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Sawflies of Southern part of Somogy county (Hymenoptera: Symphyta)

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Haris, A.: *Sawflies of Southern part of Somogy county (Hymenoptera: Symphyta).*
Abstract: 100 species of 683 specimens were collected in the Duna-Dráva National Park and the adjacent territory: Csokonyavisonta Wooded Pasture. *Caliroa cothurnata* (Serville, 1823) is new record for Hungary and for the Carpathian Basin. Rare species are: *Xyela* (*Xyela*) *julii* (Brébisson, 1818), *Monoctenus juniperi* (Linné, 1758), *Dolerus* (*Poodolerus*) *blanki* Liston, 1995 and *Euura fuscomaculata* (Förster, 1854). *Aproceros leucopoda* Takeuchi, 1939 is a newly introduced invasive species.

Keywords: Hymenoptera, Symphyta, Somogy, Hungary, new record

Introduction

This year, the Southern part of Somogy County (Fig. 1) was investigated, namely the Somogy part of Danube-Dráva National Park and the protected wooded pasture at Csokonyavisonta. The sampling places are restricted to 3 different areas. These are the Protected Wooded pasture at Csokonyavisonta, Juniper woodlands at Darány and the floodplain of River Dráva at Vízvár.

Csokonyavisonta Protected Wooded Pasture

This wooded pasture (Figs. 2, 5 and 6) was a result of human activity, namely the traditional extensive livestock breeding (cattle and pigs) in the last centuries.

The altitude of the area varies between 120-140 m. Within this small area, there are high diversity of habitats typical for Somogy county from the sand dunes till the wet and swampy depressions holding alder-moors.

Among the forest associations there are hornbeam-oak, Turkey oak forests, alder bogs and also gallery forests.

By giving up grazing, the proportion of open areas has been steadily declining. Maintaining the remaining grasslands is an important task for nature conservation.

Juniper woodland at Darány

Juniper woodland (Figs. 3 and 4) is also a result of pasture farming: grazing animals avoided prickly junipers therefore very special and unique habitat is formed in this area during the last centuries. For our days, only two larger spots remained, the other parts were replaced by forest, when grazing was abandoned. These spots are actually sand dunes covered by sporadic *Juniper* groups.

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Floodplain forests of River Dráva

River Dráva originates in the Tyrolean Alps and reaches the territory of Hungary at Őrtilos. The fast fall of the flow of the river brings with itself lot of sediments. Its fall is gradually decreasing on the Hungarian part, and its sediments are being deposited. The characteristic formations of the Dráva are the reef islands, which are constantly being built and destroyed, thus always changing their locations. The shore is accompanied by floodplain groves, where white willow, white poplar and black poplar are the canopy-level trees. Beyond the floodplain, the next stage of succession is the oak-ash-elm forest in the higher areas.

From this region ZOMBORI (1985) published a paper titled Data to the knowledge of Symphyta fauna of the Barcs juniper woodland. Further faunistic data were published in HARIS 2001b and ROLLER & HARIS 2008.

Material and methods

During the 2020 collecting season, I spent 14 days with collecting in April, 9 days in May, 2 days in July and 1 day in August.

The regular rainfall and the overcast weather conditions made the collecting very difficult in May. The applied method was net sweeping from the beginning till the first decade of May. After this, the capture of individuals was the dominant method combined with netsweeping of lower canopies and bushes.

For identification, Zhelochovtsev's work on the sawflies of the European part of the former USSR and the latest Slovakian monograph (ZHELOCHOVTSEV 1988, MACEK et al., 2020) were consulted. We also used some recent revisions and works to make the identifications even more precise (ACHTERBERG & AARTSEN 1986, HARIS 2006, KOCH 1988, PROUS et. al. 2014, ZOMBORI 2016).

For the discussion of the distribution of sawflies, we consulted the book of Roller and Haris titled Sawflies of the Carpathian Basin, History and Current Research (ROLLER & HARIS 2008), the most recent European checklist of species (TAEGER et al. 2006) augmented by other faunistic records from the Carpathian Basin (MOCSÁRY 1900, ROLLER 1993, 1994, 1996, 1998, 1999a, b, c, d, e, 2000a, b, c, 2001, 2004, 2005, 2006a, b; 2010, ROLLER & LUKÁŠ 1999, ROLLER et. al. 2006, ROLLER & MACEK 2017, ROLLER & OLŠOVSKÝ 2012, HARIS 2001a, 2009, 2010, 2011, 2012, 2018a,b; HARIS & GYURKOVICS 2012).

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

List of sites

Babócsa: Basakert, between 46° 2'28.80"N, 17°21'27.54"E and 46° 2'35.89"N, 17°21'35.33"E, altitude 118-119 m.

Babócsa: Két-árok köze, between 46° 2'22.17"N, 17°21'11.25"E and 46° 2'33.01"N, 17°21'17.35"E, altitude: 109-111 m.

Bolhó: Libalegelő, between 46° 2'17.66"N, 17°18'17.80"E and 46° 2'13.13"N, 17°18'25.88"E, altitude: 106-107 m.

Darány: Kecskésrét: Juniper woodland, between 45°58'47.15"N, 17°34'37.32"E and 45°58'53.56"N, 17°34'44.93"E, altitude: 127-129 m.

Darány: Kis-Rigócz: Juniper woodland (Fig. 4), between 45°58'43.11"N, 17°34'15.17"E and 45°58'42.61"N, 17°33'49.49"E, altitude: 127-130 m.

Darány: Kis-tó, between 45°58'48.98"N, 17°35'7.09"E and 45°58'55.73"N, 17°35'4.69"E, altitude: 120-125 m.

