

Sawflies from Lagodekhi (Georgia, Sakartvelo) with Description of *Ametastegia lagodekhiensis* spec. nov.

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Abstract. Prior to this study, only fifteen sawfly species had been recorded in the Lagodekhi Protected Areas. Eight hundred six specimens of 85 species were collected from 6 different altitudes of the Lagodekhi Reserve. A new species, *Ametastegia (Ametastegia) lagodekhiensis* spec. nov., is described and compared with *Ametastegia polygoni* Takeuchi, 1929, *Ametastegia albipes* (Thomson, 1871) and *Ametastegia glabrata* (Fallén, 1808). Twenty species are new for the fauna of Sakartvelo (Georgia). The highest total abundance of sawfly population was observed at an altitude of 666 m asl with 186 individuals. The lowest abundance 61 individuals was recorded at the highest altitude of 2559 m a.s.l. The most species – rich site was at 666 m a.s.l. altitude where 35 species were recorded. Twenty-one species of sawflies were recorded at this altitude during 12-23.04 collecting. The species – poorest sites at 1902 m and 2559 m a.s.l., 16 and 18 species, respectively. Similar to the changes in population density, there is also an early and prominent culmination period in species richness. Afterward, species richness remains consistently low. Most of the species have wide geographic distributions, i.e. Holarctic, Cosmopolitan, Palearctic, South Palearctic and West Palearctic, their proportion is 81.1%. The so-called characteristic components are the species with limited distribution, their proportion is 18.9%. This is significantly higher than that we were most experienced during our previous investigations in the other regions of the Caucasus (12-13%). © 2025 Bull. Georg. Natl. Acad. Sci.

Keywords: Lagodekhi Nature Reserve, new species, Symphyta, Caucasus

Introduction

The Lagodekhi Reserve, established in 1912, is located in the extreme north-eastern part of Georgia, on the southern slopes of the Caucasus Mountains, with altitudes ranging from 590 to 3500 meters. The Lagodekhi Protected Area encompasses the Lagodekhi Natural Reserve (19 749 ha) and a Managed Reserve (4 702 ha). This reserve is one of the world's best-preserved primeval areas, known for its diversity of natural landscapes. This work represents the 11th publication in a series studying the sawfly fauna and ecological conditions of sawfly populations in various regions of Georgia. This series serves as a preparatory phase for a more extensive project that will summarize the sawfly fauna of Georgia. Additionally, it will provide a foundation for a comprehensive study on the distribution of various insect species and groups across different terrains of the Caucasus in the current phase of climate change. Prior to this study, only fifteen species had been recorded from the Lagodekhi Protected Areas [1].

Materials and Methods

Specimens were collected using Malaise traps throughout the entire growing season of 2014 at the following locations: A1: low-altitude forest, 666 m, N 41°51.149' E 46°17.266'; A2: mid-altitude forest, 847 m, N 41°51.351' E 46°17.564'; A3: high-altitude forest, 1 351 m, N 41°52.288' E 46°18.692'; A4: subalpine forest, 1 841 m, N 41°52.964' E 46°19.311'; A5: subalpine forest 1 902 m, N 41°53.135' E 46°19.447'; A6: subalpine meadows and shrublands, 2 230 m, N 41°53.883' E 46°20.033'; A7: alpine zone, 2 559 m, N 41°54.371' E 46°20.004'.

The material was collected by G. Japoshvili and his team. Containers were filled with 80% ethanol, and species were collected every 10 ($\pm$ 2) days, then placed in 96% ethanol. Subsequently, they were sorted, dried, and mounted. During this study, more than 120 containers were collected. The collection began on April 2, 2014, and lasted until November 7, 2014. In alpine and subalpine areas, however, collecting started later (subalpine on May 5, 2014; alpine on May 23, 2014) and ended earlier (October 6, 2014), due to the climatic conditions at higher altitudes. For identification Zhelochovtsev's [2] work on the sawflies of the European part of the former USSR, the handbook of Lacourt [3] on the identification of the European sawflies, the monograph of Benson [4] on the Turkish fauna, Gussakovskij's monographs on the sawflies of the former USSR [5,6] were used. Lacourt [3] with special concern for the subfamily Nematinae to address the conclusions of Prous et al. [7]. For the analysis of the new species the following works by Parks et al. [8], Takeuchi [9], Smith [10,11], Macek et al. [12], Kayrandish et al. [13] and high number of local Chinese papers, written in Chinese to ensure this species is not a non-native East-Palaearctic newcomer. The records for Georgia are marked with asterisk.

