Sawflies (Hymenoptera: Symphyta) from North-Western Georgia (Sakartvelo)

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Abstract

In total, 388 specimens belonging to 61 species of sawflies were collected in North-Western Georgia in 2020. Among the collected species, 29 are new country records.

Key words

South Caucasus, Biodiversity, Inventory, Insecta

Introduction

The date of reporting the first sawfly (Hymenoptera) species from the Republic of Georgia is uncertain. The authors of the nineteenth century frequently provided highly ambiguous locality data (e.g. "Patria Caucasus" or "Transcaucasia" or "Rossia: Caucasus"), making it impossible to determine whether the species was described from the Caucasian part of Russia, Georgia, or other Caucasian countries in general (Eversmann 1847; Mocsáry 1880, 1883; Konow 1899, 1902). The first checklist of Caucasian insects was published by Radde (1899) providing a list of around 80 species sawflies. Later on, the keys for sawflies and horntails (Symphyta) were compiled by Andguladze (1957) for Georgia and by Dadurian (1962) for Armenia. Due to the work of Dadurian (1962) and Andghuladze (1973) the number of sawflies occurring in Georgia has increased by 105 species. After a large gap of research, the last work was published very recently by Japoshvili and Haris (2022) reporting the 65 symphitans from Kintrishin National Park, of which 42 species were new country records. Thus, prior to our research, Georgia had 147 species of sawflies reported.

In the present contribution, we are reporting the results of a recent faunistic investigation of sawflies that resulted in a significant increase in species diversity in Georgia.

Materials and methods

Between June and August of 2020, malaise traps were installed in six localities in north-western Georgia (Fig. 1), which encompasses the two administrative units of Tkibuli and Tsageri districts. The Tkibuli district is located in the Okriba basin, on average, 600-800 m above sea level, alongside the river Tkibula. The maximum height is 1569 m (Jinjikhadze, Chkheidze 2018). The Cretaceous limestone of the Tsageri district is characterized by sharp erosive and karst forms and landslides for caves. There are also Paleogene and Neogene sediments, sandstones, clays, and conglomerates. The highest point is Mount Tsekuri at 3188 meters above sea level (Chichinadze 2022). The administrative centres of both districts are around 40 km away from each other. In both districts, the vegetation types are much the same. In particular, the main forest-forming trees are beech, horn-
beam, chestnut, oak, maple, ash, and conifers (spruce, fir). The natural vegetation has been strongly transformed by human influence. There are many deciduous and evergreen shrubs in the forest understory. Elements of xerophytic vegetation are found on the southern-facing limestone slopes, while alder is a common element on the moist river banks (Nakhutsrishvili et al. 2015). The traps were operated from June to August of 2020. The sampling strategy was not designed to obtain quantitative data (for example, traps were not installed during the most active periods for sawflies due to logistic reasons, and also traps were operated for varying lengths of time), but rather to get a snapshot knowledge of the diversity of sawflies of the region.

For identification and for host-plant data, Zholochovtsev’s work on the sawflies of the European part of the former USSR (Zholochovtsev 1988), the handbook of Lacourt on the identification of the European sawflies (Lacourt 2020), the monograph of Robert Benson on the Turkish sawfly fauna (Benson 1968), and Gussakovskij’s monographs on the sawflies of the former USSR (Gussakovskij 1935, 1947) were used. We also consulted recent revisions (Gyurkovics and Haris 2014; Haris 2006; Koch 1988; Prous et.al. 2017; Tsageri, 2013) for the distribution of species in Georgia. The general distribution of species are reported based on Achterberg (2013) for the distribution of species in Georgia. For identification and for host-plant data, Zhelochovtsev’s work on the sawflies of the European part of the former USSR (Zholochovtsev 1988), the handbook of Lacourt on the identification of the European sawflies (Lacourt 2020), the monograph of Robert Benson on the Turkish sawfly fauna (Benson 1968), and Gussakovskij’s monographs on the sawflies of the former USSR (Gussakovskij 1935, 1947) were used. We also consulted recent revisions (Gyurkovics and Haris 2014; Haris 2006; Koch 1988; Prous et.al. 2017; Tsageri, 2013) for the distribution of species in Georgia. The general distribution of species are reported based on Achterberg (2013) for the distribution of species in Georgia. For identification and for host-plant data, Zhelochovtsev’s work on the sawflies of the European part of the former USSR (Zholochovtsev 1988), the handbook of Lacourt on the identification of the European sawflies (Lacourt 2020), the monograph of Robert Benson on the Turkish sawfly fauna (Benson 1968), and Gussakovskij’s monographs on the sawflies of the former USSR (Gussakovskij 1935, 1947) were used. We also consulted recent revisions (Gyurkovics and Haris 2014; Haris 2006; Koch 1988; Prous et.al. 2017; Tsageri, 2013) for the distribution of species in Georgia. The general distribution of species are reported based on Achterberg (2013) for the distribution of species in Georgia.