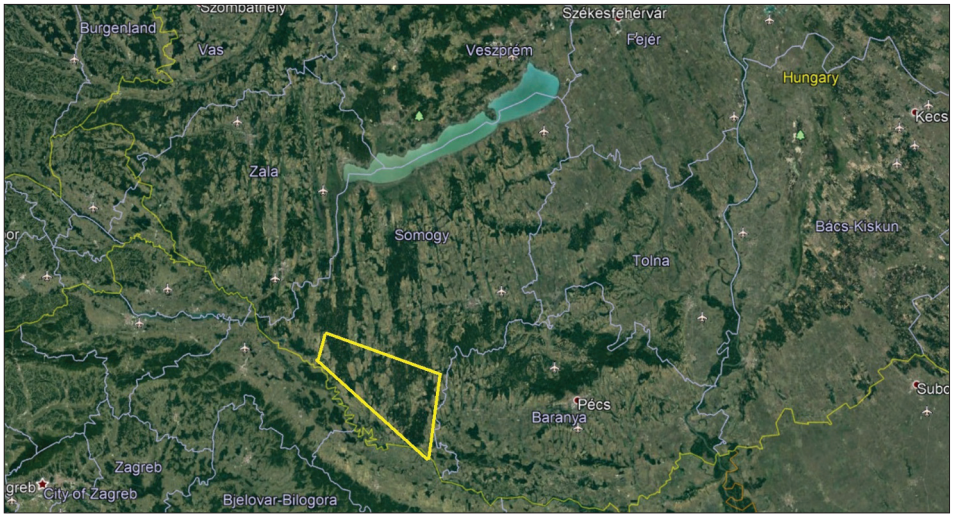

Fig. 1: The investigated area

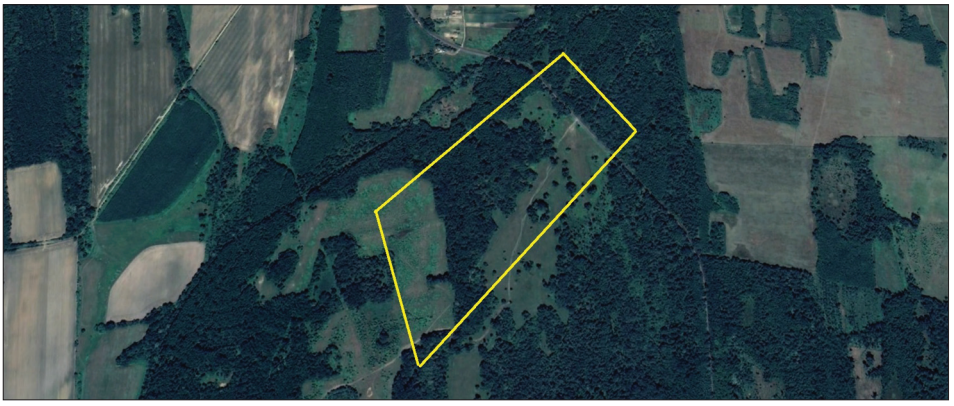

Fig. 2: Map of the protected wooded pasture at Csokonyavisonta

Fig. 3: Map of Darány: Kecskésrét, juniper woodland

Drávatamási: Old Railway, between 45°57'44.45"N, 17°35'10.05"E and 45°57'39.31"N, 17°35'18.90"E, altitude: 120-122 m.
Csokonyavisonta: Protected Wooded Pasture (Figs. 5 and 6), between 46° 3'18.40"N, 17°27'29.01"E and 46° 2'55.95"N, 17°26'59.97"E, altitude: 129-138 m.
Görösgál: Wooded Pasture, between 46° 2'5.11"N, 17°41'46.37"E and 46° 1'58.83"N, 17°41'36.43"E, altitude: 116-118 m.
Péterhida: Protected Wooded Pasture, between 46° 0'42.58"N, 17°22'26.52"E and 46° 0'25.03"N, 17°22'18.42"E, altitude: 105-107 m.
Vízvár: Dráva-part (Fig. 7), Táborhely, between 46° 5'14.60"N, 17°13'28.66"E and 46° 4'59.19"N, 17°13'40.73"E, altitude: 109-115 m.

Fig. 4: Juniper woodland at Darány

List of species

Xyelidae

Xyela (*Xyela*) *julii* (Brébisson, 1818): Darány: Kecskésrét: Juniper woodland, 10. 04. 2020, 1 female. Rare in Hungary. Larva on *Pinus sylvestris, P. nigra* and *P. cembra*.

Pamphiliidae

Pamphilius vafer (Linné, 1767): Babócsa: Két-árok köze, 09. 05. 2020, 1 female, 16. 05. 2020, 3 females. On *Alnus glutinosa* and *A. incana*. Sporadic.

Megalodontesidae

Megalodontes plagiocephalus (Fabricius, 1804): Csokonyavisonta: Protected Wooded Pasture, 16. 05. 2020, 2 females. One of the most frequent *Megalodontesidae* species. Known hostplant: *Peucedanum alsaticum*.

Diprionidae

Monoctenus juniperi (Linné, 1758): Darány: Kecskésrét: Juniper woodland, 16. 04. 2020, 1 male, 10. 04. 2020, 1 female; Darány: Kis-Rigócz: Juniper woodland, 17. 04. 2020, 3 males, 1 female. Host plants: *Juniperus communis* and *J. nana.* Sporadic.

Argidae

Arge cyanocrocea (Forster, 1771): Csokonyavisonta: Protected Wooded Pasture, 02. 05. 2020, 2 females, 04. 05. 2020, 1 female, 24. 04. 2020, 1 male; Babócsa: Két-árok köze, 02. 05. 2020, 1 female, 23. 05. 2020, 1 male, 19. 07. 2020, 4 females; Babócsa: Basakert, 02. 08. 2020, 1 female; Vízvár: Riverside, 24. 04. 2020, 1 female, 1 male, 23. 05. 2020, 1 male; Bolhó: Libalegelő, 19. 07. 2020, 4 females, 02. 08. 2020, 1 female; Darány: Kis-tó, 19. 07. 2020. Common species. Known host plants: *Rubus idaeus* and *Sanguisorba officinalis.*

Arge enodis (Linné, 1767): Bolhó: Libalegelő, 02. 08. 2020, 4 females, 3 males. Frequent, locally common. Larvae on smooth leaved willows like *Salix fragilis*, *Salix alba* and *Salix purpurea.*

Arge melanochra (Gmelin, 1790): Babócsa: Basakert, 02. 08. 2020, 1 male; Bolhó: Libalegelő, 02. 08. 2020, 1 male; Péterhida: Protected Wooded Pasture, 02. 08. 2020, 1 female. Generally the commonest Argid sawfly, however, not common in this region. Hostplant: *Crataegus oxycantha*.

Arge pagana ssp. *pagana* (Panzer, 1797): Csokonyavisonta: Protected Wooded Pasture, 02. 05. 2020, 1 female, 22. 04. 2020, 1 male. Frequent. Host plants: *Rosa* spp.

Arge ustulata (Linné, 1758): Csokonyavisonta: Protected Wooded Pasture, 22. 04. 2020, 1 male, 24. 04. 2020, 1 male. Frequent. Larva on *Betula, Salix* and *Crataegus*.

Aproceros leucopoda Takeuchi, 1939: Vízvár: Riverside, 24. 04. 2020, 1 female. Larva on *Ulmus* spp. like *Ulmus glabra, U. pumila, U. japonica, U. minor* and *U. laevis*. Introduced species. Sporadic, locally frequent.

Sterictiphora angelicae (Panzer, 1799): Bolhó: Libalegelő, 26. 07. 2020, 1 male. Frequent. Larva on P*runus spinosa* and *Rubus* spp.

Cephidae

Calameuta (Calameuta) filiformis (Eversmann, 1847): Vízvár: Riverside, 24. 04. 2020, 1 female, 09. 05. 2020, 2 males; Csokonyavisonta: Protected Wooded Pasture, 11. 05. 2020, 1 female; Babócsa: Két-árok köze, 16. 05. 2020, 1 female. Generally common species. Larva lives in stems of *Arrhenaterum elatius, Phalaris arundinacea, Calamagrostis epigeios, Elytrigia repens* and *Phragmites communis*.

Calameuta (Calameuta) haemorrhoidalis (Fabricius, 1781): Csokonyavisonta: Protected Wooded Pasture, 18. 04. 2020, 1 female, 03. 05. 2020, 1 female; Vízvár: Riverside, 24. 04. 2020, 1 female. Frequent. Hostplant unknown.

Calameuta (Calameuta) pallipes (Klug, 1803): Csokonyavisonta: Protected Wooded Pasture, 09. 05. 2020, 1 female, 1 male; Vízvár: Riverside, 24. 04. 2020, 1 male. Frequent on diverse *Poaceae*.