Results

List of species

Family Argidae: *Arge cyanocrocea* (Forster): A3: 05-15.05., 1♂; 04-14.06., 1♂; 25.06. - 05.07., 1♀; A4: 25.06. - 05.07., 1♀; 05-15.07., 1♀. Palaearctic. *Arge dimidiata* (Fallén): A3: 05-15.05., 2♂♂. Palaearctic. *Arge fuscipes* (Fallén)*: A1: 12-23.04., 1♀. Palaearctic species. *Arge gracilicornis* (Klug): Lagodekhi Reserve: A4: 04-14.06., 1♂; 15-25.06., 1♀. Palaearctic. *Arge melanocheira* (Gmelin): A2: 12-23.04., 2♂♂. Palaearctic. *Arge pagana* (Panzer): A1: 23.04.-04.05., 1♀; A3: 05-15.07., 1♂. Palaearctic. *Sterictiphora longicornis* Chevin: A1: 12-23.04.; 6♀, A2: 12-23.04., 1♀; A3: 23.04.-04.05., 2♀♀. West Palaearctic.

Family Cimbicidae: *Abia mutica* Thomson*: A1: 12-23.04., 1♀. Palaearctic.

Family Cepidae: *Calameuta grombcewskii* (Jakowlew): A6: 25.06.-05.07., 3♀♀; A7: 05-15.07., 4♀♀, 3♂♂. Ponto-Caspian, Central Asian.

Family Orussidae: *Orussus abietinus* (Scopoli): A2: 05-15.05., 1♂. Palaearctic species.

Family Pamphiliidae: *Onycholyda kervillei* (Konow): A3: 15-25.05., 1♂. West Palaearctic. New for Georgia. *Onycholyda trigaria* (Konow): A3: 15-25.05., 1♀. Ponto-Caspian-Iranian. *Pamphilius histrio* Latreille*: A4: 04-14.06., 1♀. Palaearctic. *Pamphilius pugnax* Konow: A1: 23.04.-04.05., 1♀; A4: 25.06.-05.07., 1♂. Ponto-Caspian.

Family Tenthredinidae: Subfamily Allantinae: *Allantus cinctus* (Linné): A6: 15-25.07., 1♂. Holarctic. *Ametastegia carpini* (Hartig): A1, A2, A4, A5 and A6: 12.04.-15.07.2014, 20♂♂, 8♀♀. Holarctic. *Ametastegia pallipes* (Spinola): A1: 23.04.-04.05., 3♀♀; 05-15.05., 1♀; 04-14.06., 2♀♀; A4: 15-25.06., 1♀; A5: 15-27.09., 1♀; A6: 15-25.06., 5♀♀; 05-15.07., 1♀. Holarctic. *Ametastegia tenera* (Fallén): A6: 04-14.06., 1♂. Holarctic. *Ametastegia lagodekhiensis* sp. n.: A4: 04-14.06., 1♂. *Athalia rosae* (Linné): A7: 25.06.-05.07., 1♀. Palaearctic. *Athalia liberta* (Klug): A1: 15-25.06., 1♀; 05-15.07., 1♀, 1♂; 04-14.09., 1♀;

A3: 05-15.05., 1♀; 25.06.-05.07., 1♀; A7: 05-15.07., 1♂. West Palaearctic. *Athalia circularis* (Klug): A1-A7: 23.04.-06.10.2014, 26♂♂, 29♀♀, 15-25.06.2014. Palaearctic. *Athalia cordata* Serville: A1: 04-14.06., 1♀. West Palaearctic. *Empria aridicola* Macek & Prous*: A7: 23.05.-04.06., 1♂. West Palaearctic. *Empria longicornis* (Thomson, 1871): A1-A4, A6-A7: 02. 04. - 25. 06. 2014, 77♂♂, 7♀♀. West Palaearctic. *Empria sexpunctata* (Serville, 1823): A1: 12- 23.04., 3♂♂, 23.04.-04.05., 2♂♂, A2: 12-23.04., 3♂♂. West Palaearctic. *Taxonus sticticus* (Klug, 1817): A6: 04-14.06., 1♂, 15-25.06. 014, 1♂. West Palaearctic.

