschán, D. Murányi (7♂, HNHM). Šavnik, road to Nikšić, left side stream of Bijela Rijeka, N42°56'59.8", E19°05'55.7", 870 m, 07.11.2011, T. Kovács, G. Magos (2♂, 2♀, OPC). Sinjajevina Mts, Bistrica, Ljevak, Rijeka, N42°59'15.1", E19°26'02.6", 847 m, 04.11.2011, T. Kovács, G. Magos (1♀, OPC). Sinjajevina Mts, Bogomolje, mouth of Ljutica, N43°08'16.6", E19°18'07.7", 645 m, 05.11.2011, T. Kovács, G. Magos (2♂, 1♀, OPC). Sinjajevina Mts, Donji Lipovo, left side streams of Plašnica, 42°51'57.6", E19°26'26.6", 980 m, 10.11.2011, T. Kovács, G. Magos (2♂, 1♀, OPC). Zijovo Mts, Rikavacko Jezero near Katun Rikavac, inflow brook, N42°34.165', E19°36.150', 1326 m, 13.10.2008, L. Dányi, Z. Fehér, J. Kontschán, D. Murányi (1♂, HNHM). **Slovenia**: Krka, Poltarica spring, N45°53'24.29", E14°46'16.82", 25.10.2008, I. Sivec (5♂, 1♀, OPC).

Annitella chomiacensis (Dziedzielewicz, 1908) – **Romania**: Maramures county, Rodna Mts, Borsa-Statiunea Borsa, stream along the road towards Prislop Pass, N47°37'34.0", E24°49'13.0", 1014 m, 26.09.2006, L. Dányi, J. Kontschan, D. Murányi (1♂, HNHM).

Annitella esparraguera (Schmid, 1952) – **Spain**: Sierra de Baza, Granada, Rio Gor, UTM (X:513147, Y:4133118), 1773 m, 09.11.2007, C. Zamora-Munoz (6♂, 1♀, OPC; 2♂, MM). Sierra de Cazorla, Jean. Rio Guadalquivir, UTM (X:505475, Y:4194974), 1378 m, 01.11.2009, C. Zamora-Munoz (1♀, OPC).

Annitella iglesiasi Gonzalez & Malicky, 1988 – **Spain**: Sierra Nevada, Granada, Barranco de Manuel Casas, UTM (X:460987, Y:4105396), 1704 m, 06.10.2008, M. Sainz-Bariain (1♂, OPC); 18.10.2008, M. Sainz-Bariain (1♀, OPC).

Annitella lateroproducta (Botosaneanu, 1952) – **Romania**: Apuseni Mts, Padis, open stream near pine forested sphagnum bog, N46°35'20.632", E22°45'54.857", 05.11.2011, Gy. Monori, J. Oláh, L. Szél (8♂, 6♀, OPC). Apuseni Mts, Sebes Körös valley, Suncuius, near Izbandis spring, 26.10.2009, singled, J. Oláh, M. Bálint (7♂, OPC). Apuseni Mts, Valea lui Dragan, N46.83119°, E22.77093°, 650 m, 20.11.2008, M. Bálint, Tasnádi (1♂, OPC). Caraş-Severin county, Semenic Mts, open brook E of Mt. Piatra Goznei, N45°10'55.4", E22°04'01.4", 1340 m, 15.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC). Caraş-Severin county, Ţarcu Mts, left side brook of open stream on the N slope of Mt. Ţarcu, N45°17'40.7", E22°31'44.5", 1500 m, 14.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, 1♀, OPC). Caraş-Severin county, Ţarcu Mts, open stream on the N slope of Mt. Ţarcu, N45°17'46.2", E22°31'41.5", 1500 m, 14.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (3♂, 1♀, OPC; 2♂, 1♀, MM). Caraş-Severin county, Ţarcu Mts, open stream with Salix bushes 6 km S of Poiana Mărului, N45°20'47.5", E22°31'04.6", 1000 m, 14.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC). Ciucaş Mts, 3 km S of Dălghiu, Dălghiu stream, N45°33'00.2", E25°54'43.5", 970 m, 13.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, 1♀, OPC).

Annitella obscurata (McLachlan, 1876) – **Montenegro**: Prokletije Mts, Gusinje, Alipašini Izvori, N42°33'01.2", E19°49'30.5", 930 m, 08.11.2011, T. Kovács, G. Magos (11♂, 1♀, OPC). **Romania**: Apuseni Mts, Bratca Village, Bratcutei Valley, 28.10.2006, M. Bálint (1♂, OPC). Ciucaş Mts, Vama Buzăului – Dălghiu (4.5 km SE Dălghiu), left side stream of Dălghiu stream, N45°35'42.3", E25°57'03.2", 830 m, 13.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 2♀, OPC) – Ciucaş Mts, Vama Buzăului – Dălghiu, mouth of left side stream of Dălghiu stream, N45°35'18.1", E25°57'58.6", 810 m, 13.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♂, 3♀, OPC; 3♂, 2♀, MM).

Annitella sanabriensis (Gonzalez & Otero, 1985) – **Spain**: Sierra de Ancaraes, Rio de la Vara, N42°48'13.13", E06°53'25.37", 24.10.2009, M. A. Gonsales (1♂, 1♀, OPC).

Annitella thuringica (Ulmer, 1909) – **Slovakia**: West Tatra, Bela River, 06.10.1976, light, Nagy (1♂, OPC).

Annitella triloba Marinkovic-Gospodnetic, 1955 – **Albania**: Periferi Malesia, 6 km S of the Vermosh junction on the Shkodër – Gushinje road, bank of Pr. i Lepushës, stream, N42°34.325', E19°44.395', 1082 m, 04.10.2005, T. Deli, V. Erőss, Z. Fehér, D. Murányi (1♂, 1♀, HNHM). Periferi Tropojë, Dragobi, 14 km N of Bajram Curri, gorge of Pr. i Thatë, N42°26.184', E19°59.079', 540 m, 06.10.2005, T. Deli, V. Erőss, Z. Fehér, D. Murányi (1♂, 3♀, HNHM). **Bulgaria**: Pirin Mts, 1.5 km E of Begovitsa hut, Begovitsa stream, N41°40'32.6", E23°26'38.8", 1930 m, 08.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (5♂, 7♀, OPC). Rila Mts, 7 km S of Beli Iskar, Beli Iskar, N42°12'11.2", E23°33'02.1", 1500 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (7♂, 11♀, OPC). Rila Mts, Borovets, Maritsa hut – Zavrachitsa hut, Prava Maritsa, N42°10'44.2", E23°38'25.8", 2015 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (15♂, 12♀, OPC). Rila Mts, Borovets, Zavrachitsa hut, Prava Maritsa, N42°10'04.9", E23°38'28.1", 2200 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (23♂, 22♀, OPC; 5♂, 3♀, MM). Rila Mts, Jazovir Belmeken

– Ropalitsa, Kazanishka Reka, N42°08’38.2”, E23°40’21.8”, 1910 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 2♀, OPC). Rila Mts, Ropalitsa, Ropalitsa, N42° 8’36.2”, E23°40’25.5”, 1910 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (10♂, 6♀, OPC). **Montenegro**: Durmitor Mts, Donja Bukovica, Šuškovac, N43°00’39.1”, E19°09’36.8”, 1330 m, 06.11.2011, T. Kovács, G. Magos (5♂, 6♀, OPC). Durmitor Mts, Krivača, Komarnica, N42°59’36.2”, E19°04’04.7”, 960 m, 06.11.2011, T. Kovács, G. Magos (1♀, OPC). Durmitor Mts, Pasina Voda, Toplik, N43°05’57.5”, E19°06’49.0”, 1505 m, 06.11.2011, T. Kovács, G. Magos (1♂, 1♀, OPC). Durmitor Mts, Tepca, Mlinski-potok, N43°12’22.7”, E19°04’32.3”, 780 m, 05.11.2011, UV light, T. Kovács, G. Magos (1♂, 1♀, OPC). Kolasin-Manastir Morača, Pčinja, Pčinja, N42°47’58.6”, E19°27’49.0”, 1010 m, 10.11.2011, T. Kovács, G. Magos (1♂, OPC). Komovi Mts, Mateševo – Bare Kraljske, Nesirenski potok, N42°45’04.6”, E19°34’23.2”, 1030 m, 08.11.2011, T. Kovács, G. Magos (1♂, 1♀, OPC). Murino – Peć, Radevići, Ramšića potok, N42°41’15.2”, E19°57’33.4”, 1210 m, 08.11.2011, T. Kovács, G. Magos (1♂, 1♀, OPC). Sinjajevina Mts, Donji Lipovo, left side streams of Plašnica, N42°51’57.6”, E19°26’26.6”, 980 m, 10.11.2011, T. Kovács, G. Magos (8♂, 6♀, OPC). Sinjajevina Mts, Gornji Lipovo NW 7km, alpine grassland, N42°54.181’, E19°22.933’, 1643 m, 11.10.2008, L. Dányi, Z. Fehér, J. Kontschán, D. Murányi (1♂, HNHM). Sinjajevina Mts, Krnja Jela, Dobro Do, Javorski potok, N42°54’02.3”, E19°16’11.4”, 1270 m, 07.11.2011, T. Kovács, G. Magos (2♂, 2♀, OPC). Sinjajevina Mts, Vilin Brijeg, Štitarička reka, N42°55’27.7”, E19°29’17.3”, 1080 m, 04.11.2011, T. Kovács, G. Magos (3♂, 3♀, OPC). Treskavac Mts, Poscenje (near Savnik), Kanjon, N42°59.298’, E19°04.070, 950 m, 11.10.2008, L. Dányi, Z. Fehér, J. Kontschán, D. Murányi (1♂, HNHM).

Chaetopteroides Kumanski, 1987

Chaetopteroides bulgaricus (Kumanski, 1969) – **Bulgaria:** Rila Mts, Borovets, Zavrachitsa hut, Prava Maritsa, N42°10’04.9”, E23°38’28.1”, 2200 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC). Pirin Mts, 950 m S of Demianitsa hut, left side brook of Valyavitsa stream, N41°44’02.6” E23°28’03.1”, 2020 m, 07.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (5♀, OPC; 1♂, 1♀, MM). Pirin Mts, 1.5 km E of Begovitsa hut, Begovitsa stream, N41°40’32.6” E23°26’38.8”, 1930 m, 08.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, OPC).
Chaetopteroides maximus Kumanski, 1968 – **Bulgaria:** Vitosha Mts, spring and brook 200 m E of Rodina hut, N42°37’09.6”, E23°15’32.3”, 1600 m, 03.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♀, OPC). Vitosha Mts, Lavchemo, Boyanska Reka, N42°34’34.6” E23°16’57.7”, 2050 m, 04.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, 3♀, OPC; 1♂, 1♀, MM).

Chaetopterygopsis Stein, 1874

Chaetopterygopsis maclachlani Stein, 1874 – **Bulgaria**: Rila Mts, 7 km S of Beli Iskar, Beli Iskar, N42°12’11.2”, E23°33’02.1”, 1500 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, OPC). Rila Mts, Sestrimo – Jazovir Belmeken, Kriva Reka, N42°12’08.3”, E23°51’20.0”, 1230 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (5♂, 3♀, OPC; 3♂, 1♀, MM). Vitosha Mts, Zlatni mostove – Boeritsa, Vladayska Reka, N42°35’50.3”, E23°14’49.7”, 1650 m, 03.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 1♀, OPC). **Czech Republic**: Ždarske vrchy, Heralec, stream Bøimovka, 720 m, 27.09.2000, B. Horvat, I. Sivec (1♂, OPC). **Romania**: Apuseni Mts, Padis, open stream near pine forested sphagnum bog, N46°35’20.632”, E22°45’54.857”, 05.11.2011, Gy. Monori, J. Oláh, L. Szél (6♂, 5♀, OPC). Apuseni Mts, Stána de Vale, open small stream, N46°41’20.004”, E22°37’29.2627”, 06.11.2011, Gy. Monori, J. Oláh, L. Szél (2♂, OPC). Caraş-Severin county, Semenic Mts, open brook E of Mt. Piatra Goznei, N45°10’55.4”, E22°04’01.4”, 1340 m, 15.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 2♀, OPC). **Slovenia**: Pohorje Mts, below Pesek, spring area of river Oplotnica, N46°28’24.8”, E15°20’55,9”, 1345 m, 28.09.2012, I. Sivec (1♂, 2♀, OPC); 19.10.2012, B. Horvat, I. Sivec (6♂, 5♀, OPC). Pohorje Mts, Pesek (284/4), N46°28’26.3”, E15°20’55.9”, 09.10.2010, I. Sivec (1♂, OPC).
Chaetopterygopsis sisestii Botosaneanu, 1961 – **Bulgaria**: Rila Mts, Jazovir Belmeken, Ribnitsa, N42°09’44.3”, E23°47’01.3”, 1950 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC). Rila Mts, 7 km S of Beli Iskar, Beli Iskar, N42°12’11.2”, E23°33’02.1”, 1500 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 1♀, OPC; 1♂, 1♀, MM). **Romania**: Ciucaş Mts, Vama Buzăului – Dălghiu (4.5 km SE Dălghiu), left side stream of Dălghiu stream, N45°35’42.3”, E25°57’03.2”, 830 m, 13.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC).

Chaetopteryx biloba Botosaneanu, 1960 – **Romania**: Apuseni Mts, Padis N. P. Varasoaia, open stream, N46°36'31.122", E22°42'48.294", 05.11.2011, Gy. Monori, J. Oláh, L. Szél (1♂, OPC). Apuseni Mts, Valea lui Dragan, N46.8046°, E22.7075°, 1050 m, 20.11.2008, M. Bálint, Tasnádi (1♀, OPC; 1♂, MM). Caraş-Severin county, Ţarcu Mts, open brook on the W slope of Mt. Ţarcu, N45°17'30.9", E22°30'59.9", 1770 m, 14.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, OPC).

Chaetopteryx bosniaca Marinkovic-Gospodnetic, 1955 – **Bulgaria**: Rila Mts, Jazovir Belmeken, Ribnitsa, N42°09'44.3", E23°47'01.3", 1950 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♂, OPC), Rila Mts, Ropalitsa, Ropalitsa, N42°08'36.2", E23°40'25.5", 1910 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC), Rila Mts, Tiha Rila – Dolno Ribno ezero, Rilska Reka, N42°07'32.7", E23°29'33.5", 2140 m, 07.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, OPC). Vitosha Mts, spring and brook 200 m E of Rodina hut, N42°37'09.6", E23°15'32.3", 1600 m, 03.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, OPC). **Macedonia**: Ograzden Mts, Beech forest with a brook at the Prevedena Pass, N41°33'57.6", E22°50'38.6", 1167 m, 18.10.2006, L. Dányi, J. Kontschán, D. Murányi (1♂, HNHM). Pelister Mts, Nizepole, brooks in alpine grasslands and beech forest around the sky course, N40°58'48.7", E21°15'09.9", 1375 m, 17.10.2006, L. Dányi, J. Kontschán, D. Murányi (1♂, HNHM). **Montenegro**: Durmitor Mts, Donja Bukovica, Šuškovac, N43°00'39.1", E19°09'36.8", 1330 m, 06.11.2011, T. Kovács, G. Magos (2♂, 2♀, OPC). Durmitor Mts, Krivača, Komarnica, N42°59'36.2", E19°04'04.7", 960 m, 06.11.2011, T. Kovács, G. Magos (1♂, OPC). Durmitor Mts, Pasina Voda, Toplik, N43°05'57.5", E19°06'49.0", 1505 m, 06.11.2011, T. Kovács, G. Magos (3♂, 3♀, OPC). Durmitor Mts, Polje Perovića, Glava Bukovice, N43°03'25.3", E19°06'43.6", 1350 m, 06.11.2011, T. Kovács, G. Magos (2♂, 1♀, OPC). Murino – Peć, Ćakor W, Krlje, forest torrent, N42°40'41.1", E19°59'46.7", 1480 m, 08.11.2011 T. Kovács, G. Magos (3♂, 3♀, OPC). Prokletije Mts, Gornji Vusanje, Skavkač, N42°30'47.2", E19°50'12.8", 1025 m, 08.11.2011, T. Kovács, G. Magos (4♂, 4♀, OPC). Sinjajevina Mts, Bistrica, Ljevak, Rijeka, N42°59'15.1", E19°26'02.6", 847 m, 04.11.2011, T. Kovács, G. Magos (2♂, 2♀, OPC). Sinjajevina Mts, Bogomolje, mouth of Ljutica, N43°08'16.6", E19°18'07.7", 645 m, 05.11.2011, T. Kovács, G. Magos (1♂, 1♀, OPC). Sinjajevina Mts, Donji Lipovo, left side streams of Plašnica, N42°51'57.6", E19°26'26.6", 980 m, 10.11.2011, T. Kovács, G. Magos (1♂, 1♀, OPC). Sinjajevina Mts, Gornji Štitarica, right side sprigs of Štitarička reka, N42°55'14.9", E19°29'59.4", 1040 m, 04.11.2011, T. Kovács, G. Magos (6♂, 6♀, OPC; 4♂, 3♀, MM). Sinjajevina Mts, Pass of the Savnik – Kolasin road, outflow book of a peatbog, N42°54.541', E19°16.271', 1587 m, 10.10.2008, L. Dányi, Z. Fehér, J. Kontschán, D. Murányi (2♂, HNHM); 07.11.2011, T. Kovács, G. Magos (1♀, OPC). **Romania**: 13 km from Baile Herculane, upper section of a small tributary to River Cerna, N44°59'10.34", E22°30'46.91", 13.11.2010, singled, Á. Ecsedi, I. Szivák (1♀, OPC). 24 km from Baile Herculane, spring area of a small tributary to River Cerna, N45°02'32.14", E22°35'3.36", 13.11.2010, singled, Á. Ecsedi, I. Szivák (2♂, 2♀, OPC). 31 km from Baile Herculane, a small tributary to River Cerna, N45°02'44.88", E22°37'21.67", 13.11.2010, singled, Á. Ecsedi, I. Szivák (1♂, 1♀, OPC). Apuseni Mts, Padis N. P. Varasoaia, open stream, N46°36'31.122", E22°42'48.294", 05.11.2011, Gy. Monori, J. Oláh, L. Szél (1♂, OPC). Apuseni Mts, Padis N.P. small side stream of Galbina stream, N46°33'31.898", E22°32'54.751", 06.11.2011, Gy. Monori, J. Oláh, L. Szél (2♂, OPC). Apuseni Mts, Padis, open stream near pine forested sphagnum bog, N46°35'20.632", E22°45'54.857", 05.11.2011, Gy. Monori, J. Oláh, L. Szél (13♂, 7♀, OPC). Apuseni Mts, Padis, small stream in pine forested sphagnum bog, N46°35'36.528", E22°45'54.751", 05.11.2011, Gy. Monori, J. Oláh, L. Szél (1♂, OPC). Apuseni Mts, Suncuius, near Izbandis spring, 26.10.2009, light, M. Bálint, J. Oláh (1♂, 1♀, OPC). Apuseni Mts, Suncuius, tributary stream of Sebes Körös, 26.10.2009, singled, M. Bálint, J. Oláh (5♂, 4♂, OPC). Apuseni Mts, Valea lui Dragan, N46.83119°, E22.77093°, 650 m, 20.11.2008, M. Bálint, Tasnádi (1♂, OPC). Caraş-Severin county, Semenic Mts, Brebu Nou, open stream E of the village, N45°14'01.8", E22°08'40.6", 860 m, 15.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 2♀, OPC). Caraş-Severin county, Semenic Mts, open brook E of Mt. Piatra Goznei, N45°10'55.4", E22°04'01.4", 1340 m, 15.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♂, 2♀, OPC). Caraş-Severin county, Ţarcu Mts, open stream with Salix bushes 6 km S of Poiana Mărului, N45°20'47.5", E22°31'04.6", 1000 m, 14.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, 2♀, OPC). Caraş-Severin county, Ţarcu Mts, spring and its outlet at Cuntu Meteorological Station, N45°18'00.2", E22°30'04.3", 1465 m, 14.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 1♀, OPC). Ciucaş Mts, Vama Buzăului – Dălghiu, mouth of left side stream of Dălghiu stream, N45°35'18.1", E25°57'58.6", 810 m, 13.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC). Gorj county, Mts Valcan, Arcani, at hotel, N45°07', E23°08', 940 m, 31.10.2007, Cs. Csuzdi, J. Kontschán, V. V. Pop (3♂, 3♀, HNHM). Maramureş county, Muntii Ignis, Deseşti-Staţiunea Izvoare, forest spring and spring brook at settlement, N47°45.167', E23°43.013', 920 m, 20-22.10.2010, Á. Ecsedi, J. Oláh, I. Szivák (8♂, 2♀, OPC). Maramureş county, Muntii

Ignis, Deseşti-Staţiunea Izvoare, open stream on the Valhani Plateau, N47°43.945', E23°44.661', 940 m, 08.10.2010, P. Barcánfalvi, D. Murányi, J. Oláh (8♂, 3♀, OPC). **Serbia**: Đerdap Mts, Mosna, stream valley with oak forest at the edge of the village, N44°26'46.6", E22°10'38.0", 99 m, 12.10.2006, L. Dányi, J. Kontschán, D. Murányi (6♂, HNHM). Fruska Gora, Sremska Kamenica – Irig, stream, N45°10'40.3", E19°50'14.7", 200 m, 11.11.2011, T. Kovács, G. Magos (8♂, 9♀, OPC; 5♂, 4♀, MM). Zlatibor Mts, Ćigota Mts, spring area of Crni Rzav, N43°37'52.6", E19°46'18.0", 1150 m, 03.11.2011, T. Kovács, G. Magos (7♂, 6♀, OPC); 20.11.2011, T. Kovács, Cs. Oberczán (1♂, 2♀, OPC).

Chaetopteryx fusca Brauer, 1857 – **Croatia**: Ćabranka spring, N45°36'04.8", E14°38'40.5", 19.11.2008, I. Sivec (2♂, 2♀, OPC). Zumberacka Mts, Ćunkova Draga, Kupčina, N45°41'39.7", E15°29'24.3", 175 m, 07.11.2012, T. Kovács, G. Magos (2♂, 1♀, OPC). **Hungary**: Bükk Mts, Diós-patak, 02.11.2010, L. Fülep (1♂, OPC). Bükk Mts, Felsőtárkány, Szikla-forrás, 23.10.2005, D. Murányi (1♂, 1♀, HNHM). Bükk Mts, Szalajka-völgy, 07.10.1964, singled, J. Oláh (4♂, 5♀, OPC). Bükk Mts, Szinva-patak, Rózsa-forrás, 11.11.2010, L. Fülep (1♂, OPC). Cserhát Mts, Zsunyi-patak völgye, 22.10.2005, D. Murányi (1♀, HNHM). Diósjenő, 08.10.1991, light trap (6♂, OPC). Hegyhátszentjakab, Vadása-tó, források, N46°52'32", E16°33'03", 04.11.2010, singled, J. Oláh, Á. Uherkovich (1♀, OPC). Jósvafő, Kecső-patak, 15.10.1963, singled, J. Oláh (14♂, 5♀, OPC). Mátra Mts, Kékestető, Kékes-völgy patakja a Sas-kő alatt, N47°52'12.3", E20°01'22.2", 790 m, 22.11.2012, singled, T. Kovács, G. Magos, L. Urbán (1♂, OPC). Mátra Mts, Máraszentimre, Gazsi-kanyar, Narád-patak, N47°55'01.4", E19°53'09.4", 827 m, 22.11.2012, singled, T. Kovács, G. Magos, L. Urbán (1♀, OPC). Mátra Mts, Mátraalmás, Verbőczy-kút, Szuhai-patak Ny-i ága, N47°55'13.9", E19°55'00.9", 829 m, 22.11.2012, singled, T. Kovács, G. Magos, L. Urbán (1♂, 1♀, OPC). Mátra Mts, Mátrafüred, Bukfenc-kút, N47°50'57.7", E19°59'03.8", 519 m, 22.11.2012, singled, T. Kovács, G. Magos, L. Urbán (1♀, OPC; 2♂, 2♀, MM). Mátra Mts, Mátrafüred, Ördög-forrás, Csatorna-patak, N47°50'18.3", E19°58'34.0", 421 m, 28.10.2011, singled, T. Kovács (2♂, OPC); 16.11.2011, singled, T. Kovács (1♀, OPC); 21.11.2012, singled, T. Kovács (1♀, OPC). Mátra Mts, Mátraháza, Honvédüdülő, Hidas-patak, N47°52'33.0", E19°59'12.4", 686 m, 22.11.2012, singled, T. Kovács, G. Magos, L. Urbán (1♀, OPC). Mátra Mts, Mátraháza, Szent László-forrás, Somor-patak Ny-i mellékága, N47°52'02.6", E19°58'52.5", 708 m, 22.11.2012, singled, T. Kovács, G. Magos, L. Urbán (1♂, 1♀, OPC). Mátra Mts, Parád, Disznó-tető, Ilona-patak, N47°53'01.0", E20°03'34.0", 396 m, 28.09.2011, singled, T. Kovács, G. Magos, J. Oláh (1♀, OPC). Pécsly, Zádor-kút, N46°58'25.79", E17°46'23.41", 301 m, 27.11.2011, A. Déry, I. Szivák (9♂, 1♀, OPC). Szőce, Szőce-patak, N46°53'59", E16°34'24", 04.11.2010, singled, J. Oláh, Á. Uherkovich (6♂, 5♀, OPC). Zemplén Mts, Telkibánya, 19.10.1982, light, J. Oláh (9♂, 1♀, OPC). **Slovakia**: Banskobystrický region, Zvolenská kotlina, Lieskovec, Hučava Stream above the village, N48°35.430', E19°12.157', 315 m, 18.04.2012, from spider web, T. Kovács, D. Murányi, T. Szederjesi (2♂, OPC). Javoros Mts, Blyskovica, stream Tisovnik, 657 m, 20.10.2005, D. Murányi (3♂, 2♀, HNHM). **Slovenia**: Bosljiva Loka, Mirtovički stream, 30.10.2011, I. Sivec (1♂, OPC). Ljubljana, Malo Trebeljevo, sidestream of stream Besnica, N46°01'08.38", E14°42'55.69", 449 m, 25.10.2012, I. Sivec (2♂, OPC). Postojni, 01.12.2011, I. Sivec (1♂, OPC). Predvor, 12.11.2011, I. Sivec (1♂, OPC). Radovna, Novakov Rovt, N46°23'41.31", E14°00'20.23", 15.11.2009, I. Sivec (4♂, 3♀, OPC). Vrhnika pri Ložu, spring of Veliki Obrh, N45°41'59.50", E14°30'41.13", 04.11.2008, I. Sivec (2♂, OPC).

Chaetopteryx gonospina Marinkovic-Gospodnetic, 1966 – **Bosnia & Herzegovina**: Banja Luka region, Kozara Mts, forest brook below the Vrbaška – Kozarac road, 45°02.480', 16°54.266', 560 m, 07.11.2012, T. Kovács, G. Magos (1♀, OPC). **Montenegro**: Komovi Mts, Mateševo – Bare Kraljske, Nesirenski potok, 42°45'04.6", 19°34'23.2", 1030 m, 08.11.2011, T. Kovács, G. Magos (1♂, 1♀, OPC; 1♂, MM). Sinjajevina Mts, Gornji Štitarica, right side sprigs of Štitarička reka, 42°55'14.9", 19°29'59.4", 1040 m, 04.11.2011, T. Kovács, G. Magos (1♂, OPC).

Chaetopteryx lusitanica Malicky, 1974 – **Spain**: Rio San Lázaro (Cabeza de Manzaneda), N42°16.631', E7°16.815', 1405 m, 28.09.2011, M. Sainz-Bariáin (1♂, OPC).

Chaetopteryx major McLachlan, 1876 – **Austria**: Aspang Markt, Unteraspang, stream in the valley Hottmannsgraben, N47°34'40.4", E16°03'46.2", 587 m, 19.11.2009, A. Déry, I. Szivák (1♀, OPC). **Croatia**: Gerovčica spring, N45°31'43.96", E14°40'36.63", 29.10.2009, I. Sivec (1♀, OPC). Krndija Mts, 3km N of Kutjevo, Velika rijeka tributary, N45°27'55", E17°52'37", 26.11.2012, Á. Uherkovich (1♂, OPC). Krndija Mts, 6 km N of Kutjevo, Velika rijeka, springs, N45°28'59", E17°51'33", 580 m, 04.11.2011, Á. Uherkovich (1♂, OPC); 06.11.2012, T. Kovács, G. Magos (2♂, 1♀, OPC; 1♂, 1♀, MM). Krndija Mts, Gradac Nasicki, Gradac Pass, N45°25'27", E18°00'28", 223 m, 04.11.2011, Á. Uherkovich (1♀, OPC). Velika, Sastavi, Zaagradska rijeka, N45°29'33", E17°39'11", 482 m, 03.11.2012, Á. Uherkovich (1♀, OPC). **Hungary**: Erdősmecske, 25-27.10.1983, light trap, J. Oláh (13♂, OPC). Hosszúhetény, Kisújbánya, Pásztor-forrás, N46°13'04", E18°21'27", 06.11.2009, I. Szivák, Á. Uherkovich (1♀, OPC); 05.11.2010, singled, I. Szivák, J. Oláh, Á. Uherkovich (5♂, OPC). Hegyhátszentjakab, Vadása-tó, források, N46°52'32", E16°33'03", 04.11.2010, J. singled, Oláh, Á. Uherkovich (1♀, OPC). Pécs, Éger-völgy, N46°05'38",

E18°10’28”, 01.11.2010, Á. Uherkovich (1♀, OPC). **Slovenia**: Pohorje, Pesek (284/4), N46°28’26.3”, E15°20’55.9”, 09.10.2010, I. Sivec (1♀, OPC). Srednji Vrh, potok Hladnik, N46°30’22.07”, E13°52’54.35”, 09.09.2009, I. Sivec (1♂, OPC). Tržič, Brezje at Tržič, stream Blajšnica, N46°21’46.06”, E14°17’00.31”, 646 m, 16.11.2012, B. Horvat, I. Sivec (1♀, OPC).

Chaetopteryx polonica Dziedzielewicz, 1889 – **Romania**: Borsa, 26.09.1992, singled, J. Oláh (1♂, OPC). Maramureş county, Ignis Mts, Deseşti-Staţiunea Izvoare, forest spring and spring brook at settlement, N47°45.167’, E23°43.013’, 920 m, 20-22.10.2010, Á. Ecsedi, J. Oláh, I. Szivák (18♂, 6♀, OPC; 4♂, 2♀, MM). Maramureş county, Ignis Mts, Deseşti-Staţiunea Izvoare, open brook on the Valhani Plateau, N47°43.015’, E23°44.547’, 1020 m, 07.10.2010, P. Barcánfalvi, D. Murányi, J. Oláh (1♂, OPC). Maramureş county, Ignis Mts, Deseşti-Staţiunea Izvoare, open stream on the Valhani Plateau, N47°43.945’, E23°44.661’, 940 m, 08.10.2010, P. Barcánfalvi, D. Murányi, J. Oláh (1♂, OPC). Maramureş county, Ignis Mts, Desesti-Statiunea Izvoare, sidebrook of the Mara River at the building dam, N47°47’49.1”, E23°46’27.8”, 724 m, 27.09.2006, L. Dányi, J. Kontschán, D. Murányi (2♂, HNHM). Maramureş county, Maramures Mts, Borsa-Baile Borsa, brook over the village, N47°40’21.5”, E24°50’16.7”, 1046 m, 26.09.2006, L. Dányi, J. Kontschán, D. Murányi (2♂, HNHM). **Slovakia**: Javoros Mts, Blyskovica, forest brook, 650 m, 20.10.2005, L. Dányi, D. Murányi (6♂, 4♀, HNHM).

Chaetopteryx sahlbergi McLachlan, 1876 – **Romania**: Ciucaş Mts, Vama Buzăului – Dălghiu (4.5 km SE Dălghiu), left side stream of Dălghiu stream, N45°35’42.3”, E25°57’03.2”, 830 m, 13.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♂, 2♀, OPC; 2♂, 1♀, MM).

Chaetopteryx stankovici Marinkovic-Gospodnetic, 1966 – **Bulgaria**: Rila Mts, 7 km S of Beli Iskar, Beli Iskar, N42°12’11.2”, E23°33’02.1”, 1500 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♂, 2♀, OPC). Rila Mts, Borovets, Bistritsa, Musalenska Bistritsa, N42°15’49.3”, E23°35’53.2”, 1330 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (8♂, 4♀, OPC). Rila Mts, Jazovir Belmeken, Ribnitsa, N42°09’44.3”, E23°47’01.3”, 1950 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♂, 1♀, OPC). Rila Mts, Rilski Manastir, Malka Drusljavitsa, N42°07’58.4”, E23°20’28.7”, 1130 m, 07.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♂, 4♀, OPC; 3♂, 2♀, MM). Rila Mts, Sestrimo – Jazovir Belmeken, Kriva Reka, N42°12’08.3”, E23°51’20.0”, 1230 m, 05.10.2011, UV light, Á. Ecsedi, T. Kovács, G. Puskás (1♂, 1♀, OPC). Rila Mts, Sestrimo – Jazovir Belmeken, Kriva Reka, N42°12’08.3”, E23°51’20.0”, 1230 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (8♂, 3♀, OPC). Rila Mts, Tiha Rila – Dolno Ribno ezero, Rilska Reka, N42°07’32.7”, E23°29’33.5”, 2140 m, 07.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (3♂, 1♀, OPC). Vitosha Mts, Boyanska stream 240 m S of Rodina hut, N42°37’01.2”, E23°15’23.5”, 1620 m, 03.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, 1♀, OPC). Vitosha Mts, Kladnitsa, Golemo gradishte, Mamnitsa, N42°33’14.1”, E23°11’42.5”, 1050 m, 04.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC). Vitosha Mts, Kladnitsa, Sv. Nikola, Tanchovitsa, N42°34’02.9”, E23°11’41.4”, 1100 m, 04.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (6♂, 2♀, OPC); 03.10.2011, UV light, Á. Ecsedi, T. Kovács, G. Puskás (7♂, 2♀, OPC). Vitosha Mts, KV. Dragalevtsi – Aleko, Dragalevska Reka, N42°36’31.1”, E23°17’45.8”, 1250 m, 04.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (5♂, 3♀, OPC). Vitosha Mts, Lavchemo, Boyanska Reka, N42°34’34.6”, E23°16’57.7”, 2050 m, 04.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, OPC). Vitosha Mts, Zlatni mostove, Vladayska Reka, N42°36’35.4”, E23°14’17.9”, 1400 m, 03.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, OPC). **Macedonia**: Pelister Mts, Brajcino, Brajcino stream and mixed forest below the village, N40°54’08.0”, E21°09’21.8”, 984 m, 16.10.2006, L. Dányi, J. Kontschán, D. Murányi (2♂, ♂♀ in copula, HNHM). Pelister Mts, Nizepole, brooks in alpine grasslands and beech forest around the sky course, N40°58’48.7”, E21°15’09.9”, 1375 m, 17.10.2006, L. Dányi, J. Kontschán, D. Murányi (1♂, 1♀, HNHM). Pelister Mts, Nizepole, Sapuncica stream and softwood gallery above the village, N40°59’17.7”, E21°14’47.6”, 1253 m, 17.10.2006, L. Dányi, J. Kontschán, D. Murányi (1♂, HNHM). **Montenegro**: Murino – Peć, Radevići, Ramšića potok, 42°41’15.2”, 19°57’33.4”, 1210 m, 08.11.2011, T. Kovács, G. Magos (2♂, OPC). Sinjajevina Mts, Krnja Jela, Dobro Do, Javorski potok, 42°54’02.3”, 19°16’11.4”, 1270 m, 07.11.2011, T. Kovács, G. Magos (5♂, 4♀, OPC). Velika E, Murino 17 km toward Ćakor-pass, forest torrent in mixed pine forest, N42°40.685’, E19°59.779’, 1476 m, 05.10.2005, D. Murányi (1♂, HNHM).