Calameuta (Calameuta) punctata (Klug, 1803): Csokonyavisonta: Protected Wooded Pasture, 26. 04. 2020, 1 female; Babócsa: Két-árok köze, 09. 05. 2020, 1 female. Rare. Host plant unknown.

Cephus nigrinus Thomson, 1871: Csokonyavisonta: Protected Wooded Pasture, 02. 05. 2020, 1 female, 23. 04. 2020, 1 male, 04. 05. 2020, 1 male. Frequent species. Host plants: *Milium effusum* and *Poa pratensis*.

Fig. 5: Csokonyavisonta protected wooded pasture

Cephus pygmus (Linné, 1767): Csokonyavisonta: Protected Wooded Pasture, 11. 05. 2020, 1 female; Babócsa: Két-árok köze, 16. 05. 2020, 1 female, 23. 05. 2020, 1 male. Common. Insect pest of cereals and *Gramineae*.

Cephus spinipes (Panzer, 1800): Csokonyavisonta: Protected Wooded Pasture, 30. 05. 2020, 5 females, 11. 05. 2020, 1 female, 16. 05. 2020, 1 female, 1 male, 23. 05. 2020, 1 female, 3 males, 09. 05. 2020, 1 male, 30. 05. 2020, 1 male. Frequent. Hostplant: *Phleum pratense*.

Janus compressus (Fabricius, 1793): Csokonyavisonta: Protected Wooded Pasture, 02. 05. 2020, 1 male. Frequent insect pest of *Pyrus* and *Malus* spp.

Tenthredinidae

Dolerinae

Dolerus (Dolerus) aericeps Thomson, 1871: Péterhida: Protected Wooded Pasture, 02. 08. 2020, 1 female. Frequent. Larva on *Equisetum palutre* and *E. arvense*.

Dolerus (Poodolerus) anthracinus (Klug, 1818): Csokonyavisonta: Protected Wooded Pasture, 11. 04. 2020, 1 female. Sporadic. Host plants: *Graminae*.

Dolerus (Poodolerus) blanki Liston, 1995: Csokonyavisonta: Protected Wooded Pasture, 17. 04. 2020, 1 female. Rare. Hostplant unknown.

Dolerus (Poodolerus) brevicornis Zaddach, 1859: Görösgál: Wooded Pasture, 09. 04. 2020, 1 male. Sporadic. Hosts: *Carex cespitosa, C. nigra* and some other *Carex* spp.

Dolerus (Oncodolerus) eversmanni W.F. Kirby, 1882: Darány: Kis-tó, 18. 04. 2020, 1 male. Frequent. Larva on *Equisetum arvense* and *E. palustre.*

Dolerus (Dolerus) germanicus ssp. *germanicus* (Fabricius, 1775): Babócsa: Két-árok köze, 02. 05. 2020, 1 female, 1 male; Babócsa: Basakert, 02. 08. 2020, 1 female. Common. Larva on *Equisetum arvense* and *E. palustre*.

Dolerus (Poodolerus) niger (Linné, 1767): Csokonyavisonta: Protected Wooded Pasture, 23. 04. 2020, 1 female. Sporadic. Host plants: *Poaceae*.

Dolerus (Poodolerus) nigratus (O.F. Müller, 1776): Csokonyavisonta: Protected Wooded Pasture, 09. 04. 2020, 1 female, 2 males, 10. 04. 2020, 3 females, 1 male, 11. 04. 2020, 1 female, 12. 04. 2020, 2 females, 1 male, 19. 04. 2020, 2 females, 23. 04. 2020, 1 female, 17. 04. 2020, 3 females, 02. 05. 2020, 2 females, 03. 05. 2020, 1 female, 09. 05. 2020, 1 female, 22. 04. 2020, 2 males, 24. 04. 2020, 2 males, 16. 04. 2020, 2 males; Vízvár: Riverside, 24. 04. 2020, 1 male; Darány: Kis-tó, 26. 04. 2020, 1 male. Common. Larva on *Gramineae* including cereals.

Dolerus (Poodolerus) nitens Zaddach, 1859: Csokonyavisonta: Protected Wooded Pasture, 11. 04. 2020, 1 female, 17. 04. 2020, 1 female. Sporadic. Larva on *Cyperaceae* and *Graminae*.

Dolerus (Poodolerus) picipes (Klug, 1818): Csokonyavisonta: Protected Wooded Pasture, 11. 05. 2020, 2 females, 10. 05. 2020, 1 female, 04. 05. 2020, 1 female, 09. 05. 2020, 3 females. Frequent. Larva on *Graminae*.

Dolerus (Poodolerus) puncticollis Thomson, 1871: Görösgál: Wooded Pasture, 09. 04. 2020, 1 female; Csokonyavisonta: Protected Wooded Pasture, 09. 04. 2020, 1 female, 12. 04. 2020, 1 female, 03. 05. 2020, 1 female. Common. Larva on *Graminae* including cereals.

Dolerus (Poodolerus) sanguinicollis (Klug, 1818): Vizvár: Riverside, 24. 04. 2020, 1 male. Sporadic. Larva on *Gramineae*.

Fig. 6: Swamp at Csokonyavisonta Wooded Pasture

Fig. 7: The River Dráva at Vízvár

Dolerus (Poodolerus) stygius Förster, 1860 (=*Dolerus megapterus sensu* Zombori, 1982): Csokonyavisonta: Protected Wooded Pasture, 10. 04. 2020, 1 female. Rare. Larva on *Carex* spp.

Dolerus (Achaetoprion) triplicatus (Klug, 1818): Csokonyavisonta: Protected Wooded Pasture, 10. 04. 2020, 1 male. Sporadic. Larva on *Juncus filiformis* and *J. effusus*.

Dolerus (Dicrodolerus) vestigialis (Klug, 1818): Csokonyavisonta: Protected Wooded Pasture, 23. 04. 2020, 1 male, 04. 05. 2020, 1 male. Common. Host plants: *Equisetum palustre, E. sylvaticum, E. arvense* and *E. pratense.*

Selandrinae

Birka (Birka) cinereipes (Klug, 1816): Vízvár: Riverside, 24. 04. 2020, 1 male; Csokonyavisonta: Protected Wooded Pasture, 23. 05. 2020, 1 male. Sporadic. Host plants: *Myosotis* spp.

Nesoselandria morio (Fabricius, 1781): Csokonyavisonta: Protected Wooded Pasture, 23. 05. 2020, 3 females, 1 male, 16. 05. 2020, 3 males, 03. 05. 2020, 1 male. Frequent. Host plants: *Brachytecium reflexum, Ceratodon purpureus, Chenopodium album, Dicranum scoparium, Fragaria vesca, Hedwigia ciliata, Myosotis arvensis, Plagiomnium cuspidatum, Plagiothecium denticulatum, Polygonum aviculare, Polytrichum commune, Pseudobryum cinclidiodes, Sanionia uncinata, Stellaria media, Veronica chamaedrys* and *V. officinalis*.

Selandria serva (Fabricius, 1793): Csokonyavisonta: Protected Wooded Pasture, 09. 05. 2020, 1 female. Frequent. Host plants: *Poaceae, Carex* spp. and *Juncus* spp.