Subfamily Blennocampinae: *Cladardis hartigi* Liston*: A3: 23.04.-04.05., 1♀, 05-15.05., 1♀. Palaearctic. *Claremontia alternipes* (Klug): A1: 02-12.04., 1♀, 2 ♂♂, 12-23.04., 1♂. West Palaearctic. *Eurhadinoceraea fulviventris* (Scopoli): A1-A4: 02-12.04.2014, 36♂♂, 12-23. 04.2014, 8♂♂, 7♀♀. Southern Palaearctic. *Eutomostethus ephippium* ssp. *vopiscus* (Konow): A1, A2, A6: 02.04.-25.06.2014, 7♀♀, 50♂♂. Ponto-Caspian. Hostplants: Poaceae. *Halidamia affinis* (Fallén): A1: 02-12.04., 1♀, A2: 05-15.05., 4♀♀, A3: 05-15.05., 1♀, A6: 04-14.06., 1♀. West Palaearctic, introduced to North America. *Monophadnus pallescens* (Gmelin)*: A7: 23.05.-04.06., 1♀. Holarctic. *Phymatocera aterrima* (Klug)*: A3: 05-15.05., 1♂, 05-15.07., 1♀, A5: 04-14.06., 1♀, 4♂♂, A6: 05. - 15. 05., 2♀♀, 1♂, 15-25.06., 1♂, 25.06.-05.07., 1♂, 15-25.07., 1♀, 2♂♂. Palaearctic.

Subfamily Heterarthrinae: *Caliroa cerasi* (Linné, 1758): A3: 05-15.07., 1♀. Cosmopolita. *Fenella nigrita* Westwood*: A1: 25.07.-05.08., 1♀. Holarctic. *Heterarthrus vagans* (Fallén): A1: 15-25.05., 1♀, A3: 25.06.-05.07., 2♀♀, 05-15.07., 1♀, 05-15.08., 2♀♀. Palaearctic. *Metallus pumilus* (Klug): A1: 25.07.-05.08., 1♂. Palaearctic. *Parna tenella* (Klug): A1: 23.04.-04.05., 4♀♀, 05-15.05., 2♀♀, 15-25.05., 3♀♀, A2: 12- 23.04., 1♀, 23.04.-04.05., 2♀♀, A3: 23.04.-04.05., 1♀, 05-15.05., 1♂, 04-14.06., 1♂, A4: 05-15.05., 1♂, 15-25.05., 1♂. West Palaearctic.

Subfamily Dolerinae: *Dolerus phalipi* Chevin*: A7: 23.05.-04.06., 2♂♂. West-Palaearctic. *Dolerus puncticollis* Thomson*: A7: 23.05.-04.06., 5♂♂. West Palaearctic.