Chaetopteryx subradiata Klapálek, 1907 – **Romania**: Maramureş county, Muntii Ignis, Deseşti-Staţiunea Izvoare, forest spring at settlement, N47°45.167’, E23°43.013’, 920 m, 08.10.2010, P. Barcánfalvi, D. Murányi, J. Oláh (3♀, OPC); 21.10.2010, Á. Ecsedi, J. Oláh, I. Szivák (1♀, OPC). Maramureş county, Muntii Ignis, Deseşti-Staţiunea Izvoare, open brook on the Valhani Plateau, N47°43.015’, E23°44.547’, 1020 m, 07.10.2010, P. Barcánfalvi, D. Murányi, J. Oláh (1♀, OPC). Maramureş county, Muntii Ignis, Deseşti-Staţiunea Izvoare, side valley stream along the road between Firiza and Statiunea Izvoare, 500 m, 21.10.2010, Á. Ecsedi, J. Oláh, I. Szivák (1♂, OPC).

Chaetopteryx villosa Fabricius, 1798 – **Germany**: Schlitz, Breitenbach, N50°39’, E09°38’, 10-11.2011, emergence trap, R. Wagner (53♂, 30♀, OPC; 5♂, 2♀, MM). **Slovakia**: High Tatra, Poprad lake outflow, 07.10.1976, light, Nagy (1♂, OPC).

Pseudopsilopteryx Schmid, 1952

Pseudopsilopteryx zimmeri (McLachlan, 1876) – **Austria**: Saualpe, upper section of a small tributary to the stream Löllingbach, N46°55'58.61", E14°38'48.62", 1342 m, 13.10.2011, A. Déry, I. Szivák (1♀, OPC). **Slovenia**: Pohorje Mts, Osankarica, small brooklet, N46°27'18.19", E15°25'28.41", 1212 m, 09.10.2011, A. Déry, I. Szivák (1♀, OPC). Pohorje Mts, brooklet near Rogla, N46.448280°, E15.339671°, 1350 m, 03.12.2011, A. Déry, I. Szivák (1♀, OPC). Pohorje Mts, below Pesek, spring area of river Oplotnica, N46°28'24.8", E15°20'55.9", 1345 m, 19.10.2012, B. Horvat, I. Sivec (5♂, 1♀, OPC); 08.11.2012, T. Kovács, G. Magos, I. Sivec (3♂, 1♀, OPC; 1♂, 1♀, MM). Žirovnica, River Završnica, N46°24'12.83", E14°10'51.04", 752 m, 16.11.2012, B. Horvat, I. Sivec (1♂,1♀, OPC).

Psilopteryx Stein, 1874

Psilopteryx curviclavatus Botosaneanu, 1957 – **Romania**: Apuseni Mts, Padis, open stream near pine forested sphagnum bog, N46°35'20.632", E22°45' 54.857", 05.11.2011, Gy. Monori, J. Oláh, L. Szél (1♂, OPC). Apuseni Mts, Padis, small stream in pine forested sphagnum bog, N46°35'36.528", E22°45'54.751", 05.11.2011, Gy. Monori, J. Oláh, L. Szél (2♂, OPC). Apuseni Mts, Stána de Vale, open small stream, N46°41'20", E22°37'29", 06.11.2011, Gy. Monori, J. Oláh, L. Szél (1♂, OPC). Apuseni Mts, Valea lui Dragan, N46°8046', E22°7075', 1050 m, 20.11.2008, M. Bálint, Tasnádi (6♂, 1♀, OPC; 2♂, MM).

Psilopteryx montanus Kumanski, 1968 – **Bulgaria**: Rila Mts, Borovets, Bistritsa, Musalenska Bistritsa, N42°15'49.3", E23°35'53.2", 1330 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, 1♀, OPC). Rila Mts, Jazovir Belmeken – Ropalitsa, left side stream of Leevshitsa, N42°07'43.3", E23°42'13.1", 1770 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 2♀, OPC; 1♂, 1♀, MM). Rila Mts, Ropalitsa, Ropalitsa, N42° 8'36.2", E23°40'25.5", 1910 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (3♂, OPC). Vitosha Mts, Boyanska stream 240 m S of Rodina hut, N42°37'01.2", E23°15'23.5", 1620 m, 03.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (3♂, 2♀, OPC). Vitosha Mts, KV. Dragalevtsi – Aleko, Prostor, Yanchovska Reka, N42°35'18.5", E23°17'53.9", 1650 m, 04.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, 2♀, OPC). Vitosha Mts, Lavchemo, Boyanska Reka, N42°34'34.6", E23°16'57.7", 2050 m, 04.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (3♂, 1♀, OPC). Vitosha Mts, Zlatni mostove – Boeritsa, Vladayska Reka, N42°35'50.3", E23°14'49.7", 650 m, 03.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (3♂, OPC). Vitosha Mts, Zlatni mostove, Vladayska Reka, N42°36'35.4", E23°14'17.9", 1400 m, 03.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♂, OPC). **Macedonia**: Pelister Mts, Nizepole, brooks in alpine grasslands and beech forest around the sky course, 1375 m, N40°58'48.7", E21°15'09.9", 17.10.2006, L. Dányi, J. Kontschán, D. Murányi (1♂, 1♀, HNHM).

Psilopteryx psorosa carpathica Schmid, 1952 – **Romania**: Maramures county, Rodna Mts, Borsa-Statiunea Borsa, stream along the road towards Prislop Pass, N47°37'34.0", E24°49'13.0", 1014 m, 26.09.2006, L. Dányi, J. Kontschán, D. Murányi (1♂, HNHM).

Psilopteryx psorosa gutinensis Mey & Botosaneanu, 1985 – **Romania**: Maramureş county, Muntii Ignis, Deseşti-Staţiunea Izvoare, brook in bushy edge on the Valhani Plateau, N47°44.374', E23°43.331', 930 m, 08.10.2010, P. Barcánfalvi, D. Murányi, J. Oláh (1♀, OPC). Maramureş county, Muntii Ignis, Deseşti-Staţiunea Izvoare, open brook on the Valhani Plateau, N47°43.015', E23°44.547', 1020 m, 07.10.2010, P. Barcánfalvi, D. Murányi, J. Oláh (1♂, OPC). Maramureş county, Muntii Ignis, Deseşti-Staţiunea Izvoare, open brook on the Valhani Plateau, N47°43.015', E23°44.547', 1020 m, 21.10.2010, Á. Ecsedi, J. Oláh, I. Szivák (1♂, 1♀, OPC). Maramureş county, Muntii Ignis, Deseşti-Staţiunea Izvoare, open spring brook at settlement, N47°45.167', E23°43.013', 920 m, 22.10.2010, Á. Ecsedi, J. Oláh, I. Szivák (2♂, 1♀, OPC; 1♂, MM). Maramureş county, Muntii Ignis, Deseşti-Staţiunea Izvoare, side valley spring brook along the road between Firiza and Statiunea Izvoare, 600 m, 22.10.2010, Á. Ecsedi, J. Oláh, I. Szivák (1♂, 1♀, OPC).

Psilopteryx psorosa psorosa (Kolenati, 1860) – **Czech Republic**: Jeseníky, Ovčárna, source of Bilá Opava, 1100 m, 24.09.2000, B. Horvat, I. Sivec (8♂, 1♀, OPC; 2♂, MM).

Psilopteryx psorosa retezatica Botosaneanu & Schneider, 1978 – **Romania**: Caraş-Severin county, Ţarcu Mts, left side brook of open stream on the N slope of Mt. Ţarcu, N45°17'40.7", E22°31'44.5", 1500 m, 14.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, OPC). Caraş-Severin county, Ţarcu Mts, spring and its outlet at Cuntu Meteorological Station, N45°18'00.2", E22°30'04.3", 1465 m, 14.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (14♂, 6♀, OPC; 5♂, 2♀, MM). Retezat Mts, Gura Apelor, N45°33', E22°88', 1500 m, 20.10.2007, M. Bálint, M. Braun, E. Magyari (23♂, 13♀, OPC).

Psilopteryx psorosa transsylvanica Mey & Botosaneanu, 1985 – **Romania**: Maramures county, Maramures Mts, Borsa-Baile Borsa, brook over the village, N47°40'21.5", E24°50'16.7", 1046 m, 26.09.2006, L. Dányi, J. Kontschán, D. Murányi (1♂, HNHM).

Psilopteryx schmidi Kumanski, 1970 – **Bulgaria**: Pirin Mts, 0.5 km S of Begovitsa hut, Kriva Reka, N41°40'05.6", E23°25'40.4", 1750 m, 08.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (12♂, 6♀, OPC). Pirin Mts, 1.5 km E of Begovitsa hut, Begovitsa stream, N41°40'32.6", E23°26'38.8", 1930 m, 08.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (41♂, 20♀, OPC). Pirin Mts, 2 km E of Begovitsa hut, left side brook of Begovitsa stream, N41°40'29.3", E23°26'58.5", 2000 m, 08.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (11♂, 14♀, OPC; 5♂, 3♀, MM). Pirin Mts, 950 m S of Demianitsa hut, left side brook of Valyavitsa stream, N41°44'02.6", E23°28'03.1", 2020 m, 07.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (3♂, 1♀, OPC). Pirin Mts, Bansko – Demianitsa hut, Karkamska Voda, N41°45'37.6", E23°27'45.4", 1720 m, 07.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (10♂, 14♀, OPC). Pirin Mts, Demianitsa hut, Vasilashki Potok, N41°44'33.9", E23°28'04.8", 1900 m, 07.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♂, 2♀, OPC). Rila Mts, Borovets, Maritsa hut – Zavrachitsa hut, Prava Maritsa, N42°10'44.2", E23°38'25.8", 2015 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (5♂, 4♀, OPC). Rila Mts, Borovets, Maritsa hut, left side stream of Maritsa, N42°11'20.2", E23°38'22.8", 1829 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (13♂, 7♀, OPC). Rila Mts, Borovets, Zavrachitsa hut, Prava Maritsa, N42°10'04.9", E23°38'28.1", 2200 m, 05.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (4♂, 4♀, OPC). Rila Mts, Ezero Vira – Tiha Rila, Rilska Reka, N42°08'20.5", E23°27'52.3", 1935 m, 07.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC). Rila Mts, Jazovir Belmeken – Jundola, Chakaritsa, spring and brook, N42°07'41.2", E23°47'33.7", 1880 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 2♀, OPC). Rila Mts, Jazovir Belmeken – Ropalitsa, left side stream of Leevshitsa, N42°07'43.3", E23°42'13.1", 1770 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 1♀, OPC). Rila Mts, Ropalitsa, Ropalitsa, N42° 8'36.2", E23°40'25.5", 1910 m, 06.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (2♂, 6♀, OPC). Rila Mts, Tiha Rila – Dolno Ribno ezero, Rilska Reka, N42°07'32.7", E23°29'33.5", 2140 m, 07.10.2011, Á. Ecsedi, T. Kovács, G. Puskás (1♀, OPC).

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New species and records of autumnal Trichoptera from Albania

János Oláh & Tibor Kovács

Abstract: Our knowledge on late flying caddisflies, especially at higher elevations and particularly in Albania is very limited. Here we have reported 32 species collected on higher elevations in Albania. Five new species are described: *Annitella ostrovicensis* sp. n., *Allogamus tomor* sp. n., *Potamophylax hajlos* sp. n., *Potamophylax kesken* sp. n., *Potamophylax tagas* sp. n. The unknown female of *Drusus arbanios* Oláh, 2010 has been discovered and described. Females of *Potamophylax haidukorum* Malicky, 1999 and *P. winneguthi* (Klapálek, 1902) were collected in Bosnia & Herzegovina and Serbia, their genitalia redrawn, compared and differentiated. *Potamophylax winneguthi* new species group and *Potamophylax tagas* new species cluster are erected.

Introduction

Albania is one of the least collected regions in Europe. In addition, the collection of late flying caddisflies are more difficult, especially on higher elevation. The autumnal collection is complicated by bad weather, and the collecting methods are more limited. At low temperature the light attracts few specimens. Sakertour, the Birdwatching and Hide Photography Company of the Carpathian Basin and Danube Delta has organised and financed an autumnal Trichoptera collecting trip to the high elevations of Albania between 6th and 14th of October in 2012. The results are presented here.

We have applied the methods described by Oláh (2011). Depositories: HNHM = Hungarian Natural History Museum, Budapest, Hungary, MM = Mátra Museum, Gyöngyös, Hungary, OPC = Oláh Private Collection presently under National Protection of the Hungarian Natural History Museum, Hungary.

Results

Philopotamidae Stephens, 1829

Philopotamus montanus (Donovan, 1813) – Albania: Kolonjë district, Grammos Mts, Leskovik, forest brook along the road to Ersekë, E of the city, N40°09.932', E20°38.282', 1015 m, 13.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC).

Wormaldia occipitalis (Pictet, 1834) – Albania: Skrapar district, Ostrovicë Mts, Backë, brook and spring NE of the village, N40°31.346', E20°25.096', 1650 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (4♂, 3♀, OPC).

Psychomyiidae Walker, 1852

Lype reducta (Hagen, 1868) – Albania: Tepelenë district, Tepelenë, Uji i Ftohtë, karst springs and forest, N40°15.009', E20°03.876', 165 m, 13.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC).

Glossosomatidae Wallengren, 1891

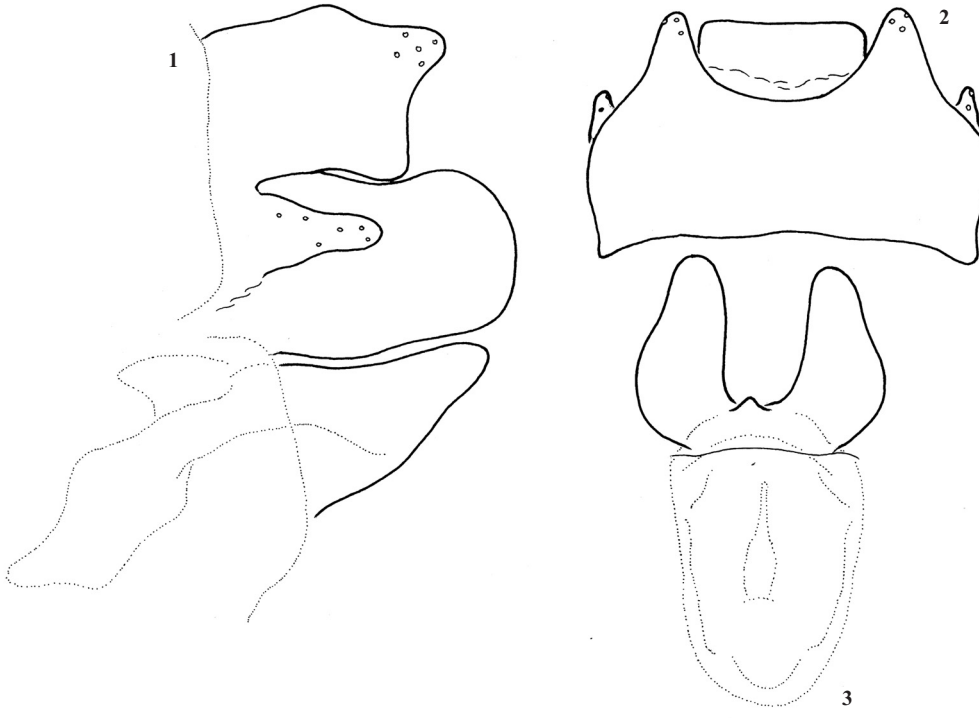
Agapetus iridipennis (McLachlan, 1879) – Albania: Bulqizë district, Çermenikë Mts, brooks in open forest beneath Mt. Kaptinë, N41°23.199', E20°17.338', 1600 m, 10.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC).

Rhyacophilidae Stephens, 1836

Rhyacophila balcanica Radovanovic, 1953 – Albania: Skrapar district, Ostrovicë Mts, Backë, brook and spring NE of the village, N40°31.346', E20°25.096', 1650 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC).
Rhyacophila obliterata McLachlan, 1863 – Albania: Shkodër district, Prokletije Mts, Theth, Shalë River S (beneath) of the village, N42°23.138', E19°46.845', 715 m, 09.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, 1♀, OPC).

Limnephilidae Kolenati, 1848

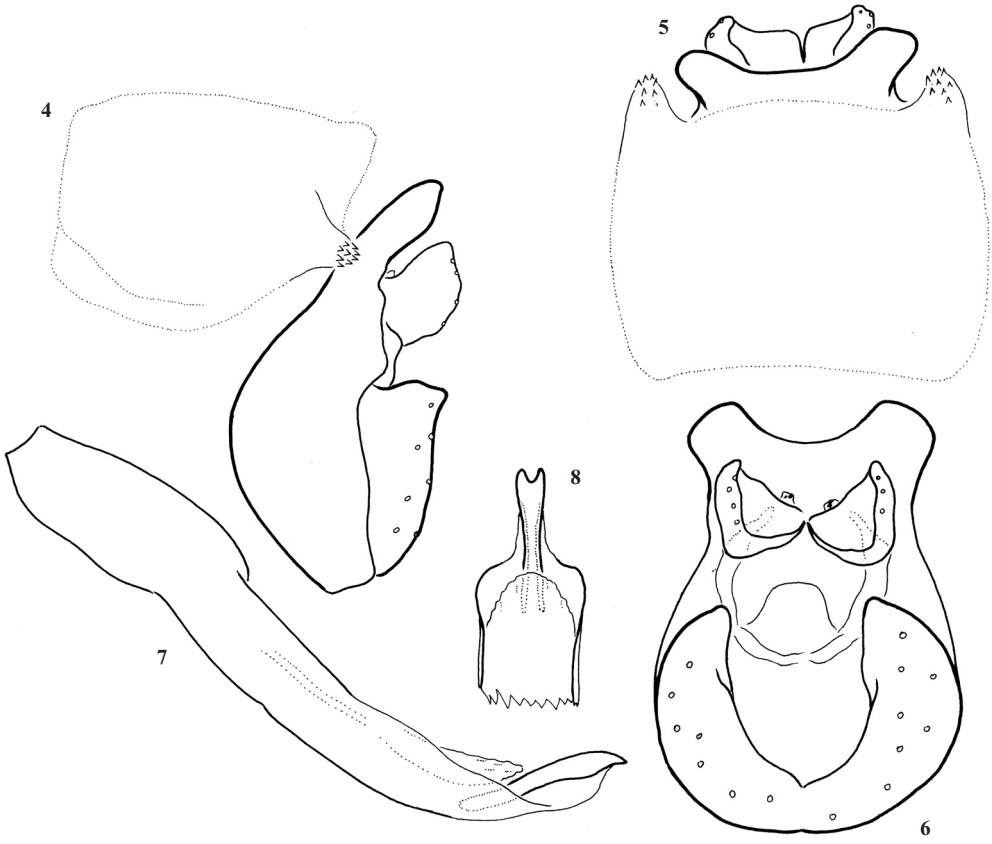
Drusus arbanios Oláh, 2010 (Figs 1–3)
This species was described from a single male collected in early July. We have collected 4 males and 11 females in the same habitats around the middle of October. Only few *Drusus* species fly in such a late season. Here we describe the unknown female.



Figs 1–3. *Drusus arbanios* Oláh, 2010 female: 1 = genitalia in left lateral view;
2 = anal tube in dorsal view; 3 = vulvar scale and sparmathecal sclerite complex in ventral view

Description of female – Most similar to the female of *Drusus lepcos* Oláh, 2011. Tergite of segment IX forming short tube, open ventrally, roundly excised dorsally; its apical lateral lobes setose, tapering in dorsal view; the lateral setose lobe of sternite IX digitate and continuing into setaless less pigmented downward section. Segment X membranous and embedded inside segment IX and encircling anus; supragenital plate of segment X well-developed and quadrangular both in lateral and dorsal view; slightly rounded middle in lateral view. Median lobe of the vulvar scale (lower vaginal lip) present and small in ventral view. Genital chamber, the vagina is medium sized reaching 2 thirds of sternite VIII. Vaginal sclerite pattern clearly visible.

Material examined – Allotype female. Albania: Skrapar district, Ostrovicë Mts, Backë, Krojmbret Spring and its outlet brook NE of the village, N40°31.753', E20°25.152', 1965 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♀, OPC). Same as allotype (3♂, 6♀, OPC). Skrapar district, Ostrovicë Mts, Backë, brook and spring NE of the village, N40°31.346', E20°25.096', 1650 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, 4♀, OPC).



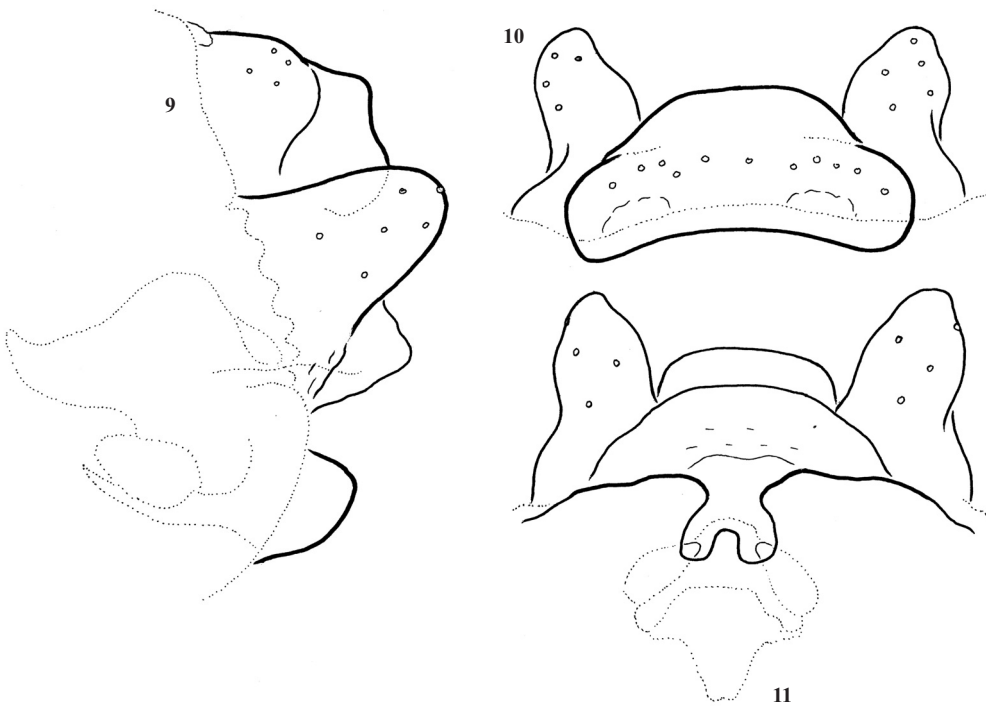
Figs 4–8. *Annitella ostrovicensis* sp. n. holotype male: 4 = genitalia without phallic organ in left lateral view; 5 = genitalia without phallic organ in dorsal view; 6 = genitalia without phallic organ in caudal view, 7 = phallic organ in lateral view; 8 = tip of phallic organ in dorsal view

***Annitella ostrovicensis* Oláh et Kovács sp. n.** (Figs 4–11)

Diagnosis – This spring brook dwelling new species collected on high elevation is a sister species of *Annitella triloba* Marinkovic-Gospodnetic, 1955 but differs in male by having tergite VIII without median spinate lobe, paraproct without median process, cerci reduced to an almost indiscernible pair of warts, bifid distal sclerite of aedeagus very narrow. Also differs in female by having sternite IX (setosa lateral lobes) with very short ventrum, dorsal black region of segment X simple rounded, not with ventral pair of oblique rounded ridges. *A. ostrovicensis* sp. n., probably a parapatric or peripatric species occurs not far from the southernmost populations of its sister species *A. triloba*.

Description – Male (in alcohol). Dark brown animal with lighter body appendages and with pale yellowish-testaceous wings. Maxillary palp formula I–II–III. Head dorsum, mesothorax and metathorax, femurs and setal warts dark brown, face, prothorax and legs yellowish brown. Anterior wing with rounded apex and with long erect spine-like setae present on both the membrane and the veins. Tibial spur number reduced to 022. Femur and tibia armed on foreleg with long mesal row of dense short spines. Forewing length 10 mm.

Male genitalia (Figs 4–8) Posterodorsal spinate lobe of vestitural noncellular microtrcihiae on segment VIII vestigial, lateral spinate lobes present. Segment IX short, dorsum developed into a pair of lateral auriform lobes, Cerci almost indiscernible, detectable deep between dorsum IX and paraproct as a pair of very small warts. Paraproctal complex (intermediate appendages) composed of a pair of heavily sclerotized auriform and mesally concave spoons.



Figs 9–11. *Annitella ostrovicensis* sp. n. allotype female:
9 = genitalia in left lateral view; 10 = genitalia in dorsal view; 11 = genitalia in ventral view

Membranous subanal lobe rounded. Gonopods with blunt apex. Phallic organ without distinct parameres, bifid distal sclerite very narrow in dorsal view.

Female (in alcohol). Colour pattern is similar to the male. Maxillary palp formula I–IV–III–II–V. Spur number 122. Foreleg femur and tibia without spine row. Length of forewing 12 mm. Forewing length close to abdomen.

Female genitalia (Figs 9–11). Tergite IX short, scattered with vestitural small setae; a pair of lightly sclerotized membranous rounded window present dorsolaterad near anterior margin. Sternite IX elongated triangular setose lobes dominating over the terminalia connected by glabrous large convex mesal plate, this glabrous ventral surface of sternite IX functions like the upper vaginal lip. Segment X rounded convex, dorsal half heavily sclerotized black, ventral part membranous housing the anal opening. The lower vaginal lip, the trifid vulvar scale is visible somewhat separated from sternite VIII by it more sclerotized structure, glabrous without any setae; its lateral lobes mesad turning, its mesal lobe small. Vaginal chamber is short, reaching only half length of sternite VIII; vaginal sclerite pattern clearly visible.

Type material – Holotype. Albania: Skrapar district, Ostrovicë Mts, Backë, Krojmbret Spring and its outlet brook NE of the village, N40°31.753', E20°25.152', 1965 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC). Allotype. Same as holotype (1♀, OPC). Paratypes. Same as holotype (20♂, 10♀, OPC; 4♂, 3♀, MM)

Etymology – The new species is named after the Ostrovicë Mts, where the type locality is found. These mountains are rich in valuable autumnal Trichoptera species (even our one-day collecting demonstrates it).

Ecological notes – In the type locality of the new species (Fig. 41) the following Trichoptera species were found: *Drusus arbanios*, *Allogamus tomor* sp. n., *Chaetopteryx stankovici*, *Potamophylax pallidus*. From the lower section (1650 m) of the brook starting from the spring the following species were collected: *Wormaldia occipitalis*, *Rhyacophila balcanica*, *Drusus arbanios*, *Enoicyla costae*, *Potamophylax goulandriorum*.

Annitella triloba Marinkovic-Gospodnetic, 1955 – Albania: Dibër district, Korab Mts, brook beneath Fushë Korabit, N41°49.209', E20°30.745', 1770 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (12♂, 6♀, OPC; 5♂, 4♀, MM). Dibër district, Korab Mts, Radomirë, brook E (above) of the village, N41°49.152', E20°30.111', 1495 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (3♂, 3♀, OPC). Dibër district, Korab Mts, Radomirë, stream E (above) of the village, N41°49.043', E20°30.013', 1440 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (3♂, OPC). Dibër district, Korab Mts, spring brooks of the bog beneath Mt. Korab, N41°47.913', E20°33.561', 2165 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♂, OPC). Mirditë district, Shent Mts, Kurbnesh, Urakë River and its sidespring NE of the city, N41°47.711', E20°06.703', 800 m, 08.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (9♂, 3♀, OPC). Shkodër district, Prokletije Mts, Okol, stream with a waterfall along the road to Theth, N42°23.852', E19°45.925', 845 m, 09.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (4♂, 1♀, OPC). Shkodër district, Prokletije Mts, Theth, Shalë River S (beneath) of the village, N42°23.138', E19°46.845', 715 m, 09.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♂, OPC).

Chaetopteryx bosniaca Marinkovic-Gospodnetic, 1955 – Albania: Bulqizë district, Çermenikë Mts, brooks in open forest beneath Mt. Kaptinë, N41°23.199', E20°17.338', 1600 m, 10.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (9♂, 5♀, OPC; 5♂, 4♀, MM). Bulqizë district, Çermenikë Mts, open brook beneath Mt. Kaptinë, N41°23.212', E20°17.506', 1610 m, 10.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (4♂, 2♀, OPC).

Chaetopteryx stankovici Marinkovic-Gospodnetic, 1966 – Albania: Dibër district, Korab Mts, Radomirë, brook E (above) of the village, N41°49.152', E20°30.111', 1495 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (7♂, 3♀, OPC). Dibër district, Lurë area, Fushë Lurë, brook in the village, N41°48.719', E20°12.823', 1075 m, 08.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (14♂, 5♀, OPC). Kolonjë district, Grammos Mts, Radanj, brook, open seeps and Mergimtori Spring at Çezma Has, N40°12.184', E20°38.270', 1085 m, 13.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♂, OPC). Skrapar district, Ostrovicë Mts, Backë, Krojmbret Spring

Fig. 41. Locus typicus of *Annitella ostrovicensis* sp. n. (photo Dávid Murányi)

and its outlet brook NE of the village, N40°31.753', E20°25.152', 1965 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (12♂, 3♀, OPC; 5♂, 3♀, MM). Tiranë district, Gropë Mts, Vakumonë, karst spring and brook along the road to Elbasan, N41°15.109', E20°05.805', 1195 m, 11.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (6♂, OPC).

Psilopteryx montanus Kumanski, 1968 – Albania: Dibër district, Korab Mts, brook beneath Fushë Korabit, N41°49.209', E20°30.745', 1770 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (7♂, 4♀, OPC; 5♂, 3♀, MM).

Limnephilus affinis Curtis, 1834 – Albania: Mat district, Gropë Mts, brook along the Klos-Elbasan road, N of Shtyllë Pass, N41°22.455', E20°05.073', 1505 m, 11.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, 1♀, OPC).

Limnephilus cianficconiae Malicky, 1980 – Albania: Dibër district, Lurë area, swampy spring outlet at Lan Lurë, N41°48.904', E20°15.449', 1385 m, 08.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♀, OPC).

Limnephilus bipunctatus Curtis, 1834 – Albania: Kolonjë district, Grammos Mts, Leskovik, forest brook along the road to Ersekë, E of the city, N40°09.932', E20°38.282', 1015 m, 13.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, 1♀, OPC). Tiranë district, Gropë Mts, Vakumonë, karst spring and brook along the road to Elbasan, N41°15.109', E20°05.805', 1195 m, 11.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♀, OPC)

Limnephilus lunatus Curtis, 1834 – Albania: Kolonjë district, Grammos Mts, Radanj, brook, open seeps and Mergimtori Spring at Çezma Has, N40°12.184', E20°38.270', 1085 m, 13.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♀, OPC).

Limnephilus sparsus Curtis, 1834 – Albania: Mat district, Gropë Mts, brook along the Klos-Elbasan road, N of Shtyllë Pass, N41°22.455', E20°05.073', 1505 m, 11.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♀, OPC).

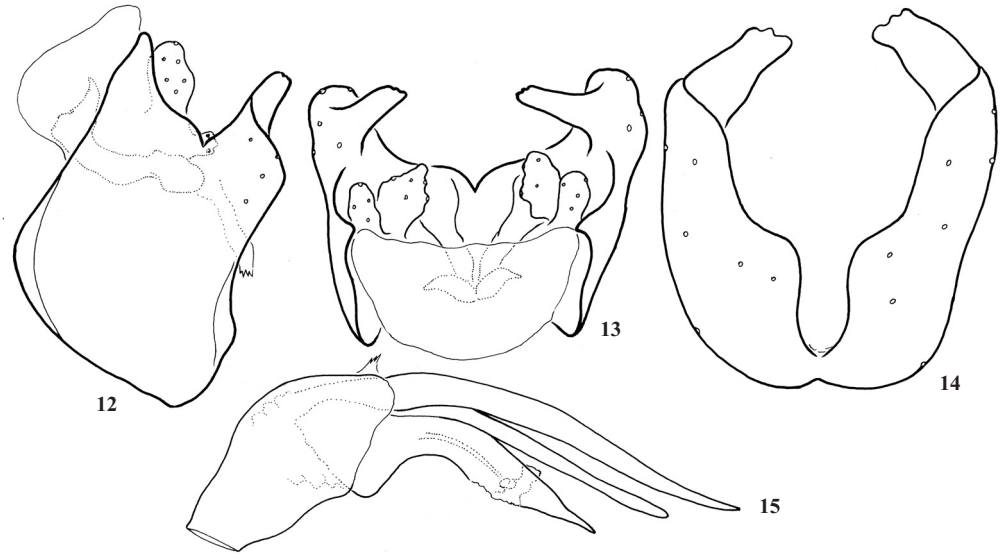
Allogamus auricollis (Pictet, 1834) – Albania: Dibër district, Korab Mts, brook beneath Fushë Korabit, N41°49.209', E20°30.745', 1770 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC). Dibër district, Korab Mts, open stream above Fushë Korabit, N41°49.215', E20°32.738', 1945 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♀, OPC). Dibër district, Korab Mts, Radomirë, brook E (above) of the village, N41°49.152', E20°30.111', 1495 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, 1♀, OPC; 2♂, 2♀, MM). Dibër district, Korab Mts, Radomirë, stream E (above) of the village, N41°49.043', E20°30.013', 1440 m, 7.X.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♂, 4♀, OPC).

***Allogamus tomor* Oláh sp. n.** (Figs 12–19)

Diagnosis – Having mesad angled gonopods together with three-armed aedeagus and fused paramere this new species is close to *Allogamus uncatus* (Brauer, 1857), but differs by having "apparent harpago" with transversally cut trilobed apical margin, not with pointed or narrowing monolobed apicoventral corner; aedeagus abbreviated and dilated, not long and slender; on female the elongated mesal structure of the vaginal sclerite complex short, not as long as at *A. uncatus*. This elongated sheath is connected to the dorsum of the vaginal or spermathecal sclerite was first mentioned by SCHMID (1951) as a *vestibular apparatus* with equilibrating function. Later SCHMID (1955) mentioned as *bursa copulatrix*. We have found this long tube-like structure as functioned to receive the long fused paramere in copulation.