Allantinae

Allantus (Emphytus) calceatus (Klug, 1818): Csokonyavisonta: Protected Wooded Pasture, 11. 04. 2020, 1 female, 1 male, 18. 04. 2020, 2 females, 2 males, 16. 04. 2020, 2 females, 19. 04. 2020, 1 female, 10. 04. 2020, 2 males. Generally sporadic, here frequent. Host plants: *Rubus, Sanguisorba, Rosa, Filipendula, Fragaria* and *Alchemilla* spp.

Ametastegia (Ametastegia) equiseti (Fallén, 1808): Csokonyavisonta: Protected Wooded Pasture, 03. 05. 2020, 1 female, 09. 05. 1 male. Frequent. Larva on *Chenopodium album, Lythrum salicaria, Polygonum persicaria* and *Rumex acetosella.*

Ametastegia (Ametastegia) glabrata (Fallén, 1808): Csokonyavisonta: Protected Wooded Pasture, 26. 04. 2020, 1 female, 17. 04. 2020, 1 female. Frequent. Larva on *Chenopodiaceae, Polygonaceae, Plantago, Salix, Lithrum, Ribes* and *Rubus* spp.

Ametastegia (Protemphytus) carpini (Hartig, 1837): Csokonyavisonta: Protected Wooded Pasture, 22. 04. 2020, 1 female. Frequent. Host plant: *Geranium* spp.

Ametastegia (Protemphytus) tenera (Fallén, 1808): Csokonyavisonta: Protected Wooded Pasture, 10. 05. 2020, 2 males, 11. 05. 2020, 1 male, 24. 04. 2020, 1 male. Frequent. Larva on *Rumex* spp.

Athalia bicolor Serville, 1823: Babócsa: Két-árok köze, 09. 05. 2020, 1 female, 1 male, 23. 05. 2020, 2 females, 23. 05. 2020, 3 males, 02. 05. 2020, 1 male; Csokonyavisonta: Protected Wooded Pasture, 10. 05. 2020, 1 female, 30. 05. 2020, 3 males, 09. 05. 2020, 3 males, 11. 05. 2020, 1 male; Darány: Kis-tó, 26. 04. 2020, 2 females. Frequent. Host plant: *Ranunculus* spp.

Athalia cordata Serville, 1823: Csokonyavisonta: Protected Wooded Pasture, 10. 05. 2020, 1 female, 21. 04. 2020, 1 female, 2 males, 11. 05. 2020, 1 female, 16. 05. 2020, 1 female, 17. 04. 2020, 1 male, 16. 04. 2020, 1 male, 19. 04. 2020, 1 male, 18. 04. 2020, 1 male, 23. 04. 2020, 3 males, 11. 04. 2020, 1 male, 23. 05. 2020, 1 male, 04. 05. 2020, 2 males; Darány: Kis-tó, 16. 04. 2020, 2 females, 22. 04. 2020, 1 female, 18. 04. 2020, 1 male, 26. 04. 2020, 3 males; Vízvár: Riverside, 19. 04. 2020, 1 female. Common. Larva on *Misopates orontinum, Antirrhinum majus, Ajuga reptans, Teucrium scorodonia* and *Plantago* spp.

Athalia lugens (Klug, 1815): Vízvár: Riverside, 09. 05. 2020, 1 male. Sporadic. Feeding on various *Cruciferae*.

Athalia circularis (Klug, 1815): Csokonyavisonta: Protected Wooded Pasture, 11. 05. 2020, 1 female, 23. 04. 2020, 1 male, 02. 05. 2020, 1 male, 04. 05. 2020. 1 male; Vízvár: Riverside, 24. 04. 2020, 1 male. Frequent. Host plants: *Arctium lappa, Ajuga reptans, Veronica beccabunga, V. longifolia, V. officinalis, Alliaria petiolata, Glechoma hederacea, Melampyrum, Capsella* and *Lycopus* spp.

Athalia rosae (Linné, 1758): Csokonyavisonta: Protected Wooded Pasture, 21. 04. 2020, 1 female, Vízvár: Riverside, 24. 04. 2020, 1 female; Bolhó: Libalegelő, 19. 07. 2020, 48 males, 24 females, 26. 07. 2020, 4 females, 1 male, 02. 08. 2020, 3 males, 2 females; Darány: Kis-tó, 19. 07. 2020, 1 female; Common pest. Host plants: *Raphanus sativus, R. raphanistrum, Sinapis arvensis, Sisymbrium officinale, Armoracia rusticana, Barbarea sp., Brassica napus, B. juncea, B. rapa, B. oleracea, Tropaeolum majus, Sinapis arvensis, Alliara petiolata* and *Cardamine* spp.

Empria sexpunctata (Serville, 1823): Csokonyavisonta: Protected Wooded Pasture, 03. 05. 2020, 2 females. Frequent. Larva on *Geum* spp.

Empria liturata (Gmelin, 1790): Csokonyavisonta: Protected Wooded Pasture, 11. 04. 2020, 2 females, 12. 04. 2020, 3 females, 1 male, 16. 04. 2020, 1 female, 1 male, 17. 04. 2020, 2 females, 18. 04. 2020, 2 females, 2 males, 19. 04. 2020, 2 females, 3 males, 22. 04. 2020, 1 female, 26. 04. 2020, 1 female, 26. 04. 2020, 1 female, 19. 04. 2020, 1

female, 04. 05. 2020, 1 female, 09. 04. 2020, 1 male, 21. 04. 2020, 1 male, 09. 05. 2020, 1 male; Vízvár: Riverside, 24. 04. 2020, 1 female. Frequent. Host plants: *Fragaria* and *Geum* spp.

Eriocampa ovata ssp. *ovata* (Linné, 1760): Babócsa: Két-árok köze, 16. 05. 2020, 1 female, 23. 05. 2020, 1 female; Csokonyavisonta: Protected Wooded Pasture, 23. 05. 2020, 3 females. Frequent. Larva on *Alnus*.

Eriocampa umbratica (Klug, 1816): Csokonyavisonta: Protected Wooded Pasture, 23. 04. 2020, 1 female, 04. 05. 2020, 1 female, 1 male, 09. 05. 2020, 1 female, 02. 05. 2020, 2 males, 24. 04. 2020, 1 male, 22. 04. 2020, 1 male, 23. 04. 2020, 1 male, 16. 05. 2020, 1 male; Vízvár: Riverside, 24. 04. 2020, 1 female. Frequent. Larva on *Alnus*.

Harpiphorus lepidus (Klug, 1818): Csokonyavisonta: Protected Wooded Pasture, 03. 05. 2020, 1 female. Sporadic. Larva on *Quercus*.

Monsoma pulveratum (Retzius, 1783): Csokonyavisonta: Protected Wooded Pasture, 03. 05. 2020, 1 female. Sporadic. Larva on *Alnus* spp.

Taxonus agrorum (Fallén, 1808): Csokonyavisonta: Protected Wooded Pasture, 21. 04. 2020, 1 female, 23. 04. 2020, 1 female; Vízvár: Riverside, 23. 05. 2020, 1 male. Frequent. Host plants: *Rubus idaeus* and *R. caesius*.

Heterarthrinae

Caliroa cothurnata (Serville, 1823): Csokonyavisonta: Protected Wooded Pasture, 11. 05. 2020, 1 female. New record for Hungary. Larva on *Quercus* spp.