Subfamily Nematinae: *Cladius brullei* (Dahlbom): A1-A3, A5: 12.04.-14.09.2014, 64♂♂, 7♀♀. Cosmopolitan. *Cladius compressicornis* (Fabricius): A1: 12-23.04., 1♀, A2: 23. 04.-04.05., 1♀. Holarctic. *Nematus wahlbergi* Thomson: A2 05-15. 05., 1♀. West-Palaearctic. *Pachynematus obductus* (Hartig): A3-A7: 02.04.-15.08.2014, 21♀♀. Holarctic. *Pachynematus vagus* (Fabricius)*: A1: 12-23.04., 1♀, 15-25.05., 1♀, 05-15.07., 1♀. Holarctic. *Phyllocolpa leucosticta* (Hartig): A4: 05-15.05., 1♀. West Palaearctic. *Pristiphora armata* (Thomson): A1: 23.04.-04.05., 1♀, A3: 23.04.-04.05., 1♀, 1♂, 05-15.05., 1♂, 23.05.-04.06., 2 ♂♂, 25.06.-05.07., 2♂♂, A4: 25.06.-05.07., 1♂. Palaearctic. *Pristiphora leucopus* (Hellén): A1: 23.04.-04.05., 4♀♀, 04-14.06., 1♀, A2: 05-15.05., 3♀♀, 23.05.-04.06., 1♀, A3: 04-14.06., 4 ♀♀, 15-25.06., 1♀, 25.06.-05.07., 2♀♀, 05-15.07., 3♀♀, A5: 04-14.06., 1♀. West-Palaearctic. *Pristiphora pallidiventrif* (Fallén): A2: 15-25.07., 1♂, A3: 04-14.06., 1♀, 15-25.07., 1♀, A4: 25.06.-05.07., 1♀, A5: 15-27.09., 1♀, A7: 25.07.-05.08., 1♀. Holarctic. *Pristiphora subarctica* (Forsslund)*: A1: 12-23.04., 1♂. West Palaearctic. *Pristiphora subbifida* (Thomson): A1: 12-23.04., 2♀♀, 23.04.-04.05., 1♀, A2: 12-23.04., 1♀. West Palaearctic. *Pristiphora tetrica* (Zaddach)*: A1: 12-23.04., 1♂, 23.04.-04.05., 1♂. West Palaearctic. *Pteronidea miliaris* (Panzer): A1: 05-15.05., 1♂. West Palaearctic. *Stauronematus platycerus* (Hartig): A4: 05-15.05., 1♀. Palaearctic.

Subfamily Selandrinae: *Aneugmenus coronatus* (Klug): A1: 12. - 23.04., 1♀, A4: 15-25.06., 1♀, A6: 05-15.07., 1♀. Palaearctic. *Nesoselandria morio* (Fabricius): A1: 15-25.05., 2♀♀, 04-14.06., 1♀, 05-15.07., 1♀. Holarctic. *Strongylogaster multifasciata* (Geoffroy): Lagodekhi Reserve: A6: 04-14.06., 8♀♀, 15-25.06., 3♀♀, 15-25.07., 1♀. Palaearctic. *Strongylogaster caucasica* Schaposchnikov: A3: 23.04.- 04.05., 3♀♀, A4: 05-15.05., 7♀♀, 5♂♂, 15-25.05., 4♀♀. Ponto-Caspian.