Results

Order: Hymenoptera
Family: Argidae
Genus Arge Schrank, 1802
Arge cyanocroceus (Forster, 1771)
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VI/2020. 1 ♀; Tsikeri, Mukhura village, Gar-krichidzebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020. 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VI/2020. 1 ♀; Tsikeri, Mukhura village, Gar-krichidzebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VI/2020.
- Previously reported by Andguladze (1973). West Palaearctic species. Common host plants: Rubus idaeus and Sanguisorba officinalis.
Genus Sterictiphora Billberg, 1820
Sterictiphora angelicae (Panzer, 1799)
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VI/2020. 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VI/2020.
- Previously reported by Japoshvili and Haris (2022).

• Previously reported by Japoshvili and Haris (2022).
  West Palaearctic. Frequent. Host plants: Prunus spinosa and Rubus spp.

Family: Tenthredinidae
Subfamily: Dolerinae
Genus Dolerus Panzer, 1801
Dolerus (Poodolorus) gonager (Fabricius, 1781)
- GEORGIA • 2 ♀♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VI/2020.
- Previously reported by Andguladze (1973). Palaearctic. Common host plants: Graminaceae spp.

Subfamily: Selandrinae
Genus Anegmenus Hartig, 1837
Anegmenus coronatus (Klug, 1818)
- GEORGIA • 1 ♀; Tkubi, Mukhura village, Katsunara; N42.678243, E42.810053; 1470 m a.s.l.; 20-26/VII/2020.
- Previously reported by Japoshvili and Haris (2022).

Holarctic. Frequent. Host plants: Dolerus cinereipes (Klug, 1818)
A. padi (Linnaeus, 1760)*
- GEORGIA • 3 ♀♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VI/2020. 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 19-25/VII/2020.
- Previously reported by Japoshvili and Haris (2022).

Palaeart. species. Sporadic. Host plants: Dryopteris filix-mas, Aspidium sp., Athyrium filix-femina and Pteridium aquilinum.

Genus Birka Malaise, 1944
Birka (Birka) annulitarsis (Thomson, 1870)*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Tsalbanis Gora; N42.678243, E42.810053; 1470 m a.s.l.; 18-24/VIII/2020.
- Previously reported by Japoshvili and Haris (2022).

West-Palaearctic species. Sporadic. Host plant unknown.

B. (Birka) catellata (Konow, 1900)
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VI/2020. 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 18-24/VIII/2020. 1 ♀; Tsageri, Doghurashi village, Sakenebeli; N42.698953, E42.826746; 1800 m a.s.l.; 20-26/VII/2020.
- Previously reported by Japoshvili and Haris (2022).

Palaearctic species. Sporadic. Host plants: Apthemenus sp. and Pteridium aquilinum.

Genus Nesoselandria Rohwer, 1910
Nesoselandria morio (Fabricius, 1781)
GEORGIA A 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VI/2020. 2 ♀♀; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VI/2020. 1 ♀; Tsageri, Doghurashi village, Katunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VII/2020. 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 18-24/VIII/2020. 5 ♀♀; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VII/2020.

• Previously reported by Japoshvili and Haris (2022).