Blennocampinae

Blennocampa phyllocolpa Viitasaari & Vikberg, 1985: Csokonyavisonta: Protected Wooded Pasture, 03. 05. 2020, 1 female. Frequent. Larva rolls the leaves of *Rosa* spp.

Cladardis elongatula (Klug, 1817): Csokonyavisonta: Protected Wooded Pasture, 03. 05. 2020, 1 female. Sporadic. Larva bores in shoots of *Rosa* spp.

Claremontia alternipes (Klug, 1816): Csokonyavisonta: Protected Wooded Pasture, 23. 04. 2020, 1 female; Vízvár: Riverside, 24. 04. 2020, 1 female. Sporadic. Host plant: *Rubus idaeus*.

Claremontia brevicornis (Brischke, 1883): Csokonyavisonta: Protected Wooded Pasture, 26. 04. 2020, 1 female. Frequent. Host plants: *Fragaria* spp., *Sanguisorba* spp. and *Potentilla reptans.*

Claremontia waldheimii (Gimmerthal, 1847): Csokonyavisonta: Protected Wooded Pasture, 21. 04. 2020, 1 female, 17. 04. 2020, 1 female. Frequent. Host plant: *Geum urbanum.*

Eutomostethus ephippium (Panzer, 1798): Csokonyavisonta: Protected Wooded Pasture, 11. 05. 2020, 1 female, 09. 05. 2020, 1 female, 4 males, 02. 05. 2020, 1 female, 2 males, 24. 04. 2020, 5 males, 10. 05. 2020, 2 males, 10. 05. 2020, 1 male, 11. 05. 2020, 8 males, 16. 05. 2020, 5 males, 23. 05. 2020, 5 males, 04. 05. 2020, 1 male, 03. 05. 2020, 1 male, 04. 05. 2020, 4 males; Vízvár: Riverside, 24. 04. 2020, 1 female, 19. 04. 2020, 2 males, 24. 04. 2020, 1 male; Darány: Kis-tó, 22. 04. 2020, 2 males, 03. 05. 2020, 1 male. Common, larva on *Poaceae*.

Eutomostethus gagathinus (Klug, 1816): Csokonyavisonta: Protected Wooded Pasture, 11. 05. 2020, 2 females, 10. 05. 2020, 1 female, 04. 05. 2020, 2 females, 09. 05. 2020, 1 male. Frequent. Host plant: *Carex paniculata*.

Eutomostethus luteiventris (Klug, 1816): Csokonyavisonta: Protected Wooded Pasture, 09. 04. 2020, 1 female, 10. 04. 2020, 3 females, 11. 04. 2020, 5 females, 12. 04. 2020, 4 females, 16. 04. 2020, 1 female, 17. 04. 2020, 2 females, 18. 04. 2020, 2 females, 21. 04. 2020, 2 females, 22. 04. 2020, 2 females, 03. 05. 2020, 1 female, 04. 05. 2020, 2 females,

Fig. 8: ***Xyela* (*Xyela*) *julii*** **(Brébisson, 1818)**

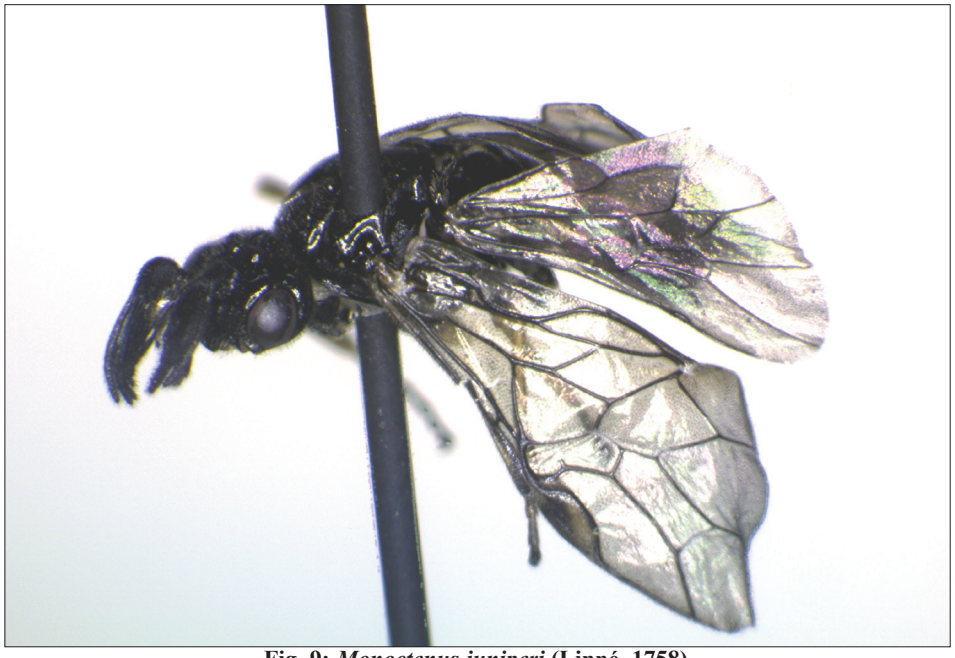

Fig. 9: ***Monoctenus juniperi*** **(Linné, 1758)**

09. 05. 2020, 2 females; Vízvár: Riverside, 24. 04. 2020, 1 female. Frequent, locally common. Larva on *Juncus effusus*.

Eutomostethus punctatus (Konow, 1887): Csokonyavisonta: Protected Wooded Pasture, 10. 05. 2020, 1 female, 02. 05. 2020, 8 males, 03. 05. 2020, 1 male, 19. 04. 2020, 1 male, 23. 04. 2020, 1 male; Vízvár: Riverside, 09. 05. 2020, 1 male, 24. 04. 2020, 2 males. Sporadic. Locally frequent. Only with few localities. Host plant: *Carex paniculata.*

Monophadnus pallescens (Gmelin, 1790): Csokonyavisonta: Protected Wooded Pasture, 11. 04. 2020, 1 female, 12. 04. 2020, 6 females, 18. 04. 2020, 1 female, 02. 05. 2020, 1 female, 10. 05. 2020, 1 female. Common. Host plants: *Ranunculus acris, R. repens, R. lanuginosus* and *Anemone nemorosa.*

Monophadnus monticola (Hartig, 1837): Csokonyavisonta: Protected Wooded Pasture, 10. 04. 2020, 1 female, 16. 04. 2020, 1 female, 18. 04. 2020, 1 female; Darány: Kis-tó, 16. 04. 2020, 1 female; Vízvár: Riverside, 24. 04. 2020, 1 female. Sporadic. Larva on *Helleborus* spp.

Stethomostus fuliginosus (Schrank, 1781): Csokonyavisonta: Protected Wooded Pasture, 24. 04. 2020, 1 male, 02. 05. 2020, 1 male. Frequent. Larva on R*anunculus acris, R. repens* and *R. sceleratus.*

Tenthredininae

Aglaostigma (Astochus) aucupariae (Klug, 1817): Csokonyavisonta: Protected Wooded Pasture, 23. 04. 2020, 1 female, 26. 04. 2020, 1 female, 11. 04. 2020, 2 males, 03. 05. 2020, 1 male. Common. Larva on *Galium mollugo* and *G. boreale*.