Subfamily Tenthredininae: *Aglaostigma aucupariae* (Klug): A1: 12-23.04., 1♀, A6: 15-25.06., 1♀. Palearctic. *Macrophya alboannulata* Costa: A4: 25.06.-05.07., 1♂. West Palearctic. *Macrophya hamata* ssp. *caucasicola* Muche: A1-A7: 23.04.-25.07.2014, 8♂♂, 12♀♀. Ponto-Caspian subspecies. *Macrophya militaris* (Klug)*: A2: 23.05.-04.06., 1♀. West-Palearctic. *Macrophya recognata* Zombori: A3: 15-25.07., 1♀, A6: 25.06.-05.07., 1♀, A7: 05-15.07., 1♀. West Palearctic. *Macrophya sanguinolenta* (Gmelin): A6: 04-14.06., 1♀. Palearctic. *Pachyprotasis rapae* (Linné): A1: 23.04.-04.05., 2♂♂, 15-25.05., 1♀, 15-25.06., 2♀♀, A2: 12-23.04., 2♀♀, 05-15.05., 1♀, A4: 04-14.06., 1♂, A6: 23.05.-04.06., 12♂♂, 04-14.06., 1♂, 15-25.06., 5♂♂, A7: 25.06.-05.07., 1♀, 1♂. Holarctic. *Rhogogaster chlorosoma* (Benson): A6: 04-14.06., 1♀, A7: 23.05.-04.06., 1♀. Palearctic. *Rhogogaster punctulata* (Klug): A4: 15-25.06., 1♀, A6: 15-25.06., 1♂. Palearctic. *Sciapteryx circassica* Dovnar-Zapolskij: A6: 23.05.-04.06., 1♂. Ponto-Caspian. *Sciapteryx levantina* André*: A1: 02-12.04., 1♀. Pontocaspian – East Mediterranean. *Tenthredo atrochypeata* Enslin*: A2: 23.05-4.06., 1♂, A6, 15-25.07., 1♂. Siberian – Pontocaspian. *Tenthredo bipunctula* Klug*: A4: 15-25.05., 1♀. West-Palearctic. *Tenthredo (Tenthredella) colon* Klug*: A6: 23.05.-04.06., 5♀♀, 05-15.07., 1♀, 15-25.07., 1♀, A7: 15-25.07., 1♀. Holarctic. *Tenthredo duplicata* Enslin: A5: 15-25.05., 1♀, 04-14.06., 1♀, A6: 05-15.07., 1♀. Ponto-Caspian – East Mediterranean. *Tenthredo ferruginea* Schrank: A6: 23.05.-04.06., 1♀, 04-14.06., 1♀, A7: 23.05.-04.06., 1♀, 1♂. Palearctic. *Tenthredo livida* Linné: A2-A7: 05.05.-27.09.2014, 27♀♀, 19♂♂. Palearctic. *Tenthredo mesomela* Linné: A3-A6: 15.05.-25.07.2014, 4♂♂, 9♀♀. Palearctic. *Tenthredo oryssoides* Jakowlew: A5: 15-25.05., 1♀, 04-14.06., 1♀, A6: 05-15.07., 1♀. Ponto-Caspian. *Tenthredo procera* Klug: A3: 04-14.06., 1♀. West Palearctic. *Tenthredo radoszkowskii* (André): A4: 15-25.05., 1♀. Ponto-Caspian-Anatolian. *Tenthredo vestita* André: A3: 15-25.05., 1♀, 15-25.06., 1♀. Pont-Caspian-Anatolian-Persian. *Tenthredopsis ornatrix* Konow: A5: 04-14.06., 14♂♂, A6: 05-15.05., 1♀, 04-14.06., 1♂, 15-25.06., 4♂♂, 15-25.07., 1♂. Ponto-Caspian. *Tenthredopsis viridis* Zhelochovtsev: A3: 15-25.05., 1♀, A6: 04-14.06., 1♂. Ponto-Caspian. *Tenthredopsis litterata* (Geoffroy): A2: 23.05.-04.06., 1♀, A6: 15-25.07., 1♀, A7: 15-25.07., 1♀. West Palearctic. *Tenthredopsis friesei* (Konow): A2: 23.05.-04.06., 1♀. Palearctic. *Tenthredopsis scutellaris* (Fabricius): A4: 25.06.-05.07., 1♀, 2♂♂, A5: 15-25.05., 1♂, A6: 15-25.06., 1♂. Palearctic.

Description of the new species

Ametastegia (Ametastegia) lagodekhiensis spec. nov. (Figs. 1, 2 and 3).

Holotype: ♂, Lagodekhi, A4: 04-14.06., Malaise trap. The holotype is deposited at the entomological collection of the Institute of Entomology, Agricultural University of Georgia, Tbilisi.



Figs. 1-3. 1. *Ametastegia lagodekhiensis* spec. nov. holotype; 2. Thorax of *Ametastegia lagodekhiensis* spec. nov. holotype in dorsal view; 3. Middle abdominal segments of *Ametastegia lagodekhiensis* spec. nov. holotype in dorsal view.

Antenna as long as costa. Ratios of antennal segments 1-9:10:5:32:24:25:15:14:13:16. Diameter of anterior ocellus: length of gena behind eye: 5:6. OOL:POL:OCL:13:10:18. Head, including temples, vertex, frontal area densely, deeply punctured with moderately large punctures, interspaces between punctures