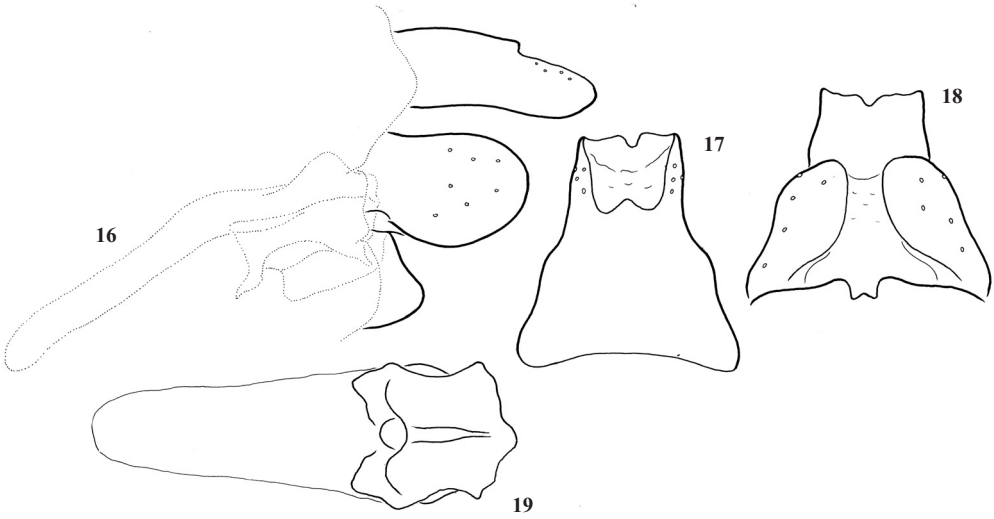
Description – Male and female (in alcohol). Brown animal with spotted forewing; both male and female have strong erect setae on forewing, setae on the longitudinal veins are almost as strong as in the Chaetopterygini tribe. Forewing length of holotype male is 21 mm, and that of the allotype female is 15 mm.

Male genitalia (Figs 12–15). Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII present. Segment IX with narrowing dorsum in lateral view; anterior margin rounded triangular with long antecosta; posterior margin fused with gonopods. The pouch-like concavity of segment X large giving space for the paracproct anchored female anal tube during copulation. Cerci rounded lobe with an additional more irregularly shaped mesal lobe. Apical hook of the paraproctal complex with narrowing dorsad and laterad directed pointed apex middle connecting section long, basal triangle monolobe in lateral view, basal triangles function like a supporting fulcrum during copulation. Membranous subanal lobe short. Gonopods short with mesad turning apical flap "apparent harpago" with shallowly trilobed apical margin. Phallic organ composed of short narrowing phallic apodeme, short tube of phallotheca, short endotheca,



Figs 12–15. *Allogamus tomor* sp. n. holotype male: 12 = genitalia without phallic organ in left lateral view; 13 = genitalia without phallic organ in dorsal view; 14 = gonopods in caudal view; 15 phallic organ in lateral view

aedeagus and paramere; aedeagus is short and robust arching; terminating in well-sclerotized bifid head and supplied with a pair of aedeagal rods fusing to the basement of the aedeagus; single fused paramere with bifid apical third is independently articulated to the membranous endotheca. Female genitalia (Figs 16–19). Anal tube formed by the fusion of tergite IX and X is medium long slightly downward arching; setose sternite IX regular elliptical in lateral view. Supragenital plate of segment X narrow in ventral view compressed by the enlarged sternite IX. Vulvar scale (lower vulvar lip) short plate with small quadrangular excision middle with the very small mesal lobe. Vaginal chamber medium sized reaching to the middle of sternite VIII. Vaginal sclerite pattern clearly visible, elongated sheath of the modified bursa copulatrix short and wide.



Figs 16–19. *Allogamus tomor* sp. n. allotype female: 16 = genitalia in left lateral view; 17 = genitalia in dorsal view; 18 = genitalia in ventral view; 19 = spermathecal sclerite complex with the elongated bursa copulatryx in ventral view

Type material – Holotype. Albania: Skrapar district, Ostrovicë Mts, Backë, Krojmbret Spring and its outlet brook NE of the village, N40°31.753', E20°25.152', 1965 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC). Allotype. Same as holotype (1♀, OPC).

Etymology – tomor from "tömör" solid or concise in Hungarian, refers to the abbreviated and dilated aedeagus of the phallic organ.

Allogamus uncatus (Brauer, 1857) – Albania: Bulqizë district, Çermenikë Mts, open brook beneath Mt. Kaptinë, N41°23.212', E20°17.506', 1610 m, 10.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC). Dibër district, Korab Mts, spring brooks of the bog beneath Mt. Korab, N41°47.913', E20°33.561', 2165 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♀, OPC).

Enoicyla costae McLachlan, 1876 – Albania: Skrapar district, Ostrovicë Mts, Backë, brook and spring NE of the village, N40°31.346', E20°25.096', 1650 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♀, OPC).

Halesus digitatus (Schrank, 1781) – Albania: Kolonjë district, Grammos Mts, Radanj, brook, open seeps and Mergimtori Spring at Çezma Has, N40°12.184', E20°38.270', 1085 m, 13.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC).

Potamophylax cingulatus (Stephens, 1837) – Albania: Dibër district, Lurë area, Fushë Lurë, brook in the village, N41°48.719', E20°12.823', 1075 m, 08.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, 2♀, OPC).

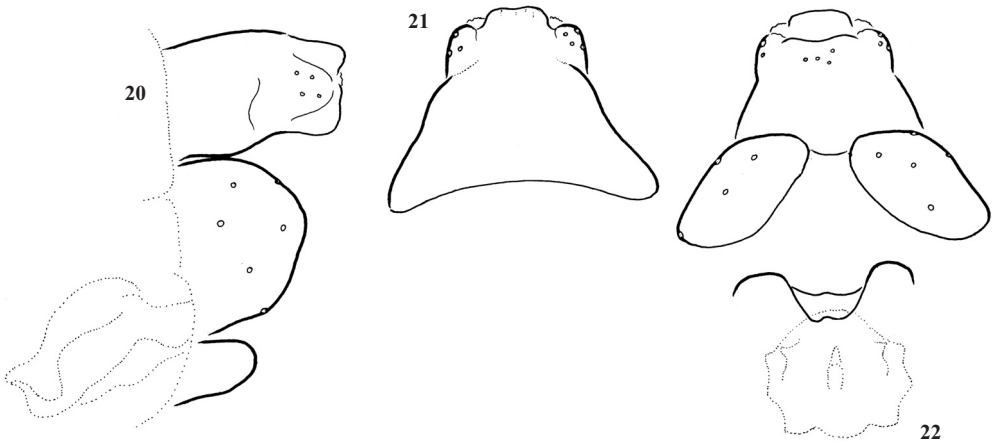
Potamophylax goulandriorum Malicky, 1975 – Albania: Bulqizë district, Çermenikë Mts, open brook beneath Mt. Kaptinë, N41°23.212', E20°17.506', 1610 m, 10.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♀, OPC; 1♀, MM). Dibër district, Lurë area, Fushë Lurë, brook in the village, N41°48.719', E20°12.823', 1075 m, 08.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♀, OPC). Skrapar district, Ostrovicë Mts, Backë, brook and spring NE of the village, N40°31.346', E20°25.096', 1650 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC; 1♂, MM). Tiranë district, Gropë Mts, Vakumonë, karst spring and brook along the road to Elbasan, N41°15.109', E20°05.805', 1195 m, 11.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♂, OPC).

Potamophylax winneguthi **new species group**

The habit of this species group differs from the typical *Potamophylax*. Species with known males and females are characterized by very pronounced sexual dimorphism. Females are lighter and smaller than males with tendency to brachyptery. They have very long and strong erect setae of "Chaetopteryx type"on forewings, especially strong setae are present on the longitudinal veins. Males are larger with normal forewing shape without any brachyptery. Male have less and shorter erect setae on forewing. However the males of *P. kesken* sp. n. and *P. tagas* sp. n. are brachypterous and have long and strong erect setae on forewing similarly to the females of the other species, which have however males without this chaetopterygini character. Unfortunately their females are not known. The male and female genital structures also differ from a typical *Potamophylax*. Their genitalia are more similar to *Chaetopteryx*. Male gonopods have very high or broad apex. Female anal tube closed. The discovery of the two new species where the males and not only the females have typical *Chaetopterygini* wings further emphasizes the need to examine the phylogenetic relations in *Stenophylacini* tribe. Seven species belong to this group: *Potamophylax gurunaki* Malicky, 1992 from Greece, *P. haidukorum* Malicky, 1999 from Bosnia, *P. hajlos* sp. n. from Albania, *P. juliani* Kumanski, 1999 from Bulgaria, *P. kesken* sp. n. from Albania, *P. tagas* sp. n. from Albania, *P. winneguthi* Klapálek, 1902 from Bosnia and Serbia.

Potamophylax haidukorum Malicky, 1999 (Figs 20–22)

Material examined – Bosnia & Herzegovina: Banja Luka region, Borja Planina, between Maslovare and Klupe, Hajduk spring, N44°35'29.2", E17°35'50.9", 790 m, 06.11.2012, leg.



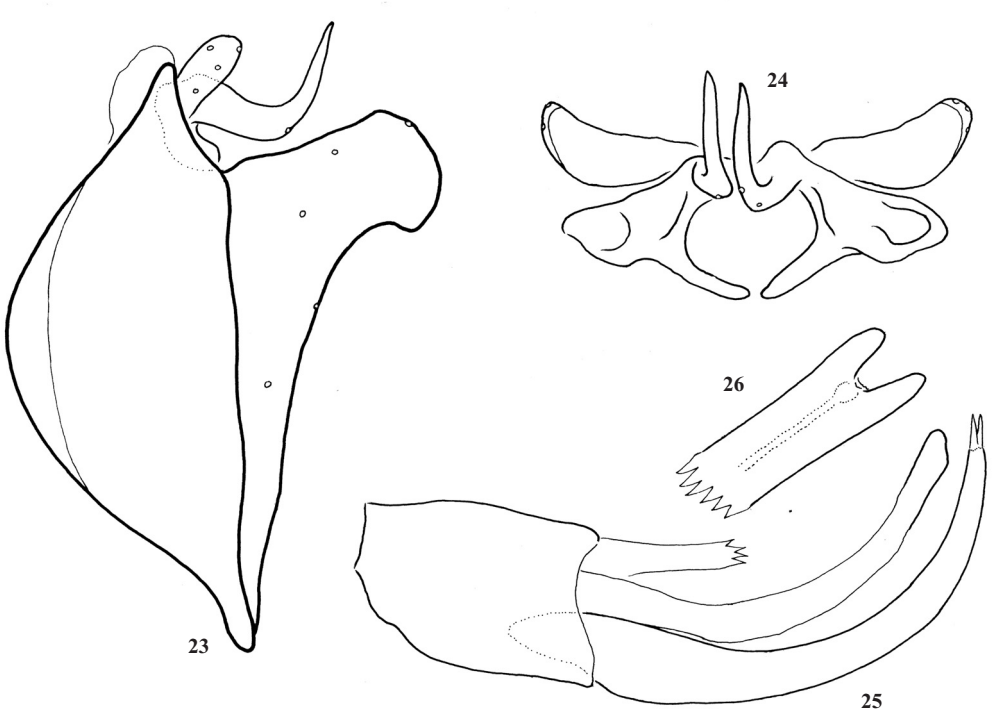
Figs 20–22. *Potamophylax haidukorum* Malicky, 1999 female:
20 = genitalia in left lateral view; 21 = genitalia in dorsal view; 22 = genitalia in ventral view

T. Kovács, G. Magos (1♀, OPC; 1♂, 1♀, MM). Banja Luka region, Kozara Mts, forest brook below the Vrbaška – Kozarac road, N45°02.480', E16°54.266', 560 m, 07.11.2012, leg. T. Kovács, G. Magos (1♀, OPC). Bosnien, Hajdučka voda, Zucht 1990, leg. H. Malicky (1♂, 1♀, OPC).

Notes – There seems to be no clear feature for separating the females of *P. haidukorum* and *P. winneguthi* wrote Malicky (KUMANSKI & MALICKY 1999). After a detailed examination of both the external and internal genital structure we have found significant differences to separate the females of these species. The fused regions of segment IX and X, the closed anal tube is subquadrangular on *P. winneguthi* and triangular on *P. haidukorum* both in dorsal and ventral view; sternite IX, the setose lateral lobes differently shaped, longer than high on *P. winneguthi* and higher than long on *P. haidukorum*; vulvar scale, the lower vulvar lip very developed on *P. winneguthi* and less developed on *P. haidukorum*; the mesal lobe of the vulvar scale is present on *P. winneguthi* and almost vestigial on *P. haidukorum*; the internal genital structure, the vaginal or spermathecal sclerite complex clearly differently formed in the two species.

***Potamophylax hajlos* Oláh sp. n.** (Figs 23–29)

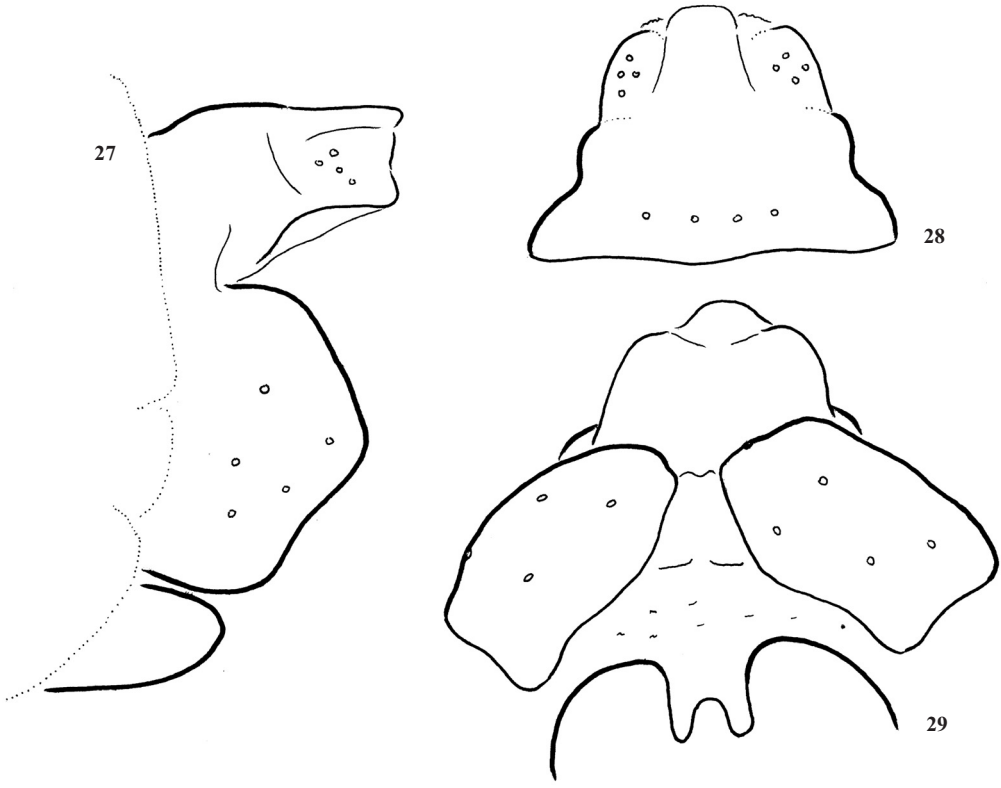
Diagnosis – A member of the *Potamophylax winneguthi* new species group and of the *Potamophylax tagas* new species cluster. Most close to *P. kesken* sp. n. but differs by having gonopod apical margin with downward directed outgrow and paramere tip with two spines; apicomesal excision on the aedeagus narrow, not wide U-shaped.



Figs 23–26. *Potamophylax hajlos* sp. n. holotype male: 23 = genitalia without phallic organ in left lateral view; 24 = superanal genital complex of cerci and paraproct in caudal view; 25 = phallic organ in lateral view; 26 = tip of phallic organ in ventral view

Description – Male (in alcohol). Antennae slender, not as stout as on *P. kesken* sp. n. and *P. tagas* sp. n. Spur number 134 both on male and female. Thoracic and femur sclerites dark brown on male, lighter on female; forewing with very long and strong erect setae on the longitudinal veins, almost as strong as in the *Chaetopterygini* tribe on female, but shorter and less strong on males. Forewing length of holotype male is 16 mm, that of allotype female is 10 mm.

Male genitalia (Figs 23–26). Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII present. Segment IX with very short dorsum and ventrum in lateral view; anterior margin rounded semicircular with long antecosta; posterior margin fused with gonopods with visible suture. The pouch-like concavity of segment X very short. Cerci elongated spatulate in lateral view. Apical hook of the paraproctal complex slender upward curving; middle connecting section broad, bipartite; basal triangle bipartite, composed of lateral small triangular and mesal narrow sclerites. Gonopods long and low with downward directed apicoventral lobe on the rounded apical margin. Phallic organ composed of short narrowing phallic apodeme, short tube of phallotheca, short endotheca, aedeagus and paramere; aedeagus bifid, its mesal excision narrow, V-shaped; pair of paramere stout upward curving, its tip composed of two equal spines.



Figs 27–29. *Potamophylax hajlos* sp. n. allotype female:
27 = genitalia in left lateral view; 28 = genitalia in dorsal view; 29 = genitalia in ventral view

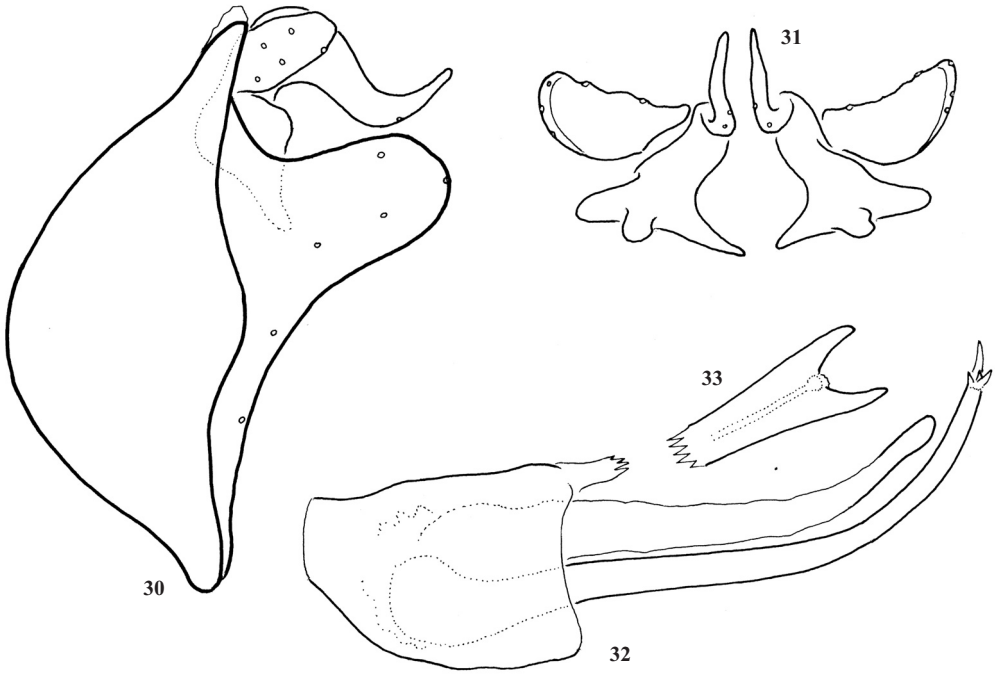
Female genitalia (Figs 27–29). Anal tube formed by the fusion of tergite IX and X is short; setose sternite IX rounded triangular in lateral view. Supragenital plate of segment X narrow in ventral view compressed by the enlarged sternite IX. Vulvar scale (lower vulvar lip) composed of large rounded lateral and small mesal lobe. Vaginal chamber medium sized reaching to the middle of sternite VIII. Vaginal sclerite pattern clearly visible.

Type material – Holotype. Albania: Tiranë district, Gropë Mts, Vakumonë, karst spring and brook along the road to Elbasan, N41°15.109', E20°05.805', 1195 m, 11.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC). Allotype. Same as holotype (1♀, OPC). Paratypes. Same as holotype (1♂, OPC). Bulqizë district, Çermenikë Mts, open brook beneath Mt. Kaptinë, N41°23.212', E20°17.506', 1610 m, 10.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (3♂, OPC; 2♂, MM). Mat district, Gropë Mts, brook along the Klos-Elbasan road, N of Shtyllë Pass, N41°22.455', E20°05.073', 1505 m, 11.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC).

Etymology – hajlos from "hajló, hajlós" bending in Hungarian, refers to the downward directed ventroapical corner of the gonopods.

***Potamophylax kesken* Oláh sp. n.** (Figs 30–33)

Diagnosis – A member of the *Potamophylax winneguthi* new species group and of the *Potamophylax tagas* new species cluster. Most close to *P. hajlos* sp. n. but differs by having



Figs 30–33. *Potamophylax kesken* sp. n. holotype male: 30 = genitalia without phallic organ in left lateral view; 31 = superanal genital complex of cerci and paraproct in caudal view; 32 = phallic organ in lateral view; 33 = tip of phallic organ in ventral view

gonopod apical margin without any downward outgrow and paramere tip with a single spines accompanied with three very short basal spines; apicomesal excision on the aedeagus very wide, U-shaped, not narrow.

Description – Male (in alcohol). Antennae stout. Thoracic and femur sclerites dark brown; forewing with long and strong erect setae, setae on the longitudinal veins are almost as strong as in the *Chaetopterygini* tribe. Forewing length of holotype male is 7 mm.

Male genitalia. Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII present. Segment IX with very short dorsum and ventrum in lateral view; anterior margin rounded semicircular with long antecosta; posterior margin fused with gonopods with visible suture. The pouch-like concavity of segment X very short. Cerci elliptical spatulate. Apical hook of the paraproctal complex slender upward curving; middle connecting section broad, bipartite; basal triangle tripartite, composed of lateral small triangular, middle outgrowth and mesal narrow sclerites. Gonopods long and low with rounded apical margin. Phallic organ composed of short narrowing phallic apodeme, short tube of phallotheca, short endotheca, aedeagus and paramere; aedeagus bifid, its mesal excision wide, U-shaped; pair of paramere stout upward curving, its tip composed of a single large and three small peg-like spines.

Type material – Holotype. Albania: Dibër district, Korab Mts, open stream above Fushë Korabit, N41°49.215', E20°32.738', 1945 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC).

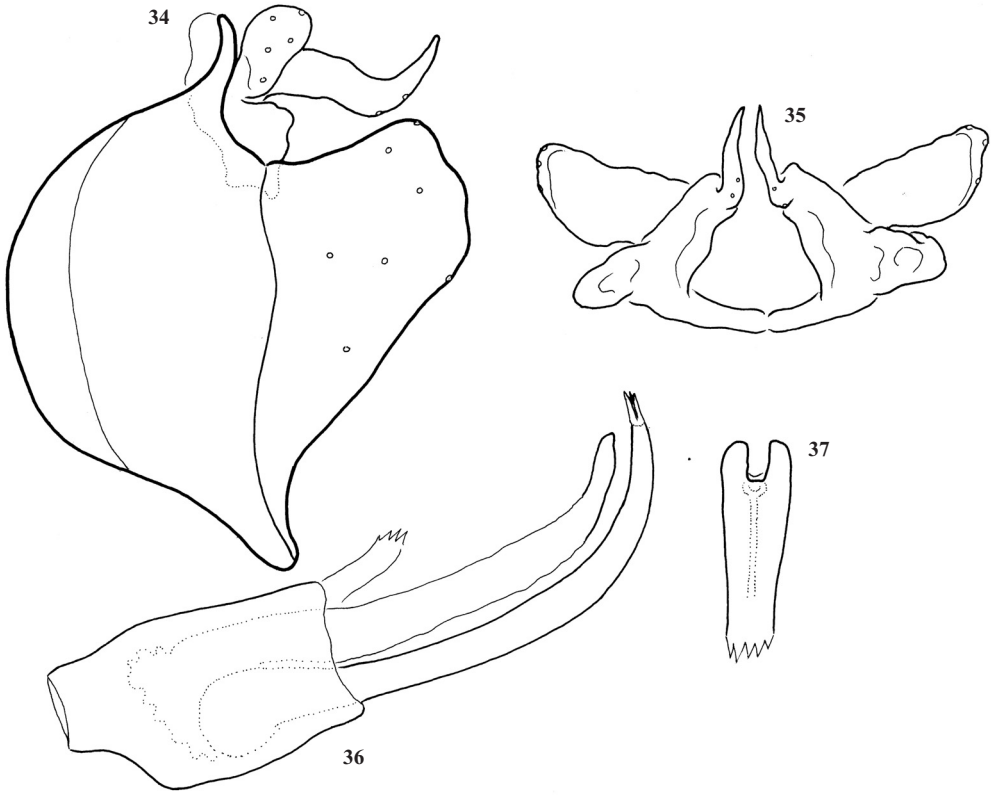
Etymology – kesken from "keskeny" narrow in Hungarian, refers to the narrow gonopods in lateral view compared to the gonopod of *P. tagas*.

***Potamophylax tagas* Oláh et Kovács sp. n.** (Figs 34–37)

Diagnosis – A member of the *Potamophylax winneguthi* new species group. *Potamophylax tagas* sp. n. forms a new species cluster together with *P. hajlos* sp. n. and *P. kesken* sp. n. This cluster is characterized by apical margin of the gonopods without any significant projections; superanal genital complex of cerci and paraproct rather uniform; paramere forms stout, upward arching and slightly narrowing rod. The very tip of the rod armed with a few number of short and stout spines. *P. tagas* sp. n. differs from both by the very long and high gonopods, by the tip of aedeagus and parameres.

Description – Male (in alcohol). Antennae stout. Thoracic and femur sclerites dark brown; forewing with long and strong erect setae, setae on the longitudinal veins are almost as strong as in the *Chaetopterygini* tribe. Forewing length of holotype male is 8 mm.

Male genitalia. Posterodorsal spinate area of vestitural noncellular microtrcihiae on segment VIII present. Segment IX with very short dorsum and ventrum in lateral view; anterior margin rounded semicircular with long antecosta; posterior margin fused with gonopods with visible suture. The pouch-like concavity of segment X very short. Cerci elliptical spatulate. Apical hook of the paraproctal complex slender upward curving; middle connecting section broad, bipartite; basal triangle composed of fused more sclerotized lateral triangular and a mesal transversal sclerites. Gonopods long and high with truncate apical margin. Phallic organ composed of short narrowing phallic apodeme, short tube of phallotheca, short endotheca, aedeagus and paramere; aedeagus bifid, its mesal excision narrow; pair of paramere stout upward curving, its tip composed of adhering three almos equal spines, one spine only little longer and stouter.



Figs 34–37. *Potamophylax tagas* sp. n. holotype male: 34 = genitalia without phallic organ in left lateral view; 35 = superanal genital complex of cerci and paraproct in caudal view; 36 = phallic organ in lateral view; 37 = tip of phallic organ in ventral view

Type material – Holotype. Albania: Dibër district, Korab Mts, spring brooks of the bog beneath Mt. Korab, N41°47.913', E20°33.561', 2165 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC). Paratypes. Same as holotype (2♂, OPC; 1♂, MM).

Etymology – tagas from "tágas" spacious or wide in Hungarian, refers to the enlarged gonopods.

Ecological notes – In the type locality of the new species (Fig. 42) the following species were found: *Annitella triloba* and *Allogamus uncatus*.

Potamophylax winneguthi (Klapálek, 1902) (Figs 38–40)

Material examined – Serbia: Zlatibor Mts, Čigota Mts, spring area of Crni Rzav, N43°37'52.6", E19°46'18.0", 1150 m, 03.11.2011, leg. T. Kovács & G. Magos (2♂, 2♀, OPC) (OLÁH 2011). Zlatibor Mts, Čigota Mts, spring area of Crni Rzav, N43°37'52.6", E19°46'18.0", 1150 m, 20.11.2011, leg. T. Kovács, Cs. Oberczán (15♂, 7♀, OPC) (OLÁH 2011).

Notes – There seems to be no clear feature for separating the females of *P. haidukorum* and *P. winneguthi* wrote Malicky (Kumanski & Malicky 1999). Differences in both the external and internal genital structure have been found and compared. See at *P. haidukorum*.

Fig. 42. Locus typicus of *Potamophylax tagas* sp. n. (photo Dávid Murányi)

Potamophylax pallidus (Klapálek, 1899) – Albania: Skrapar district, Ostrovicë Mts, Backë, Krojmbret Spring and its outlet brook NE of the village, N40°31.753', E20°25.152', 1965 m, 12.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, 1♀, OPC).
Stenophylax zarathustra Malicky, 1982 – Albania: Tiranë district, Gropë Mts, Vakumonë, karst spring and brook along the road to Elbasan, N41°15.109', E20°05.805', 1195 m, 11.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♀, OPC).
Stenophylax nycterobius (McLachlan, 1875) – Albania: Dibër district, Korab Mts, spring and brook at Fushë Korabit, N41°49.251', E20°31.543', 1940 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♀, OPC). Dibër district, Peshkopi, petrol station at the edge of the city, N41°41.467', E20°24.553', 640 m, 08.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♂, OPC). Kolonjë district, Grammos Mts, Radanj, brook, open seeps and Mergimtori Spring at Çezma Has, N40°12.184', E20°38.270', 1085 m, 13.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♂, 1♀, OPC).
Stenophylax permistus McLachlan, 1895 – Albania: Dibër district, Korab Mts, Radomirë, brook E (above) of the village, N41°49.152', E20°30.111', 1495 m, 07.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (1♀, OPC).

Uenoidae Iwata, 1927

Thremma anomalum McLachlan, 1876 – Albania: Tiranë district, Gropë Mts, Shëngjergj, forest seep along the road to Elbasan, E of the village, N41°19.875', E20°08.483', 1355 m, 11.10.2012, leg. P. Juhász, T. Kovács, D. Murányi, G. Puskás (2♂, OPC).

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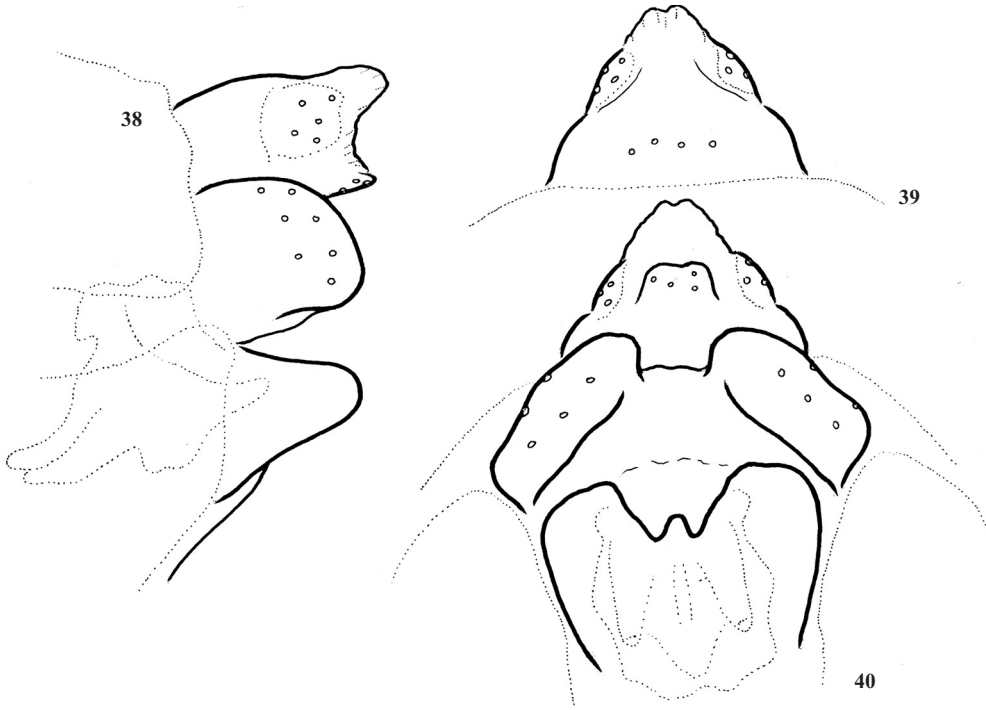

Figs 38–40. *Potamophylax winneguthi* Klapálek, 1902 female:
38 = genitalia in left lateral view; 39 = genitalia in dorsal view; 40 = genitalia in ventral view

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Taxonomic list of Trichoptera described and recorded from New Guinea region

JÁNOS OLÁH

ABSTRACT: Caddisfly species described and recorded from the New Guinea region are surveyed and listed including their locus typicus and their months of collection. Altogether 352 species are listed: 338 are newly described species from the New Guinea region and only 14 species are described from other faunal regions and recorded on the New Guinea region. Based on the genital structure *Cheumatopsyche lelamba* Botosaneanu, 2008 was transferred to *Abacaria lelamba*, as new combination.

Introduction

New Guinea faunal region is one of the last unexplored biodiversity region of the world. During the last few years a growing interest is detectable in the exploration of its biodiversity. Butterflies and beetles are the most favoured groups. Caddisflies (Trichoptera) were and are not in the focus of the biodiversity reasearch. Caddisfly species described and recorded in the New Guinea Region are listed in this synopsis. The surveyed region represents geographically the New Guinea Island with all the surrounding islands, including Archipelagos of Raja Ampat, Bismarck and the Solomon Islands. This survey collected the data of the taxonomic history of listed species together with their locality data, the locus typicus of the holotypes as well as the months of the collecting dates.

Results

PHILOPOTAMIDAE Stephens, 1829

Chimarra aiyura Korboot, 1965 – KORBOOT (1965): 40. *Locus typicus*: New Guinea: Eastern Highlands, Aiyura, 5000 ft, IX.

Chimarra anoaclana (Malicky, 1978) – *Synagapetus anoaclana* MALICKY (1978): 163, transferred by NEBOISS (1986): 216. *Locus typicus*: West Neuguinea, Apalapsili, 900 m, XI.

Chimarra aureofusca Kimmins, 1957 – KIMMINS (1957): 295–296. *Locus typicus*: Guadalcanal Island, Honiara, X.

Chimarra babarensis Johanson & Espeland, 2010 – JOHANSON & ESPELAND (2010): 34–36. *Locus typicus*: Solomon Islands, Western Province, Kolombangara Island, Babare River, 1 km W main road, 7°535.440'S, 157°7.516'E, I.

Chimarra biramosa Kimmins, 1957 – KIMMINS (1957): 292–295. *Locus typicus*: Guadalcanal Island, Tapenanje, XII. *Records*: Papua New Guinea, Bougainville I., Arava, XII (CARTWRIGHT 2001). Solomon Islands, several localities on Kolombangara and Guadalcanal Islands (JOHANSON & ESPELAND 2010).

Chimarra bobita Oláh, 2012 – OLÁH (2012): 39. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, IX, X, XI.

Chimarra cheesmanae Kimmins, 1962 – KIMMINS (1962): 115–116. *Locus typicus*: Dutch New Guinea, Cyclops Mts, Mt Lina, 3500-4000 ft, III.

Chimarra cyclopica Kimmins, 1962 – KIMMINS (1962): 108–110. *Locus typicus*: Dutch New Guinea, Mt Cylops, 3500 ft, III. *Paratype*: Cyclops Mts, Sabron, Camp 2, 2000 ft, VII.

Chimarra falcata Kimmins, 1962 – Kimmins (1962): 117–118. *Locus typicus*: Dutch New Guinea, Mt Cylops, 3500 ft, III. *Records*: New Guinea, Wau, Edie Creek, 2050 m, X (Sykora 1967).

Chimarra fehera Oláh, 2012 – Oláh (2012): 39–40. *Locus typicus*: Indonesia, Papua, Batanta Island, X–XI.

Chimarra felkora Oláh, 2012 – Oláh (2012): 40. *Locus typicus*: Indonesia, Papua, Batanta Island, X–XI.

Chimarra formosa Botosaneanu & de Vos, 2006 – Botosaneanu & de Vos (2006): 135–140. *Locus typicus*: Indonesia, Papua, Kecamatan Abenaho, Pass Valley, 1950 m, II.