Aglaostigma (Astochus) fulvipes (Scopoli, 1763): Csokonyavisonta: Protected Wooded Pasture, 10. 04. 2020, 1 male, 17. 04. 2020, 6 males, 23. 04. 2020, 1 male, 18. 04. 2020, 1 male, 21. 04. 2020, 1 male, 11. 04. 2020, 1 female, 24. 04. 2020, 2 females, 12. 04. 2020, 2 females, 16. 04. 2020, 1 female, 03. 05. 2020, 1 female; Vízvár: Riverside, 19. 04. 2020, 2 males, 19. 04. 2020, 1 female; Babócsa: Két-árok köze, 02. 05. 2020, 1 female. Common. Larva on *Galium mollugo* and *G. verum*.

Macrophya (Macrophya) albicincta (Schrank, 1776): Csokonyavisonta: Protected Wooded Pasture, 02. 05. 2020, 1 female, 03. 05. 2020, 1 female, 04. 05. 2020, 1 female, 10. 05. 2020, 1 female, 16. 04. 2020, 1 female, 17. 04. 2020, 1 female, 19. 04. 2020, 1 female, 22. 04. 2020, 2 females, 23. 04. 2020, 3 females, 24. 04. 2020, 1 female, 1 male, 26. 04. 2020, 1 female, 21. 04. 2020, 2 males; Vízvár: Riverside, 24. 04. 2020, 1 female, 3 males; Darány: Kis-tó, 22. 04. 2020, 1 male, 23. 04. 2020, 2 males. Common. Host plants: *Sambucus ebulus, S. nigra, S. racemosa, Valeriana officinalis* and *Viburnum opalus.*

Macrophya (Macrophya) annulata (Geoffroy, 1785): Csokonyavisonta: Protected Wooded Pasture, 16. 05. 2020, 1 female, 23. 05. 2020, 7 females, 2 males,09. 05. 2020, 3 females, 02. 05. 2020, 1 male, 10. 05. 2020, 2 males, 11. 05. 2020, 1 male. Frequent. Larva on *Potentilla reptans, Origanum vulgare, Euphorbia, Rosa, Rubus* and *Sambucus* spp.

Macrophya (Macrophya) duodecimpunctata (Linné, 1758): Babócsa: Két-árok köze, 16. 05. 2020, 1 female; Csokonyavisonta: Protected Wooded Pasture, 09. 05. 2020, 1 male, 10. 05. 2020, 1 male. Frequent. Host plants: *Graminae, Cyperaceae* and *Carex* spp.

Macrophya (Macrophya) montana ssp. *montana* (Scopoli, 1763): Csokonyavisonta: Protected Wooded Pasture, 04. 05. 2020, 1 female, 1 male, 09. 05. 2020, 1 female, 02. 05. 2020, 2 males, 10. 05. 2020, 2 males; Vízvár: Riverside, 23. 05. 2020, 1 female; Babócsa: Két-árok köze, 23. 05. 2020, 1 female, 09. 05. 2020, 1 male. Common. Host plant: *Rubus caesius*.

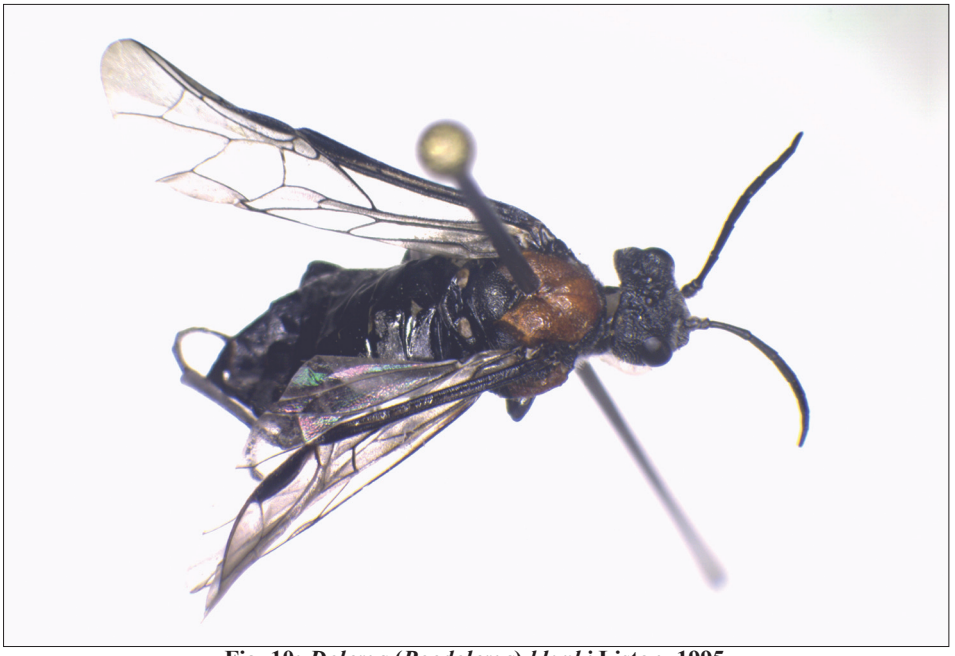

Fig. 10: ***Dolerus*** **(*Poodolerus*)** ***blanki*** **Liston, 1995**

Fig. 11: ***Caliroa cothurnata*** **(Serville, 1823)**

Macrophya (Macrophya) sanguinolenta (Gmelin, 1790): Csokonyavisonta: Protected Wooded Pasture, 09. 05. 2020, 1 male, 2 females, 16. 05. 2020, 1 male, 23. 05. 2020, 1 male, 03. 05. 2020, 1 female. Generally sporadic, here frequent. Larva on *Galeopsis* spp., *Senecio* spp. and *Veronica* spp.

Sciapteryx consobrina (Klug, 1816): Csokonyavisonta: Protected Wooded Pasture, 11. 04. 2020, 1 female, 12. 04. 2020, 1 female, 24. 04. 2020, 1 female; Darány: Kis-tó, 18. 04. 2020, 2 females. Frequent. Larval hosts: *Adoxa* spp., *Anemone* spp., *Ranunculus acris* and *Ranunculus ficaria.*

Perineura rubi (Panzer, 1803): Csokonyavisonta: Protected Wooded Pasture, 16. 04. 2020, 1 female. 02. 05. 2020, 1 female. Sporadic. Host plant unknown. Adults associated with *Rubus* spp.

Pachyprotasis rapae (Linné, 1767): Csokonyavisonta: Protected Wooded Pasture, 23. 04. 2020, 1 female, 26. 04. 2020, 1 female, 04. 05. 2020, 1 female, 09. 05. 2020, 1 female, 10. 05. 2020, 1 male, 11. 05. 2020, 1 male, 03. 05. 2020, 1 male, 02. 05. 2020, 1 male. Frequent. Host plants: *Solanum tuberosum, Pedicularis palustris, Angelica sylvestris, Veronica beccabunga, Betonica officinalis, Corylus avellana, Salix caprea, Fraxinus excelsior, Tussilago farfara, Symphoricarpos albus, Scrophularia, Solidago, Verbascum, Origanum, Atropa, Sarothamnus, Senecio, Polygonum, Aspidium, Epilobium, Hypericum, Galeopsis, Mentha, Polystichum, Plantago, Quercus* and *Stachys* spp.

