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Articles

New data on the Lepidoptera of Azerbaijan (Southern Transcaucasia). Superfamily Pyraloidea Latreille, 1809

Aleksandr N. Streltzov	Herzen State Pedagogical University of Russia, 48 Moika Emb., Saint Petersburg 191186, Russia
Nataly Snegovaya	Institute of Zoology, Ministry of Science and Education of Azerbaijan (IZB), A. Abbaszade st. 115, pr. 1128, bl. 504, Az 1004, Baku, Azerbaijan; Western Caspian University, 31 Istiglaliyyat St., Baku, Azerbaijan
Nazar A. Shapoval	Department of Karyosystematics, Zoological Institute, Russian Academy of Sciences, 1 Universitetskaya nab., St. Petersburg, 199034, Russia
Mahmud F.-O. Humbatov	Western Caspian University, 31 Istiglaliyyat St., Baku, Azerbaijan
Ismayil B.-O. Mammadov	Nakhchivan State University, University Campus, Nakhchivan, AZ7012, Azerbaijan; Institute of Bioresources of Nakhchivan Branch of National Academy of Sciences of Azerbaijan, Babek 10, AZ 7000 Nakhchivan, Azerbaijan
Roman V. Yakovlev	Altai State University, 61 Lenina Ave., Barnaul 656049, Russia; Tomsk State University, 36 Lenina Ave., Tomsk 634050, Russia; Western Caspian University, 31 Istiglaliyyat St., Baku, Azerbaijan

We present the faunal list of Pyraloidea (Lepidoptera) of Azerbaijan, including 222 species of 114 genera, belonging to two families. Forty eight species of Pyraloidea Moths are reported for Azerbaijan for the first time.

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Corresponding author: Aleksandr N. Streltzov (streltzov@mail.ru)

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Keywords

Biodiversity, Caucasus, species richness, fauna, Pyralidae, Crambidae

Introduction

The Caucasus Ecoregion (including the Russian Caucasus, Azerbaijan, Armenia, Georgia, northeastern Turkey and northwestern Iran) is included in the list of “biodiversity hotspots” (Myers 1988; Myers et al. 2000). The Lepidoptera of this richest region are studied very unevenly. Traditionally, the most detailed summaries are on Papilionoidea (Ilyina and Morgun 2010, 2011; Tshikolovets and Nekrutenko 2012). Relatively complete information is available for most “Macrolepidoptera” (Schintlmeister 2008; Yakovlev et al. 2015; Zolotuhin 2015; Didmanidze 2016; Zolotuhin and Evdoshenko 2019; Zolotuhin and Nedoshivina 2021; Snegovaya and Petrov 2021) and for several “Microlepidoptera” (Anikin and Shchurov 2001). The fauna of most Lepidoptera families is studied very fragmentary, though in the recent years some significant faunal results have been obtained for southern Ossetia (Streltzov et al 2022a, b, 2024; Nedoshivina et al. 2023; Sinev et al. 2023) and the Republic of Dagestan (Ilyina et al. 2012; Poltavsky and Ilyina 2016; Dubatolov et al. 2021; Ustjuzhanin et al. 2022; Yakovlev et al. 2022; Tsvetkov 2023).

With this article we begin a series dedicated to the little-studied Lepidoptera families of Azerbaijan.

Geographically, Azerbaijan is located in the South Caucasus region of Eurasia. It lies between latitudes 38° and 42° N, and longitudes 44° and 51° E. The country has a landlocked exclave, the Nakhchivan Autonomous Republic. Three physical features dominate Azerbaijan: the Caspian Sea, whose shoreline forms a natural boundary to the east; the Greater Caucasus mountain range to the north; and the extensive flatlands at the country's center. There are also three mountain ranges, the Greater and Lesser Caucasus, and the Talysh Mountains, together covering approximately 40% of the country. The highest peak of Azerbaijan is Mount Bazardüzü 4,466 m, while the lowest point lies in the Caspian Sea −28 m. Over half of Azerbaijan's landmass consists of mountain ridges, crests, highlands, and plateaus which rise up to hypsometric levels of 400–1000 meters (including the Middle and Lower lowlands), in some places (Talish, Jeyranchol-Ajinohur and Langabiz-Alat foreranges) up to 100–120 meters, and others from 0–50 meters and up (Qobustan, Absheron). Nine out of eleven existing climate zones are present in Azerbaijan. The maximum annual precipitation falls in Lenkoran (1,600 to 1,800 mm) and the minimum in Absheron (200 to 350 mm). Azerbaijan's flora consists of more than 4,500 species of higher plants (Askerov 2008). Due to the unique climate in Azerbaijan, the flora is much richer in the number of species than the flora of the other republics of the South Caucasus. 66 percent of the species growing in the whole Caucasus can be found in Azerbaijan. The main areas of plant diversity in Azerbaijan are the highlands of Nakhchivan (60% of the species occur here), the Kura-Araz plain (40%), the Devechi-Kuba region east of the Greater Caucasus (38%), the centre of the Lesser Caucasus (29%), Gobustan (26.6%), the Lenkoran region in the Talish Mountains (27%), and the Absheron region (22%). There are over 400 species of plants endemic to Azerbaijan (including ten endemic species of lichens). The country lies within four ecoregions: Caspian Hyrcanian mixed forests, Caucasus mixed forests, Eastern Anatolian montane steppe, andAzerbaijan shrub desert and steppe (Dinerstein et al. 2017).