Holarctic. Frequent. Host plants: Brachyteceium reflexum, Ceratodon purpureus, 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.
Subfamily: Allantinae
Genus *Ametastega* Costa, 1882
*Ametastega* (*Protemphytus*) *pallipes* (Spinola, 1808)
- GEORGIA • 2 ♀♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VI/2020. 2 ♀♀; Tsageri, Doghurashi village, Sakenebeli; N42.696151, E42.812965; 1500 m a.s.l.; 20-26/VII/2020. 2 ♀♀; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020. 1 ♂; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VI/2020.
- Previously reported by Japoshvili and Haris (2022). Holarctic. Frequent. Host plant: *Viola* spp.

*A. (Protemphytus) perla* (Klug, 1818)*
- GEORGIA • 1 ♀; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VI/2020.
- Previously reported by Japoshvili and Haris (2022). Holarctic. Frequent. Host plant: *Viola* spp.

*A. (Protemphytus) tenera* (Fallén, 1808)
- GEORGIA • 6 ♀♀; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020.

Holarctic. Frequent. Larva on *Rumex* spp.

**A. (Pigmy) guinea** Japoshvili and Haris (2022)

**A. (Emphytus) melanarius** (Klug, 1818)*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VI/2020. 1 ♀; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020.

West Palaearctic. Frequent. Host plant: *Cornus sanguinea*.

Genus *Athalia* Leach, 1817
*Athalia* (*circularis*) *circularis* (Klug, 1815)
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 18-24/VIII/2020. 9 ♀♀; Tsageri, Doghurashi village, Sakenebeli; N42.698953, E42.826746; 1800 m a.s.l.; 20-26/VII/2020. 1 ♂; Tsageri, Doghurashi village, Naklobievi; N42.669761, E42.785362; 1070 m a.s.l.; 18-24/VIII/2020. 1 ♂; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 19-25/VII/2020. 6 ♀♀, 6 ♂♂; Tsageri, Doghurashi village, Sakenebeli; N42.696151, E42.812965; 1500 m a.s.l.; 20-26/VII/2020.

Color form "cordatoides". Previously reported by Japoshvili and Haris (2022). Palaearctic. Common. Host plants: *Rosa* and *Fragaria* spp.

Genus *A. (Emphytus) castaneus* (Klug, 1818)
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VI/2020. 1 ♀; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VII/2020.

Previously reported by Japoshvili and Haris (2022). West Palaearctic. Common. Host plants: *Misopates orontinum*, *Antirrhinum majus*, *Ajuga reptans*, *Teucrium scorodonia* and *Plantago* spp.

Genus *A. liberta* (Klug, 1815)
- GEORGIA • 1 ♀; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VII/2020.

Previously reported by Japoshvili and Haris (2022). West Palaearctic species. Frequent. Host plants: *Aliaria petiolata*, *Arabidopsis thaliana*, *Cardamine hirsuta*, *Cardamine petiolaris*, *Diplotaxis*, *Entodon*, *Fragaria*, *Fragaria vesca*. Common. Host plants: *Rosa* and *Fragaria* spp.

Genus *A. (Emphytus) cinerus* (Linnaeus, 1758)
- GEORGIA • 1 ♀, 5 ♂♂; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 19-25/VII/2020.
- Palaearctic. Sporadic, locally frequent. Host plants: *Rubus*, *Sanguisorba*, *Rosa*, *Filipendula*, *Fragaria* and *Alchemilla* spp.

Genus *A. (Emphytus) cinctus* (Spinola, 1808)
- GEORGIA • 1 ♀, 5 ♂♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VI/2020. 9 ♀♀; Tsageri, Doghurashi village, Tsalbans Gora; N42.667243, E42.810053; 1470 m a.s.l.; 5-12/VII/2020. 7 ♀♀, 50 ♂♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VII/2020. 1 ♀, 3 ♂♂; Tsageri, Doghurashi village, Nalobievi; N42.698953, E42.826746; 1800 m a.s.l.; 20-26/VII/2020. 4 ♀♀; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VII/2020. 3 ♀♀, 12 ♂♂; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 18-24/VIII/2020.
- Previously reported by Japoshvili and Haris (2022). Holarctic. Common. Host plants: *Rosa* and *Fragaria* spp.