Tenthredopsis friesei (Konow, 1884): Csokonyavisonta: Protected Wooded Pasture, 16. 05. 2020, 1 female, 30. 05. 2020, 1 female. Frequent. Host plants: *Holcus mollis* and other *Poaceae*.

Tenthredopsis litterata (Geoffroy, 1785): Csokonyavisonta: Protected Wooded Pasture, 09. 05. 2020, 1 male, 16. 05. 2020, 2 males. Frequent. Larva on *Agrostis, Dactylis* and *Calamagrostis* spp.

Tenthredopsis nassata (Linné, 1767): Babócsa: Két-árok köze, 09. 05. 2020, 1 female. Earlier frequent, recently sporadic. Host plants: *Dactylis glomerata, Deschampsia caespitosa, D. calmagrostis, Flexuosa* spp., *Holcus* spp., *Lolium perenne, Agropyron* spp., *Carex* spp., *Anthriscus silvestris* and *Artemisia* spp.

Tenthredopsis ornata (Serville, 1823): Csokonyavisonta: Protected Wooded Pasture, 16. 05. 2020, 2 females. Frequent. Larva on *Brachypodium sylvaticum*.

Tenthredopsis sordida (Klug, 1817): Csokonyavisonta: Protected Wooded Pasture, 02. 05. 2020, 6 males, 04. 05. 2020, 3 males, 03. 05. 2020, 5 males, 1 female, 11. 05. 2020, 2 males, 23. 04. 2020, 1 male; Babócsa: Két-árok köze, 09. 05. 2020, 1 female. Frequent. Larva on *Arrhenatherum elatius, Lolium perene, Carex* spp., *Calamagrostis* spp. and *Dactylis glomerata.*

Tenthredopsis stigma (Fabricius, 1798): Csokonyavisonta: Protected Wooded Pasture, 10. 05. 2020, 1 female. Frequent. Known host plant: *Triticum intermedium*.

Tenthredopsis tessellata (Klug, 1817): Csokonyavisonta: Protected Wooded Pasture, 22. 04. 2020, 1 female, 24. 04. 2020, 1 female. Sporadic. Larva on *Deschampsia*, *Dactylis, Aira* and *Lolium* spp.

Tenthredo (Tenthredella) atra Linné, 1758: Csokonyavisonta: Protected Wooded Pasture, 10. 05. 2020, 1 male. Frequent. Larval hosts: *Lamium, Mentha, Plantago, Vicia, Ranunculus, Scabiosa, Brassica* and *Solanum* spp.

Tenthredo (Tenthredo) zona Klug, 1817: Csokonyavisonta: Protected Wooded Pasture, 11. 04. 2020, 1 female. Sporadic. Host plant: *Hypericum perforatum*.

Tenthredo (Zonuledo) distinguenda (Stein, 1885): Csokonyavisonta: Protected Wooded Pasture, 04. 05. 2020, 1 female, 1 male, 09. 05. 2020, 1 male. Frequent. Host plant unknown.

Tenthredo (Temuledo) temula Scopoli, 1763: Csokonyavisonta: Protected Wooded Pasture, 21. 04. 2020, 1 female. Frequent, locally common. Larva on *Ligustrum* and *Origanum* spp.

Nematinae

Cladius (Cladius) pectinicornis (Geoffroy, 1785): Csokonyavisonta: Protected Wooded Pasture, 16. 05. 2020, 1 male. Common. Host plant: *Rubus* spp.

Euura fuscomaculata (Förster, 1854) (=*Nematus fuscomaculatus* Förster, 1854): Csokonyavisonta: Protected Wooded Pasture, 22. 04. 2020, 1 female, 23. 04. 2020, 1 female. Rare. It was recorded from *Populus tremula*.

Euura leucosticta (Hartig, 1837) (=*Phyllocolpa leucosticta* (Hartig, 1837): Csokonyavisonta: Protected Wooded Pasture, 16. 05. 2020, 1 female, 03. 05. 2020, 1 female; Darány: Kis-tó, 03. 05. 2020, 1 female. Frequent. Larva on *Salix capreae, S. aurita, S. atrocinerea* and *S. cinerea.*

Euura mucronata (Hartig, 1837): Csokonyavisonta: Protected Wooded Pasture, 03. 05. 2020, 1 male. Host plants: *Salix* spp. Rare.

Euura myosotidis (Fabricius, 1804) (=*Nematus myosotidis* (Fabricius, 1804): Csokonyavisonta: Protected Wooded Pasture, 18. 04. 2020, 1 female, 16. 04. 2020, 1 female, 16. 05. 2020, 1 female, 03. 05. 2020, 1 male, 02. 05. 2020, 1 male, 09. 05. 2020, 1 male, 10. 05. 2020, 1 male, 11. 05. 2020, 1 male, 23. 05. 2020, 1 male, 16. 05. 2020, 1 male; Babócsa: Két-árok köze, 09. 05. 2020, 1 male. Common. Larval hosts: *Onobrychis* and *Trifolium* spp.

Euura vaga (Fabricius, 1781) (=*Pachynematus vagus* (Fabricius, 1781)): Csokonyavisonta: Protected Wooded Pasture, 04. 05. 2020, 1 female, 26. 04. 2020, 1 female, 11. 05. 2020, 1 male. Larva on *Carex* spp. Frequent.

Hoplocampa fulvicornis (Panzer, 1801): Drávatamási, Old Railway 10. 04. 2020, 1 female. Sporadic. Larva on *Prunus spinosa*.

Nematinus luteus (Panzer, 1803): Csokonyavisonta: Protected Wooded Pasture, 21. 04. 2020, 1 female. Sporadic. Larva on *Alnus* spp.

Nematus lucidus (Panzer, 1801): Csokonyavisonta: Protected Wooded Pasture, 19. 04. 2020, 1 female, 09. 05. 2020, 1 female. Frequent. Larva on *Crataegus* and *Prunus spinosa*.

Platycapus luridiventris (Fallén, 1808): Csokonyavisonta: Protected Wooded Pasture, 03. 05. 2020, 1 male. Larva on *Alnus glutionosa* and *A. incana*. Sporadic.

Pristiphora armata (Thomson, 1863): Csokonyavisonta: Protected Wooded Pasture, 11. 05. 2020, 1 female, 04. 05. 2020, 1 female, 22. 04. 2020, 1 female, 3 males, 17. 04. 2020, 1 male, 16. 04. 2020, 2 males, 19. 04. 2020, 2 males, 18. 04. 2020, 4 males, 21. 04. 2020, 7 males, 23. 04. 2020, 2 males, 24. 04. 2020, 1 male, 03. 05. 2020, 1 male, 02. 05. 2020, 4 males; Vízvár: Riverside, 24. 04. 2020, 1 female, 1 male; Babócsa: Két-árok köze, 16. 05. 2020, 2 males. Frequent. Larva on *Crataegus* spp.