The first information about the Pyraloidea fauna (Lepidoptera) of Transcaucasia in general and the modern territory of Azerbaijan in particular appeared after the expeditions of H.T. Christoph (Hugo Theodor Christoph (1831−1894)) in Transcaucasia and Northern Iran in 1881, 1882 and 1883. The results of these expeditions were published by him and Grand Duke N.M. Romanoff (Christoph 1876, 1887, 1893; Romanoff 1887) and to this day are the most complete reports on Pyraloidea of Azerbaijan. In total, he lists 134 species. Some data is also contained in the well-known catalog of G.I. Radde (1899), the first volume of which is devoted to invertebrate animals, including Lepidoptera. Radde lists 66 species of Pyraloidea for different locations. For almost the entire 20th century, the Pyraloidea of Transcaucasia were not the subject of close attention of researchers. Information about Pyraloidea of Azerbaijan in modern works is scarce and they are mentioned either in reviews of agricultural pests (Akhundova-Tuaeva 1947; Zagulyaev 1965; Vezirov et al. 1981; Jafarov 1982; Sinev 1999), or incidentally in articles devoted to the fauna of Azerbaijan in general and adjacent regions (Bogachev 1951; Ivinskis 1986; Poltavsky et al. 2013). Most of this

information was taken into account in the works of F. Slamka (Slamka 2006; 2008; 2013; 2019), where 46 species are listed in the text and on maps.

Materials and methods

This article is based on materials collected by Nataly Snegovaya, Nazar Shapoval and Roman Yakovlev in the nine localities of Azerbaijan (Fig. 1). A total of 92 species of Pyraloidea were identified, of which 48 were found for the first time (marked “*” in the table). In addition to our own materials, we summarized all available literature sources and included the data available in Table 1. The order of genera is adopted as in the Catalog of Lepidoptera of Russia (Sinev et al. 2009; Sinev, Streltzov 2009). This review can serve as a basis for further research.

List of collecting localities

1. **Azerbaijan**, Salyan District, Shirvan Reserve, 39°39′38″N 49°20′25″ E, -20 m, 13-14.05.2023, N. Shapoval & R. Yakovlev leg. (Fig. 2);

2. **Azerbaijan**, near Mingechaur, Kura Valley, 40°47′47″ N 47°3′12″ E, 100 m, 16- 17.05.2023, N. Snegovaya, N. Shapoval & R. Yakovlev leg. (Fig. 3);

3. **Azerbaijan**, Agdash District, Bozdag Ridge, near Turianchai, 40°43′17″ N 47°30′11″ E, 140 m, 18-19.05.2023, N. Snegovaya, N. Shapoval & R. Yakovlev leg. (Fig. 4);

4. **Azerbaijan**, Talysh Mts., Masalli District, 25 km SW Masalli, 38°56′53″ N 48°28′42″ E, 380 m, 21.05.2023, N. Snegovaya, N. Shapoval & R. Yakovlev leg. (Fig. 5);

5. **Azerbaijan**, Baku city, Garadagh District, near Gobustan, 40°12′42″ N 49°12′33″ E, 310 m, 22.05.2023, N. Shapoval & R. Yakovlev leg. (Fig. 6);

6. **Azerbaijan**, Masalli District, Massaly, Miyanku village, 38°53′52″N, 48°39′59″E, 24-27.07.2023, N. Snegovaya leg.;

7. **Azerbaijan**, Ordubad District, Agdere village, 39°6′40″N, 45°54′55″E, 23- 24.08.2023, N. Snegovaya leg.;

8. **Azerbaijan**, Yevlakh city, near the Kainat hotel, 40°36′52″N, 47°8′51″E, 4.07.2023, N. Snegovaya leg.;

9. **Azerbaijan**, Lerik, Gosmalyan village, 38°40′22″N, 48°22′15″E, 5.06.2023, N. Snegovaya leg.

The collections were carried out by manual collection during the daytime and at dusk, as well as on light screens Naturaliste-180 (using lamps OSRAM-160, 250 W) (Fig. 7) and autonomous light traps ENTOSPHINX lamp UV LED 12 V/19,2W (equipped with diodes 240 UV LED) (Fig. 8). The form of the map of Azerbaijan was taken from an open Internet resource (https://www.bluegreenatlas.com).