Genus *A. (Emphytus) didymus* (Klug, 1818)
- GEORGIA • 1 ♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VI/2020.
- West Palaearctic. Sporadic. Larva on *Sanguisorba minor*; old records from *Rubus* and *Rosa* spp. need checking.

Genus *A. (Emphytus) melanarius* (Klug, 1818)*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VII/2020. 1 ♀; Tikbuli, Mukhura village, Garbrichidzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VII/2020.
- Previously reported by Japoshvili and Haris (2022). Palaearctic. Frequent. Host plants: *Geum* spp. and *Rubus idaeus*.

Genus *A. (Emphytus) tridens* (Konow, 1896)*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VI/2020.
- Holarctic. Frequent. Host plants: *Geum* spp. and *Rubus idaeus*.

Genus *A. (Emphytus) abdounalis* (Fabricius, 1798)*
- GEORGIA • 1 ♂; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 18-24/VIII/2020.
• Palaeartic, introduced to US and Canada. Sporadic, locally frequent. Host plants: *Glaux maritima*, *Lysimachia nummularia* and *L. vulgaris*.

**Genus Taxus** Hartig, 1837

*Taxus sticicica* (Klug, 1817)*

- GEORGIA • 2 ♂♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VII/2020.
- West Palaeartic. Sporadic. Host plant unknown.

**Subfamily: Heterarthrinae**

**Genus Caliroa** Costa, 1859

*Caliroa cerasi* (Linnæus, 1758)

- GEORGIA • 3 ♂♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VII/2020. 1 ♀; Tsageri, Doghurashi village, Tsablanis Gora; N42.678243, E42.810053; 1470 m a.s.l.; 18-24/VIII/2020. 1 ♀; Tsageri, Doghurashi village, Sakenebeli; N42.69151, E42.812965; 1500 m a.s.l.; 20-26/VII/2020.
- Previously reported by Andguladze (1973). Cosmopolitan. Frequent. Host plants: *Pyrus, Malus, Prunus, Crataegus, Sorbus, Rosa, Cytisus, Mespilus, Rubus, Amgadalus, Cerasus, Amelanchier, Pyracantha, Cotoneaster* rarely *Quercus, Salix* spp.

*C. cuthurnata* (Serville, 1823)

- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VII/2020. 1 ♀; Tsageri, Doghurashi village, Tsablanis Gora; N42.678243, E42.810053; 1470 m a.s.l.; 5-12/VII/2020. 1 ♀; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E42.61274; 780 m a.s.l.; 20-27/VII/2020.
- Previously reported by Japoshvili and Haris (2022). West Palaeartic. Frequent. Host plant: *Quercus* spp.

**Genus Metalius** Forbes, 1885

*Metalius beckeri* (Konow, 1904)*

- GEORGIA • 2 ♀♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VII/2020.
- Previously reported by Japoshvili and Haris (2022). Ponto-Caspian-Persian species. Frequent. Hostplant unknown.

*M. pumila* (Klug, 1816)

- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Sakenebeli, N42.69151, E42.812965; 1500 m a.s.l.; 20-26/VII/2020. 1 ♀; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E42.61274; 780 m a.s.l.; 20-27/VII/2020. 1 ♀; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E42.61274; 780 m a.s.l.; 13-20/VII/2020. 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 19-25/VII/2020. 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 19-25/VII/2020.
- Previously reported by Japoshvili and Haris (2022). Palaeartic species. Common. Host plants: *Rubus cerasius* and *Rubus idaeus*.

**Subfamily: Blennocampinae**

**Genus Eurhadinoceraea** Enslin, 1920

*Eurhadinoceraea fulviceps* (Scopoli, 1763)*

- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VII/2020. 3 ♀♀, 1 ♀; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VII/2020. 4 ♂♂; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VII/2020. 1 ♀, 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VII/2020. 3 ♀♀, 12 ♂♂; Tsageri, Doghurashi village, Tsablanis Gora; N42.678243, E42.810053; 1470 m a.s.l.; 5-12/VII/2020. 4 ♂♂; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VII/2020.
- Previously reported by Andguladze (1973) and Japoshvili and Haris (2022). Ponto-Caspian species. Common. Hostplants: *Poaceae*.