Chimarra goroca Sykora, 1967 – Sykora (1967): 589–590. *Locus typicus*: NE New Guinea, Goroka, Omaheka River, 2200 m, IX. *Records*: Papua New Guinea, Morobe Province, Wau, 130 m, XI (Kumanski 1979).

Chimarra gressitti Sykora, 1967 – Sykora (1967): 590–591. *Locus typicus*: NE New Guinea, Wau, Edie Creek, 2050 m, X.

Chimarra guentheri Mey, 2006 – Mey (2006): 261–263. *Locus typicus*: D.N. Guinea T.40/ Lager 7, V.

Chimarra holda Oláh, 2012 – Oláh (2012): 40. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, IX–XI.

Chimarra horgoka Oláh, 2012 – Oláh (2012): 40–41. *Locus typicus*: Indonesia, Papua, Batanta Island, VI.

Chimarra kanala Oláh, 2012 – Oláh (2012): 41. *Locus typicus*: Indonesia, Papua, Batanta Island, V–VI, IX–XI.

Chimarra kokodana Kimmins, 1962 – Kimmins (1962): 119–121. *Locus typicus*: Papua, Kokoda, 1200 ft, VIII.

Chimarra kolombangensis Johanson & Espeland, 2010 – Johanson & Espeland (2010): 33–34. *Locus typicus*: Solomon Islands, Western Province, Kolombangara Island, Poitete River, 200 m WSWW Poitete on road L44, 103 m, 7°535.440'S, 157°7.516'E, I.

Chimarra longpela Cartwright, 2001 – Cartwright (2001): 224. *Locus typicus*: Papua New Guinea, Bougainville I., Panguna, XII.

Chimarra lorengau Malicky, 1994 – Malicky (1994a): 165. *Locus typicus*: Bismarck-Archipel, Manus, Lorengau, VI.

Chimarra loriana Navas, 1933 – Navas (1933b): 40–41. *Locus typicus*: N. Guinea, SE Moroka, 1300 m, VII. *Notes*: Lectotype male was drawn by Neboiss (1986c): 101–102.

Chimarra lud Malicky, 2011 – Malicky (2011): 23, 26. *Locus typicus*: Indonesia, Irian Jaya, Manokwari, Weg nach Mokmer, 800 m, II.

Chimarra maculata Johanson & Espeland, 2010 – Johanson & Espeland (2010): 28. *Locus typicus*: Solomon Islands, Western Province, Kolombangara Island, N slope of Mt Veve, 2.5 km S end of road L57, 723 m, 7°55.494'S, 157°2.986'E, I.

Chimarra mussaua Malicky, 1994 – Malicky (1994a): 165. *Locus typicus*: Bismarck-Archipel, Mussau, Talumalaus, II. *Paratype*: New Britain, Yalom, 1000 m, V.

Chimarra panguna Cartwright, 2001 – Cartwright (2001): 224–225. *Locus typicus*: Papua New Guinea, Bougainville I., Panguna, VIII.

Chimarra papuana Kimmins, 1962 – Kimmins (1962): 110–111. *Locus typicus*: Dutch New Guinea, Mt Cylops, 3500 ft, III.

Chimarra pinga Cartwright, 2001: 225 – Cartwright (2001): 225. *Locus typicus*: Papua New Guinea, Bougainville I., Panguna, XII.

Chimarra rosavensis Johanson & Espeland, 2010 – Johanson & Espeland (2010): 41–42. *Locus typicus*: Solomon Islands, Quadalcanal Province, Weather Coast, Kusumba Region, Talin River, 30 m S junction with Rosava River, 70 m, 9°36.724'S, 159°41.234'E, I.

Chimarra sabrona Kimmins, 1962 – Kimmins (1962): 113–114. *Locus typicus*: Dutch New Guinea, Cyclops Mts, Sabron, Camp 2, 2000 ft, VI.

Chimarra schmidi Kimmins, 1962 – Kimmins (1962): 111–113. *Locus typicus*: Dutch New Guinea, Mt Cylops, 3500 ft, III.

Chimarra sedlaceki Sykora, 1967 – Sykora (1967): 588–589. *Locus typicus*: NE New Guinea, Wau, 1500 m, X.

Chimarra sepho Malicky, 2011 – Malicky (2011): 23. *Locus typicus*: Indonesia, Irian Jaya, Manokwari, Weg nach Mokmer, 800 m, II.

Chimarra sinuosa Kimmins, 1962 – Kimmins (1962): 118–119. *Locus typicus*: Dutch New Guinea, Cyclops Mts, Sabron, Camp 2, 2000 ft, VII.

Chimarra solomonensis Johanson & Espeland, 2010 – Johanson & Espeland (2010): 39–40. *Locus typicus*: Solomon Islands, Western Province, Kolombangara Island, stream parallel to road L8, 4 km NW main road, 269 m, 8°1.233'S, 157°8.090'E, I.

Chimarra talinensis Johanson & Espeland, 2010 – Johanson & Espeland (2010): 30–31. *Locus typicus*: Solomon Islands, Quadalcanal Province, Weather Coast, Kusumba Region, Talin River, 30 m S junction wirth Rosava River, 70 m, 9°36.724'S, 159°41.234'E, I.

Chimarra ujjka Oláh, 2012 – Oláh (2012): 41. *Locus typicus*: Indonesia, Papua, Batanta Island, X–XI.

Chimarra ulmeri Kimmins, 1962 – Kimmins (1962): 114–115. *Locus typicus*: Papua, Kokoda, 1200 ft, VI–VII.

Chimarra ventrospina Johanson & Espeland, 2010 – Johanson & Espeland (2010): 37–39. *Locus typicus*: Solomon Islands, Western Province, Kolombangara Island, stream crossing main road, 200 m N road L2, 158 m, 8°4.520'S, 157°8.845'E, I.

Chimarra veveensis Johanson & Espeland, 2010 – Johanson & Espeland (2010): 32–33. *Locus typicus*: Solomon Islands, Western Province, Kolombangara Island, N slope of Mt Veve, 2.5 km S end of road L57, 723 m, 7°55.494'S, 157°2.986'E, I.

Chimarra vitapinensis Johanson & Espeland, 2010 – Johanson & Espeland (2010): 36–37. *Locus typicus*: Solomon Islands, Quadalcanal Province, Weather Coast, Kusumba Region, small stream 400 m S Vutapinau Village, 70 m, 9°36.713'S, 159°40.598'E, I.

Chimarra xenillion Neboiss, 1986 – Neboiss (1986c): 102–104. *Locus typicus*: N. Guinea, SE Moroka, 1300 m, VII. *Notes*: Misidentified syntype male of *Chimarra loriana* Navas, 1933 was described as a new species by Neboiss (1986c).

Chimarra yaloma Malicky, 1994 – Malicky (1994a): 165–166. *Locus typicus*: Bismarck-Archipel, New Britain, Yalom, 1000 m, V.

Chimarra yuleae Cartwright, 2001 – Cartwright (2001): 224. *Locus typicus*: Papua New Guinea, Bougainville I., Panguna, XII.

Ecnomidae Ulmer, 1903

Ecnomus addi Malicky, 1993 – Malicky (1993): 1120. *Locus typicus*: Bismarck Islands, Noona Dam Expedition, ZMK.

Ecnomus aliceae Cartwright, 1998 – Cartwright (1998): 81. *Locus typicus*: Papua New Guinea, Central Province, Eilogo River, near Sergeri, 9°27'S, 147°27'E, 150 m, II.

Ecnomus bullatus Cartwright, 1998 – Cartwright (1998): 815. *Locus typicus*: Papua New Guinea, Mamai Plantation, E of Port Glasgow, 150 m, II.

Ecnomus bunkos Oláh, 2012 – Oláh (2012): 41–42. *Locus typicus*: Indonesia, Papua, Batanta Island, IX–XI.

Ecnomus cavatus Cartwright, 1998 – Cartwright (1998): 78. *Locus typicus*: Papua New Guinea, Morobe District, Wau, 1050 m, XI.

Ecnomus cyclopicus Kimmins, 1962 – Kimmins (1962): 134. *Locus typicus*: Dutch New Guinea, Mt Cylops, 3500 ft, III. *Records*: Papua New Guinea, Telefomin, West Sepic Province, 1600 m, VII–VIII (Cartwright 1998). Papua New Guinea, Telefomin, West Sepic Province, 1660 m, VIII–IX (Kumanski 1979).

Ecnomus dadi Cartwright, 1998 – Cartwright (1998): 85. *Locus typicus*: Papua New Guinea, Mamai Plantation, E of Glasgow, 150 m, II.

Ecnomus digitulus Cartwright, 1998 – Cartwright (1998): 77. *Locus typicus*: Papua New Guinea, Muller Plaeau (Duna Sands, Atem Karanda), VIII.

Ecnomus illugi Cartwright, 1998 – Cartwright (1998): 78, 80. *Locus typicus*: Papua New Guinea, New Britain, Gazelle Peninsula, UpperWarangoi, Illugi, 220 m, XII.

Ecnomus iomari Cartwright, 1998 – Cartwright (1998): 85. *Locus typicus*: Papua New Guinea, Central Province, Iomari Ck, Bereima-Port Moresby road, V.

Ecnomus laensis Cartwright, 1998 – Cartwright (1998): 83. *Locus typicus*: Papua New Guinea, 14.4 km W Lae, X.

Ecnomus larakia Cartwright, 1990 – Cartwright (1990): 25. *Locus typicus*: Australia, Northern Territory, Howard Spring, IX. *Records*: Papua New Guinea, Morobe Province, Wau Ecology Institute, V (Cartwrigh 1998).

Ecnomus lelog Oláh, 2012 – Oláh (2012): 42. *Locus typicus*: Indonesia, Papua, Batanta Island, XI.

Ecnomus masalai Cartwright, 1998 – Cartwright (1998): 754. *Locus typicus*: Papua New Guinea, Wau, 1150–1300 m, XII.

Ecnomus masong Cartwright, 1998 – Cartwright (1998): 80. *Locus typicus*: Papua New Guinea, Umboi Island, about 8 km WNW Lab Lab, 300 m, II.

Ecnomus milnensis Cartwright, 1998 – Cartwright (1998): 85. *Locus typicus*: Papua New Guinea, Milne Bay, 10 m, 10°18'S, 150°20'E, III.

Ecnomus obtusus Ulmer, 1910 – Ulmer (1910): 50–51. *Locus typicus*: Java, Semarang, VII. *Records*: Deutsch-Neu-Guinea, Hauptlager bei Malu, VII (Ulmer 1915).

Ecnomus oriomo Cartwright, 1998 – Cartwright (1998): 78. *Locus typicus*: Papua New Guinea, Western District, Oriomo River, 3 m, 8°50'S, 143°11'E VIII.

Ecnomus papuanus Ulmer, 1938 – Ulmer (1938): 400–402. *Locus typicus*: D. N.-Guinea, Kaiserin Augustafluss-Exped., Hauptlager bei Malu, VII.
Ecnomus skruim Cartwright, 1998 – Cartwright (1998): 80. *Locus typicus*: Papua New Guinea, Mamai Plantation, E of Glasgow, 150 m, II.
Ecnomus spia Cartwright, 1998 – Cartwright (1998): 75. *Locus typicus*: Papua New Guinea, Mamai Plantation, E of Port Glasgow, 150 m, II.
Ecnomus tamiok Cartwright, 1998 – Cartwright (1998): 81. *Locus typicus*: Papua New Guinea, Morobe District, Ulap, 800-1100 m, IX.
Ecnomus ulap Cartwright, 1998 – Cartwright (1998): 83. *Locus typicus*: Papua New Guinea, Morobe District, Ulap, 800-1100 m, IX.
Ecnomus vekon Oláh, 2012 – Oláh (2012): 42. *Locus typicus*: Indonesia, Papua, Batanta Island, X–XI.
Ecnomus wamena Cartwright, 1998 – Cartwright (1998): 83. *Locus typicus*: Indonesia, Irian Jaya, Baheim Valley, Wamena, 1500 m, X. *Paratype*: Papua New Guinea, Central Province, Eilogo River, near Sergeri, 9°27'S, 147°27'E 150 m, II.

Dipseudopsidae Ulmer, 1904

Pseudoneureclipsis jaret Malicky, 1993 – Malicky (1993): 1108. *Locus typicus*: Bismark Islands, Noona Dan Expedition.

Psychomyiidae Walker, 1852

Tinodes anoana Malicky, 1994 – Malicky (1994a): 167–168. *Locus typicus*: Bismarck-Archipel, no more data.
Tinodes aberrans Kimmins, 1962 – Kimmins (1962): 132. *Locus typicus*: Papua, Kokoda, 1200 ft, VI–IX.
Tinodes gomboc Oláh, 2012 – Oláh (2012): 42–43. *Locus typicus*: Indonesia, Papua, Batanta Island, X.
Tinodes lomholdti Malicky, 1994 – Malicky (1994a): 167. *Locus typicus*: Bismarck-Archipel, New Britain, Yalom, 1000 m, V.
Tinodes martoni Oláh, 2012 – Oláh (2012): 43. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, IX, XI.
Tinodes rekae Oláh, 2012 – Oláh (2012): 43. *Locus typicus*: Indonesia, Papua, Batanta Island, IX–X.

Polycentropodidae Ulmer, 1903

Nyctiophylax Brauer, 1865 – Neboiss (1993) re-defined the genera *Nyctiophylax* Brauer, 1865 and *Paramyctiophylax* Tsuda, 1942 and transferred all *Nyctiophylax* species with looped anal veins in the forewings to the genus *Paranyctiophylax*. *Paranyctiophylax* was lowered to subgeneric status by Malicky (1994).

Nyctiophylax anoana Malicky, 1994 – Malicky (1994a): 167–168. *Locus typicus*: Bismarck-Archipel, no more data.
Nyctiophylax batant Oláh, 2012 – Oláh (2012): 43–44. *Locus typicus*: Indonesia, Papua, Batanta Island, XI.
Nyctiophylax bunk Oláh, 2012 – Oláh (2012): 44. *Locus typicus*: Indonesia, Papua, Batanta Island, X.
Nyctiophylax esli Malicky, 1993. – Malicky (1993): 1111. *Locus typicus*: West-Neuguinea, Apalapsili 900 m, XI.
Nyctiophylax flavus Ulmer, 1915 – Ulmer (1915): 45–46. *Locus typicus*: Deutsch-Neu-Guinea, Hauptlager bei Malu, VII.
Nyctiophylax gyratus (Neboiss, 1994) – *Paranyctiophylax gyratus* Neboiss (1994): 196, 198. *Locus typicus*: Papua New Guinea, Mamai Plantation, 10°16'S, 149°30'E 150 m, II.
Nyctiophylax ketes Oláh, 2012 – Oláh (2012): 44. *Locus typicus*: Indonesia, Papua, Batanta Island, X.
Nyctiophylax kevert Oláh, 2012 – Oláh (2012): 44–45. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, X.
Nyctiphylax synorius Neboiss, 1994 – Neboiss (1994): 203, 205. *Locus typicus*: Papua New Guinea, Bougainville I., Panguna, 6°10'S, 155°30'E, XII.
Nyctiphylax traunensis Neboiss, 1994 – Neboiss (1994): 203. *Locus typicus*: Papua New Guinea, Baiyer River Sanctuary, Trauna River, 5°35'S, 144°10'E.
Polycentropus auricollis Kimmins, 1962 – Kimmins (1962): 127–128. *Locus typicus*: Papua, Kokoda, 1200 ft, VII.
Polycentropus australis Ulmer, 1915 – Ulmer (1915): 44–45. *Locus typicus*: Deutsch-Neu-Guinea, Regenberg, 550 m, V. *Paratypes*: Etapenberg, X; Maanderberg, VIII.

Polycentropus drummondi Illies, 1969 – Illies (1969): 487–489. *Locus typicus*: Eastern Highlands of New Guinea, Mt Wilhelm, Lake Aunde, 3600–3680 m, X. *Records*: Papua New Guinea, Mt Wilhelm, at Lake Pinde, 3480 m, X (Kumanski 1979).

Polycentropus elegans Kumanski, 1979 – Kumanski (1979): 208–209. *Locus typicus*: Papua New Guinea, Finim tel, Western Province, 2260 m, IX.

Polycentropus grandis Kimmins, 1962 – Kimmins (1962): 121–124. *Locus typicus*: Papua, Mondo, 5000 ft, I–II. *Records*: Papua New Guinea, Cave Yaromdeng tem, near Finim tel, Western Province, XI (Kumanski 1979).

Polycentropus kenampi (Korboot, 1964) – *Austrecnomina* (gen. n.) *kenampi* Korboot (1964): 47–48. *Austrecnomina* synonymized by Neboiss (1987): 136–138. *Synonym*: *Polycentropus drummondi* Illies, 1969 (Illies 1969: 487–489), synonymized by Neboiss (1987): 136–138. *Locus typicus*: New Guinea, Mt Wilhelm, E. H., 11300 ft, IX. *Records*: Papua New Guinea, shore of Lake Aunde, X (Illies 1969).

Polycentropus moselyi Kimmins, 1962 – Kimmins (1962): 125. *Locus typicus*: Papua, Mt Tafa, 8500 ft, III. *Paratype*: Mondo, 5000 ft, I–II.

Polycentropus mounthageni Kumanski, 1979 – Kumanski (1979): 208–209. *Locus typicus*: Papua New Guinea, Mount Hagen, X. *Records*: Indonesia, Papua, Lelambo, X (Botosaneanu 2008).

Polycentropus piceus Kimmins, 1962 – Kimmins (1962): 128–129. – *Locus typicus*: Papua, Kokoda, 1200 ft, VIII–IX.

Polycentropus rosselinus Navas, 1924 – Navas (1924): 204–205. *Locus typicus*: Rossel Isl., Mt Rossel, 2000–2100 ft, XI–XII. *Notes*: Kimmins (1962) has figured the male genitalia of paratype.

Polycentropus similis Kimmins, 1962 – Kimmins (1962): 130–132. *Synonym*: *Polycentropus niger* Korboot, 1964 (Korboot 1964: 49), synonymized by Neboiss (1987): 138. *Locus typicus*: Papua, Kokoda, 1200 ft, VI. *Records*: New Guinea, Umbra, Mt Hagen, III (Korboot 1964). Papua New Guinea, Moroba Province, Wau, 1300 m, XI; Telefomin, West Sepic Province, 1660 m, VII–IX (Kumanski 1979).

Polycentropus sinuosus Kimmins, 1962 – Kimmins (1962): 124–125. *Locus typicus*: Papua, Kokoda, 1200 ft, VI. *Paratype*: Matsika, 3000 ft, XII. *Rrecords*: Papua New Guinea, Telefomin, West Sepic Province, 1660 m, VII–IX (Kumanski 1979).

Polyplectropus bradleyi Kimmins, 1957 – Kimmins (1957): 296–298. *Locus typicus*: Guadalcanal Island, Honiara, Tapenanje, X, XII.

Polyplectropus chapmani Kumanski, 1979 – Kumanski (1979): 211–213. *Locus typicus*: Papua New Guinea, Mt Wilhelm, Lake Pinde, 3480 m, X.

Polyplectropus kedal Malicky & Mey, 2011 – Malicky (2011): 29. *Locus typicus*: Indonesia, Irian Jaya, Manokwari, 800 m, II.

Polyplectropus tagas Oláh, 2012 – Oláh (2012): 45. *Locus typicus*: Indonesia, Papua, Batanta Island, X.

Hydropsychidae Curtis, 1835

Diplectroninae Ulmer, 1951

Diplectrona mafulua Kimmins, 1962 – Kimmins (1962): 143–145. *Locus typicus*: Papua, Mafulu, 4000 ft, I.

Diplectrona subtriangulata Kumanski, 1979 – Kumanski (1979): 197–198. *Locus typicus*: Papua New Guinea, Mt Wilhelm, Lake Pinde, 3480 m, X.

Diplectrona triangulata Sykora, 1967 – Sykora (1967): 593–594. *Locus typicus*: NE New Guinea, Wau, 1500 m, X. *Records*: Papua New Guinea, Telefomin, West Sepic Province, VII (Kumanski 1979).

Hydropsychinae Curtis, 1835

Abacaria baretti Korboot, 1964 – Korboot (1964): 52. *Locus typicus*: New Guinea, Kundiawa, E. H., 5200 m, IX.

Abacaria beroni (Kumanski, 1979) – *Cheumatopsyche beroni* Kumanski (1979): 203–205, transferred to *Abacaria* by Oláh et al. (2006). *Locus typicus*: Papua New Guinea, Telefomin, West Sepic Province, 1600 m, VIII. *Records*: Indonesia, Papua, Walmak, X, as *Cheumatopsyche beroni* (Botosaneanu 2008).

Abacaria cristova Oláh & Barnard, 2006 – Oláh et al. (2006): 51–52. *Locus typicus*: Solomon Islands, San Cristoval camp 2, VII.

Abacaria lelamba (Botosaneanu, 2008) – **New combination**. *Cheumatopsyche lelamba* Botosaneanu (2008): 81–83. *Locus typicus*: Indonesia, Papua, Lelambo, X. *Notes*: *Cheumatopsyche* never has belly form of phallic organ in lateral view and the characteristic medial setaless tongue on the segment X is absent. These genital characters correspond with the genus *Abacaria*.

Abacaria cristova Oláh & Barnard, 2006 – Oláh et al. (2006): 56–57. *Locus typicus*: Solomon Islands, San Cristoval camp 2, VII.

Abacaria nuhu Oláh & Barnard, 2006 – Oláh et al. (2006): 50–51. *Locus typicus*: Solomon Islands, Guadalcanal, Nuhu, X.

Abacaria orkeni Illies, 1969 – Illies (1969): 489–490. *Locus typicus*: Eastern Highlands of New Guinea, Mt Wilhelm, Lake Aunde, 3600–3680 m, X.

Abacaria subfusca Kimmins, 1962 – Kimmins (1962): 143–145. *Locus typicus*: Papua, Kokoda, 1200 ft, VI.

Cheumatopsyche batanta Oláh, 2012 – Oláh (2012): 45. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, X.

Cheumatopsyche cheesmanae (Kimmins, 1962) – *Hydropsychodes cheesmanae* Kimmins (1962): 142–143, synonymized *Hydropsychodes* with *Cheumatopsyche* by Kimmins (1963): 130–131. *Locus typicus*: Papua, Kokoda, 1200 ft, VII–IX.

Cheumatopsyche ebal Malicky, 2009 – Malicky (2009): 15. *Locus typicus*: Bismarck-Archipel, Yalom, V, VI, X.

Cheumatopsyche expeditionis Ulmer, 1938 – *Hydropsychodes expeditionis* Ulmer (1938): 402–403, synonymized *Hydropsychodes* with *Cheumatopsyche* by Kimmins (1963): 130–131. *Locus typicus*: D. N.-Guinea, Kaiserin Augustafluss-Exped., Pionierlager, V. *Records*: Papua, Kokoda, 1200 ft, V–X (Kimmins 1962). Papua New Guinea, Moroba Province, Wau, 1300 m, XI, Mount Hagen, X (Kumanski 1979).

Cheumatopsyche oktedit Oláh & Johanson, 2008 – Oláh & Johanson (2008a): 46. *Locus typicus*: Papua New Guinea, Oktedi, Tabulil, VI.

Cheumatopsyche ronbata Oláh, 2012 – Oláh (2012): 45–46. *Locus typicus*: Indonesia, Papua, Batanta Island, X–XI.

Cheumatopsyche ronujra Oláh, 2012 – Oláh (2012): 46. *Locus typicus*: Indonesia, Papua, Batanta Island, XI.

Cheumatopsyche tarka Oláh, 2012 – Oláh (2012): 46. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, XI.

Hydropsyche burgersi Ulmer, 1915 – Ulmer (1915): 48–50. *Locus typicus*: Deutsch-Neu-Guinea.

Hydropsyche carolae Oláh & Johanson, 2008 – Oláh & Johanson (2008b): 157–158. *Locus typicus*: Papua New Guinea, Madang, Beahman Mission 200 m, X.

Hydropsyche excavata (Kimmins, 1962) – *Herbertorossia excavata* Kimmins (1962): 137, synonymized *Herbertorossia* with *Hydropsyche* by Oláh & Johanson (2008b): 58. *Locus typicus*: Papua, Kokoda, 1200 ft, IV–IX. *Records*: Papua New Guinea, Moroba Province, Wau, 1300 m, XI (Kumanski 1979).

Hydropsyche flintorum Oláh & Johanson, 2008 – Oláh & Johanson (2008b): 86–87. *Locus typicus*: Papua New Guinea, Morobe Province, Wau, Wau Ecological Institute, 1200 m, VII.

Hydropsyche flynni Korboot, 1964 – Korboot (1964): 51. *Locus typicus*: New Guinea, Liagam, W. H., 5700 m, III. *Synonym*: *Hydropsyche papuana* Kumanski,1979 (Kumanski 1979: 202), synonymized by Neboiss (1987): 134–136. *Records*: New Guinea, Telefomin, VIII (Kumanski 1979). Indonesia, Papua, Walmak, X (Botosaneanu 2008).

Hydropsyche kimminsi (Kumanski, 1979) – *Herbertorossia kimminsi* Kumanski (1979): 198–200, synonymized *Herbertorossia* with *Hydropsyche* by Oláh & Johanson (2008b): 58. *Locus typicus*: Papua New Guinea, Telefomin, West Sepic Province, 1600 m, VII.

Hydropsyche neboissi Botosaneanu, 2008 – Botosaneanu (2008): 83, 85–86. *Locus typicus*: Indonesia, Papua, Lelambo, X.

Hydropsyche noonadanae (Malicky, 2009) – *Herbertorossia noonadanae* Malicky (2009): 41, synonymized *Herbertorossia* with *Hydropsyche* by Oláh & Johanson (2008b): 58. *Locus typicus*: New Britain, Yalom, 35 km SE Cape Lambert, 1000 m, V.

Hydropsyche orakaivai (Kimmins, 1962) – *Herbertorossia orakaivai* Kimmins (1962): 141–142, synonymized *Herbertorossia* with *Hydropsyche* by Oláh & Johanson (2008b): 58. *Synonym*: *Herbertorossia rapsoni* Korboot, 1964, synonymized by Neboiss (1987): 136. *Locus typicus*: Papua, Kokoda, 1200 ft, V, VII, IX–X. *Records*: New Guinea, Minj, W.H., 5200 ft, V (Korboot 1964). Papua New Guinea, Telefomin, West Sepic Province, 1600 m, XI (Kumanski 1979).

Hydropsyche papuana (Kumanski, 1979) – *Diplectrona papuana* Kumanski (1979): 195–196, synonymized by Malicky (2002): 1215. *Locus typicus*: Papua New Guinea, Telefomin, West Sepic Province, VII.

Hydropsyche sabronensis (Kimmins, 1962) – *Herbertorossia sabronensis* Kimmins (1962): 137–139, synonymized *Herbertorossia* with *Hydropsyche* by Oláh & Johanson (2008b): 58. *Locus typicus*: Dutch New Guinea, Cyclops Mts, Sabron, 930 ft., IV–VI. *Records*: Papua New Guinea, Telefomin, West Sepic Province, 1600 m, XI (Kumanski 1979).

Hydropsyche striata (Kimmins, 1962) – *Herbertorossia striata* Kimmins (1962): 139–141, synonymized *Herbertorossia* with *Hydropsyche* by Oláh & Johanson (2008b): 58. *Locus typicus*: Papua, Kokoda, 1200 ft, V. *Records*: New Guinea, Wau, 1500 m, X (Sykora 1967).

Hydropsyche tapena Kimmins, 1957 – Kimmins (1957): 299–300. *Locus typicus*: Guadalcanal Island, Tapenanje, XII.

Hydropsyche testacea (Navas, 1933) – *Anisocentropus testaceus* Navas (1933a): 104, transferred by Neboiss (1986): 218. *Locus typicus*: N. Guinea, Moroko, 1300 m, VII–IX.

Hydropsyche trirostrata Botosaneanu, 2008 – Botosaneanu (2008): 86. *Locus typicus*: Indonesia, Papua, Supiori Island, Nansfori, X.

Hydropsyche ungulata (Ulmer, 1906) – *Hydromanicus ungulatus* Ulmer (1906): 82–83, transferred by Ulmer (1915): 47. *Locus typicus*: Deutsch-Neu-Guinea. *Records*: Deutsch-Neu-Guinea, Standlager bei Malu, IV; Regenberg, 550 m, V; Maanderberg, VIII (Ulmer 1915).

Hydropsyche walmaka Botosaneanu, 2008 – Botosaneanu (2008): 83. *Locus typicus*: Indonesia, Papua, Walmak, X.

Macronematinae Ulmer, 1905

Baliomorpha barna Oláh, 2012 – Oláh (2012): 47. *Locus typicus*: Indonesia, Papua, Batanta Island, IX–XI.

Baliopmorpha caudicea Neboiss, 1984 – Neboiss (1984): 134. *Locus typicus*: Papua New Guinea, S Garaina, 900–1800 m, I.

Baliopmorpha chiloma Neboiss, 1984 – Neboiss (1984): 136–137. *Locus typicus*: New Guinea, Irian Jaya, Bokondini, 40 km N of Baliem Val, 1300 m, XI.

Baliopmorpha echinata Neboiss, 1984 – Neboiss (1984): 134. *Locus typicus*: Papua New Guinea, Finchhafen, IV.

Baliomorpha loriai (Navas, 1933) – *Macronema loriai* Navas (1933b): 42–43, *Baliomorpha* gen n. erected and transferred by Neboiss (1984): 134. *Locus typicus*: N. Guinea Mer.

Baliomorpha mariannae Oláh, 2012: 47. – Oláh (2012): 47. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, IX–X.

Baliomorpha pezidion Neboiss, 1984 – Neboiss (1984): 134. *Locus typicus*: Papua New Guinea, Wau, 1260 m, V.

Leptopsyche gracilis McLachlan, 1866 – McLachlan (1866): 266–267. *Locus typicus*: Insula Dorey (Wallace) (Indonesia, Papua).

Macrostemum auriferum Neboiss, 1984 – Neboiss (1984): 138. *Locus typicus*: New Guinea (Irian Jaya), Bodem, 11 km SE of Oerberfaren, 100 m, VII. *Records*: New Guinea (Irian Jaya), Nabire, 5–50 m, VIII–IX (Neboiss 1984).

Macrostemum croceum (Navas, 1924) – *Macronema croceum* Navas (1924): 207, division of *Macronema* by resurrection of *Macrostemum* by Flint & Bueno-Soria (1982): 369. *Locus typicus*: St Aignan, A. S.-Meek,-Mt Riu, 2000 ft, Sudest Isl., V (Louisiade Archipelago). *Notes*: Described from a single female, without any drawings.

Macrostemum dulce (McLachlan, 1866) – *Macronema saundersi* McLachlan (1866): 262–263, division of *Macronema* by resurrection of *Macrostemum* by Flint & Bueno-Soria (1982): 369. *Locus typicus*: Nova Guinea (Wallace). *Notes*: Described from a single female without any drawing, type lost (Neboiss 1986b).

Macrostemum loriai (Navas, 1930) – *Macronema loriai* Navas (1930): 22–23 (not Navas 1933b), division of *Macronema* by resurrection of *Macrostemum* by Flint & Bueno-Soria (1982): 369. *Locus typicus*: New Guinea (Papua New Guinea), Astrolabe Mts, Haveri, 600 m, VII–XI. *Records*: Papua, Kokoda, 1200 ft, V–VIII; Dutch New Guinea, Lake Sentani, Ifar, VIII (Kimmins 1962). Papua New Guinea, Lae, Singuawa River, IV; NE Papua, Mt Lamington, 1300–1500 ft; Wareo, Finchhafen New Ginea Res. (Neboiss 1984).

Macrostemum saundersi (McLachlan, 1866) – *Macronema saundersi* McLachlan (1866): 261–262, division of *Macronema* by resurrection of *Macrostemum* by Flint & Bueno-Soria (1982): 369. *Locus typicus*: Insula Mysol (Wallace). *Records*: Papua, Kokoda, 1200 ft, VII (Kimmins 1962). New Guinea, Morobe district, Wau, 1200 m, X (Neboiss 1984). *Notes*: Distributed in New Guinea and N Australia.

Macrostemum wallacei (McLachlan, 1866) – *Macronema saundersi* McLachlan (1866): 262, division of *Macronema* by resurrection of *Macrostemum* by Flint & Bueno-Soria (1982): 369. *Locus typicus*: Nova Guinea (Wallace). *Notes*: Described from a single female with a small habitus drawing, type lost (Neboiss 1986b).

Oestropsyche vitrina (Hagen, 1859) – *Macronema vitrinum* Hagen (1859): 209, synonymized *Oestropsyche palingenia* Brauer, 1868 (Brauer 1868: 266), the type species of the monotypic genus *Oestropsyche* with *Macronema vitrinum* and transferred *Macronema vitrinum* to *Oestropsyche* by Ulmer (1907b): 29–30. *Locus typicus*: Rambodde (Sri Lanka). *Records*: Papua, Kokoda, 1200 ft, V, VII–IX (Kimmins 1962).

Apsilochorema agassizi Mey, 1999 – MEY (1999): 178–179. *Locus typicus*: Papua, New Guinea, Southern Highlands, Mendi, 5000 ft, XI.

Apsilochorema burgersi Ulmer, 1938 – ULMER (1938): 398–400. *Locus typicus*: D. N.-Guinea, Kaiserin Augustafluss-Exped., Hunsteinspitze, Abhang, III.

Apsilochorema clavator Schmid, 1989 – SCHMID (1989): 138. *Locus typicus*: Papua New Guinea, Kotuni, south slopes, Mt Otto, 2200 m, VIII.

Apsilochorema clavigerum Schmid, 1989 – SCHMID (1989): 138. *Locus typicus*: Papua New Guinea, Pengagl Camp, Mt Wilhelm, 2770 m, VII.

Apsilochorema extensum Schmid, 1989 – SCHMID (1989): 138–139. *Locus typicus*: West New Guinea, Star Mts, Sibil Va., 1245 m, X–XI.

Apsilochorema falculiferum Schmid, 1989 – SCHMID (1989): 139. *Locus typicus*: Papua New Guinea, Purosa Camp, Okapa area, 1950 m, IX.

Apsilochorema monicae Schmid, 1989 – SCHMID (1989): 139–140. *Locus typicus*: SE New Guinea, Koroba, 40 km W of Tari, 1650 m, IX.

Apsilochorema oxypages Neboiss, 1984 – NEBOISS (1984): 178. *Locus typicus*: New Guinea, Papua New Guinea, Western Highlands, Mt Hagen range, Murmur Pass, 8700 ft, X–XII.

Apsilochorema rossi Kimmins, 1957 – KIMMINS (1957): 291. *Locus typicus*: Guadalcanal, Tapenanje, XII.

Apsilochorema unciferum Schmid, 1989 – SCHMID (1989): 140. *Locus typicus*: Papua New Guinea, No 9, Kimi Cr. Camp, NE Slopes Mt Michael, 1980 m, VIII.

Tanorus bibax Schmid, 1989 – SCHMID (1989): 134–135. *Locus typicus*: Papua New Guinea, Pengagl Camp, Mt Wilhelm, 2770 m, VII.

Tanorus densus (Korboot, 1964) – *Ornatus* (gen. n.) *densus* KORBOOT (1964): 47–48, preoccupied by LAUBENFELS (1955) in Porifer, and replaced by a new name *Tanorus* NEBOISS (1984): 180. *Locus typicus*: New Guinea, Mendi, S. H., 5500 ft, X.