about 2/3x as large as a diameter of a puncture, moderately shiny. Mesonotal lobes shiny, sporadically and shallowly punctured. Scutellum and mesoscutellar appendage smooth and shiny. Metascutellum mostly smooth and shiny with moderately large, deep punctures on hind margin. Mesopleuron shiny with moderately dense and shallow punctures. First tergite smooth and shiny, other tergites shiny with shallow coriaceous surface sculpture. Clypeal emargination shallow, asymmetrically rounded about 0.2x as deep as clypeal median length, Clypeus densely, roughly punctured nearly matte. Head gently narrowed behind eyes. Postoccipital carina missing. Frontal area flat, not separated by carina. Head and thorax covered with short, black, dense pubescence, about 0.33x as long as diameter of anterior ocellus. Cenchri rounded, length of a cenchrus : distance between cenchri: 3 : 4. Head: including antenna, clypeus and labrum black. Maxillary palp white, labial palp brown, Thorax black, tegula light brown, cenchri pearlescent white with a slight brownish tint. All coxae and trochanters white, Femora dark brown, except narrow white apices and dominantly white ventral surface of anterior femur. Anterior femur dorsally brown, ventrally dominantly white with a larger brown ventral middle surface. All tibiae and anterior and middle tarsi white. Posterior tarsi and apical ring on hind tibia brown. Abdomen brown, tergite 1 with subtriangular white spot based on the apical margin of the tergite and reaching to the half of the tergite, the basal half of the tergite widely divided. Tergite 4 with basal subtriangular white spot reaching down to the quarter of tergite, tergite 5 with large triangular white spot reaching down to the upper third of the tergite. Venation and stigma dark brown. Wings uniformly brown infusate. Anterior wing with 4 cubital cell. Anal cell of hind wing with very short petiole. Crossvein of radial cell and 3rd cubital crossvein nearly interstitial. Claws smooth, small basal lobe present. Length: 6.2 mm. The new species belong to subgenus *Ametastegia* Costa, 1882. Etymology: the species name lagodekhiensis refers to the area where the holotype was captured: Lagodekhi Reserve.

From the East-Palaearctic fauna, the new species is closely related to *Ametastegia polygona* Takeuchi, 1929. In *A. polygona*, the clypeal emargination is deep, but in the new species, it is shallow, approximately 0.2x as deep as the clypeal median length. Additional differences are observed in coloration: in *A. polygona* (both ♂ and ♀), the coxae, trochanters, femora, and tibiae are yellowish-white. In the new species, the middle and hind femora are black, and the anterior femora are black in the middle. In *A. polygona*, the abdomen is black, whereas in the new species, it is brown with a large triangular white spots on tergites 4 and 5. However, the occurrence of *A. polygona* could be expected in the Caucasus and Europe, as according to Barudanović et al. [14], this species is highly invasive. From the Nearctic region, this subgenus is missing; only two European species, namely *Ametastegia equiseti* (Fallén, 1808) and *Ametastegia tenera* (Fallén, 1808), represent the four-cubital crossvein subgenus *Ametastegia* Costa, 1882 [9,10]. In the West-Palaearctic region, the new species is most similar to *Ametastegia albipes* (Thomson, 1871) and *Ametastegia glabrata* (Fallén, 1808). In *A. albipes*, the malar space is less than the diameter of an ocellus, linear. The malar space in the new species is not narrow, it is about as wide as diameter of anterior ocellus. *Ametastegia glabrata*'s legs are entirely light reddish-brown, including the coxae and trochanters, with only the hind tarsi being brownish-black. In the new species, the femora are dominantly brownish black. The characteristic triangular pattern on the middle tergites is absent in both species. The new species fits into the West-Palaearctic species of subgenus *Ametastegia* as follows (the other subgenus, *Protemphytus* is omitted from this key:

Key to *Ametastegia* species:

- 1 (2) Abdomen entirely black or brown3
- 2 (1) Abdomen black with segments 3 or 4 to 5 or 6 red. Turkey, Siberia, Mongolia, North America. 5-7 mm. *Ametastegia equiseti* (Fallen, 1808)

- 3(4) Thorax with tegulae and angles of pronotum white. Malar space linear its length is less than the diameter of an ocellus. Legs white or reddish yellow, but apex of tibiae and tarsi black. Northern and central Europe, Sardinia, Sicily, Siberia. 5.0-6.0 mm. *Ametastegia albipes* (Thomson, 1871)
- 4 (3) Thorax entirely black or tegula may white coloured in one Caucasian species but malar space more wide, as long as the diameter of anterior ocellus. 5
- 5 (6) Tergites 4-5 with triangular, subtriangular white membraneous field. Femora extensively blackish brown. *Ametastegia lagodekhiensis* spec. nov.
- 6 (5) Abdomen black without any triangular membraneous patch in tergites 4 and 5. Femora light coloured without dark spots. 7
- 7 (8) Mesopleura heavily punctate, rough. Labrum white. Legs with apex of coxae and trochanters white. Italy. 6.0-8.0 mm. *Ametastegia lacteilabris* (Costa, 1894)
- 8 (7) Mesopleura not punctate, glossy. Labrum brown. legs except for base of coxae reddish yellow, hind tarsus black. Holarctic: all Europe, northern Africa, central Siberia, North America; introduced into South America. 5.5-8 mm. *Ametastegia glabrata* (Fallén, 1808)