**Subfamily: Tenthredininae**

**Genus Aglaostigma** Kirby, 1882

*Aglaostigma (Bivena) langei* (Konow, 1894)*

- GEORGIA • 5 ♂♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VII/2020.
- West Palaeartic species. Sporadic. Host plants: *Salix* spp., *Chaenactis angustifolium* and *Epilobium palustre*.

**Genus Macrophya** Dahlbom, 1835

*Macrophya (Macrophya) alboannulata* Costa, 1859)*

- GEORGIA • 1 ♀; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VII/2020.
- West Palaeartic species. Frequent. Host plants: *Sambucus nigra, S. racemosa* and *S. ebulus*.

*M. (Macrophya) annulata* (Geoffroy, 1785)*

- GEORGIA • 3 ♂♂; Tsageri, Doghurashi village, Tsablanis Gora; N42.678243, E42.810053; 1470 m a.s.l.; 5-12/VII/2020.
- Previously reported by Andguladze (1973). Palaeartic. Frequent. Host plants:*Potentilla reptans, Origanum vulgare, Euphorbia, Rosa, Rubus and Sambucus* spp.

*M. (Macrophya) blanda* (Fabricius, 1775)*

- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Nalobievi; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VII/2020. 1 ♀; Tkibuli, Mukhura village, Gabrichidzebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VII/2020. 1 ♀,
Tenthredo Linnaeus, 1758

T. nastassia (Fabricius, 1775)*
- GEORGIA • 1 ♀; Tkibuli, Makhura village, Sakanebeli; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VI/2020.
- West Palaecartic. Frequent. Host plant: Salix, Sorbus, Rosa, Betula, Alnus, Fraxinus, Prunus and Corylus spp.

Genus Rhogogaster Konow, 1884

Rhogogaster (Rhogogaster) punctulata (Klug, 1817)*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Sakanebeli; N42.698953, E42.826746; 1800 m a.s.l.; 20-26/VI/2020.
- Palaearctic. Frequent. Host plants: Frangaria spp., Rubus spp. and Potentilla reptans.

M. (Macrophya) diversipes (Schrank, 1782)
- GEORGIA • 2 ♀; Tsageri, Doghurashi village, Nalobiavi; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VI/2020.
- Palaearctic. Frequent. Host plants: Frangaria and Rubus spp.

M. (Macrophya) duodecimpunctata (Linnaeus, 1758)*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Nalobiavi; N42.669761, E42.785362; 1070 m a.s.l.; 5-12/VI/2020.
- Palaearctic. Frequent. Host plants: Frangaria and Rubus spp.

M. (Macrophya) erythrocnema Costa, 1859*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Nalobiavi; N42.669761, E42.785362; 1070 m a.s.l.; 20-27/VI/2020.
- West Palaearctic. Sporadic. Host plant: Knautia arvensis.

M. (Macrophya) sanguinolenta (Gmelin, 1790)
- GEORGIA • 5 ♂♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VI/2020. 2 ♀♀, 1 ♂; Tsageri, Makhura village, Garbhidizeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020.
- Palaearctic. Frequent. Host plants: Galenopsis, Senecio and Veronica spp.

M. (Macrophya) superba Tischbein, 1852*
- GEORGIA • 1 ♂; Tkibuli, Makhura village, Garbhidizeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 5-12/VI/2020.
- Ponto-Caspian. Frequent. Host plant unknown.

Genus Cladius Illiger, 1807

Cladius (Cladius) pectinicornis (Geoffroy, 1785)
- GEORGIA • 3 ♂♂; Tkibuli, Makhura village, Garbhidizeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 5-12/VI/2020.
- West Palaearctic. Frequent. Host plants: Poa pratense, Festuca elatior, Dactylis glomerata and Elytrigia repens.

T. viridis Zhelochovtsev, 1941*
- GEORGIA • 2 ♀♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 5-12/VI/2020.
- Ponto-Caspian species. Frequent. Host plants: Poaeeae, particularly Brachypodium silviacum.