Tanorus desidiosus Schmid, 1989 – SCHMID (1989): 135. *Locus typicus*: New Guinea (NE) Edie Creek, Wau, 200 m, X.

Tanorus empheres Neboiss, 1984 – NEBOISS (1984): 181. *Locus typicus*: Papua New Guinea, Malgi, Mt Giluwe, 2500 m, V.

Tanorus fallax Schmid, 1989 – SCHMID (1989): 135. *Locus typicus*: New Guinea (NE) Morobe District, Mt Missim, 2350 m, V.

Tanorus furax Schmid, 1989 – SCHMID (1989): 135–136. *Locus typicus*: New Guinea (NE), Mt Ialibu, 2650 m, V.

Tanorus giluweana Neboiss, 1984 – NEBOISS (1984): 181. *Locus typicus*: New Guinea, Papua New Guinea, NE, Mt Wilhelme, 3750 m, VIII.

Tanorus mendax Schmid, 1989 – SCHMID (1989): 136. *Locus typicus*: New Guinea (NE) Morobe District, Wau, 1200 m, VII.

Tanorus otiosus Schmid, 1989 – SCHMID (1989): 136. *Locus typicus*: Papua New Guinea, Pengagl Camp, Mt Wilhelm, 2770 m, VII.

Tanorus papuanus (Kimmins, 1962) – *Percivalia papuana* KIMMINS (1962): 100–102, preoccupied by PRESTON (1914) in Mollusca, and replaced by *Edpercivalia* MCFARLANE (1964) from New Zealand, however none of the structures of *Edpercivalia* are present therefore placed into *Tanorus* by NEBOISS (1984): 180. *Locus typicus*: Papua, Mt Tafa, 8500 ft, III.

Tanorus proditor Schmid, 1989 – SCHMID (1989): 136–137. *Locus typicus*: Papua New Guinea, Pengagl Camp, Mt Wilhelm, 2770 m, VII.

Tanorus veterator Schmid, 1989 – SCHMID (1989): 137. *Locus typicus*: New Guinea (NE) Morobe District, Mt Missim, 2350 m, V.

GLOSSOSOMATIDAE Wallengren, 1891

Agapetus apalapsili (Malicky, 1978) – *Synagapetus apalapsili* MALICKY (1978): 163, transferred to *Agapetus* by NEBOISS (1986): 216. *Locus typicus*: West Neuguinea, Apalapsili, 900 m, XI.

Agapetus inflatigonus Botosaneanu, 2008 – BOTOSANEANU (2008): 80. *Locus typicus*: Indonesia, Papua, Walmak, I–II.

Agapetus jafiwi Ross, 1951 – Ross (1951): 354. *Locus typicus*: Hollandia, New Guinea, near Jafiwi, III. *Records*: Dutch New Guinea, Cyclops Mts, Sabron, Canp 2, 2000 ft, VII; Mt Cyclops, 3500 ft, III (Kimmins 1962).

Agapetus kivagot Oláh, 2012 – Oláh (2012): 47–48. *Locus typicus*: Indonesia, Papua, Batanta Island, X.

Agapetus latosus Ross, 1951 – Ross (1951): 354. *Locus typicus*: Netherlands New Guinea, II.

Agapetus productus (Kimmins, 1962) – *Synagapetus productus* Kimmins (1962): 102–103, transferred to *Agapetus* by Neboiss (1986): 216. *Locus typicus*: Papua, Kokoda, 1200 ft, IX. *Records*: Papua New Guinea, Mount Hagen, 1630 m,VII (Kumanski 1979). Papua New Guinea, Mt Lamington, 500 m, VI (Neboiss 1986).

Agapetus salomonis (Kimmins, 1957). – *Synagapetus salomonis* Kimmins (1957): 291–292, transferred to *Agapetus* by Neboiss (1986): 216. *Locus typicus*: Guadalcanal, Tapenanje, XII.

Agapetus ulmeri Ross, 1951 – Ross (1951): 353–354. *Locus typicus*: Hollandia, New Guinea, rain forest, III. *Records*: Papua, Kokoda, 1200 ft, VII–IX (Kimmins 1962). Indonesia, Papua, Walmak, II, X (Botosaneanu 2008).

Hydroptilidae Stephens, 1836

Hydroptilinae Stephens, 1836

Hellyethira eskensis (Mosely, 1934) – *Xuthotrichia eskensis* Mosely (1934): 141, transferred to *Hellyethira* by Wells (1979): 321. *Locus typicus*: Queensland, Esk, VII. *Records*: Papua New Guinea, West Highlands Province, Baiyer River Sanctuary, Trauna River, 1160 m, VI (Wells 1991).

Hellyethira haitimlain Wells, 1991 – Wells (1991): 497. *Locus typicus*: Papua New Guinea, Central Province, Laloki River, at Rouna Falls, VI.

Hellyethira kukensis Wells, 1991 – Wells (1991): 495. *Locus typicus*: Papua New Guinea, East Highlands Province, Ukarumpa, Ba'i River, VI. *Paratypes*: Morobe Province, Bulolo, Taun Creek, VI; Central Province, Laloki River, at Rouna Falls, V.

Hellyethira maai Wells, 1991 – Wells (1991): 498. *Locus typicus*: Irian Jaya (West New Guinea), Waris, VIII.

Hellyethira narakain Wells, 1991 – Wells (1991): 497–498. *Locus typicus*: Papua New Guinea, Central Province, Iomari Creek on Bereina-Port Morseby road, V. *Paratypes*: Kokoda, 400 m, XI; Morobe Province, Bulolo, Taun Creek, VI; West Highlands Province, Baiyer River Sanctuary, Trauna River, 1160 m, VI.

Hellyethira sarina Oláh, 2012 – Oláh (2012): 48. *Locus typicus*: Indonesia, Papua, Batanta Island, X.

Hydroptila bispina Kimmins, 1962 – Kimmins (1962): 106–107. *Locus typicus*: Papua, Kokoda, 1200 ft, IX. *Records*: New Guinea, Bulolo River, 950 m, X (Wells 1984). Papua New Guinea, Morobe Province, Bulolo, Watut River nr mission, VI (Wells 1991).

Hydroptila bozontos Oláh, 2012 – Oláh (2012): 48. *Locus typicus*: Indonesia, Papua, Batanta Island, X.

Hydroptila bugata Wells, 1984 – Wells (1984): 267–268. *Locus typicus*: New Guinea, NE, Bugu River, E of Lae, 100 m, IX. *Paratype*: Irian Jaya, Nabire S, Geelwink Bay, IX.

Hydroptila caperata Wells, 1984 – Wells (1984): 264. *Locus typicus*: New Guinea, SE, Kokoda, 400 m, XI.

Hydroptila furcula Wells, 1984 – Wells (1984): 269. *Locus typicus*: New Guinea, SE, Kokoda, 400 m, XI. *Records*: Papua New Guinea, Morobe Province, Bulolo, Taun Creek, VI (Wells 1991).

Hydroptila incertula Mosely, 1934 – Mosely (1934): 145–147. *Locus typicus*: Australia, Brisbane. *Records*: New Guinea, SE, Manai Plantation, E of Port Glasgow, 150 m, II (Wells 1984). Papua New Guinea, Central Province, Iomari Creek on Bereina-Port Moresby road, V; East Highlands Province, Ukarumpa, Ba'i River, Ram Creek, VI (Wells 1991).

Hydroptila koropa Wells, 1984 – Wells (1984): 266–267. *Locus typicus*: New Guinea, NE, Korop, Upper Jimmi Valley, 1300 m, VII. *Records*: Papua New Guinea, West Highlands Province, Baiyer River Sanctuary, Trauna River, 1160 m, VI; East Highlands Province, Ukarumpa, Ba'i River, Ram Creek, VI (Wells 1991).

Hydroptila laloka Wells, 1991 – Wells (1991): 503–504. *Locus typicus*: Papua New Guinea, Central Province, Laloki River at Rouna Falls, VI.

Hydroptila nemtompa Oláh, 2012 – Oláh (2012): 48. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, XI.

Hydroptila obscura Wells, 1978 – Wells (1978): 758–759. *Synonym*: *Hydroptila explicata* Wells, 1984 (Wells 1984: 264), synonymized by Weels (1990a): 382. *Locus typicus*: Australia, Queensland, Palmer River, V–VI. *Records*: New Guinea, SE, Kokoda, 400 m, XI (Wells 1984). Papua New Guinea, Morobe Province, Bulolo, Taun Creek, VI; Central Province, Iomari Creek, VI (Wells 1991). Indonesia, Papua, Batanta Island, VI, XI (Oláh 2012).

Hydroptila quadrifidaa Wells, 1984 – Wells (1984): 266. *Locus typicus*: New Guinea, SE, Kokoda, 400 m, XI.

Hydroptila setigera Wells, 1984 – Wells (1984): 270–271. *Locus typicus*: New Guinea, NE, Banz, Waghi Valley, 1500 m, VII.

Hydroptila traunica Wells, 1991 – Wells (1991): 504, 506. *Locus typicus*: Papua New Guinea, West Highlands Province, Baiyer River Sanctuary, Trauna River, 1160 m, VI.

Hydroptila triloba Kimmins, 1957 – Kimmins (1957): 300–301. *Locus typicus*: Guadalcanal Island, Honiara, XII. *Records*: New Guinea, NE, Umboi Island, II (Wells 1984). Papua New Guinea, Eastern Highlands Province, Ukarumpa, Ba'i River, VI (Wells 1991).

Hydroptila vittata Wells, 1984 – Wells (1984): 267. *Locus typicus*: New Guinea, Bulolo River, 950 m, X. *Records*: Papua New Guinea, Morobe Province, Wau Ecology Institute, V; Morobe Province, Bulolo, Taun Creek, VI (Wells 1991).

Hydroptila warisa Wells, 1984 – Wells (1984): 266. *Locus typicus*: New Guinea, Irian Jaya, Waris, VIII. *Paratypes*: New Guinea, NE, Sepik, Maprik area, 160 m, VIII; Wum, Upper Jimmi Valley, 840 m, VII. *Records*: Central Province, Iomari Creek on Bereina-Port Moresby road, V; Morobe Province, Bulolo, Taun Creek, VI; West Highlands Province, Baiyer River Sanctuary, Trauna River, 1160 m, VI (Wells 1991).

Missitrichia kunkora Oláh, 2012 – Oláh (2012): 49. *Locus typicus*: Indonesia, Papua, Batanta Island, XI–X.

Missitrichia nusam Wells, 1991 – Wells (1991): 510. *Locus typicus*: Papua New Guinea, Morobe Province, Mt Missim, 1300 m, VII.

Oxyethira* (*Oxyethira*) *bogambara Schmid, 1958 – *Oxyethira bogambara* Schmid (1958): 67–68, subgeneric state erected by Kelley (1984): 436–437. *Locus typicus*: Ceylon, Kandapola, Nuwara Elyia, Hunnuwela, I–III. *Records*: Papua New Guinea, West Highlands Provonce, Kuk, 1600 m, VI; East Highlands Province, Ukarumpa, Ba'i River, VI; Morobe Province, Wau, Hospital Creek, 1250 m, IV; Central Province, Kokoda, 400 m, XI (Wells 1991).

Oxyethira* (*Dampfitrichia*) *incana Ulmer, 1906 – *Oxyethira incana* Ulmer (1906): 102–103, subgeneric state erected by Kelley (1984): 438–440. *Synonyms*: *Stenoxyethira excisa* Kimmins, 1951 (Kimmins 1951: 209–210), synonymized by Kelley (1984): 436, 439. *Gnathotrichia isabellina* Ulmer, 1951 (Ulmer 1951: 60–61), synonymized by Kelley (1984): 436, 439. *Gnathotrichia australiensis* Wells, 1981 (Wells 1981: 112–114), synonymized by Kelley (1984): 436, 439. *Locus typicus*: Java, Pekalongan. *Records*: Lower Burma, Thaton, IX (Kimmins 1951). Sumatra, Pangkalang, VI, VII, X (Ulmer 1951). Australia, Queensland, Mt. Sepec, Little Crystal Creek, V–VI (Wells 1981). Papua New Guinea, DPI Urimo Station, Nargum Block, XI–XII (Wells 1991).

Oxyethira* (*Dampfitrichia*) *plumosa (Wells, 1981) – *Stenoxyethira plumosa* Wells (1981): 117, subgeneric state erected by Kelley (1984): 436, 438–440. *Locus typicus*: Australia, North Queensland, Mulgrave River, IV. *Records*: Papua New Guinea, Central Province, Iomari Creek on Bereina-Port Moresby road, V; Central Province, Laloki River atRouna Falls, V (Wells 1981).

Oxyethira* (*Dampfitrichia*) *smolpela Wells, 1991 – Wells (1991): 493. *Locus typicus*: Australia, North Queensland, Iomari Creek on Bereina-Port Moresby road, V.

Saranganotrichia oldalra Oláh, 2012 – Oláh (2012): 49. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, X.

Ugandatrichia catyae Wells, 1991 – Wells (1991): 507–508. *Locus typicus*: Papua New Guinea, Bougainville Island, Panguna, Konaiano Creek, III.

Orthotrichiinae Nielsen, 1948

Orthotrichia advena Wells, 1984 – Wells (1984): 276–277. *Locus typicus*: New Guinea, NE, Morobe District, Mt Missim, 1300 m, I.

Orthotrichia aiema Wells, 1991 – Wells (1991): 514. *Locus typicus*: Papua New Guinea, Central Province, Aieme River, VI.

Orthotrichia annulata Wells, 1984 – Wells (1984): 274–276. *Locus typicus*: New Guinea, Mendi, 1497 m, X. *Paratype*: New Guinea, SE, Kokoda, 400 m, XI.

Orthotrichia balra Oláh, 2012 – Oláh (2012): 49–50. *Locus typicus*: Indonesia, Papua, Batanta Island, VI, IX–X.

Orthotrichia banisbus Wells, 1991 – Wells (1991): 512, 514. *Locus typicus*: Papua New Guinea, Morobe Province, Bulolo, creek behind forestry compound, VI.

Orthotrichia bipela Wells, 1991: 516. – Wells (1991): 516. *Locus typicus*: Papua New Guinea, Central Province, Iomari Creek on Bereina-Port Morseby road, V.

Orthotrichia bilasnating Wells, 1991 – Wells (1991): 514, 516. *Locus typicus*: Papua New Guinea, West Highlands Province, Peregai, VI.

Orthotrichia bunkosa Oláh, 2012 – Oláh (2012): 50. *Locus typicus*: Indonesia, Papua, Batanta Island, XI.

Orthotrichia cinctigera Wells, 1984 – Wells (1984): 277. *Locus typicus*: New Guinea, Mendi, 1497 m, X.

Orthotrichia crutwelli Wells, 1991 – Wells (1991): 519, 521. *Locus typicus*: Papua New Guinea, Eastern Highlands Province, Mt Gahavasuka Provincial Park, VI.

Orthotrichia cucullata Wells, 1984 – Wells (1984): 272. *Locus typicus*: New Guinea, NE, Mt Kaindi, 2100–2350 m, I.

Orthotrichia digitata Wells, 1984 – Wells (1984): 281. *Locus typicus*: New Guinea, Mendi, 1497 m, X.

Orthotrichia disparalis Wells, 1984 – Wells (1984): 276. *Locus typicus*: New Guinea, NE, Wau, Big Wau Creek, 1300 m, XI.

Orthotrichia eltera Oláh, 2012 – Oláh (2012): 50. *Locus typicus*: Indonesia, Papua, Batanta Island, IX, XI.

Orthotrichia ensiformis Wells, 1984 – Wells (1984): 281. *Locus typicus*: New Guinea, D.P.I. Urimo Station, XII.

Orthotrichia fimbriataa Wells, 1991 – Wells (1991): 519. *Locus typicus*: Papua New Guinea, Central Province, Veikabu, IX.

Orthotrichia fragilis Wells, 1984 – Wells (1984): 274. *Locus typicus*: Irian Jaya, Waris, VIII.

Orthotrichia glebula Wells, 1984 – Wells (1984): 276. *Locus typicus*: New Guinea, NE, Morobe District, 10 km W Bulolo, 780 m, VIII.

Orthotrichia gressitti Wells, 1991 – Wells (1991): 523. *Locus typicus*: Papua New Guinea, New Ireland, SW, Camp Bishop, 15 km up Kait River, 1125 m,VII.

Orthotrichia kaitica Wells, 1991 – Wells (1991): 521. *Locus typicus*: Papua New Guinea, New Ireland, SW, Camp Bishop, 15 km up Kait River, 1125 m,VII.

Orthotrichia kisbunka Oláh, 2012 – Oláh (2012): 50. *Locus typicus*: Indonesia, Papua, Batanta Island, X.

Orthotrichia kokodana Kimmins, 1962 – Kimmins (1962): 104–106. *Locus typicus*: Papua, Kokoda, 1200 ft, VIII.

Orthotrichia krungut Wells, 1991 – Wells (1991): 517, 519. *Locus typicus*: Papua New Guinea, Central Province, Laloki River at Rouna Falls, VI.

Orthotrichia lentigo Wells, 1984 – Wells (1984): 274. *Locus typicus*: New Guinea, NE, Wau, McAdam Park, 1250 m, X.

Orthotrichia litotes Wells, 1984 – Wells (1984): 272–274. *Locus typicus*: New Guinea, Mendi, 1497 m, X.

Orthotrichia mackayi Wells, 1991 – Wells (1991): 521, 523. *Locus typicus*: Papua New Guinea, West Highlands Province, Baiyer River Sanctuary, Trauna River, 1160 m, VI.

Orthotrichia obscura Kimmins, 1962 – Kimmins (1962): 103–104. *Locus typicus*: Papua, Kokoda, 1200 ft, IX.

Orthotrichia para Oláh, 2012 – Oláh (2012): 50–51. *Locus typicus*: Indonesia, Papua, Batanta Island, XI.

Orthotrichia savoska Oláh, 2012 – Oláh (2012): 51. *Locus typicus*: Indonesia, Papua, Batanta Island, X.

Orthotrichia talea Wells, 1984 – Wells (1984): 278–279. *Locus typicus*: New Guinea, Wau, Hospital Creek, 1250 m, IV.

Orthotrichia talumalaus Malicky, 2007 – Malicky (2007): 1041–1042. *Locus typicus*: Bismarck-Archipel, Insel Mussau, Talumalaus, I.

Orthotrichia thistletoni Wells, 1991 – Wells (1991): 514, 517. *Locus typicus*: Papua New Guinea, West Highlands Province, Peregai, VI.

Orthotrichia tobfona Oláh, 2012 – Oláh (2012): 51. *Locus typicus*: Indonesia, Papua, Batanta Island, IX–X.

Orthotrichia tumoris Wells, 1984 – Wells (1984): 277. *Locus typicus*: New Guinea, Mendireek, 1497 m, X.

Orthotrichia urimica Wells, 1984 – Wells (1984): 279. *Locus typicus*: New Guinea, D.P.I. Urimo Station, XII.

Orthotrichia veikaba Wells, 1991 – Wells (1991): 516–517. *Locus typicus*: Papua New Guinea, Central Province, Veikabu, IX.

Orthotrichia warmona Oláh, 2012 – Oláh (2012): 51. *Locus typicus*: Indonesia, Papua, Batanta Island, X.

Stactobiinae Botosaneanu, 1956

Chrysotrichia arapela Wells, 1990 – Wells (1990b): 837–838. *Locus typicus*: Papua New Guinea, Central Province, stream in Kanosia Rubber Plantati on Port Moresby-Bereina road, V.

Chrysotrichia iomara Wells, 1990 – Wells (1990b): 838. *Locus typicus*: Papua New Guinea, Central Province, Iomari Creek on Port Moresby-Bereina road, V.

Chrysotrichia likliklang Wells, 1990 – Wells (1990b): 839. *Locus typicus*: Papua New Guinea, Central Province, creek in Kanosi Rubber Plantation on Port Moresby-Bereina road, V.

Niuginitrichia arakain Wells, 1990 – Wells (1990b): 825. *Locus typicus*: Papua New Guinea, soak at Kapao on Bululo-Aseki road, VI.

Niuginitrichia bomberi Wells, 1990 – Wells (1990b): 833–834. *Locus typicus*: New Guinea, Irian Jaya, Fak Fak, Bomberi,VI.

Niuginitrichia brukimnamel Wells, 1990 – Wells (1990b): 828, 830. *Locus typicus*: Papua New Guinea, Central Province, Aieme River, VI.

Niuginitrichia bukamat Wells, 1990 – Wells (1990b): 823. *Locus typicus*: Papua New Guinea, Central Province, Laloki River, Rouna Falls, V. *Partatypes*: West Highlands Provinca, Peregai, VI; Bulolo, soak at Kapao on Bululo-Aseki road, VI.

Niuginitrichia eiloga Wells, 1990 – Wells (1990b): 828, 830. *Locus typicus*: Papua New Guinea, Central Province, Eilogo Creek, nr. Sogeri, V.

Niuginitrichia ismayi Wells, 1990 – Wells (1990b): 823, 825. *Locus typicus*: Papua New Guinea, Central Province, Tapini, VI.

Niuginitrichia kurukut Wells, 1990 – Wells (1990b): 828. *Locus typicus*: Papua New Guinea, Central Province, Laloki River, Rouna Falls, on soak, V.

Niuginitrichia namelbanis Wells, 1990 – Wells (1990b): 828. *Locus typicus*: Papua New Guinea, East Highland Province, Ukarumpa, Ram Creek, VI.

Niuginitrichia peregai Wells, 1990 – Wells (1990b): 830–832. *Locus typicus*: Papua New Guinea, East Highland Province, Peregai, VI.

Niuginitrichia rouna Wells, 1990 – Wells (1990b): 832–833. *Locus typicus*: Papua New Guinea, Central Province, Laloki River, Rouna Falls, on soak, V.

Niuginitrichia sapimarere Wells, 1990 – Wells (1990b): 830. *Locus typicus*: Papua New Guinea, Central Province, Aieme River, VI.

Niuginitrichia ukarumpa Wells, 1990 – Wells (1990b): 833. *Locus typicus*: Papua New Guinea, East Highland Province, Ukarumpa, Ram Creek, VI.

Niuginitrichia umboina Wells, 1990 – Wells (1990b): 832. *Locus typicus*: Papua New Guinea, Umboi Island, 300 m, VIII.

Scelotrichia kakatu Wells, 1990 – Wells (1990b): 840, 842. *Locus typicus*: Papua New Guinea, West Highland Province, Peregai, VI.

Scelotrichia laitimtok Wells, 1990 – Wells (1990b): 845, 848. *Locus typicus*: Papua New Guinea, Central Province, Rouna Falls, V.

Scelotrichia supsup Wells, 1990 – Wells (1990b): 845. *Locus typicus*: Papua New Guinea, Central Province, Eilago Creek, V.

Scelotrichia warabai Wells, 1990 – Wells (1990b): 842, 845. *Locus typicus*: Papua New Guinea, West Highland Province, Ukarumpa, Ba'i River in gorge N of village, VI.

Stactobia zarva Oláh, 2012 – Oláh (2012): 51. *Locus typicus*: Indonesia, Papua, Batanta Island, X.

Goeridae Ulmer, 1903

Goera nielseni Malicky, 1994 – Malicky (1994a): 168. *Locus typicus*: Bismarck-Archipel, no more data.

Lepidostomatidae Ulmer, 1903

Lepidostoma japenense (Kimmins, 1962) – *Goerodes japenensis* Kimmins (1962): 184–187, synonymized *Goerodes* Ulmer, 1907 (Ulmer 1907a: 37–38) with *Lepidostoma* Rambur, 1842 (Rambur 1842:4 93) by Weaver (2002): 175. *Locus typicus*: Dutch New Guinea, Japen Island, Mt Eiori, 2000 ft, IX.

Lepidostoma piceum (Ulmer, 1913) – *Dinarthropsis picea* Ulmer (1913): 91–92, synonymized *Dinarthropsis* Ulmer, 1913 with *Lepidostoma* Rambur, 1842 by Weaver (2002): 174. *Locus typicus*: Java, Nongkodjadjar, I. *Records*: Dutch New Guinea, Cyclops Mts, Mt Lina, 3500–4500 ft, III (Kimmins 1962).

Calamoceratidae Ulmer, 1905

Anisocentropus banghaasi Ulmer, 1909 – Ulmer (1909): 139–141. *Synonym*: *Anisocentropus bipustulatus* Botosaneanu & de Vos, 2004 (Botosaneanu & de Vos 2004: 5–6), synonymized by Oláh (2012): 52. *Locus typicus*: Neu-Pommern, Kinigunang (New Britain). *Records*: Indonesia, Irian Jaya, Jembatan, Dua, Cyclops Mts near Waena, I (Botosaneanu & de Vos 2004). Indonesia, Waigeo Island, Orobai River, X (Oláh 2012).

Anisocentropus dilucidus McLachlan, 1863 – McLachlan (1863): 494. *Locus typicus*: New Guinea, Island of Mysol.

Anisocentropus fulgidus Navas, 1933 – Navas (1933a): 103. *Locus typicus*: N. Guinea. Ramoi (1876, Beccari) II.

Anisocentropus gilvimacula Botosaneanu & de Vos, 2004 – Botosaneanu & de Vos (2004): 6–7. *Locus typicus*: Indonesia, Irian Jaya, Wandammen Peninsula, Tandia, 17 km S Wasior, XI.

Anisocentropus horvathi Oláh, 2012 – Oláh (2012): 52. *Locus typicus*: Indonesia, Papua, Batanta Island, IX–XI.

Anisocentropus hyboma Neboiss, 1986 – Neboiss (1986a): 220, 222. *Locus typicus*: Papua New Guinea, Port Moresby, Mt Lawes, 400 m, III-V. *Records*: Indonesia, Waigeo Island, Orobai River, X (Oláh 2012).

Anisocentropus immunis McLachlan, 1863 – McLachlan (1863): 494–495. *Locus typicus*: New Guinea.

Anisocentropus io Kimmins, 1962 – Kimmins (1962): 146–148. *Locus typicus*: Dutch New Guinea, Cyclops Mts, Sabron, 930 ft, V–VI.

Anisocentropus krampus Malicky, 1994 – Malicky (1994b): 69. *Locus typicus*: New Britain, Komgi, 1000 m, Noona Dan Expedition, V.

Anisocentropus mclachlani Ulmer, 1929 – Ulmer (1929): 178–180. *Locus typicus*: Neu-Quinea, Andai, Doherty.

Anisocentropus pholos Malicky, 2009 – Malicky (2009): 52. *Locus typicus*: New Britain, Yalom, 1000 m.

Anisocentropus pictilis Neboiss, 1986 – Neboiss (1986a): 222. *Locus typicus*: Papua New Guinea, Woodlark Island, Kulumadau, I–V.

Anisocentropus solomonis Banks, 1939 – Banks (1939): 482-483. *Locus typicus*: Solomon Islands, Auki.

Anisocentropus tapenan Oláh & Johanson, 2010 – Oláh & Johanson (2010): 36–39. *Locus typicus*: Solomon Islands, Guadalcanal Island, Tapenanje, XII.

Leptoceridae Leach, 1815

Leptocerinae Leach, 1815

Adicella pulcherrima Ulmer, 1906: 43–46. – Ulmer (1906): 43–46. *Locus typicus*: West Java, Preanger, 5000 ft. *Records*: Dutch New Guinea, Cyclops Mts, Mt Lina, 3500–4500 ft, III (Kimmins 1962).

Leptocerus cheesmanae Kimmins, 1962 – Kimmins (1962): 152. *Locus typicus*: Papua, Kokoda, 1200 ft, IX.

Oecetis accola Neboiss, 1989 – Neboiss (1989): 198. *Locus typicus*: Papu New Guinea, Mamai Plantation, (E of Port Glasgow), 10°16'S, 149°30'E, II.

Oecetis acuminata Kimmins, 1962 – Kimmins (1962): 161. *Locus typicus*: Papua, Kokoda, 1200 ft, V, VI, VIII–X.

Oecetis arawana Neboiss, 1989 – Neboiss (1989): 198. *Locus typicus*: Papua New Guinea, Buagainville Island, Arawa 6°10'S, 157°15'E, III.

Oecetis arctipennis Kimmins, 1962 – Kimmins (1962): 156–157. *Locus typicus*: Papua, Kokoda, 1200 ft, IX.

Oecetis asymmetrica Kimmins, 1962 – Kimmins (1962): 165–166. *Locus typicus*: Papua, Kokoda, 1200 ft, V–VII, IX–X.

Oecetis hemerobioides (McLachlan, 1866) – *Setodes hemerobioides* McLachlan (1866): 152, transferred to *Oecetis* by Ulmer (1906): 41. *Locus typicus*: Macassar, in insula Celebes. *Records*: Dutch New Guinea, Cyclops Mts, Sabron, 390 ft, V–VI (Kimmins 1962).

Oecetis keraia Neboiss, 1989 – Neboiss (1989): 198, 200. *Locus typicus*: Papu New Guinea, Mamai Plantation (E of Port Glasgow), 10°16'S, 149°30'E, II.

Oecetis kerkion Malicky, 2005 – Malicky (2005b): 631. *Locus typicus*: Papua Neuguinea, Madang, Brahman Mission, X.

Oecetis kimminsi Kumanski, 1979 – Kumanski (1979): *Locus typicus*: Papua New Guinea, Mt Wilhelm, 3300 m, VII. *Paratypes*: Lake Pinde, 3480 m, X; Lake Aunde, 3610 m, X.

Oecetis kinyras Malicky, 2005 – Malicky (2005b): 631–632. *Locus typicus*: Papua Neuguinea, Madang, Brahman Mission, X.

Oecetis kokalos Malicky, 2005 – Malicky (2005b): 635. *Locus typicus*: Papua Neuguinea, Madang, Brahman Mission, X.

Oecetis kokytos Malicky, 2005 – Malicky (2005b): 635. *Locus typicus*: Papua Neuguinea, Madang, Brahman Mission, X.

Oecetis kolobota Neboiss, 1989 – Neboiss (1989): 196, 198. *Locus typicus*: Papu New Guinea, Port Moresby, V.

Oecetis kreon Malicky, 2005 – Malicky (2005b): 634–635. *Locus typicus*: Papua Neuguinea, Madang, Brahman Mission, X.

Oecetis kronos Malicky, 2005 – Malicky (2005b): 635. *Locus typicus*: Papua Neuguinea, Madang, Brahman Mission, X.

Oecetis kyane Malicky, 2005 – Malicky (2005b): 635. *Locus typicus*: Papua Neuguinea, Madang, Brahman Mission, X.

Oecetis longiterga Kimmins, 1962 – Kimmins (1962): 161–162. *Locus typicus*: Dutch New Guinea, Humboldt Bay, VIII.

Oecetis mambia Kimmins, 1962 – Kimmins (1962): 157–160. *Locus typicus*: Papua, Kokoda, 1200 ft, V, VII, VIII, X.

Oecetis marginata Kimmins, 1962 – Kimmins (1962): 163–164. *Locus typicus*: Papua, Kokoda, 1200 ft, IV, VI–X. *Records*: Indonesia, Papua, Lelambo, X (Botosaneanu 2008).

Oecetis nausinoos Malicky, 2006 – Malicky (2006): 1518. *Locus typicus*: Bismarck-Archipel, No more data.

Oecetis ornata Kimmins, 1962 – Kimmins (1962): 157. *Locus typicus*: Dutch New Guinea, Humboldt Bay, IX–X.

Oecetis quadrangula Botosaneanu, 2008 – Botosaneanu (2008): 90–91. *Locus typicus*: Indonesia, Papua, Walmak, X.

Oecetis reticulata Kimmins, 1957 – Kimmins (1957): 302–301. *Locus typicus*: Guadalcanal Island, Honiara, X.

Oecetis squamosa Kimmins, 1962 – Kimmins (1962): 154–155. *Locus typicus*: Papua, Kokoda, 1200 ft, VIII.

Oecetis tripunctata Fabricius, 1793 – Fabricius (1793): 81. *Synonym*: *Oecetis buitenzorgensis* Ulmer, 1951 (Ulmer 1951: 459–461), synonymized by Malicky (2009): 49. *Locus typicus*: Germany. *Records*: Java, Buitenzorg, VI–IX (Ulmer 1951). Papua, Kokoda, 1200 ft, VI–VII (Kimmins 1962).

Oecetis viriplaca Malicky, 2005 – Malicky (2005b): 630–631. *Locus typicus*: Papua Neuguinea, Madang, Brahman Mission, X.

Oecetis xaniona Neboiss, 1989 – Neboiss (1989): 196. *Locus typicus*: Papu New Guinea, Tari subdistrict, Mt Hagen, 1578 m, V.

Setodes niveogrammicus Schmid, 1987 – Schmid (1987): 180–182. *Locus typicus*: Papua and N.G., E Highlands Dist., Kassem Pass, 1200 ft, X.

Setodes niveolineata Kimmins, 1962 – Kimmins (1962): 180–182. *Locus typicus*: Papua, Kokoda, 1200 ft, VI–IX.

Setodes papuana Kimmins, 1962 – Kimmins (1962): 182–184. *Locus typicus*: Papua, Kokoda, 1200 ft, II.

Triaenodes aurea Kimmins, 1962 – Kimmins (1962): 177. *Locus typicus*: Papua, Mt Tafa, 8500 ft, III.

Triaenodes contuberna Botosaneanu, 2008 – Botosaneanu (2008): 88–90. *Locus typicus*: Indonesia, Papua, Walmak, X.

Triaenodes costalis Kimmins, 1962 – Kimmins (1962): 168–171. *Locus typicus*: Papua, Kokoda, 1200 ft, VIII.

Triaenodes corallina Kimmins, 1962 – Kimmins (1962): 175–177. *Locus typicus*: Papua, Kokoda, 1200 ft, VII, IX.

Triaenodes excisa Kimmins, 1957 – Kimmins (1957): 304–305. *Locus typicus*: Guadalcanal Island, Tapenanje, XII.

Triaenodes lanceolata Kimmins, 1957 – Kimmins (1957): 304. *Locus typicus*: Guadalcanal Island, Tapenanje, XII.

Triaenodes longispina Kimmins, 1962 – Kimmins (1962): 168. *Locus typicus*: Papua, Kokoda, 1200 ft, VI–VIII.

Triaenodes loriai Navas, 1932 – Navas (1932): 154–155. *Locus typicus*: N. Guinea.

Triaenodes minos Malicky, 2005. – Malicky (2005a): 38. *Locus typicus*: Papua New Guinea, E Highlands Province, NW Goroka, Mt Gahavisuka, near Lipizuga Cr., 2200 m, VIII.

Triaenodes mondoana Kimmins, 1962 – Kimmins (1962): 173–175. *Locus typicus*: Papua, Monmdo, 5000 ft, I.

Triaenodes nigrolineataa Kimmins, 1962 – Kimmins (1962): 171–172. *Locus typicus*: Papua, Kokoda, 1200 ft, V.

Triaenodes oidipus Malicky, 2005 – Malicky (2005a): 38–39. *Locus typicus*: Indonesia, Irian Jaya, Wamena, 1600 m, XI.

Triaenodes odysseus Malicky, 2005 – Malicky (2005a): 38. *Locus typicus*: Papua Neuguinea, Morobe, Mt Kaindi, 2350 m, X.

Triaenodes penelope Malicky, 2005 – Malicky (2005a): 38. *Locus typicus*: Indonesia, Irian Jaya, Jayapura, Sentani, 250 m, Cyclop Mountain Nature Reserve, XI.