Pristiphora pallidiventris (Fallén, 1808): Csokonyavisonta: Protected Wooded Pasture, 16. 04. 2020, 1 female, 22. 04. 2020, 1 female, 11. 04. 2020, 1 male. Frequent. Larva on *Geum, Potentilla, Rubus* and *Filipendula* spp. *Filipendula ulmaria, Geum urbanum, G. rivale, Rubus chamaemorus, R. idaeus, R. fruticosus* and *R. ulmifolius.*

Results

100 species of 683 specimens were collected in the Duna-Dráva National Park and the adjecent territory: Csokonyavisonta Wooded Pasture. According to Zombori, 1985: "In the last 10 years, 143 specimens were collected, representing 45 species". I can confirm, the observation of Zombori. The species richness and population density of sawflies are very low in the Dráva region. Here only 29% of the specimens were collected, and only 41 species.

The majority of the specimens, exemplars were collected significantly north of the Dráva Region, in Csokonyavisonta Protected Wooded Pasture (482 specimens). This small area gave 70.6 % of the total collected material. From the 100 species collected in the region, 59 species were captured only in Csokonyavisonta Protected Wooded Pasture.

The dominant species was *Athalia rosae* (Linné, 1758) with 85 exemplars. Other frequent species (with 20 or more collected exemplars) were *Eutomostethus ephippium* (Panzer, 1798), *Dolerus (Poodolerus) nigratus* (O.F. Müller, 1776), *Athalia cordata* Serville, 1823, *Empria liturata* (Gmelin, 1790), *Macrophya (Macrophya) albicincta* (Schrank, 1776), *Aglaostigma (Astochus) fulvipes* (Scopoli, 1763), *Eutomostethus luteiventris* (Klug, 1816), *Eutomostethus ephippium* (Panzer, 1798) *Pristiphora armata* (Thomson, 1863) and *Arge cyanocrocea* (Forster, 1771). These 11 species (with 342 exemplars) amounts up to 50% of the total collected material.

Rare and interesting species

Xyela (Xyela) julii (Brébisson, 1818): In the Carpathian Basin, this species is sporadic but extremely rare in Hungary. We have only one historical exemplare from Törökbálint. This is the second specimen from Hungary. Fig. 8.

Aproceros leucopoda Takeuchi, 1939: Recently invaded Europe, known from Hungary, Poland, Slovakia, Austria, Romania, Ukraine and the Russian Far East (BLANK et al. 2010, CSÓKA et al. 2010).

Monoctenus juniperi (Linné, 1758): Widely distributed, sporadic in the Carpathian Basin but rare in Hungary. We have records from Visegrád, Bakony, Pilis, Csepel, Csévharaszt and Piliscsaba. From the Juniper Woodland at Darány, only the other species, *Monoctenus obscuratus* (Hartig, 1837) was recorded. Fig. 9.

Dolerus (Poodolerus) blanki Liston, 1995: From the following sites, we have records from the Carpathian Basin: from Slovakia: Humenné (Homonna), from Hungary: Szeged, Fehértó, Kaposvár: Tókaji parkerdő, Kis Balaton: Zala part, Darány, from Transylvania: Hátszeg (Hateg), Tasnád (Tasnad), Peér (Pir), Nagyszeben (Sibiu), Magura, Vízakna (Ocna Sibiului), Szenterzsébet (Gusterita), Pöltinis (Paltinis), Gyilkos tó (Lacu Rosu), Fogaras (Mt. Fagaras), Szinája (Sinaia) and from Coratia: Ogulin. Rare, widely distributed European species. Fig. 10.

Caliroa cothurnata (Serville, 1823): New record for Hungary and for the Carpathian Basin. It is a recently revised species (LACOURT 2002), so far it has been considered as synonym of *Caliroa cinxia* (Klug, 1816). Differences of the 2 species: *Caliroa cothurnata* (Serville, 1823): The spot on hind tibia is clearly marked with white: in the male, between the fifth and the basal quarter of the tibia is clearly white; in the female, between one third and one quarter of the base of hind tibia is clearly white. Head with short hairs. On anterior wings, the smoky transverse bland is clearly visible, this spot is delimited by the 1st recurrent vein and the oblique apical part of the median vein. Posterior wings of females are always with two closed median cells. In *Caliroa cinxia* (Klug, 1816): the white spot on hind tibia smaller and weaker: in the male, only the knee

with small white spot and a light brown trail which is more or less developed along the tibia; in the female, a conspicuous white spot occupies the basal fifth of the hind tibia. Head with long hairs. The diffuse smoky band of anterior wing is poorly delimited laterally. Hind wings of females with two closed median cells in 30 to 40% of cases or with a single closed median cell in 60 to 70% of the individuals. It has been recorded from Germany, Italy, Finland, Poland, France and Luxembourg. Fig. 11.

Euura fuscomaculata (Förster, 1854) (=*Nematus fuscomaculatus* Förster, 1854): From Hungary it is only known from Tákos. Other places of capture from the Carpathian Basin: from Slovakia: Kňaží vrch (Pap kő), Vranov (Varannó), Viničky (Szőllőske), Tatranská Lomnica (Tátralomnic), from Romania: Poiana-Teiului (Piatra Nemat), Szeben (Sibiu), Szucsáva (Suceava), Moldova and Magura (Magura Cisnadiei) From Croaqtia: Kopacko jezero, Hordovanj, from Bosnia: Ildze and from the Czech part of Tatras: Trojačka and Jičina. Widely distributed, rare European species.

Species diversity and endangering factors on the main sampling sites

Csokonyavisonta

The protected wooded pasture at Csokonyavisonta village holds the highest diversity of sawflies with numerous rare species and divers habitats. Unfortunately, the traditional grazing and sheep farming was completely abandoned and the vegetation of the pasture isn't cut. Therefore, the shrubby pioneer vegetation occupies more and more territories year by year. The main endangering factors for the pasture are the invasive daisy fleabane (*Stenactis annua* L.) in dry spots and goldenrode (*Solidago* sp.) in wet spots. Black cherry (*Prunus serotina* Ehrh.) and common milkweed *(Asclepias syriaca* L.*)* are also frequent.

Babócsa

Along the Rinya brook, the pasture is regularly cut, however it is still far not enough to prevent the spreading of fleabane (*Stenactis annua* L.) and goldenrode (*Solidago* sp.), the dominant invasive species of this sampling site. Population density and species richness of sawflies are low. Black cherry (*Prunus serotina* Ehrh.) and common milkweed *(Asclepias syriaca* L.*)* are also present.

Vízvár

The sampling site at Vízvár is willow dominated floodplain forest with wet meadow spots. The sawfly density and species richness is low. The most frequent invasive plants are goldenrode (*Solidago* sp.) and black locust *(Robinia pseudoacacia L.)*. Common ragweed *(Ambrosia artemisiifolia L.)* is also frequent.

Darány: Juniper woodlands

Very special habitats, unique in Hungary probably even in the Carpathian Basin. Since it is dominated by Juniper trees on sand dunes, the sawfly biodiversity is extremely low (only 3 species, 2 of them were captured this year) but very special and valuable. The sand dunes are endangered by black locust *(Robinia pseudoacacia* L.*)* and in the forested parts by black cherry (*Prunus serotina* Ehrh.) is dominated. Ailanthus (*Ailanthus altissima* Mill.), American pokeweed *(Phytolacca americana* L.*)* and common ragweed *(Ambrosia artemisiifolia* L.*)* are also frequent invasive species.

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