Seasonal dynamics of flight activity of sawflies (Fig. 4). The highest total abundance of the sawfly population was observed at an altitude of 666 m a.s.l. with 186 individuals collected. The lowest abundance was at the highest altitude of 2559 m a.s.l. and it was 61 individuals. During seasons the pick of sawfly catch occurred at 1841 m a.s.l. reaching 74 individuals in 5-15.05.2014. During the last three catches (from 27.09. until 27.10) at the end of the season no sawflies were collected. We must note that after July the number of sawflies has been reduced in all sites and altitudes. Flight activity at each elevation can be modelled using one, or in some cases, two Gaussian curves. The first flight period at the lower levels covers the months of April to June. As we move higher in elevation, this first flight period shifts to May-June, June-July, and June-August. Similar to the Pannonian Biogeographic Region, there is sometimes (at 847 m and 1902 m levels, always in the Pannonian Biogeographic Region) a second intense flight period in September (in the Pannonian Biogeographic Region, in August) [15]. Therefore, the Alpine Biogeographic Region can be modelled with a single prominent Gaussian curve [16], which gradually peaks later as elevation increases.

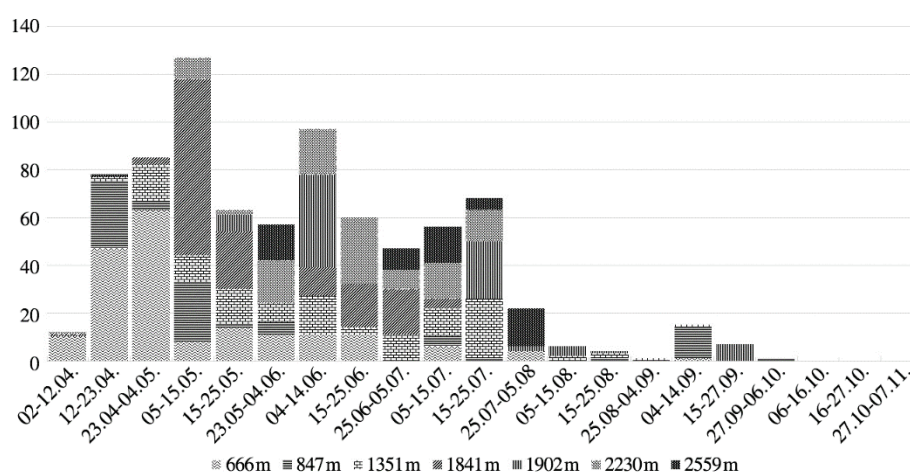


Fig. 4. Temporal dynamics of sawfly populations in various altitudes of the Lagodekhi Reserve.

Seasonal dynamics of species richness (Fig. 5). Similar to the changes in population density, there is also an early and prominent culmination period in species richness. Afterward, species richness remains consistently low. The aforementioned second peak in individual density in September is attributable to 1 to a maximum of 5 species, primarily the late generations of the *Athalia* species. The early and relatively species-rich phase shifts later with increasing elevation, just like the period of intense flight activity.

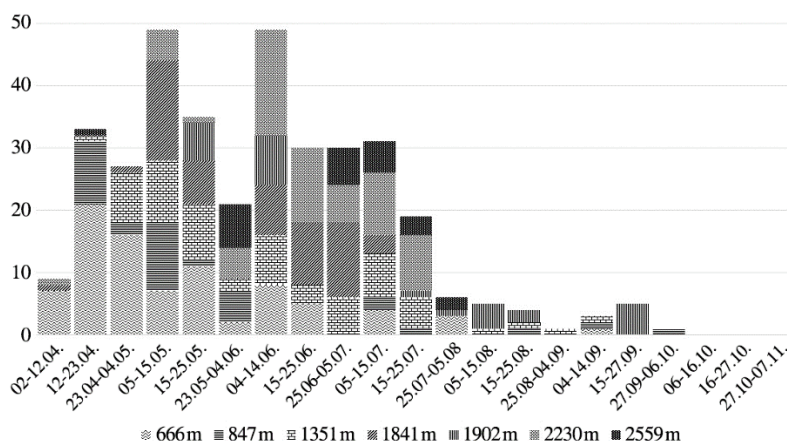


Fig. 5. Temporal dynamics of sawfly species in various altitudes of the Lagodekhi Reserve.