Triaenodes picea Kimmins, 1957 – Kimmins (1957): 304. *Locus typicus*: Guadalcanal Island, Tapenanje, XII.

Triaenodes proteus Malicky, 2005 – Malicky (2005a): 37. *Locus typicus*: Bismarck-Archipel, Insel New Britain, Komgi, V. *Paratypes*: New Britain, Yalom, V; Insel Manus, Lorengau, VI.

Triaenodes silvanus Malicky, 2005 – Malicky (2005a): 39. *Locus typicus*: Papua New Guinea, Morobe Province, Wau Ecological Institute, 1200 m, VIII.

Triaenodes sinis Malicky, 2005 – Malicky (2005a): 37–38. *Locus typicus*: Bismarck-Archipel, Insel Mussau, Talumalaus, I.

Triaenodes tafana Kimmins, 1962 – Kimmins (1962): 172–173. *Locus typicus*: Papua, Mt Tafa, 8500 ft, III.

Triaenodes telefominicus Kumanski, 1979 – Kumanski (1979): 217–218. *Locus typicus*: Papua New Guinea, Telefomin, West Sepic Province, 1660 m, VIII–IX.

Triaenodes thespios Malicky, 2005 – Malicky (2005a): 39. *Locus typicus*: Papua New Guinea, Morobe Province, Wau Ecological Institute, 1200 m, VIII.

Triaenodes tortuosa Botosaneanu, 2008 – Botosaneanu (2008): 86–88. *Locus typicus*: Indonesia, Papua, Walmak, X.

Triaenodes trifida Kimmins, 1957 – Kimmins (1957): 305–307. *Locus typicus*: Guadalcanal Island, Tapenanje, XII.

Triaenodes ustulata Kimmins, 1962 – Kimmins (1962): 177–179. *Locus typicus*: Papua, Kokoda, 1200 ft, V–VII.

Triaenodes xanthos Malicky, 2005 – Malicky (2005a): 36–37. *Locus typicus*: Bismarck-Archipel, Insel Mussau, Talumalaus, II.

Triaenodes zetes Malicky, 2005 – Malicky (2005a): 37. *Locus typicus*: Bismarck-Archipel, Insel Dyaul, Sumuna, III–V. *Paratypes*: Insel Mussau, Talumalaus, I–II; Insel Lavongai, Banatam, III.

Triplectidinae Ulmer, 1906

Symphitoneuria ampla Korboot, 1964 – Korboot (1964): 49–50. *Locus typicus*: New Guinea, Mt Wilhelm, 11 300 ft. *Records*: Eastern Highlands of New Guinea, Mt Wilhelm, Lake Pinde and Aunde, 3600–3680 m, most abundant caddis fly throughout the year (Illies 1969).

Symphitoneuria opposita (Walker, 1852) – *Leptocerus oppositus* Walker (1852): 73, transferred to *Symphitoneuiria* by Mosely & Kimmins (1953): 267–268. *Locus typicus*: Van Dieman's Land. From Dr Hooker's sale, Australia (Tasmania). *Rrecords*: Papua New Guinea, Finim tel, Western Province, 2400 m, VIII; Morobe Province, Wau, 1300 m, XI (Kumanski 1979).

Symphitoneurina fulva (Navas, 1932) – *Symphitoneuria fulva* Navas (1932): 153–154, transferred to *Symphitoneurina* gen. n. by Schmid (1949): 363–365. *Locus typicus*: N. Guinea, Hatam, IV. *Paratype*: Moroca, 1300 m, VII–IX. *Records*: Papua, Mafulu, 4000 ft, I; Dutch New Guinea, Cyclops Mts, Sabron, 930 ft, V–VI (Kimmins 1962). Papua New Guinea, Telefomin, West Sepic Province, 1600 m, VII–VIII (Kumanski 1979).

Triplectides gilolensis (McLachlan, 1866) – *Notanatolica gilolensis* McLachlan (1866): 258, synonymized *Notanalolica* McLachlan, 1866 with *Triplectides* Kolenati, 1859 by Mosely (1936): 91. *Locus typicus*: Gilolo (Halmahera). *Records*: Deutsch-Neu-Guinea, Malu, V–VI (Ulmer 1915). West New Guinea: Njau-limon, S of Bougainville, 3000 ft, II; Papua, Kokoda, 1200 ft, VI–VII (Kimmins 1962).

Triplectides nivosus (Navas, 1932) – *Notanatolica nivosa* Navas (1932): 208–209, synonymized *Notanalolica* McLachlan, 1866 with *Triplectides* Kolenati, 1859 by Mosely (1936): 91. *Locus typicus*: Inseln Luisiana Mt Riu, Sudest Island, 2000 ft, IV.

Triplectides zonatus (Navas, 1932) – *Notanatolica nivosa* Navas (1932): 209, synonymized *Notanalolica* McLachlan, 1866 with *Triplectides* Kolenati, 1859 by Mosely (1936): 91. *Locus typicus*: Oceanie. Hydrographer Alt. Brit. N. G., 2500 ft, III.

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Radetzky Jenő tojásgyűjteményének katalógusa

Solti Béla

Absract: (The catalogue of Jenő Radetzky's bird egg collection) The author deals with the catalogue of Jenő Radetzky's – a teacher and amateur ornithologist from Székesfehérvár – bird egg collection. The collection comprises 6204 eggs of 1273 clutches of 192 bird species. Most of the clutches were collected in Hungary, but some of them are from 12 other European countries and even from Algeria and Iraq. The biggest part of the Hungarian collection was gathered in Fejér County. Due to Jenő Radetzky's international relationships, a number of well-known ornithologists and oologists can be found among the collectors both from Hungary and other countries. The collection includes many rarities, for example clutches of Glossy Ibis (*Plegadis falcinellus*), Griffon Vulture (*Gyps fulvus*), Short-toed Eagle (*Circaetus gallicus*), Osprey (*Pandion haliaetus*), Lesser Kestrel (*Falco naumanni*), Little Bustard (*Tetrax tetrax*), Marsh Sandpiper (*Tringa stagnatilis*), Mediterranean Gull (*Larus melanocephalus*), Gull-billed Tern (*Gelochelidon nilotica*), Little Tern (*Sterna albifrons*), Short-toed Lark (*Calandrella brachydactyla*), Dipper (*Cinclus cinclus*), Rock Thrush (*Monticola saxatilis*), Aquatic Warbler (*Acrocephalus paludicola*), Crested Tit (*Parus cristatus*), Woodchat Shrike (*Lanius senator*), Rose-coloured Starling (*Sturnus roseus*) and Ortolan Bunting (*Emberiza hortulana*).

Radetzky Jenő tanár, amatőr ornitológus, a hazai madárvédelem és madártani ismeretterjesztés kiemelkedő alakja. 1908. június 14-én született a Fejér megyei Tárnokon. Édesapja a madár- és tojásgyűjteményéről ismert ornitológus, oológus, Radetzky Dezső volt. Radetzky Jenő 1932-ben a Pázmány Péter Tudományegyetemen szerzett tanári oklevelet, híres tanárai voltak Méhely Lajos és Cholnoky Jenő. Székesfehérváron gimnáziumi tanárként és Fejér megye biológiai szakfelügyelőjeként dolgozott, egészen nyugdíjba vonulásáig. Tanítványai segítségével 1959-ben megalapította, és haláláig vezette az agárdi Chernel István Madárvártát. A madárvárta működtetésén keresztül diákok százait indította el a madártan és a természetvédelem útján. 1964-ben életrehívta a Fejér megyei Madárbarátok Körét, melynek taglétszáma 1983-ra meghaladta az 5000 főt.

Közben jelentős tudományos és gyűjtő munkát is végzett. Többedmagával elsőként mutatta ki a kék fu (*Porphyrio porphyrio*) és a fehérfarkú lilebíbic (*Chettusia leucura*) hazai előfordulását. Számos szakcikket közölt a Kócsag, az Aquila és a Der Falke ímű folyóiratokban.

1. ábra. Radetzky Jenő (1909–1991)

Édesapja nyomdokán ő is egy tojásgyűjteményt állított össze, mely idővel jelentős méretet ért el. A 1980-as évek végén levelezést folytattam Radetzky Jenővel, hogy gyűjteménye a Mátra Múzeumba kerüljön. Sajnos ez – Radetzky Jenő 1991-ben bekövetkezett halála miatt – nem valósult meg, de a gyűjteménye katalógusát elküldte nekem, hogy használjam fel, belátásom szerint. Úgy gondoltam, hogy ennek az anyagnak nem szabad elkallódnia, közre kell adni, hogy bekerülhessen a tudományos életbe, és ezzel mindenki számára hozzáférhetővé váljon. Maga a tojásgyűjtemény jelenleg az örökösöknél, Székesfehérváron van. 2009. júniusában ifj. Radetzky Jenő az anyag egy részét Tárnokon kiállította, de ezt a kiállítást augusztus végén bezárták.

A gyűjtemény összesen 192 faj 1273 fészekaljának 6204 tojását tartalmazza. A fészekaljak nagy része hazai lelőhelyekről, összesen 16 megyéből származik, a legtöbb Fejér megyéből. Külföldi gyűjtőkkel történt cserék révén azonban még 12 európai országból, valamint Algériából és Irakból származnak fészekaljak. Ezekben az országokban az alábbi fajokat gyüjtötték:

Algéria: *Circaetus gallicus* – **Ausztria**: *Scolopax rusticola* – **Belgium**: *Phalacrocorax carbo*, *Columba livia*, *Cinclus cinclus*, *Troglodytes troglodytes*, *Phoenicurus ochruros*, *Turdus viscivorus*, *Regulus regulus*, *Carduelis spinus* – **Dánia**: *Gelochelidon nilotica* – **Franciaország**: *Turdus viscivorus* – **Hollandia**: *Falco peregrinus*, *Philomachus pugnax* – **Irak**: *Hippolais pallida* – **Macedónia**: *Falco naumanni*, *Calandrella brachydactyla* – **Nagy-Britannia**: *Accipiter nisus*, *Alcedo atthis*, *Cinclus cinclus* – **Németország**: *Pandion haliaetus*, *Alcedo atthis*, *Dryocopus martius*, *Turdus pilaris*, *Phylloscopus trochilus*, *Ficedula hypoleuca*, *Parus cristatus*, *Parus ater*, *Certhia* sp., *Pyrrhula pyrrhula* – **România**: *Milvus milvus*, *Aquila pomarina*, *Lanius excubitor* – **Spanyolország**: *Lanius senator* – **Svájc**: *Lanius excubitor* – **Svédország**: *Tringa glareola*.

A gyűjtemény kezdő éveként Radetzky Jenő 1957-et jelölte meg, a gyűjtemény katalógusát pedig 1962. szeptemberében állította össze. Az ennél későbbi gyűjtések adatait (és még több előzőt is) Haraszthy Lászlótól kaptam meg, aki a tárnoki kiállításon jegyezte fel azokat.

A fészekaljak között számos ritkaság található, mint például a batla (*Plegadis falcinellus*), a vörös kánya (*Milvus milvus*), a fakó keselyű (*Gyps fulvus*), a kígyászölyv (*Circaetus gallicus*), a halászsas (*Pandion haliaetus*), a fehérkarmú vércse (*Falco naumanni*), a kerecsensólyom (*Falco cherrug*), a vándorsólyom (*Falco peregrinus*), a haris (*Crex crex*), a reznek (*Tetrax tetrax*), a tavi cankó (*Tringa stagnatilis*), a szerecsensirály (*Larus melanocephalus*), a kacagócsér (*Gelochelidon nilotica*), a kis *csér (Sterna albifrons*), a szikipacsirta (*Calandrella brachydactyla*), a vízirigó (*Cinclus cinclus*), a kövirigó (*Monticola saxatilis*), a csíkosfejű nádiposzáta (*Acrocephalus paludicola*), a halvány geze (*Hyppolais pallida*), a búbos cinege (*Parus cristatus*), a vörösfejű gébics (*Lanius senator*), a pásztormadár (*Sturnus roseus*), a süvöltő (*Pyrrhula pyrrhula*) és a kerti sármány (*Emberiza hortulana*) egy-egy fészekalja.

Radetzky Jenő kiterjedt ismeretségei folytán a gyűjtők között számos neves hazai és külföldi ornitológus neve található meg.

A gyűjtők neveinek rövidítése (zárójelben az általuk gyűjtött fészekaljak száma): AE = Agárdi Ede (8); AI = Andrássy István Dr (1); BB = Barotai Béla (18); BF = Berényi Ferenc (1); BGy = Breuer György (6); BI = Bandász István (2); BK = Berki K. Dr (1); BL = Balanyi László (31); BM = Breuer Máté (1); BP = Beretzk Péter (14); CF = Cerva Frigyes (1); Cr = Cristensen (1); CsA = Csath András (16); CsJ = Csaba József (1); CsL = Csiba Lajos (20); CsS = Cserkuthy Sándor (3); CsSz = Cseresnyés Szilárd (10); CWM = Congreve, W. M. (5); DL = Dobay László (1); DM = Denis le Maus (1); EGy = Ember György (9); EM = Endes Mihály (8); FJ = Falusi József (1); FK = Fekete Károly (1); GB = Gergelyi Béla (3); GGy = Gorzó György (3); GI = Gébl István (1); HÁ = Házy Árpád Dr (1); HL = Horváth László (8); HLa = Horváth Lajos (1); Hu = Huddert (2); JI = Jánosy István (1); JM = Janisch Miklós (1); Jo = Johnston (1); KA = Kátay A. (22); KE = Kovács Ernő (1); KI = Kun István (1); KK = Koffán Károly (1); Le = Leclercq (12); LI = Lőrincz

István (4); LS = Lovassy Sándor (1); Ma = Malatinsky (1); MB = Molnár Béla (2); MG = Müller Géza (1); MI = Müller István (2); ML = Máté László (18); MW = Makatsch, Wolfgang (20); NJ = Németh Jenő (3); NM = Németh Márton (20); NR = Németh Rudolf (1); OL = Ocsovszky László (1); PI = Pátkai Imre (1); PL = Povázsay László (29); PaL = Palágyi Lajos (27); RD = Radetzky Dezső (7); RJ = Radetzky Jenő (701); RJif = Radetzky Jenő ifj. (56); RP = Rapos Pál (8); Ro = Rozenberger (4); SL = Sólymossy László (9); StL = Studinka László (2); SzI = Szabó István (3); SzL = Szabó László (13); TD = Tapfer Dezső (9); TJ = Tihanyi János (37); VI = Vásárhelyi István (2); WM = Weber M. (4).

Néhány fészekaljnál a gyűjtő neve hiányzik, ezek némelyikénél feltételezhető, hogy ki gyűjtötte, mert például az illető ugyanazon a napon, ugyanott más fajok fészekalját is gyűjtötte. Ezeknél a nevet kérdőjellel beírtam. Hasonlóan kérdőjellel szerepel a gyűjtő az olyan helyeken, ahol szerepelt a neve, de kétségbe vonható, hogy egy napon, egymástól távol lévő helyszíneken gyűjthetett volna.

Az anyag ismertetésénél a fajnév után a lelőhelyet (község, terepi név, nem hazai lelőhelynél az ország is), a gyűjtési időpontot, a gyűjtő nevének rövidítését, a tojások számát, és a kotlottság fokát adom meg, továbbá néhány, a fészekaljjal kapcsolatos megjegyzést (törött tojás, összetojás, közös gyűjtés stb.). A tojásszámnál a zárójelben lévő szám az eredeti fészekaljszámot mutatja. A kotlottság fokának rövidítései: t = tiszta, vh = vérhártyás, v = véres, v! = erősen véres, f = fias, f! = erősen fias, F! = rothasztott, z = záp.

A fajok nevezéktana és sorrendje Magyar *et al.* (1998), a lelőhelyek besorolása a Központi Statisztikai Hivatal (1973) munkája alapján történt.

A gyűjtemény ismertetése

Podicipedidae Bonaparte, 1831

Tachybaptus ruficollis (Pallas, 1764) – Sárszentágota, 1957.06.16., RJ, 8, t; 1957.07.16., RJ, 9, t; 1959.06.16., RJ, 6, v!; Soponya, 1959.05.24., RJ, 5, t; 1959.05.24., RJ, 5, t; 1959.07.01., RJ, 6, v; 1960.07.02., RJ, 7, v; 1961.05.09., RJ, 5, v; 1961.05.28., RJ, 6, vh; 1962.06.28., RJ, 5, F!; 1962.06.28., RJ, 6, F!; 1962.06.28., RJ, 6, vh; 1962.07.01., RJ, 5, v.
Podiceps cristatus (Linnaeus, 1758) – Biharugra, 1960.07.06., EM, 5, f!; Gárdony: Dinnyés, 1962.05.08., RJ, 4, f!; Előszállás, 1959.06.21., RJ, 4, v; Pusztaegres: Örspuszta, 1958.05.25., RJ, 5, t; Sumony, 1955.05.02., NM, 5, t.
Podiceps griseigena (Boddaert, 1783) – Iszkaszentgyörgy, 1960.06.01., TD, 4, v; Sumony, 1955.05.02., NM, 3, v; Szeged: Fehér-tó, 1962.06.24., BP?, 6.
Podiceps nigricollis C. L. Brehm, 1831 – Békéscsaba, 1942.06.02., PL, 5; Előszállás, 1959.06.16., RJ, 4, v; 1959.06.21., RJ, 3, v; Fülöpháza, 1957.06.12., NM, 5, t; 1958.05.12., RJ, 3, t; 1958.05.12., RJ, 4, f; 1958.05.12., RJ, 4, t; 1958.05.12., RJ, 4, t; Pusztaegres: Örspuszta, 1955.05.29., SzL, 3.

Phalacrocoracidae Reichenbach, 1850

Phalacrocorax carbo (Linnaeus, 1758) – Kis-Balaton, 1959.04.20., RJ, 4, v; 1959.04.20., RJ, 3, v; 1959.04.20., RJ, 3, v; 1959.04.20., RJ, 2; Wulveringem (Belgium), 1956.03.17., Le, 5.

Ardeidae Leach, 1820

Botaurus stellaris (Linnaeus, 1758) – Igar, 1960.05.19., TD, 5, f; Tác: Fövenypuszta, 1963.05.15., TJ, 5.
Ixobrychus minutus (Linnaeus, 1766) – Előszállás, 1960.04.26., RJ, 5, t; Gárdony: Dinnyés, 1958.07.16., RJ, 6, t; 1959.07.06., RJ, 6, t; 1961.06.12., RJ, 6, v; Pusztaegres: Örspuszta, 1957.05.26., RJ, 6, t; 1958.06.01., RJ, 6, v; Soponya, 1959.06.11., RJ, 6, t; 1960.06.26., RJ, 6, t; 1960.07.02., RJ, 5, t; 1960.07.12., RJ, 5, t; 1961.05.09., RJ, 6, t; 1961.05.14., RJ, 5, t; 1961.05.28., RJ, 6, v; 1961.06.04., RJ, 6, t; 1962.05.27., RJ, 6, v; 1967.05.26., RJ?, 6; Szolnok, 1960.06.25., LI, 6, t; 1960.06.25., RJ, 6, t.
Ixobrichus minutus + ***Gallinula chloropus*** – Soponya, 1962.06.03., RJ, 3 + 1, t.

Nycticorax nycticorax (Linnaeus, 1758) – Pusztaegres: Örspuszta, 1957.05.20., RJ, 5, t; 1960.05.31., RJ, 4, t; 1960.05.31., RJ?, 3; Sárbogárd: Rétszilas, 1958.07.04., RJ?, 3; Soponya, 1958.05.20., RJ, 4, t; 1958.05.20., RJ, 4, t; 1958.05.20., BI, 4, t; 1959.06.07., RJ?, 3; 1960.06.26., RJ, 4, t; 1961.04.29., RJ, 4, v; 1961.04.29., RJ, 4, t; 1961.05.06., RJ, 4, t; 1961.05.06., RJ, 5, v!; 1961.05.06., RJ, 4, v; 1961.05.15., RJ, 4, t; 1961.06.04., RJ, 5, v; 1962.06.03., RJ, 4, vh; 1962.06.03., RJ, 4, t; 1962.06.03., RJ, 4, t; 1962.06.03., RJ, 4, t.
Ardeola ralloides (Scopoli, 1769) – Pusztaegres: Örspuszta, 1957.05.30., RJ, 5, t; 1959.07.04., RJ, 5, v; 1960.06.06., RJ, 4, t; 1960.06.06., RJ, 4, v; Soponya, 1959.05.24., RJ, 5, t; 1959.06.02., RJ, 5, t; 1959.06.02., RJ, 5, t; 1959.06.02., RJ, 5, t; 1959.06.02., RJ, 5, t; 1959.06.19., RJ, 5, v; 1959.06.19., RJ, 4, v; 1959.06.26., RJ, 5, v; 1959.06.26., RJ, 5, v; 1960.06.26., RJ, 4, v.
Egretta garzetta (Linnaeus, 1766) – Kis-Balaton, 1959.05.12., NM, 3, t; Szeged: Algyő, Sasér, 1959.05.16., NM, 5, t.
Egretta alba (Linnaeus, 1758) – Gárdony: Dinnyés, 1955.05.20., ML és SzL, 2; Velencei-tó, 1954.04.23., –, 1 (4); 1957.04.05, RJ, 4; 1957.04.08., RJ, 4, t; 1959.04.23., RJ, 4, v; 1963.04.21., RJ, 1 (4).
Ardea cinerea Linnaeus, 1758 – Gárdony, 1957.04.23., RJ, 5, t; Gárdony: Dinnyés, 1958.04.24., RJ, 5, t; 1959.04.17., RJ, 5, t; 1961.04.05., RJ, 5, v!; 1962.04.19., RJ, 4, v; Kis-Balaton, 1959.04.20., RJ, 4, v; 1959.04.20., RJ, 4, v; Kocsola, 1959.05.02., RJ, 5, v; Velencei-tó, 1960.04.23., RJ, 4, t.
Ardea purpurea Linnaeus, 1766 – Gárdony: Dinnyés, 1957.04.30., RJ, 6, t; 1958.05.15., RJ, 5, v; 1958.05.15., RJ, 5, v; 1958.05.15., RJ, 4, v; 1960.04.28., RJ, 4, t; 1960.04.28., RJ, 4, t; 1960.04.28., RJ, 4, v; 1960.04.28., RJ, 4, v; 1960.04.28., RJ, 4, v; 1961.05.01., RJ, 5, vh; 1961.05.01., RJ, 5, v; 1961.05.01., RJ, 4, v; 1962.05.03., RJ, 5, v; 1963.05.16., 6; Pusztaegres: Örspuszta, 1957.05.26., RJ, 4, v; 1959.05.10., RJ, 4, v; 1959.05.10., RJ, 4, v.

Ciconiidae Gray, 1840

Ciconia nigra (Linnaeus, 1758) – Baja: Pörböly, 1959.05.25., BL, 4, f!; Hercegszántó, 1959.05.10., FK, 3, v; 1960.04.18., BL, 5, t; Tormafölde: Vétyempuszta, 1952.05.03., BGy (FJ?), 5.
Ciconia ciconia (Linnaeus, 1758) – Csősz, 1958.05.07., RJ, 5, t; 1959.05.03., RJ, 6, t; 1959.05.13., RJ, 5, f.

Threskiornithidae Richmond, 1917

Plegadis falcinellus (Linnaeus, 1766) – Kis-Balaton, 1922.05.20., LS, 4.
Platalea leucorodia Linnaeus, 1758 – Gárdony: Dinnyés, 1958.04.24., RJ, 4, t; 1958.05.04., RJ, 4, t; 1958.05.04., RJ, 3, t; 1959.04.17., RJ, 3, t; 1960.04.23., RJ, 4, t; 1960.04.25., RJ, 4, t; 1960.04.28., RJ, 4, t; 1960.04.28., RJ, 3, t; 1961.04.05., RJ, 4, t; 1962.05.19., RJ, 4, f!.

Anatidae Leach, 1820

Anser anser (Linnaeus, 1758) – Gárdony: Dinnyés, 1958.04.11., RJ, 6, t; Pákozd, 1961.03.18., RJ, 6, t; 1961.03.18., RJ, 6, vh; Tác: Fövenypuszta, 1960.05.09., TJ, 5, f; Velencei-tó: Nádas-tó, 1958.03.30., RJ, 5, t; 1958.04.13., RJ, 5, t.
Anas strepera Linnaeus, 1758 – Szeged: Fehér-tó, 1948.06.15., BP, 10, f; 1961.05.29., BP, 10, t; 1962.05.24., BP, 9, t; Velencei-tó, 1937.05.02., ML, 9, f;
Anas platyrhynchos Linnaeus, 1758 – Fülöpháza, 1960.04.08., GGy, 7; Mór, 1960.04.14., TD, 12, t; Sárszentágota, 1957.05.05., RJ, 12, t; Seregélyes, 1960.04.13., 8; Soponya, 1961.06.04., RJ, 10, f; 1964.04.20., RJ, 10.
Anas platyrhynchos + ***Aythya nyroca*** – Soponya, 1967.05.21., RJ?, 9 + 3.
Anas acuta Linnaeus, 1758 – Pákozd: Börgönd, Börgöndi-rét, 1961.04.21., RJ, 9, v; 1961.05.01., RJ, 10, v; Seregélyes, 1961.04.21., RJ, 10, v; Szeged: Fehér-tó, 1962.05.26., BP?, 10.
Anas querquedula Linnaeus, 1758 – Alap, 1959.05.20., KE, 8, v; Békéscsaba, 1937.05.07., PL, 8; Gárdony: Dinynyés, 1960.05.03., RJ, 1 + 1; 1961.05.13., RJ, 10, t; 1962.05.24., RJ, 9, t; Seregélyes, 1961.04.21., RJ, 10, t; Szeged: Fehér-tó, 1946.05.05, BP, 10, f; Székesfehérvár, 1937.05.01., ML, 9, f.
Anas clypeata Linnaeus, 1758 – Pákozd: Börgönd, Börgöndi-rét, 1961.05.01., RJ, 11, t; 1961.05.01., RJ, 10, t; 1961.05.11., RJ, 10, v; Soponya, 1962.06.03., RJ, 8, f!; Tác: Fövenypuszta, 1936.05.16., ML, 8, v.
Aythya ferina (Linnaeus, 1758) – Pusztaegres: Örspuszta, 1936.06.03., ML, 8; 1959.05.16., RJ, 9, v.
Aythya ferina + ***Aythya nyroca*** – Pusztaegres: Örspuszta, 1957.05.23., RJ, 11 + 1, f.
Aythya nyroca (Güldenstädt, 1770) – Gárdony: Dinnyés, 1960.05.25., RJ, 8, v; 1961.06.12., RJ, 9, f!; 1961.06.22., RJ, 10, t; Kocsola, 1959.06.04., RJ, 8, f!.
Aythya nyroca + ***Aythya ferina*** – Pusztaegres: Örspuszta, 1958.06.07., RJ, 11 + 1, f.

ACCIPITRIDAE Vieillot, 1816

Pernis apivorus (Linnaeus, 1758) – Dunakiliti: Tejfalusziget, 1961.05.30., CsL, 2, v.
Milvus migrans (Boddaert, 1783) – Ács, 1950.05.07., JM, 3; Dunakiliti: Tejfalusziget, 1954.04.25., CsL, 3; Hercegszántó, 1960.04.24., BL, 4, t; Káloz, 1959.04.30., RJ, 4, v; Kocsola, 1959.04.20., RJ, 3, v; Lovasberény, 1962.05.09, RJ, 3, t; Nádasladány, 1960.04.22., RJ, 4, v; Soponya, 1959.05.17., RJ, 3, t; Tamási, 1962.05.06., RJ, 3, v.
Milvus milvus (Linnaeus, 1758) – Doboz, 1939.05.01., CsA, 3; Valea lui Mihai (Érmihályfalva, Románia), 1931.05.12., AI, 2.
Haliaeetus albicilla (Linnaeus, 1758) – Hanság, dátum nélkül, győri diák, 1; Kocsola, 1959.04.15., Ro, 1, v.
Gyps fulvus (Hablizl, 1783) – Alduna (Románia), 1899., 1.
Circaetus gallicus (Gmelin, 1788) – Djebel Bourbaia (Algéria), 1961.02.02., MW, 1.
Circus aeruginosus (Linnaeus, 1758) – Erdősmecske, 1937.04.25., AE, 3; Velencei-tó, 1959.05.17., RJ, 5, v; 1959.05.28., RJ, 5, v; 1961.05.01., RJ, 5, v.
Circus pygargus (Linnaeus, 1758) – Lébénymiklós: Lébény, 1935.05.12., StL, 3.
Accipiter gentilis (Linnaeus, 1758) – Dunaszeg, 1950.04.23., StL, 3; Kocsola, 1959.04.07., RJ, 3, t; Máza, 1959.04.10., KA, 3, t; 1959.04.22., RJ, 3, v; Rajka, 1953.04.22., CsL, 3, t.
Accipiter nisus (Linnaeus, 1758) – Anglia (Nagy-Britannia), 1918.06.05., CWM, 5; Doboz, 1949.05.15., CsA, 4; Sarkadremete, 1959.05.25., PL, 5; Szeged: Királyhalom, 1942.06.14., PL, 4.
Buteo buteo (Linnaeus, 1758) – Erdősmecske, 1937.04.15., AE, 2; Iszkaszentgyörgy: Burok-völgy, 1961.04.15., RJ, 3, t; Kocsola, 1959.03.30., RJ, 3, v; 1959.03.30., RJ, 2, t; 1959.04.02., RJ, 2, t; 1959.04.08., RJ, 3, v; Lovasberény, 1962.04.15., RJ, 3, v; 1962.04.15., RJ, 3, t; 1962.04.18., RJ, 3, t; Máza, 1959.04.10., RJ, 3, v; Miskolc: Lillafüred, 1934.05.10., VI, 2; Mór, 1960.04.28., RJ, 2, v; Tamási, 1962.04.23., RJ, 3, vh; 1962.05.06., RJ, 2, v.
Aquila pomarina C. L. Brehm, 1831 – Pozsga (Románia), 1926.05.25., CWM, 1; 1934.04.30., CWM, 1; 1934.04.30., CWM, 1; Tamási, 1959.05.10., RJ, 2, v; 1961.05.09., RJ?, 2, vh.
Aquila heliaca Savigny, 1809 – Csákvár, 1961.05.08., SzL, 1, z.

PANDIONIDAE Sclater & Salvin, 1873

Pandion haliaetus (Linnaeus, 1758) – Mecklenburg (Németország), 1.

FALCONIDAE Vigors, 1824

Falco naumanni Fleischer, 1818 – Bitolj (Bitola?, Macedónia), 1939.05.09., MW, 5.
Falco tinnunculus Linnaeus, 1758 – Alap, 1958.05.10., KE, 5; Bajaszentistván, 1960.05.03., BL, 5, t; Csősz, 1958.05.02., RJ, 5, t; 1959.05.10., RJ, 5, t; 1959.05.10., RJ, 5, v; 1960.06.12., Cse, 5, v; Ócsa, 1960.04.29., RJ, 3, t; Pusztaegres: Örspuszta, 1957.05.04., RJif, 5, t; 1957.05.19., RJ, 5, t; 1957.05.26., RJ, 6, t; Sárszentmihály: Sárpentele, 1957.04.15., RJ, 5, t; 1957.05.15., RJ, 4, t; 1958.04.29., RJ, 6, t; 1960.05.08., RJ, 5, t; 1960.05.19., RJ, 5, t; 1960.06.05., RJ, 5, v; Seregélyes, 1960.06.06., RJ, 5, v; 1961.04.24., RJ, 6, v; 1961.04.24., RJ, 5, t; 1961.04.24., RJ, 5, t; 1961.05.13., RJ, 5, t; Soponya, 1959.05.17., 4; 1959.05.29., RJ, 5, t; 1960.05.17., RJ, 5, v; 1961.05.14., RJ, 6, t; Székesfehérvár, 1960.05.28., RJif, 5, t; 1960.06.22., RJ, 5, t; 1957.05.13., RJ, 6, t.
Falco tinnunculus + ***Passer*** sp. – Székesfehérvár: Csala, 1960.04.27., KI, 5 + 1.
Falco vespertinus Linnaeus, 1758 – Sárospatak, 1958.06.18., Corb., 4, v; Sárszentmihály: Sárpentele, 1960.05.23., TJ, 5, t; Soponya, 1959.05.29., RJ, 4, t; 1959.05.29., RJ, 4, t; 1959.05.29., RJ, 4, t; 1959.06.19., RJ, 4, t; Szabadbattyán, 1959.06.07., TJ, 4, v.
Falco tinnunculus/vespertinus – Sárszentmihály: Sárpentele, 1960.06.05., TJ, 4.
Falco subbuteo Linnaeus, 1758 – Csősz, 1958.06.04., Cse, 3, t; Doboz, 1951.06.07., CsA, 3; Jászfelsőszentgyörgy, 1950.06.29., BGy, 3; Mezőgyán, 1959.06.07., PL, 3.
Falco cherrug Gray, 1834 – Sukoró: Velencei-hegység, 1962.04.18., RJ, 3, vh.
Falco peregrinus Tunstall, 1771 – Ravon (Hollandia), 1936.04.04., Le, 4.

PHASIANIDAE Horsfield, 1821

Perdix perdix (Linnaeus, 1758) – Csór, 1958.05.02., 7; Csősz, 1958.05.10., RJ?, 7; 1958.05.14., RJ, 16, v; 1958.05.26., RJ?, 8; Rajka, 1957.05.07., RP, 15; Soponya, 1960.06.19., 4; Székesfehérvár, 1946.06.20., RJ, 5.

Coturnix coturnix (Linnaeus, 1758) – Baja, 1959.06.04., BL, 8, t; Csávoly, 1959.05.22., BL, 8, t; Doboz, 1950.05.09., CsA, 9; Halásztelek, 1961.07.12., HL, 8, v; Szabadbattyán, 1959.06.14., TJ, 13, t; Szarvas, 1934.05.15., PaL, 10; Újkér, 1959.06.04., SL, 11, t; 1960.06.14., SL, 11, t; 1959.06.15., SL, 8, t; 1961.07.16., SL, 8, t; Zámoly, 1961.06.16., RJ, 10, v.
Phasianus colchicus Linnaeus, 1758 – Csősz, 1959.05.02., RJ, 16, t; Dunavarsány, 1960.05.05., 5; Kocsola, 1959.05.20., 6; Rajka, 1960.05.25., RJif, 23, t; Soponya, 1958.05.16., BI, 14; Zámoly, 1960.06.02., SzI, 13, v.