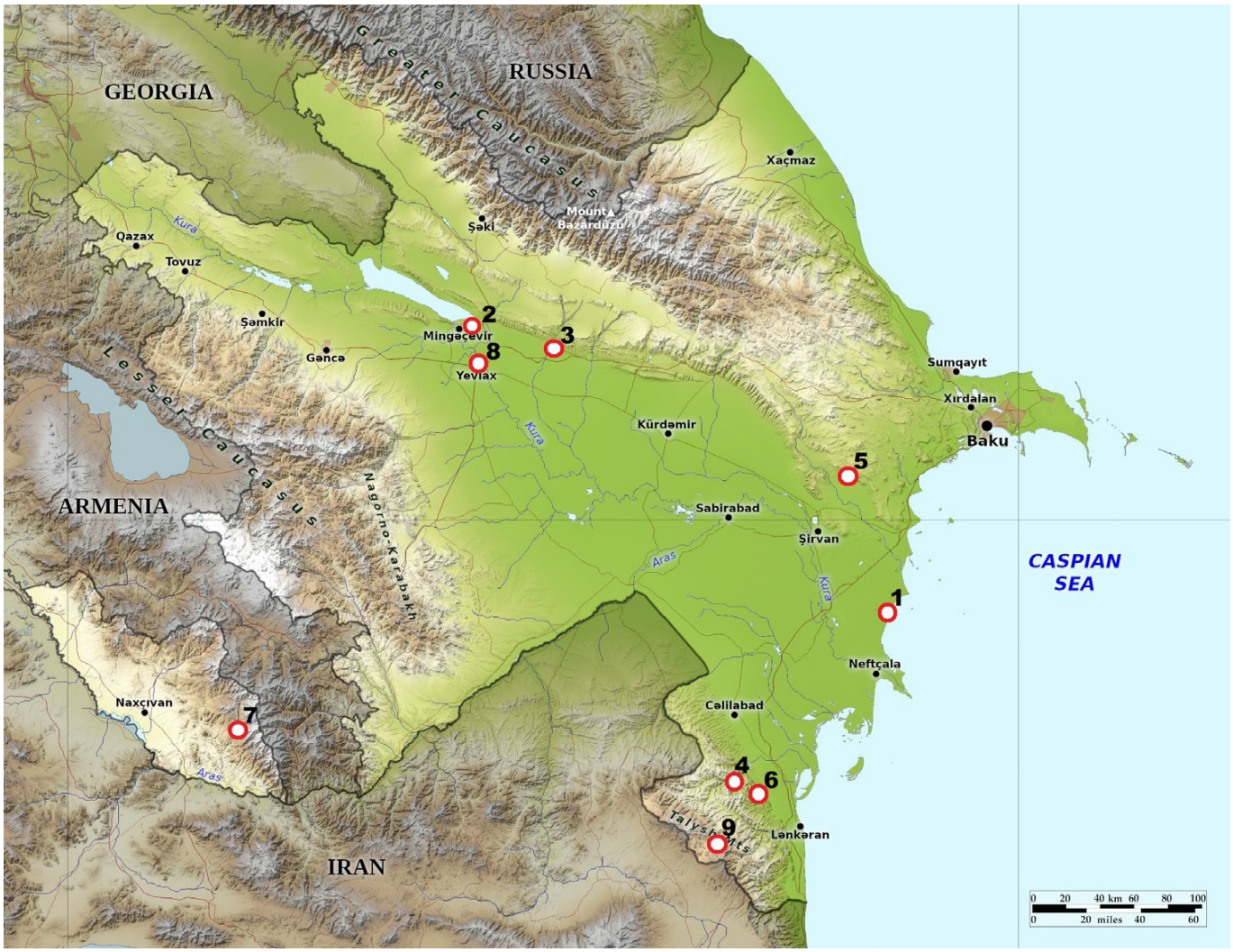

Figure 1. *Map of Azerbaijan with collecting localities.*

Figure 2. *Salyan District, Shirvan Reserve (photo by R. Yakovlev).*

Figure 3. *Near Mingechaur, Kura Valley (photo by R. Yakovlev).*

Figure 4. *Agdash District, Bozdag Ridge, near Turianchai (photo by R. Yakovlev).*

Figure 5. *Talysh Mts., Masalli District, 25 km SW Masalli (photo by R. Yakovlev).*

Figure 6. *Near Gobustan (photo by R. Yakovlev).*

Figure 7. *Light screens Naturaliste-180 (photo by R. Yakovlev).*

Figure 8. *Autonomous light traps (photo by R. Yakovlev).*

Result

Table 1. List of Pyraloidea of Azerbaijan (http://journal.asu.ru/biol/article/view/15707/13375)

Faunistic and systematic notes

**Hypotia infulalis* Lederer, 1858

The species is widespread in the Mediterranean region and is known from Turkey (Leraut 2014). The northernmost find.

**Psorosa* sp. (*marashella* sp. group)

An unidentified species from the *marashella* group, possibly new to science, additional materials and research are required.

**Ceutholopha isidis* (Zeller, 1867)

The species is distributed in Africa, the Middle East, and is locally occurring in Great Britain and Corsica (Leraut 2014). Relatively recently, the species was discovered in Turkey (Akın 2018). The most northeastern records.

Discussion

Thanks to this, a complete summary of the Pyraloidea fauna of Azerbaijan was obtained, including 222 species. This summary can serve as a basis for further research.

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