At lower elevations, this occurs in April-May, while at higher elevations it shifts to June-July. The most species – rich site was at 666 m a.s.l. altitude where 35 species were recorded. Twenty-one species of sawflies were recorded at this altitude during 12-23.04 collecting. The species – poorest sites at 1902 m and 2559 m a.s.l., with 16 and 18 species recorded, respectively.

The zoogeographic origin of the collected sawflies was evaluated. The majority of species have wide geographic distribution, i.e. Holarctic, Cosmopolitan, Palaearctic, South Palaearctic and West Palaearctic, their proportion is 81.1%. The so-called characteristic components are the species with limited distribution, their proportion is 18.9%. This proportion is significantly higher than that of we observed during our previous investigations in the different regions of Caucasus (12-13%).

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ენტომოლოგია

ლაგოდების ხერხიები, ერთი ახალი სახეობის *Ametastegia lagodekhiensis* spec. nov. აღწერით

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* აკადემიის წევრი, საქართველოს მეცნიერებათა ეროვნული აკადემია; საქართველოს აგრარული უნივერსიტეტი, ენტომოლოგიის ინსტიტუტი, თბილისი, საქართველო; უხერხემლოთა კვლევის ცენტრი, თელავი, საქართველო

** რაპლ-რონაის მუზეუმი, კაპოსვარი, უნგრეთი

წინამდებარე კვლევამდე ხერხიების მხოლოდ 15 სახეობა იყო ცნობილი ლაგოდების დაცული ტერიტორიებიდან. 6 სხვადასხვა სიმაღლეზე შეგროვდა 85 სახეობის რგას ექვსი ეგზემპლარი. *Ametastegia* (*Ametastegia*) *lagodekhiensis* spec. nov. აღწერილია, როგორც ახალი სახეობა და შედარებულია *Ametastegia polygoni* Takeuchi, 1929, *Ametastegia albipes* (Thomson, 1871) და *Ametastegia glabrata* (Fallén, 1808)-თან. საქართველოს ფაუნისთვის ოცი სახეობა ახალია. ხერხიების ყველაზე მაღალი სიმჭიდროვე დაფიქსირდა ზღვის დონიდან 666 მ სიმაღლეზე და შეადგინა 186 ინდივიდი. ყველაზე დაბალი სიმჭიდროვე კი დაფიქსირდა ყველაზე მაღალ, 2559 მ სიმაღლეზე და შეადგინა 61 ინდივიდი. სახეობებით მდიდარი წერტილი ასევე იყო 666 მ სიმაღლეზე, სადაც დაფიქსირდა 35 სახეობა. ამ სიმაღლეზე 12-23.04-ს დაფიქსირდა ხერხიების ოცდაერთი სახეობა. ყველაზე ღარიბი ადგილი სახეობების მხრივ იყო 1902 მ და 2559 მ სიმაღლეები, შესაბამისად 16 და 18 სახეობა. პოპულაციის სიმჭიდროვის მსგავსად, სახეობათა მრავალფეროვნება ვეგეტაციის ადრეულ სეზონზე ფიქსირდება. ამის შემდეგ, სახეობების სიმდიდრე კლებულობს. მათ უმეტესობას აქვს ფართო გეოგრაფიული გავრცელება, ანუ ჰოლარქტიკული, კოსმოპოლიტური, პალეარქტიკული, სამხრეთ პალეარქტიკული და დასავლეთ პალეარქტიკული, რაც ჯამში 81,1%-ია. შეზღუდული გავრცელების სახეობების წილი არის 18,9%, რაც საგრძნობლად აღემატება ჩვენ მიერ წინა კვლევების დროს კავკასიის სხვადასხვა რეგიონში მიღებულ მონაცემებს (12-13%).

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