RALLIDAE Rafinesque, 1815

Rallus aquaticus Linnaeus, 1758 – Bátmonostor, 1961.05.03., BL, 9, v; Gárdony: Dinnyés, 1958.05.03., RJ, 8, t; 1961.06.18., RJ, 7, t; 1962.05.03., RJ, 10, v; Seregélyes, 1960.05.30., RJ, 1; Székesfehérvár, 1935.05.11., ML, 7.
Porzana porzana (Linnaeus, 1766) – Sárszentmihály: Sárpentele, 1936.05.10., ML, 9; Szabadbattyán, 1958.05.06., RJ, 6, v.
Porzana parva (Scopoli, 1769) – Gárdony: Dinnyés, 1958.05.13., RJ, 8, t; 1959.05.18., RJ, 7, t; 1959.06.03., RJ, 6, v; 1959.06.03., RJ, 7, v; 1959.07.06., RJ, 5, v; 1960.05.24., RJ, 6, t; 1960.05.24., RJ, 8, v; 1961.04.19., RJ, 7, t; 1961.05.03., RJ, 7, t; 1961.05.12., RJ, 6, vh; 1961.05.13., RJ, 7, vh; 1962.05.28., RJ, 8, t; 1962.05.28., RJ, 7, t; 1962.05.31., RJ, 8, vh; Soponya, 1961.06.04., RJ, 7, v; Szabadbattyán, 1959.06.04., TJ, 8, v.
Crex crex (Linnaeus, 1758) – Doboz, 1940.05.24., CsA, 6.
Gallinula chloropus (Linnaeus, 1758) – Baja, 1960.05.16., BL, 11; Cegléd, 1960.05.01., 5; 1960.05.20., BB, 9, t; Gárdony: Dinnyés, 1961.05.01., RJ, 8, t; Pusztaegres: Örspuszta, 1957.05.02., RJ, 9, t; 1958.06.01., RJ, 10, f; Soponya, 1959.06.10., RJ, 8, v; 1959.07.01., RJ, 9, v; 1960.07.03., RJ, 8, v; 1961.05.09., RJ, 10, v; 1961.05.14., RJ, 9, v; 1961.05.14., RJ, 9, vh; 1961.05.28., RJ, 10, f!; 1961.05.28., RJ, 9, v; 1961.06.04., RJ, 10, v; 1961.06.04., RJ, 8, f!; 1962.06.07., RJ, 7, vh; 1967.05.21., RJ?, 12.
Fulica atra Linnaeus, 1758 – Pusztaegres: Örspuszta, 1957.05.30., RJ, 10, f; Sárszentágota, 1958.04.19., RJ, 8, t.

OTIDIDAE Rafinesque, 1815

Tetrax tetrax (Linnaeus, 1758) – Cserebökény, 1952.06.02., OL, 1, t.
Otis tarda Linnaeus, 1758 – Csákvár, 1960.05.05., SzL, 3, t; Doboz, 1937.04.28., CsA, 2; Füzesgyarmat, 1937.05.10., CsA, 3; Gyoma, 1962.05.24., Ro, 2, f!; 1962.05.24., Ro, 2, F!; Karcag, 1959.05.10., 1; Mezőtúr, 1930.05.08., 1 (csere a szegedi Móra Ferenc múzeummal); Sárbogárd, 1955.05.12., NR, 1; Sárszentmihály: Sárpentele, 1960.05.19., RJ, 2, t.

RECURVIROSTRIDAE Bonaparte, 1854

Himantopus himantopus (Linnaeus, 1758) – Bócsa, 1943.05.28., PL, 3; Szeged: Fehér-tó, 1958.06.11., BP, 4, z; Székesfehérvár: Sóstó, 1949.06.19., ML, 2.
Recurvirostra avosetta Linnaeus, 1758 – Fülöpháza, 1958.05.12., RJ, 4, t; 1958.05.12., RJ, 4, t; 1958.05.12., RJ, 4, t; 1958.05.12., RJ, 4, t; 1959.04.26., RJ, 4, t; 1959.04.26., RJ, 4, t; 1960.04.30., GGy, 4, z; Sárszentágota, 1961.04.24., RJ, 4, z; Szeged: Fehér-tó, 1949.05.10., BP, 3; 1957.05.01., BP, 4.

BURHINIDAE Mathews, 1912

Burhinus oedicnemus (Linnaeus, 1758) – Csór, 1938.05.08., ML, 2; 1939.05.09., ML, 2; Kunbaracs, 1959.06.02., NM, 2, t; Mátételke, 1961.05.28., BL, 2.

GLAREOLIDAE C. L. Brehm, 1831

Glareola pratincola (Linnaeus, 1766) – Dömsöd: Apaj, 1926.05.24., RD, 3; Kunmadaras, 1961.06.15., NM, 3, f; 1962.05.28., SzL, 3, t; Szeged: Fehér-tó, 1947.06.05., BP, 3.

CHARADRIIDAE Vigors, 1825

Charadrius dubius Scopoli, 1786 – Dunasziget: Doborgazsziget, 1957.05.25., CsL, 4, v; Rajka, 1957.06.12., RP, 4, t.
Charadrius alexandrinus Linnaeus, 1758 – Bócsa, 1943.06.14., PL, 3; 1943.06.14., PL, 3; Dömsöd: Apaj, 1926.05.23., RD, 3; Fülöpszállás, 1958.05.11., RJ, 3, t; Sárszentágota, 1935.05.19., ML, 3; 1935.05.19., ML, 3; 1952.04.20., ML, 3.

Vanellus vanellus (Linnaeus, 1758) – Cegléd, 1960.05.02., BB, 4, v; 1960.05.10., BB, 4, v; 1960.05.13., BB, 4, v; Fülöpháza, 1959.04.26., RJ, 4, v; Fülöpszállás, 1958.05.11., RJ, 4, v; 1958.05.11., RJ, 4, v; Gárdony: Dinnyés, 1957.04.22., RJ, 4, v; 1959.04.04., RJ, 4, t; 1960.04.02., 3; Sárszentágota, 1958.05.10., RJ, 4, v; 1959.04.12, RJ, 4, t; 1959.04.12., RJ, 4, t; 1961.04.08, RJ, 4, t; Sárszentmihály, 1960.04.07., RJ, 4, t; 1960.04.17., RJ, 4, t; 1961.04.03., RJ, 4, t; Seregélyes, 1961.04.16., RJ, 4, v; 1961.04.16., RJ, 4, v; 1961.04.16., RJ, 4, v; Soponya, 1958.05.12., RJ, 4, v; Szabadbattyán, 1959.04.08., RJ, 4, t; 1960.04.07., RJ, 4, t; Székesfehérvár, 1949.06.08., ML, 2; 1959.04.05, RJ, 4, t; Zámoly, 1955.06.05., 3.

Scolopacidae Rafinesque, 1815

Philomachus pugnax (Linnaeus, 1758) – Fríz-szigetek (Hollandia), 1937.05.09., MW, 4, t.
Gallinago gallinago (Linnaeus, 1758) – Szabadbattyán, 1959.05.02., RJ, 4, v; 1960.04.20., TJ, 4, t; 1961.04.10., RJ, 4, t; 1961.04.10., TJ, 4, t; 1961.04.21., TJ, 4, t; 1961.04.26., RJ, 4, v; 1962.04.21., RJif, 4, vh; 1962.04.25., RJ, 4, t.
Scolopax rusticola Linnaeus, 1758 – Gasztony, 1969.04.12., CsJ, 2 (4) (kettő kiszedés előtt összetört); Gmunden?: Cumberland (Ausztria), 1922.04.27., Jo, 3.
Limosa limosa (Linnaeus, 1758) – Cegléd, 1959.05.10., 2; Fülöpháza, 1958.05.12., RJ, 4, v; 1958.05.12., RJ, 4, v; 1958.05.12., RJ, 4, v; Sárkeresztes, 1951.04.27., ML, 0 (3), a tojások hiányoznak, dankasirály tojások vannak helyettük; Seregélyes, 1961.04.16., RJif, 4, v; 1961.04.16., RJif, 4, t; 1961.04.16., RJif, 4, t; 1961.04.21., RJ?, 3; Szabadbattyán, 1959.05.01., TJ, 4, v; 1960.04.15., RJ, 4, t; 1961.04.21., RJ, 4, t; Székesfehérvár, 1958.05.01., RJ, 3, v; 1961.05.16., RJ, 4, v; Székesfehérvár: Mohai-rét, 1961.05.03., RJ, 4, t; Szolnok, 1960.04.19., LI, 4, t.
Numenius arquata (Linnaeus, 1758) – Csór: Sárrét, 1961.04.30., RJ, 4, t; 1962.05.02., RJ, 4, t; 1962.05.02., TJ, 4, t; 1963.05.01., RJ, 1 (4) (3 a postai szállítás során eltört); 1965.04.27., RJ, 3; Ócsa, 1959.04.27., RJ, 4, vh (elcserélve 1962.10.05-én); 1960.04.29., RJ, 4, vh; Sárkeszi, 1962.04.30., RJ, 4, t; Székesfehérvár, 1958.05.03., RJ, 4, t; 1961.05.10., RJ, 4, t.
Tringa totanus (Linnaeus, 1758) – Alap, 195?.05.20., 3 (4); Fülöpháza, 1958.05.12., RJ, 4, t; 1960.04.08., GGy, 4, t; Pákozd: Börgönd, Börgöndi-rét, 1961.05.01., RJif, 4, t; 1961.04.09., RJ, 4, v; 1961.04.21., RJ, 4, vh; 1961.04.26., RJ, 4, v; 1961.05.01., RJ, 4, v; Sárkeresztúr, 1965.05.16., 4; Seregélyes, 1961.04.21., RJ, 4,t; 1961.04.21., RJ?, 3; Szabadbattyán, 1959.05.24., TJ, 4, v; 1961.04.07., RJ, 4, t; 1961.04.15., RJ, 4, t; 1961.04.16., RJ, 4, v; 1961.04.21., TJ, 4, v; 1961.04.26., RJ, 4, v; 1962.04.21., RJ, 4, t; 1962.04.21., RJ, 4, t; 1962.04.21., RJ, 4, t.
Tringa stagnatilis (Bechstein, 1803) – Szeged: Fehér-tó, BP, 1.
Tringa glareola Linnaeus, 1758 – Lappland (Svédország), 1883.05.30., Huddert, 4.
Actitis hypoleucos (Linnaeus, 1758) – Dunakiliti: Tejfalusziget, 1958.05.05., CsL, 4, t; 1960.07.07., RJ, 4, vh; Rajka, 1960.05.06., RJif, 4, vh.

Laridae Vigors, 1825

Larus melanocephalus Temminck, 1820 – Szeged: Fehér-tó, 1947.05.04., BP, 3.
Larus ridibundus Linnaeus, 1766 – Ágasegyháza, ?.04.26., 2; Előszállás, 1960.06.04., RJ, 3, t; 1960.06.04., RJ, 3, t; Fülöpháza, 1959.04.06., RJ, 3, t; Gárdony: Dinnyés, 1960.06.01., RJ, 3, v; 1960.06.01., RJ, 3, v; 1960.06.01., RJ, 3, v; 1960.06.01., RJ, 3, v; 1960.06.02., RJ, 3, v; 1960.06.02., RJ, 3, v; Pusztaegres: Örspuszta, 1952.05.25., ML, 3; 1957.05.02., RJ, 3, t; 1957.05.16., RJ, 4, t; 1957.05.16., RJ, 3, t; 1957.05.16., RJ, 3, t; 1957.05.16., RJ, 3, t; 1957.05.16., RJ, 2, t; 1957.05.16., RJ, 2; 1958.05.28, RJ, 3, t; 1960.05.31., RJ, 3, v; 1960.05.31., RJ, 3, t; Soponya, 1958.05.03, RJ, 3, t; Szeged: Fehér-tó, 1951.06.11., BP, 1 (törpe tojás, nem volt sárgája).
Larus ridibundus + ***Podiceps nigricollis*** – Fülöpháza, 1958.05.12., RJ, 2 + 1, t.
Gelochelidon nilotica (Gmelin, 1789) – Jutland (Dánia), 1943.05.31., Cr, 3, f.

Sterdidae Bonaparte, 1838

Sterna hirundo Linnaeus, 1758 – Balatonlelle, 1958.06.20., NM, 3, f; 1960.06.23., TD, 3, f; 1960.06.23., TD, 3, f; Biharugra, 1960.07.07., EM, 3, f!; Előszállás, 1959.06.03., RJ, 2 + 1, v; 1960.06.03., RJ, 3, t; 1960.06.03., RJ, 3, t; 1960.06.03., RJ, 2, t; 1960.06.03., RJ, 2, t; 1960.06.08., RJ, 3, v; Látrány: Rádpuszta, 1961.06.05., TD, 4, f; 1961.06.05., TD, 3, f; Pusztaegres: Örspuszta, 1959.07.04., RJ, 3, t; Szeged: Fehér-tó, 1948.06.25., BP, 3; 1958.07.05., BP, 1.
Sterna albifrons Pallas, 1764 – Szeged: Fehér-tó, 1947.06.17., BP, 3.
Chlidonias hybridus (Pallas, 1811) – Biharugra, 1960.07.05., EM, 3, f; Pusztaegres: Örspuszta, 1959.07.04., RJ, 4, t; 1959.07.04., RJ, 3, t; 1959.07.04., RJ, 3, t; 1959.07.04., RJ, 3, t; 1959.07.04., RJ, 3, t; 1959.07.04.,

RJ, 3, t; Soponya, 1959.07.01., RJ, 3, v; 1959.07.01., RJ, 3, f; 1959.07.01., RJ, 3, f; 1959.07.01., RJ, 3, f; 1959.07.01., RJ, 1.
Chlidonias niger (Linnaeus, 1758) – Gárdony: Dinnyés, 1957.05.25., RJ, 3, v; 1957.06.04., RJ, 3, t; 1957.06.04., RJ, 3, t; 1957.06.06., RJ, 3, t; 1957.07.05., RJ, 3, t; 1958.05.23., RJ, 3, t; 1960.06.06., RJ, 3, v; 1960.06.06., RJ, 3, v; 1960.06.06., RJ, 3, v; Előszállás, 1959.06.16., RJ, 3, v; 1959.06.16., RJ, 3, v; 1959.06.16., RJ, 3, v; Pusztaegres: Örspuszta, 1959.07.04., RJ, 3, t; Soponya, 1959.05.29., RJ, 3, t; 1959.05.29., RJ, 3, t; 1959.05.29., RJ, 3, t; 1959.05.29., RJ, 3, t; 1959.05.24., RJ, 3, t; 1959.05.24., RJ, 3, t; 1959.05.24., RJ, 3, t; 1959.05.24., RJ, 3, t; 1959.05.24., RJ, 3, t; 1959.05.29., RJ, 3, t; Újkígyós, 1940.07.06., CsA, 3.
Chlidonias leucopterus (Temminck, 1815) – Békéscsaba, 1940.05.04., PL, 2; 1941.06.04., PL, 3.

Columbidae Illiger, 1811

Columba livia Gmelin, 1789 – Namur: Boz (Belgium), 1959.04.27., Le, 2.
Columba oenas Linnaeus, 1758 – Mecsek, 1953.04.12., CsSz, 2; Villers-la-Ville (Belgium), 1959.03.14., Le, 2.
Columba palumbus Linnaeus, 1758 – Csősz, 1959.05.02., RJ, 2, t; Előszállás, 1961.05.03., GB, 2, t; Gárdony, 1958.07.19., RJ, 2, t; Nádasladány, 1959.05.02., RJ, 2, t; Pusztaegres: Örspuszta, 1957.05.04., RJ, 2, t; Seregélyes, 1960.05.06., RJif, 2, t; Soponya, 1960.06.26., RJ, 2, t; 1961.04.09., RJ, 2, t; 1961.05.06., RJ, 2, t; Székesfehérvár, 1960.04.19. RJ, 2, t; 1961.04.14., RJ, 2, t.
Streptopelia decaocto (Frivaldszky, 1838) – Cegléd, 1960.05.12, RJ, 2, v; Gárdony, 1958.03.24., RJ, 2, t; Seregélyes, 1960.04.11., RJ, 2, t; 1960.04.23., RJ, 2, t; 1960.04.30., RJ, 2, t; Székesfehérvár, 1960.06.17., RJ, 2, v; 1960.06.20., RJ, 2, t.
Streptopelia turtur (Linnaeus, 1758) – Baja, 1959.05.11., BL, 2, v; Cegléd, 1960.05.12., BB, 2; Dunavarsány, 1960.05.01., KA, 2, t; Felsőszentiván, 1957.05.26., RJ, 2, v; Nádasladány, 1959.05.10., RJ?, 2, v; Rajka, 1960.05.25., Rjif, 2, t; 1960.05.27., Rif, 2, t; Sárszentmihály, 1960.04.05., RJ, 2, t; Seregélyes, 1960.05.12., RJ, 2, t; Soponya, 1960.06.25., RJ, 2, t; 1962.06.07., RJ, 2, t; Székesfehérvár, 1957.06.27., RJif, 2, v; 1957.06.27., RJ, 2, v; Székesfehérvár: Csala, 1960.04.28., RJ, 2, t.

Cuculidae Vigors, 1825

Cuculus canorus Linnaeus, 1758
Cuculus canorus + ***Acrocephalus arundinaceus*** – Békéscsaba, 1934.05.24., PL, 1 + 3; Dunasziget: Doborgazsziget, 1954.06.02., CsL, 1 + 3; Előszállás: Matild, 1960.06.04., RJ, 2 + 4, v; Ercsi, 1958.05.26., RJ, 1 + 3; Sárszentágota, 1958.06.07., RJ, 1 + 5, t; 1958.06.07., RJ, 1 + 4, t; Soponya, 1959.05.06., RJ, 1 + 3, t; 1960.07.09., RJ, 1 + 3, t; 1961.05.28., RJ, 1 + 4, v; 1961.06.04., RJ, 1 + 3; Szarvas, 1935.06.30., PaL, 2 + 3; 1936.06.02., PaL, 2 + 5; Szigethalom, 1960.06.10., HL, 2 + 3, t.
Cuculus canorus + ***Acrocephalus scirpaceus*** – Soponya, 1962.05.27., RJ, 1 + 2, t; 1962.07.06., RJ, 1 + 3, t; 1967.05.26., RJ?, 1 + 3.
Cuculus canorus + ***Erithacus rubecula*** – Mája, 1959.05.20., RJ, 1 + 6, t.
Cuculus canorus +***Lanius collurio*** – Mája, 1958.05.16., RJ, 1 + 6, t; Pilisszentkereszt, 1957.05.27., RJ, 1 + 3, t.

Tytonidae Ridgway, 1914

Tyto alba (Scopoli, 1769) – Baja, 1959.04.06., BL, 5, t; Sárszentmihály: Sárpentele, 1960.05.09., TJ, 7, t.

Strigidae Vigors, 1825

Otus scops (Linnaeus, 1758) – Nagykovácsi Á. G., 1958.05.19., RJ, 4, t.
Bubo bubo (Linnaeus, 1758) – Budakeszi, 1913.04.02., CF, 2; Gerla: Póstelek, 1937.04.13., CsA, 2.
Athene noctua (Scopoli, 1769) – Baja: Pörböly, 1959.05.14., BL, 4, t; Bicsérd, 1949.04.12., CsSz, 5, t; Kondoros, 1935.05.02., PaL, 5; Szarvas, 1934.04.14., PaL, 6; 1937.05.02., MB, 5; Székesfehérvár, 1959.05.10., RJ, 5, t; 1962.05.15., RJ, 5, v.
Strix aluco Linnaeus, 1758 – Dunakiliti: Tejfalusziget, 1960.03.25., CsL, 4, t; Rajka, 1952.04.12., CsL, 4, v.
Asio otus (Linnaeus, 1758) – Baja: Püspökpuszta, 1960.04.21., BL, 6, v; Moha, 1958.04.12., RJ, 6, f!; Póstelek, 1939.04.18., CsA, 5; Seregélyes, 1961.04.24., RJ, 5, t; Soponya, 1959.05.24., RJ?, 3; 1961.04.09., RJ, 5, t; 1961.05.06., RJ, 5, f; Zámoly, 1960.04.15., SzI, 6, v.
Asio flammeus (Pontoppidan, 1763) – Szarvas, 1931., HÁ, 2.

CAPRIMULGIDAE Vigors, 1825

Caprimulgus europaeus Linnaeus, 1758 – Cegléd, 1960.05.03., 1; Doboz, 1939.06.08., CsA, 1; Kunbaracs, 1961.07.27., NM, 2, t.

APODIDAE Hartert, 1897

Apus apus (Linnaeus, 1758) – Pécs, 1947.05.21., CsSz, 2; 1952.05.06., CsSz, 2; 1961.06.04., WM, 2, f!; 1961.06.04., WM, 2, f; 1962.05.22., WM, 4, f; 1962.05.22, WM, 2, f!.

ALCEDINIDAE Rafinesque, 1815

Alcedo atthis (Linnaeus, 1758) – Diósgyőr, 1937.06.16., VI, 4; Lancaster: Barton Wood (Nagy-Britannia), 1948.04.29., Hu, 7, vh; Mecklenburg: Plau (Németország), 1959.05.19., MW, 6.

MEROPIDAE Rafinesque, 1815

Merops apiaster Linnaeus, 1758 – Báránd, 1958.06.25., 4; Csór, 1939.06.14., ML, 6; Gárdony, 1957.06.20., EGy, 8, v; Iszkaszentgyörgy, 1960.06.12., TD, 5, t; 1937.06.14., HL, 6; Polgárdi, 1960.06.24., TJ, 5, v; Sükösd, 1960.05.19., BL, 5, t; Szabadbattyán, 1961.06.19., TJ, 6, f!; 1962.06.16., TJ, 6, t; Tác: Fövenypuszta, 1961.06.16., RJif, 7, f!.

CORACIIDAE Rafinesque, 1815

Coracias garrulus Linnaeus, 1758 – Mezőkomárom, 1961.05.22., BK, 4, t; Sáregres, 1961.05.28., 2; Szarvas, 1933.06.30., PaL, 5; 1936.05.30., PaL, 4; Tárnok, 1920.05.08., RD, 4.

UPUPIDAE Leach, 1820

Upupa epops Linnaeus, 1758 – Alap, 1958.05.20., 6; Baja, 1959.05.03., BL, 6, t; Békéscsaba, 1949.05.07, PL, 10; 1949.05.11., PL, 8; Cegléd, 1959.04.19., BB, 6, t; 1959.04.21., BB, 7, t; 1959.05.15., BB, 8, v; Dunaföldvár, 1962.05.13., RJ, 6, f!; Kiskunhalas, 1951.04.26., PL, 7, t; Rajka, 1960.05.27., RP, 2; Sárszentmihály: Sárpentele, 1961.05.09., TJ, 8, v; Szigethalom, 1958.05.13., HL, 8, t; Szolnok, 1960.05.19., LI, 7, v.

PICIDAE Vigors, 1825

Jynx torquilla Linnaeus, 1758 – Bakonyoszlop, 1952.07.13., RP, 9, v; Gárdony, 1959.06.05., EGy, 19, vh; Pákozd, 1959.05.12., RJ, 10, t; Szarvas, 1934.05.30., PaL, 9.
Picus viridis Linnaeus, 1758 – Szarvas, 1936.04.21., PaL, 7; Székesfehérvár, 1961.05.03., RJ, 7, f.
Dryocopus martius (Linnaeus, 1758) – Neukirchen?: Ölendorf, 1933.04.27., MW, 4.
Dendrocopos major (Linnaeus, 1758) – Császártöltés, 1959.05.15., GI, 4; Doboz, 1940.05.14., CsA, 5, f; Lovasberény, 1962.05.09., RJ, 5, v; Sarkadremete, 1945.05.09., PL, 5; Sárkeszi, 1962.05.04., RJ, 7, t.
Dendrocopos syriacus (Hemprich & Ehrenberg, 1833) – Hortobágy: áll., 1960.04.29., EM, 5, f; Pécs, 1959.04.28., NM, 5; Székesfehérvár, 1957.07.02., RJ, 2, t.
Dendrocopos medius (Linnaeus, 1758) – Lovasberény, 1962.05.09., RJ, 5, f!; Magyarürög, 1950.05.09., CsSz, 6.
Dendrocopos minor (Linnaeus, 1758) – Pécs: Mecsekalja, 1953.05.24., NM, 5.

ALAUDIDAE Vigors, 1825

Calandrella brachydactyla (Leisler, 1814) – Macedónia, 1940.05.29., MW, 3, v.
Galerida cristata (Linnaeus, 1758) – Cegléd, 1961.05.15., 3; Csősz, 1958.05.10., RJ, 5, t; 1959.04.30., RJ, 6, t; 1959.04.30., RJ, 4, t; Tárnok, 1912.04.02., RD, 3; Zámoly, 1958.06.04., RJ, 4, t; Zichyújfalu, 1958.06.20., EGy, 3.
Lullula arborea (Linnaeus, 1758) – Budaörs, 1958.04.17., KK, 4; Sukoró, 1957.04.15., RJif, 5, f.
Alauda arvensis Linnaeus, 1758 – Gárdony: Dinnyés, 1961.06.10., RJ, 5, t; Győr: Bácsa, 1951.05.29., ?, 5; Lovasberény, 1960.05.27., RJ, 4, v; Mátyásdomb, 1959.05.30., RJ, 4, f; Pákozd: Börgönd, Börgöndi-rét, 1961.04.28., RJ,

3, v; Sárszentmihály: Sárpentele, 1958.04.29., RJ, 4, t; Seregélyes, 1961.04.26., RJ, 4, v; Soponya, 1959.06.02., RJ, 5, t; 1962.06.22., RJ, 4, vh; Szarvas, 1935.05.18., PaL, 5.

HIRUNDINIDAE Vigors, 1825

Riparia riparia (Linnaeus, 1758) – Nyergesújfalu, 1960.05.30., RJ, 5, v; 1960.05.30., RJ, 6, v; Székesfehérvár, 1960.05.15., RJ, 5, t; 1960.05.15., RJif, 5, t; 1960.06.03., RJ, 5, v; 1960.06.03., RJif, 6, t; 1961.05.25., RJ, 6, v; 1961.05.25., RJif, 5, v; 1962.05.09., RJif, 6, t; 1962.05.09., RJif, 5, t; 1962.05.16., RJif, 5, t.
Hirundo rustica Linnaeus, 1758 – Dunavarsány, 1960.05.25., KA, 6, t; Előszállás, 1961.06.18., 4; Gárdony, 1959.05.31., EGy, 5, t; Seregélyes, 1960.06.04., RJif, 5, t; Tác: Pötöllepuszta, 1961.06.15., TJ, 5, t; Zichyújfalu, 1952.06.22., EGy, 4.
Delichon urbica (Linnaeus, 1758) – Baja, 1960.05.25., BL, 5, t; Szarvas, 1936.05.09., PaL, 5.
Delichon urbica + ***Hirundo rustica*** – Seregélyes, 1960.06.13., RJ, 3 + 1, t.

MOTACILLIDAE Horsfield, 1821

Anthus campestris (Linnaeus, 1758) – Füle, 1960.06.04., TJ, 3, t; Vasegerszeg, 1958.06.20., NJ, 4, t.
Anthus trivialis (Linnaeus, 1758) – Baja: Pörböly, 1959.05.22., BL, 5, t; Dunakiliti: Tejfalusziget, 1960.05.07., RJ, 6, t; Füle – Polgárdi, 1962.06.23., TJ, 5, v!; Pécsvárad, 1938.05.08., AE, 4; Vasegerszeg, 1956.05.09., NJ, 5, t.
Motacilla flava Linnaeus, 1758 – Agárd, 1959.05.26., RJ, 6, t; Alap, 1959.05.20., RJ, 6, v; Békéscsaba, 1949.05.22., PL, 6; Gárdony: Dinnyés, 1959.06.03., RJ, 5, v; Nyírábrány, 1939.05.20., PaL, 4.
Motacilla cinerea Tunstall, 1771 – Erdősmecske, 1961.04.15., AE, 6, t; Magyaregregy, 1957.04.07., SzL, 4, t; Mecsek: Óbányai-völgy, 1950.07.18., CsSz, 6, v.
Motacilla alba Linnaeus, 1758 – Dunakiliti: Tejfalusziget, 1955.05.19., CsL, 5; Dusnok, 1961.04.14., BL, 5, t; Szarvas, 1934.04.24., PaL, 6; Székesfehérvár, 1962.06.05., TJ, 6, t.

CINCLIDAE Sundevall, 1836

Cinclus cinclus (Linnaeus, 1758) – Namur: Crupet (Belgium), 1959.03.27., Le, 5; Shropshire: Ludlow (Nagy-Britannia), 1908.04.14., CWM, 4.

TROGLODYTIDAE Swainson, 1832

Troglodytes troglodytes (Linnaeus, 1758) Közép-Mecsek: Petnyáki-völgy, 1961.06.04., NM, 6, v; Rajka, 1960.05.27., RJif, 7, t; Thoricourt (Belgium), 1959.05.06., Le, 5; Villers-la-Ville (Belgium), 1959.05.12., Le, 6.

PRUNELLIDAE Richmond, 1908

Prunella modularis (Linnaeus, 1758) – Dunakiliti: Tejfalusziget, 1952.05.08., CsL, 5; 1959.04.20., CsL, 6, t; 1960.05.07., RJ, 5, t; 1960.07.09., CsL, 5; 1961.04.30., CsL, 5, t; Rajka, 1958.05.16., RP, 5, t; 1960.05.06., RJ, 5, t; 1960.05.10., RJ, 5, v; 1960.05.24., RJif, 4, t; 1960.05.26., RJif, 6, t.

TURDIDAE Rafinesque, 1815

Erithacus rubecula (Linnaeus, 1758) – Isztimér: Guttamási, 1954.05.02., ML, 7; Kocsola, 1959.06.15., RJ, 6, v; Lovászi: Kútfej, 1952.05.11., BGy, 5; Máza, 1958.05.01., KA, 6, t; 1959.04.28., RJ, 6, t.
Luscinia megarhynchos C. L. Brehm, 1831 – Békéscsaba, 1940.05.19., PL, 5; Sukoró: Velencei-hegység, 1960.05.01., RJ, 5, t; Szabadbattyán, 1962.06.02., TJ, 5, t; Szarvas, 1935.05.15., PaL, 5; 1936.05.30., PaL, 5.
Luscinia svecica (Linnaeus, 1758) – Adony: Cikola, 1960.05.23., RJ, 6, f; Gárdony: Dinnyés, 1960.05.07., RJ, 6, v; 1961.06.11., RJ, 6, v.
Phoenicurus ochruros (S. G. Gmelin, 1774) – Hegyfalu, 1954.05.29., NM, 5, v; Nagykovácsi: Á.G., 1958.05.19., RJ, 5, t; Namur: Dave (Belgium), 1958.05.14., Le, 5.
Phoenicurus phoenicurus (Linnaeus, 1758) – Debrecen, 1958.05.10., EM, 6, t; 1958.05.14., EM, 7, t; Szarvas, 1934.05.08., PaL, 6, v.
Saxicola rubetra (Linnaeus, 1758) – Alap, 1958.06.28., RJ, 5, t; Erdősmecske, 1940.06.23., AE, 6, f.

Saxicola torquata (Linnaeus, 1766) – Lovászi: Kútfej, 1951.06.03., BGy, 5; Öttevény, 1950.05.12., 6.
Oenanthe oenanthe (Linnaeus, 1758) – Baja, 1959.05.03., BL?, 4; Bakonycsernye, 1959.05.19., RJ, 6, t; Cegléd, 1960.05.15., 5; Szarvas, 1935.05.12., PaL, 5; Székesfehérvár, 1962.05.09., RJ, 6, t; Szigethalom, 1959.06.04., HL, 6, v; Velence, 1958.05.08., SzL, 6, t.
Monticola saxatilis (Linnaeus, 1766) – Badacsony, 1930.05.28., Keszthelyi Múzeum, 5, f; Pécs: Patacs, 1950.06.11., CsSz, 4.
Turdus merula Linnaeus, 1758 – Cegléd, 1959.04.18., BB, 4, v; Dobogókő, 1957.05.23., RJ, 3, t; Dunakiliti: Tejfalusziget, 1960.05.07., RJ, 5, v; Dunavarsány, 1960.05.08., KA, 6, v; Lovasberény, 1960.04.24., RJ, 4, v; Martonvásár, 1960.05.11., RJ, 4, t; 1961.04.13., RJ, 5, v; 1961.04.13., RJ, 5, t; Mája, 1959.04.12., RJ, 4, v; Mór: Tímárpuszta, 1960.04.24, RJ, 4, v; Nádasladány, 1960.05.08., RJ, 5, v; Pilisszentkereszt, 1957.05.27., RJ, 5, t; Rajka, 1960.05.06., RJif, 4, t; 1960.05.10., RJif, 5, v; 1960.05.11., RJif, 4, v; 1960.05.17., RJif, 5, v; Seregélyes, 1960.05.01., RJ, 5, t; 1960.05.04., RJif, 4, t; 1960.05.12., RJif, 5, t; 1961.04.06., RJ, 4, t; Székesfehérvár: Csala, 1960.05.04., RJ, 6, v; Tabajd, 1961.04.16., RJ, 5, t; Zámoly, 1959.06.08., RJ, 4, t.
Turdus pilaris Linnaeus, 1758 – Taubenheim (Németország), 1936.04.16., MW, 4.
Turdus philomelos C. L. Brehm, 1831 – Dunakiliti: Tejfalusziget, 1958.05.17., RJ, 5, v; 1958.05.17., RJ, 5, v; Dunavarsány, 1960.05.01, KA, 5, t; Kocsola, 1959.05.01., Ro, 5, t; Martonvásár, 1960.04.30., RJ, 5, t; 1960.04.30., RJ, 5, t; 1961.05.12., RJ, 5, t; Mája, 1959.04.07., RJ, 5, t; 1958.05.05., RJ, 5, t; 1958.05.08., RJ, 6, t; 1959.05.15., 4; Mór: Tímárpuszta, 1960.04.24., RJ?, 4 (5); Rajka, 1960.05.27., RJif, 5, v; Szigethalom, 1958.05.10., HL, 5; Tamási, 1962.05.06., RJ, 5, t.
Turdus viscivorus Linnaeus, 1758 – La Milesse (Franciaország), 1949.06.10, DM, 4; Pécs, 1957.04.06., NM, 4, t; Sárszentmihály, 1962.04.30., RJ, 3, f!; Thoricourt (Belgium), 1958.04.21., Le, 4.