Subfamily: Nematinae

Genus Tenthredo Linnaeus, 1758

Tenthredo (Maculeto) maculata Geoffroy, 1785*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l.; 20-26/VI/2020. 3 ♂♂; Tsageri, Doghurashi village, Sakanebeli; N42.699853, E42.826746; 1800 m a.s.l.; 20-26/VI/2020.
- West Palaearctic. Sporadic species. Host plant unknown. Comment: Replacement name of Tenthredo punctulata Konow, 1887

Genus Tenthredopsis Costa, 1859

Tenthredopsis litterata (Geoffroy, 1785)*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Sakanebeli; N42.699853, E42.826746; 1800 m a.s.l.; 20-26/VI/2020.
- West Palaearctic. Frequent. Host plants: Agrostis, Dactylis and Calamagrostis spp.

T. semicolon Mol, 2013*
- GEORGIA • 1 ♀; Tsageri, Doghurashi village, Sakanebeli; N42.699853, E42.826746; 1800 m a.s.l.; 20-26/VI/2020.
- West Palaearctic. Sporadic species. Host plant unknown. Comment: Replacement name of Tenthredo punctulata Konow, 1887
eri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VI/2020.

- Previously reported by Andguladze (1957; 1973) and Japoshvili and Haris (2022). Holarctic. Common. Host plants: *Alchemilla, Filipendula, Fragaria, Potentilla, Sanguisorba*, Rosa and Rubus spp.

**Genus Priophorus** Dahlbom, 1835

_Priophorus blanki_ Dahlbom, 1835

- **GEORGIA** • 1♂; Tsageri, Doghurashi village, Sakenebeli; 42.696151, 42.812965; 1500 m a.s.l.; 20-26/VI/2020. 1♀; Tkibuli, Mukhura village, Gabridichzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VI/2020. 1♂;Tkibuli, Mukhura village, Gabridichzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020.
- Previously reported by Japoshvili and Haris (2022). Cosmopolitan. Common. Host plants: *Rubus* spp. like _R. idaeus, R. caesius* and *R. saxatilis*.

_P. compressicornis_ (Fabricius, 1804)*

- **GEORGIA** • 1♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VI/2020. 2♂♂; Tkibuli, Mukhura village, Gabridichzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VI/2020. 4♂♂; Tkibuli, Mukhura village, Gabridichzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020. 1♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VI/2020.
- Previously reported by Japoshvili and Haris (2022). Holarctic. Frequent pest. Host plants: *Betula, Cotonaster, Prunus, Rubus, Sorbus, Fragaria, Crataegus, Corylus* and *Rosa* spp.

_P. ruffii_ (Serville, 1823)*

- **GEORGIA** • 1♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VI/2020.
- West Palaearctic. Sporadic. Host plants: *Ulmus* spp.

**Genus Pristiphora** Latreille, 1810

_Pristiphora armata_ (Thomson, 1863)

- **GEORGIA** • 1♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VI/2020.
- Palaearctic species. Frequent. Host plants: *Crataegus* spp.

_P. leucocephalus_ (Hellén, 1948)

- **GEORGIA** • 1♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VI/2020.
- Previously reported by Japoshvili and Haris (2022). West Palaearctic species. Frequent. Host plants: *Tilia* spp.

_P. pallidiventris_ (Fallin, 1808)*

- **GEORGIA** • 1♂; Tkibuli, Mukhura village, Gabridichzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020.
- Holarctic. Frequent. Host plants: *Geum, Potentilla, Rubus* and *Filipendula* spp. The species is listed in GBD. However, the record is erroneously based on Haris (2006).

**Genus Pteronidea** Rohwer, 1911

_Pteronidea bergmanni_ (Dahlbom, 1835)*

- **GEORGIA** • 1♀; Tkibuli, Mukhura village, Gabridichzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020.
- Palaearctic species. Frequent. Host plant: *Salix* spp.

