

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

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JAPOSHVILI, G. & HARIS, A.: *Sawflies (Hymenoptera: Symphyta) from Babaneuri state reserve and Tbilisi, Georgia (Sakartvelo)*.

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

Keywords: Caucasus, Hymenoptera, Symphyta, faunistics, ecology

Introduction

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

Material and methods

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

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

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



Fig. 1: Habitat of Agruni: Dendropark in Tbilisi



Fig. 2: Habitat of Agruni: Dendropark in Tbilisi

Results

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

List of species

Argidae

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

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

Tenthredinidae

Selandrinae

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

Allantinae

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

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

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

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

Blennocampinae

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

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

Tenthredininae

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

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

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

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

Nematinae

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

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

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

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

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

Cephidae

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

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

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

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

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

Discussion

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

Mediterranean pattern of flight period of sawflies at Tbilisi Dendropark

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

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