Sylviidae Vigors, 1825

Locustella naevia (Boddaert, 1783) – Hanság, 1912., ?, 6.
Locustella luscinioides (Savi, 1824) – Gárdony: Dinnyés, 1930.05.11., RD, 3; 1960.05.11., RJ, 5, t; 1961.06.07., RJ, 5, v; 1961.06.18., RJ, 4, v; 1962.05.12., RJ, 5, t; Soponya, 1960.07.12., RJ, 4, v; Szeged: Fehér-tó, 1952.05.08., BP, 4.
Acrocephalus melanopogon (Temminck, 1823) – Gárdony: Dinnyés, 1934.04.17., RD, 4; 1958.04.20., RJ, 4, v; 1960.04.21., RJ, 4, t; 1960.04.21., RJ, 4, t; 1960.04.25., RJ, 4, v; 1960.05.24., RJ, 3, v; 1961.04.22., RJ, 4, t; 1961.04.26., RJ, 4, t; 1961.06.02., RJ, 4, t; 1961.06.04., RJ, 4, t; 1961.06.11., RJ, 4, v; 1962.05.12., RJ, 4, t; Pusztaegres: Örspuszta, 1958.06.02., RJ, 4, v; Lelőhely nélkül, 1967.05.08., RJ?, 3.
Acrocephalus paludicola (Vieillot, 1817) – Tárnok, 1926.05.11., RD, 3.
Acrocephalus schoenobaenus (Linnaeus, 1758) – Gárdony: Dinnyés, 1958.06.06., RJ, 6, v; 1961.06.04., RJ, 5, t; Soponya, 1958.05.29., RJ, 5, t; 1961.05.28., RJ, 5, t; 1962.06.03., RJ, 5, vh; 1962.06.03., RJ, 5, vh.
Acrocephalus palustris (Bechstein, 1798) – Békéscsaba, 1933.06.23., PL, 3; Doboz, 1934.06.16., CsA, 4; Dobri, 1950.06.03., BGy, 4.
Acrocephalus scirpaceus (Hermann, 1804) – Gárdony, 1959.06.30., RJ, 4, t; Gárdony: Dinnyés, 1960.05.24., RJ, 4, v; 1962.05.12., RJ, 4, t; 1962.05.12., RJ, 4, t; Pusztaegres: Örspuszta, 1957.05.26., RJ, 3, t; Soponya, 1960.07.09., RJ, 4, t; 1960.07.12., RJ, 4, t; 1961.05.14, RJ, 4, t; 1961.05.28, RJ, 4, t; 1961.06.04., RJ, 4, v; 1961.06.04, RJ, 4, t; 1961.06.11., RJ, 4, v; 1962.06.03., RJ, 4, t; 1962.06.03., RJ, 4, t; Székesfehérvár: Csala, 1960.05.26., RJ, 4, t.
Acrocephalus arundinaceus (Linnaeus, 1758) – Pusztaegres: Örspuszta, 1957.05.30., RJ, 5, t; 1958.05.25., RJ, 5, t; Sárszentágota, 1958.06.07., RJ, 5, t; Soponya, 1959.05.24., RJ, 5, v; 1959.05.24., RJ, 5, v; 1959.05.24., RJ, 5, t; 1959.05.24., RJ, 5, v; 1961.07.09., RJ, 4, t; 1962.06.03., RJ, 5, t.
Hippolais pallida (Hemprich & Ehrenberg, 1833) – Qual'at Saleh (Irak), 1957.06.04., MW, 3.
Hippolais icterina (Vieillot, 1817) – Dunakiliti: Tejfalusziget, 1959.06.08., CsL, 4; 1960.06.05., CsL, 5; 1960.06.30., CsL, 5, v; 1962.06.07., CsL, 2.
Sylvia nisoria (Bechstein, 1795) – Baja: Pörböly, 1960.05.25., BL, 5, v; Debrecen, 1960.05.18., EM, 5; Nagykovácsi, 1958.05.19., RJ, 6, t; Pilisszentkereszt, 1957.05.27., RJ, 5, t; Szabadbattyán, 1960.05.30., TJ, 5, t; Szarvas, 1936.05.24., PaL, 5.
Sylvia curruca (Linnaeus, 1758) – Békéscsaba, 1936.05.09., PL, 5; Gyula, 1959.05.07., PL, 5, v; Sarkadremete, 1940.05.19., PL, 5; 1948.05.14., PL, 5; Szarvas, 1935.05.04., PaL, 5; 1936.05.08., PaL, 5.
Sylvia communis Latham, 1787 – Békéscsaba, 1931.05.21., PL, 6; Csór: Ősi-Sárrét, 1962.05.16., RJ, 6, f!; Csősz, 1958.05.11., RJ, 5, v; Győr: Győrszentiván, 1950.05.09., RJ, 4; Szabadbattyán, 1962.05.24., TJ, 5, t; 1962.05.27., TJ, 5, v; 1962.06.06., TJ, 5, vh; Szarvas, 1934.06.17., PaL, 4.

Sylvia borin (Boddaert, 1783) – Dunakiliti: Tejfalusziget, 1958.05.17., RP, 5, t; 1960.05.05., CsL, 5, t; 1960.05.22., RJif, 5, v; Rajka, 1960.05.08., RJif, 5, v; 1960.05.17., RJif, 5, t; 1960.05.27., RJif, 5, v; Sarkadremete, 1941.05.22., PL, 6.
Sylvia atricapilla (Linnaeus, 1758) – Baja: Pörböly, 1960.05.04., BL, 6, t; Dunakiliti: Tejfalusziget, 1958.05.17., RJ, 5, t; 1958.05.17., RJ, 5, t; 1958.05.17., RJ, 5, t; 1960.05.07., RJ, 5, t; 1960.05.22., RJif, 5, v; 1960.05.22., RJif, 5, v; Kocsola, 1959.05.10., RJ?, 5, t; 1959.05.10., RJ?, 4, t; 1959.05.10., RJ?, 5, t; Martonvásár, 1960.05.11., RJ, 5, v; Rajka, 1960.05.06., RJif, 4; 1960.05.08., RJif, 5, t; 1960.05.11, RJif, 5, t; 1960.05.14, RJif, 5, t; 1960.05.17., RJif, 5, t; 1960.05.17., RJif, 4, v; 1960.05.25., RJif, 5, v; 1960.05.27., RJif, 5, v; Seregélyes, 1959.05.15., RJ, 5, t; Zichyújfalu, 1962.05.23., RJ, 4, v.
Phylloscopus sibilatrix (Bechstein, 1793) – Pusztavacs, 1953.05.13., PI, 5; Sukoró: Velencei-hegység, 1959.05.24., SzL, 7, v.
Phylloscopus collybita (Vieillot, 1817) – Lovasberény, 1962.04.26., RJif, 6, t; Lovászi: Kútfej, 1950.04.26., BGy, 6; Sukoró: Velencei-hegység, 1959.04.24., SzL, 5, t.
Phylloscopus trochilus (Linnaeus, 1758) – Brandenburg (Németország), 1926.05.16., MW, 6; Rathenow (Németország), 1929.06.01., MW, 6.
Regulus regulus (Linnaeus, 1758) – La Roche-en-Ardenne (Belgium), 1958.05.12., Le, 8.

Muscicapidae Fleming, 1822

Muscicapa striata (Pallas, 1764) – Cegléd, 1959.05.25., BB, 5, v; Debrecen, 1958.05.19., EM, 5, v; Győr: Kismegyer, 1949.05.26., RJ, 5; Hegyfalu, 1953.06.07., NM, 4, v; Rajka, 1958.05.24., RP, 5, t.
Ficedula albicollis (Temminck, 1815) – Báta, 1951.05.11., CsSz, 5, v; Sarkadremete, 1940.05.08., PL, 6; 1959.05.28., PL, 5; Sukoró: Velencei-hegység, 1958.04.28., SzL, 10, v.
Ficedula hypoleuca (Pallas, 1764) – Erlangen?: Mönau (Németország), 1962.05.19., MW, 6; 1962.05.19., MW, 6; 1962.05.17, MW, 6; 1962.05.19., MW, 6.

Timaliidae Vigors & Horsfield, 1827

Panurus biarmicus (Linnaeus, 1758) – Gárdony: Dinnyés, 1957.05.01., RJ, 9, v; 1959.03.28., RJ, 9, t; 1959.04.03., RJ, 6, t; 1959.04.03., RJ, 6, t; 1959.04.07., RJ, 6, t; 1959.06.03., RJ, 7, t; 1960.04.04., RJ, 10, t; 1960.04.04., RJ, 6, t; 1960.04.07., RJ, 11, t; 1960.04.09., RJ, 7, t; 1960.04.12., RJ, 9, t; 1960.04.14., RJ, 6, t; 1960.05.11., RJ, 6, v; 1961.04.08., RJ, 7, t; 1961.04.19., RJ, 7, f!; 1961.04.19., RJ, 7, t; 1962.04.19., RJ, 8, vh; 1967.05.18., RJ?, 5.

Aegithalidae Reichenbach, 1850

Aegithalos caudatus (Linnaeus, 1758) – Dunafalva, 1960.04.27., BL, 10, v; Martonvásár, 1961.04.06., RJ, 1, v; Máza, 1959.04.07., RJ, 10, t; Vasegerszeg, 1958.06.20., NJ, 4, t.

Paridae Vigors, 1825

Parus palustris Linnaeus, 1758 – Dunakiliti: Tejfalusziget, 1958.05.17., RJ, 8, t; Martonvásár, 1961.04.03., RJ, 7, t.
Parus cristatus Linnaeus, 1758 – Brandenburg (Németország), 1918.04.30., MW, 8.
Parus ater Linnaeus, 1758 – Riesa?: Naschwitz (Németország), 1949.04.27., MW, 6.
Parus caeruleus Linnaeus, 1758 – Baja, 1959.04.14., BL, 12, t; Gyula, 1938.04.23., PL, 16; Martonvásár, 1960.04.21., RJ, 11, t; 1960.04.21., RJ, 11, t; 1960.04.30., RJ, 12, t; Tamási, 1962.05.06., RJ, 13, t.
Parus major Linnaeus, 1758 – Cegléd, 1959.04.20., BB, 7, v; Előszállás, 1959.05.26., RJ, 9, v; 1960.04.24., GB, 10, t; Isztimér: Királyszállás, 1961.04.19., LI, 11, t; Martonvásár, 1960.04.21., RJ, 11, t; 1960.04.30., RJ, 10, t; 1961.04.13., RJ, 12, t; 1961.04.19., RJ, 11, vh; Máza, 1959.05.20., KA, 8, v; 1959.05.27., KA, 10, v; Szarvas, 1936.04.30., PaL, 13.

Sittidae Lesson, 1828

Sitta europaea Linnaeus, 1758 – Lovasberény, 1962.04.18., RJ, 8, t; 1962.05.09., RJ, 5, t; Máza, 1959.04.12., KA, 7, f; Nyugat-Mecsek, 1960.04.17., NM, 8, v; Pécs: Patacs, 1950.04.19., CsSz, 5; Zengővárkony, 1961.04.12., AE, 5, f.

CERTHIIDAE Leach, 1820

Certhia brachydactyla C. L. Brehm, 1820 – Mecsek, 1951.04.12., CsSz, 5; Sarkadremete, 1945.05.03., PL, 6; Sukoró: Velencei-hegység, 1957.04.04., SzL, 5, t.
Certhia sp. – Regenthin / Mark (Németország), 1930.05.02., MW, 5.

REMIZIDAE Olphe-Galliard, 1891

Remiz pendulinus (Linnaeus, 1758) – Pusztaegres: Örspuszta, 1960.07.01., RJ, 6, t; Soponya, 1959.05.17., RJ, 7, t; 1959.06.19., RJ, 7, t; 1961.04.29., RJ, 8, t; 1961.04.29., RJ, 7, t; 1961.05.20., RJ, 6, v; 1961.05.20., RJ, 6, t.

ORIOLIDAE Vigors, 1825

Oriolus oriolus (Linnaeus, 1758) – Cegléd, 1959.05.28., BB, 4, t; Doboz, 1941.05.26., CsA, 4; Gárdony, 1959.06.07., RJ, 4, t; Soponya, 1959.06.02., RJ, 4, t; 1960.05.30., RJ, 4, v; 1960.05.30., RJ, 4, v; 1962.06.03., RJ, 4, t; Szarvas, 1933.06.20., PaL, 4; Székesfehérvár, 1960.06.03., RJ, 4, v.

LANIIDAE Rafinesque, 1815

Lanius collurio Linnaeus, 1758 – Baja: Pörböly, 1959.05.25., BL, 5; 1959.05.31., BL, 5; Ceglédbercel, 1959.04.15., 5; Dunavarsány, 1960.05.29., KA, 6, v; Dunavecse, 1960.06.11., RJ, 5, t; Előszállás, 1961.06.03., RJ, 5, t; 1961.06.11., RJ, 4; Gárdony: Dinnyés, 1960.06.04., RJ, 5, v; 1960.06.04., RJ, 6, v; Mária, 1958.06.01., KA, 6, t; 1958.06.04., KA, 6, t; 1958.06.04., KA, 5, t; 1958.06.05., KA, 5, t; 1958.06.06., KA, 6, t; 1958.06.09., KA, 6, t; 1959.05.28., RJ, 7, t; Nagykovácsi, 1958.05.19., RJ, 6, t; 1958.05.19., RJ, 6, t; Pilisszentkereszt, 1957.05.27., RJ, 6, t; Rajka, 1960.05.18., RJif, 7, t; Sárszentágota, 1961.06.18., 5; Sárszentmihály: Sárpentele, 1960.06.04., RJ, 5, t; 1960.06.07., 3; 1961.05.18., 5; Seregélyes, 1959.06.04., RJ, 6, t; 1960.05.25., RJ, 5, t; 1960.07.03., RJif, 6, t; Soponya, 1959.05.24., RJ, 6, t; Szabadbattyán, 1960.05.30., RJ, 5, t; 1960.06.06., 6; 1960.06.20., TJ, 5, t; Székesfehérvár, 1960.05.29., RJ, 6, v; Szigethalom, 1960.06.15., HL, 6, v; Zichyujfalu, 1962.05.23., RJ, 6, t; 1962.05.30., RJ, 6, t; 1962.05.30., RJ, 6, t.
Lanius minor Gmelin, 1788 – Bajaszentistván, 1959.05.25., BL, 5, t; Bácsborsód, 1959.05.29., BL, 4, t; Cegléd, 1958.05.18., BB, 4, t; 1959.05.18., BB, 6, t; 1959.05.18., BB, 6, t; Csősz, 1958.06.11., RJ, 5, v; 1958.06.16., RJ, 7, t; 1960.05.30., 4; Dunavarsány, 1960.05.28., KA, 4, v; 1960.06.05., KA, 5, v; Gara, 1959.05.28., BL, 4, t; Gárdony: Dinnyés, 1960.05.25., RJ, 6, t; Nagyvenyim, 1960.06.16., Ma, 4, t; Seregélyes, 1960.06.07., RJ, 5, t; Soponya, 1959.06.02., RJ, 8, t; 1962.06.22., RJ, 4, v; Szabadbattyán, 1960.06.03., RJ, 5, t; Székesfehérvár, 1958.05.31., RJ, 5, v; 1958.05.31., RJ, 4, t; Szigethalom, 1960.06.08., HL, 5, v.
Lanius excubitor Linnaeus, 1758 – Erdély (Románia), 1933., DL, 2; Mies (Svájc), 1926.04.23., MW, 5.
Lanius senator Linnaeus, 1758 – Spanyolország, 1938.06.01., MW, 5.

CORVIDAE Leach, 1820

Garrulus glandarius (Linnaeus, 1758) – Nadap: Velencei-hegység, Meleg-hegy, 1959.04.30., 4; Mór, 1960.05.26., 4; Nádasladány, 1960.04.19., RJ, 6, t; Sukoró: Velencei-hegység, 1957.04.15., SzL, 6, v; Székesfehérvár: Csala, 1960.04.30., RJ, 8, t; Tököl, 1958.05.11., HLa, 6; Zámoly, 1960.05.19., RJ, 7, t.
Pica pica (Linnaeus, 1758) – Cegléd, 1959.05.02., BB, 5; Pusztaszabolcs: Felsőcikolapuszta, 1957.05.12., RJ, 6, v; Sárszentágota, 1960.04.10., RJ, 6, t; Sárszentmihály: Sárpentele, 1957.04.20., RJ, 8, t; Székesfehérvár, 1958.04.27., RJ, 8, t; 1960.04.09., RJ, 6, t.
Pica pica + ***Passer*** sp. – Székesfehérvár: Csala, 1960.04.28., RJ, 8 + 1, v.
Corvus monedula Linnaeus, 1758 – Baja, 1960.04.22., BL, 5, v; Cegléd, 1959.04.26., 4; Gárdony: Agárd, Csiribpuszta, 1958.05.01., RJ, 7, t; Sárszentmihály: Sárpentele, 1961.04.23., RJ, 5, v; Seregélyes, 1959.05.02., RJ, 7, t; 1960.04.26., RJ, 7, t; 1961.04.20., RJ, 5, v; 1961.04.21., RJ?, 4; 1961.04.24., RJ, 6, t; Szabadbattyán, 1960.04.30., RJ, 6, t; Szarvas, 1937.04.30., MB, 7; Székesfehérvár, 1961.04.16., RJ, 5, v; 1961.04.16., RJ, 5, v; 1961.04.16., RJ, 7, v; 1962.05.15., RJ, 6, v.
Corvus frugilegus Linnaeus, 1758 – Füzesgyarmat, 1960.03.31., MG, 6, t; Sárszentágota, 1960.04.10., RJ, 5, f!; 1961.03.26., RJ, 5, t; 1961.03.26., RJ, 5, t; 1961.03.26., RJ, 4, t; 1961.04.10., RJ, 6, v; Sárszentmihály, 1960.04.17., TJ, 5, v; 1961.04.03., RJ, 4, f; 1961.04.03., TJ, 5, v; 1961.04.08., RJ, 4, v; Sárszentmihály: Sárpentele, 1960.04.04.,

RJ, 4, v; Soponya, 1959.05.10., RJ, 4, v; Szabadbattyán, 1960.03.27., RJ, 5, t; 1960.03.27., RJ, 4, t; 1960.03.27., RJ, 5, t; 1960.04.03., TJ, 5, vh; 1960.04.03., TJ, 5, v; 1960.04.09., RJ, 4, t; 1961.04.17., RJ, 5, vh.
Corcus corone Linnaeus, 1758 – La Roche-en-Ardenne (Belgium), 1956.04.14., Le, 5, f.
Corvus cornix Linnaeus, 1758 – Csór: Sárrét, 1961.04.23., RJ, 5, f!; 1962.04.30., RJ, 5, vh; Csősz, 1958.04.29., RJ, 5, t; Felsőszentiván, 1961.04.01., RJ, 6, t; Hercegszántó, 1960.04.25., BL, 6, t; Iszkaszentgyörgy, 1960.04.14., TD, 7, t; Kis-Balaton, 1959.04.20., RJ, 4, t; Pincehely, 1962.04.23., RJ, 6, v; Sárszentmihály, 1960.04.17., RJ, 4, t; 1960.05.01., RJ, 5, t; 1961.04.14., RJ, 5, v; 1961.04.14, RJ, 5, t; Sárszentmihály: Sárpentele, 1961.05.11., RJ, 5, v; Soponya, 1959.05.16., RJ, 4, v; 1961.04.15., RJ, 6, t; Szabadegyháza, 1962.04.18., RJ, 5, t; Székesfehérvár, 1960.04.19., RJ, 5, t; 1961.04.22., RJ, 5, v; 1961.05.03., RJ, 5, t; 1961.05.07., RJ, 5, t; Székesfehérvár: Mohai-rét, 1963.04.17., 5.
Corvus corax Linnaeus, 1758 – Gyulavári, 1959.03.18., PL, 4, f!; Makó, 1951.03.21., BF, 1.

Sturnidae Rafinesque, 1815

Sturnus vulgaris Linnaeus, 1758 – Bátmonostor, 1960.04.21., BL, 5, t; Doboz, 1940.05.08., CsA, 5; Dunakiliti: Tejfalusziget, 1959.04.26., CsL, 6, t; Székesfehérvár, 1958.04.29., RJ, 5, t; Zengővárkony, 1961.04.21., AE, 5, t.
Sturnus roseus (Linnaeus, 1758) – Hortobágy, 1949.07.10., BGy, 3 (Máté).

Passeridae Illiger, 1818

Passer domesticus (Linnaeus, 1758) – Cegléd, 1959.05.25., BB, 8, t; Gárdony, 1958.07.19., EGy, 6, t; 1958.07.19., EGy, 6, t; Nagykovácsi, 1958.05.19., RJ, 5, t; Székesfehérvár, 1959.05.28., RJ, 5, t; Zichyújfalu, 1958.06.22., EGy, 6, t; 1958.06.22., EGy, 5, t.
Passer montanus (Linnaeus, 1758) – Baja, 1959.05.23., BL, 6, t; Előszállás, 1960.06.03., RJ, 5, t; Martonvásár, 1960.04.21., RJ, 5, t; Máza, 1959.05.26., KA, 5, t; Nagykovácsi, 1958.05.19., RJ, 6, t; Pusztaszabolcs: Felsőcikola-puszta, 1957.05.12., RJ, 6, t; Soponya, 1959.05.17., RJ, 5, t; Szigethalom, 1955.05.14., HL, 5.

Fringillidae Vigors, 1825

Fringilla coelebs Linnaeus, 1758 – Dunakiliti: Tejfalusziget, 1958.05.17., RJ, 5, v; Dunavarsány, 1960.05.01., KA, 5, t; Iszkaszentgyörgy: Burok-völgy, 1961.04.28., RJ, 5, vh; Kocsola, 1959.05.10., RJ?, 5, v; 1959.05.10., RJ?, 6, v; Lovasberény, 1962.05.09., RJ, 6, v; 1962.05.09., RJ, 5, v; Martonvásár, 1961.04.19., RJ, 5, t; 1961.04.19., RJ, 5, t; 1960.04.30., RJ, 5, t; Rajka, 1960.05.06., RP, 5, t; 1960.05.11., RJif, 5, v; Seregélyes, 1961.04.16., RJ, 5, t; Szarvas, 1937.05.08., PaL, 5.
Serinus serinus (Linnaeus, 1766) – Előszállás, 1958.05.15., RJ, 5, t; Martonvásár, 1960.04.30., RJ, 4, t; Rajka, 1930.06.15., CsL, 4; 1960.05.06., RJ, 4, t.
Carduelis chloris (Linnaeus, 1758) – Dunakiliti: Tejfalusziget, 1958.05.17., RJ, 5, t; 1960.05.07., RJ, 5, t; Dunavarsány, 1960.06.05., KA, 5, t; Martonvásár, 1957.06.29., RJ, 5, t; Máza, 1958.05.08., RJ, 6, t; 1958.05.08., RJ, 6, t; 1958.06.02., KA, 5, v; 1959.04.07., RJ, 5, t; Nádasladány, 1960.06.13., RJ, 5, v; Rajka, 1960.05.12., RJif, 5, t; 1960.05.15., RJif, 5, vh; 1960.05.15., RJif, 5, t; 1960.05.25., RJif, 5, v; Seregélyes, 1960.05.12., RJif, 5, t; 1960.05.16., RJ, 5, t; 1960.07.05., RJ, 5, t; Soponya, 1962.06.03., RJ, 5, t; Velence, 1957.06.01., SzL, 5, v.
Carduelis carduelis (Linnaeus, 1758) – Baja, 1959.05.19., BL, 4, t; Doboz, 1938.05.28., CsA, 4; Előszállás, 1960.05.12., RJ, 5, t; Martonvásár, 1960.05.11., RJ, 5, t; 1960.05.11., RJ, 4, t; Seregélyes, 1960.06.08., RJ, 5, v; Szarvas, 1934.05.31., PaL, 4; 1937.05.20., PaL, 5; Szabadbattyán, 1960.06.17., TJ, 5, v.
Carduelis spinus (Linnaeus, 1758) – Eupen (Belgium), 1952.05.20., Le, 5.
Carduelis cannabina (Linnaeus, 1758) – Rajka, 1960.05.06., RJ, 5, t; 1960.05.10., RJ, 5, t; 1960.05.14., RJif, 5, v; Vasegerszeg, 1957.06.09., NJ, 6, t; 1958.07.21., NM, 5, t.
Pyrrhula pyrrhula (Linnaeus, 1758) – Habichtswald (Németország), 1899.05.21., MW, 5.
Coccothraustes coccothraustes (Linnaeus, 1758) – Agárd, 1957.05.03., RJ, 5, t; Pécs, 1954.05.08., NM, 6, v.

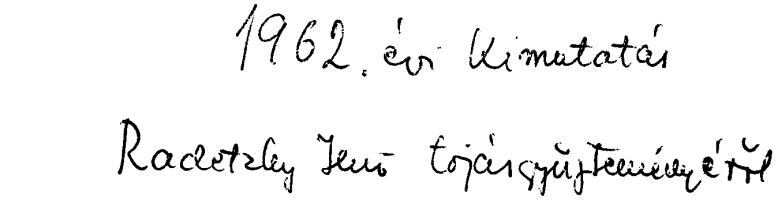
Emberizidae Vigors, 1831

Emberiza citrinella Linnaeus, 1758 – Apátvarasd, 1961.04.28., AE, 5, vh; Káta (Perkáta?), 1959.04.30., RJ?, 3; Máza, 1958.05.08., RJ, 4, t; Rajka, 1960.05.20., RJ, 4, t; Zámoly, 1958.05.03, RJ, 5, t.
Emberiza hortulana Linnaeus, 1758 – Pécs, 1955.06.14., NM, 5, t; 1962.05.24., NM, 5, f.

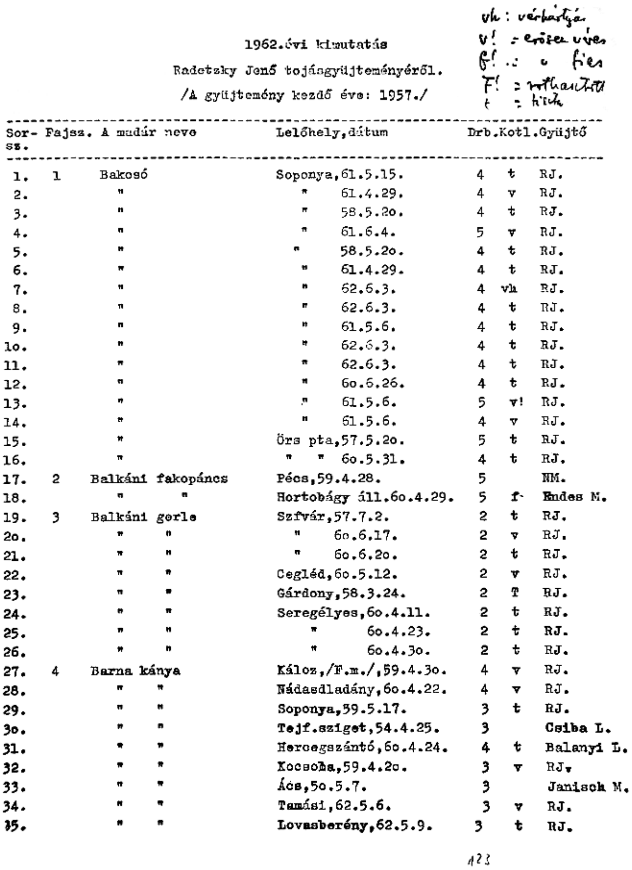
Emberiza schoeniclus (Linnaeus, 1758) – Gárdony: Dinnyés, 1958.05.04., RJ?, 3; 1960.05.04., RJ, 5, t; 1960.05.04., RJ, 5, t (elcserélve, 1962.10.05-én); 1960.06.13., RJ, 5, t; 1961.04.26., RJ, 6, v; 1961.05.03., RJ, 6, t; Pákozd: Börgönd, Börgöndi-rét, 1961.05.01., RJ, 5, t; Sárszentágota, 1960.04.26., RJ, 5, t; Soponya, 1961.05.28., RJ, 5, v; Tác: Fövenypuszta, 1962.05.13., TJ, 5, t.
Miliaria calandra (Linnaeus, 1758) – Cegléd, 1960.05.09., BB, 4, t; Soponya, 1959.05.24., RJ, 5, v; Szarvas, 1938.05.18., PaL, 6; Székesfehérvár, 1960.06.20., RJ, 6, v; 1961.05.03., RJif, 5, t; Újkér, 1960.06.11., SL, 5, v; 1960.06.14., SL, 6, v; 1960.06.20., SL, 5, v; 1960.06.20., SL, 5, v; 1962.05.19., SL, 5, v.

A lelőhelyek megoszlása országonként és a hazai adatok esetében megyénként

Algéria: Algír: Djebel Bourbaia. – **Ausztria**: Gmunden: Cumberland. – **Belgium**: Namur: Boz; Namur: Crupet; Namur: Dave; Eupen; La Roche-en-Ardenne; Thoricourt; Villers-la-Ville; Wulveringem. – **Dánia**: Jutland. – **Franciaország**: La Milesse. – **Hollandia**: Fríz-szigetek; Ravon. – **Irak**: Qual'at Saleh. – **Macedónia**: Bitolj (Bitola?); Macedónia. – **Magyarország**: ***Baranya megye***: Apátvarasd; Bicsérd; Dunafalva; Erdősmecske; Közép-Mecsek: Petnyáki-völgy; Magyaregregy; Mecsek; Mecsek: Óbányai-völgy; Nyugat-Mecsek; Pécs; Pécs: Magyarürög; Pécs: Mecsekalja; Pécs: Patacs; Pécsvárad; Sumony; Zengővárkony. ***Bács-Kiskun megye***: Ágasegyháza; Baja; Baja: Bajaszentistván; Baja: Pörböly; Baja: Püspökpuszta; Bácsborsód; Bátmonostor; Bócsa; Császártöltés; Csávoly; Dunavecse; Dusnok; Felsőszentiván; Fülöpháza; Fülöpháza: Szívósszék; Fülöpszállás; Gara; Hercegszántó; Kiskunhalas; Kunbaracs; Mátételke; Sükösd. ***Békés megye***: Békéscsaba; Biharugra; Doboz; Füzesgyarmat; Gerla: Póstelek; Gyoma; Gyula; Gyulavári; Kondoros; Mezőgyán; Sarkad: Sarkadremete; Szarvas; Újkígyós. ***Borsod-Abaúj-Zemplén megye***: Miskolc: Diósgyőr; Miskolc: Lillafüred; Sárospatak. ***Csongrád megye***: Makó; Szeged: Algyő, Sasér; Szeged: Fehér-tó; Szeged: Királyhalom; Szentes: Cserebökény. ***Fejér megye***: Adony: Cikola; Alap; Bakonycsernye; Csákvár; Csór; Csór: Sárrét; Csősz; Előszállás; Előszállás: Matild; Ercsi; Füle; Gárdony; Gárdony: Agárd, Csiribpuszta; Gárdony: Dinnyés; Gárdony: Zichyújfalu; Igar; Iszkaszentgyörgy; Iszkaszentgyörgy: Burok-völgy; Isztimér: Guttamási; Isztimér: Királyszállás; Káloz; Lovasberény; Martonvásár; Mátyásdomb; Mezőkomárom; Moha; Mór; Mór: Tímárpuszta; Nadap: Velencei-hegység, Meleg-hegy; Nagyvenyim; Nádasladány; Pákozd; Pákozd: Börgönd, Börgöndi-rét; Perkáta; Polgárdi; Pusztaegres: Örspuszta; Pusztaszabolcs: Felsőcikolapuszta; Sárbogárd: Rétszilas; Sárbogárd; Sáregres; Sárkeresztes; Sárkeresztúr; Sárkeszi; Sárszentágota; Sárszentmihály; Sárszentmihály: Sárpentele; Seregélyes; Soponya; Sukoró; Sukoró: Velencei-hegység; Szabadbattyán; Szabadegyháza; Székesfehérvár; Székesfehérvár: Csala; Székesfehérvár: Mohai-rét; Székesfehérvár: Sóstó; Tabajd; Tác: Fövenypuszta; Tác: Pötöllepuszta; Velence; Velencei-hegység; Velencei-tó; Velencei-tó: Nádas-tó; Zámoly. ***Győr-Moson-Sopron megye***: Dunakiliti: Tejfalusziget; Dunaszeg; Dunasziget: Doborgazsziget; Győr; Bácsa; Győr: Győrszentiván; Győr: Kismegyer; Hanság; Lébénymiklós: Lébény; Öttevény; Rajka; Újkér. ***Hajdú-Bihar megye***: Báránd; Debrecen; Hortobágy; Nyírábrány. ***Jász-Nagykun-Szolnok megye***: Jászfelsőszentgyörgy; Karcag; Kunmadaras; Mezőtúr; Szolnok. ***Komárom-Esztergom megye***: Ács; Nyergesújfalu. ***Pest megye***: Budakeszi; Budaörs; Cegléd; Ceglédbercel; Dobogókő; Dömsöd: Apaj; Dunavarsány; Halásztelek; Nagykovácsi; Nagykovácsi: Á. G.; Ócsa; Pilisszentkereszt; Pusztavacs; Szigethalom; Tárnok; Tököl. ***Somogy megye***: Balatonlelle; Látrány: Rádpuszta. ***Tolna megye***: Báta; Dunaföldvár; Kocsola; Máza; Pincehely; Tamási. ***Vas megye***: Gasztony; Hegyfalu; Vasegerszeg. ***Veszprém megye***: Bakonyoszlop. ***Zala megye***: Dobri; Kis-Balaton; Lovászi: Kútfej; Tormafölde: Vétyempuszta. – **Nagy-Britannia**: Anglia; Lancaster: Barton Wood; Shropshire: Ludlow. – **Németország**: Brandenburg; Habichtswald; Mecklenburg; Erlangen?: Mönau; Riesa?: Naschwitz; Neukirchen?: Ölendorf; Mecklenburg: Plau; Rathenow; Regenthin/Mark; Taubenheim. – **Románia**: Alduna; Erdély; Pozsga; Valea lui Mihai (Érmihályfalva). – **Spanyolország**: Spanyolország. – **Svájc**: Mies. – **Svédország**: Lappland (Lappföld).



2. ábra. Radetzky Jenő kézírása



1962.évi kimutatás

Radetzky Jenő tojásgyüjteményéről.

/A gyüjtemény kezdő éve: 1957./

vh : vérhártyá
v! : erősen véres
f! : " fies

Sor-sz.	Fajsz.	A madár neve	Lelőhely,dátum	Drb.	Kotl.	Gyüjtő
1.	1	Bakosó	Soponya,61.5.15.	4	t	RJ.
2.		"	" 61.4.29.	4	v	RJ.
3.		"	" 58.5.2o.	4	t	RJ.
4.		"	" 61.6.4.	5	v	RJ.
5.		"	" 58.5.2o.	4	t	RJ.
6.		"	" 61.4.29.	4	t	RJ.
7.		"	" 62.6.3.	4	vh	RJ.
8.		"	" 62.6.3.	4	t	RJ.
9.		"	" 61.5.6.	4	t	RJ.
1o.		"	" 62.6.3.	4	t	RJ.
11.		"	" 62.6.3.	4	t	RJ.
12.		"	" 6o.6.26.	4	t	RJ.
13.		"	" 61.5.6.	5	v!	RJ.
14.		"	" 61.5.6.	4	v	RJ.
15.		"	Örs pta,57.5.2o.	5	t	RJ.
16.		"	" " 6o.5.31.	4	t	RJ.
17.	2	Balkáni fakopáncs	Pécs,59.4.28.	5		NM.
18.		" "	Hortobágy áll.6o.4.29.	5	f	Endes M.
19.	3	Balkáni gerle	Szfvár,57.7.2.	2	t	RJ.
2o.		" "	" 6o.6.17.	2	v	RJ.
21.		" "	" 6o.6.2o.	2	t	RJ.
22.		" "	Cegléd,6o.5.12.	2	v	RJ.
23.		" "	Gárdony,58.3.24.	2	T	RJ.
24.		" "	Seregélyes,6o.4.11.	2	t	RJ.
25.		" "	" 6o.4.23.	2	t	RJ.
26.		" "	" 6o.4.3o.	2	t	RJ.
27.	4	Barna kánya	Káloz,/F.m./,59.4.3o.	4	v	RJ.
28.		" "	Nádasdladány,6o.4.22.	4	v	RJ.
29.		" "	Soponya,59.5.17.	3	t	RJ.
3o.		" "	Tejf.sziget,54.4.25.	3		Csiba L.
31.		" "	Hercegszántó,6o.4.24.	4	t	Balanyi L.
32.		" "	Kocsola,59.4.2o.	3	v	RJ.
33.		" "	Ács,5o.5.7.	3		Janisch M.
34.		" "	Tamási,62.5.6.	3	v	RJ.
35.		" "	Lovasberény,62.5.9.	3	t	RJ.

123

3. ábra. A gyűjteményi katalógus első lapja

Köszönetnyilvánítás: Köszönettel tartozom néhai Radetzky Jenőnek azért, hogy a gyűjteménye katalógusát és a publikálás jogát átengedte részemre. Köszönöm továbbá Haraszthy Lászlónak a támogató közreműködését, és hogy a tojásgyűjteménnyel kapcsolatos adatait – az anyag teljesebbé tételéhez – átadta nekem.

Irodalom

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