_P. myosotidis_ (Fabricius, 1804)*

- **GEORGIA** • 1♀, 33♂♂; Tkibuli, Mukhura village, Gabridichzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VI/2020. 12♂♂; Tsageri, Doghurashi village, Nalobievi; N42.667961, E42.785362; 1070 m a.s.l.; 5-12/VI/2020. 1♂; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VI/2020. 1♂; Tsageri, Doghurashi village, Nalobievi; N42.667961, E42.785362; 1070 m a.s.l.; 18-24/VIII/2020. 2♂♂; Tsageri, Doghurashi village, Nalobievi; N42.667961, E42.785362; 1070 m a.s.l.; 19-25/VII/2020.
- Previously reported by Japoshvili and Haris (2022). Palaearctic. Common. Host plants: *Onobrychis, Vicia, Trifolium* spp. also _Laethyrus pratensis_.

_P. oligopla_ ( Förster, 1854)*

- **GEORGIA** • 2♂♂; Tkibuli, Mukhura village, Gabridichzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 13-20/VI/2020.
- Originally Palaearctic species, introduced globally, now cosmopolitan. Frequent. Host plants: *Salix* spp. It is also reported from *Populus* spp.

_P. tibialis_ (Newman, 1837)*

- **GEORGIA** • 1♀; Tkibuli, Mukhura village, Gabridichzeebis Ubani; N42.319369, E43.061274; 780 m a.s.l.; 20-27/VI/2020.
- Nearctic, introduced to Europe with _Robinia_, invasie in the Caucasus. Frequent. Larva on _Robinia pseudacacia_ and also on _Robinia viscosa, R. hispida_ and _Gleditsia triacanthos_.

**Genus Pachynematus** Konow, 1890

_Pachynematus obductus_ (Hartig, 1837)*

- **GEORGIA** • 1♀; Tsageri, Doghurashi village, Sakenebeli; 42.689853, 42.826746; 1800 m a.s.l.; 20-26/VI/2020.
- Holarctic. Sporadic. Larva on Gramineae (*Poaceae*) and *Carex* spp.

**Genus Stauro nematus** Benson, 1953

_Stauro nematus platycerus_ (Hartig, 1840)*

- **GEORGIA** • 1♀; Tsageri, Doghurashi village, Katsunara; N42.667145, E42.770836; 550 m a.s.l., 5-12/VI/2020.
- Previously reported by Japoshvili and Haris (2022). Palaearctic species. Frequent. Host plants: *Populus* spp.: *Populus tremula, P. alba, P. nigra, P. balsamifera* and *Salix* spp. The only European Symphyta which larva erects a palisade of dried saliva around its feeding place.

**Family: Cephidae**

**Genus Calameta** Konow, 1896

_Calameta (Calameta) antiquae_ (Konow, 1894)*

- **GEORGIA** • 3♀♀; Tsageri, Doghurashi village, Tsbalanis Gora; N42.678243, E42.810053; 1470 m a.s.l.; 5-12/VI/2020.
Conclusions

Prior to our study, 147 species of sawflies had been reported from Georgia (Japoshvili and Haris 2022). During this study, 29 new species for Georgia were reported, and thus the number of sawflies found in Georgia increased to 183. Given the rather scarce and sporadic investigation of sawflies in Georgia, the species number is expected to be significantly higher. Furthermore, we collected 61 species in north-west Georgia, which indicates that this area supports a much higher diversity of sawflies compared to south-west Georgia. Indeed, extensive, whole-year malaise trap sampling of sawflies in Kintrishi Protected areas revealed 65 species only (Japoshvili and Haris, 2022).

The density of sawflies and their species richness were measured at five different altitudes (from 550 to 1800 meters above sea level). The highest diversity and density, with 40% (155) of individuals belonging to 39 species, were collected at 1070 m. The number of individuals and raw species richness decrease at lower (550 m - 16 ind/9sp, 780 m - 121ind/28sp) and higher altitudes (1470 m - 74ind/15sp, 1800 m - 22ind/7sp). However, this kind of inference is not statistically valid as the sampling intensity was also higher at the elevations with higher individual/species density. In addition, the sampling period was behind the activity peaks (April and May) of sawflies. Accordingly, obtained numbers of individuals or species density cannot be considered as comprehensive quantitative biodiversity data.

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