

THE FIRST RECORD OF THE GENUS *ARGIOPE* OF THE
FAMILY ARANEIDAE: *ARGIOPE BRUENNICHI* (SCOPOLI, 1772)
AND *ARGIOPE LOBATA* (PALLAS, 1772) IN ARMENIA

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The article presents the first record of the genus *Argiope*, orb-weaver spiders from the Araneidae family in Armenia. The two female specimens of *Argiope bruennichi* (Scopoli, 1772) were found in the Lori Region (northern part), and two specimens of the female spider of *Argiope lobata* (Pallas, 1772) were recorded in the Tavush Region (north-eastern part) and Armavir Region (south-western part) of Armenia in 2020–2022.

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Keywords: new records, spider, distribution, spider of Caucasus, *Argiope bruennichi*, *Argiope lobate*.

Introduction. The family Araneidae is a member of the order Araneae (Foelix, 1982). Araneida is one of the most successful spider families; they have over 3006 species described from 168 genera (Platnick, 2011) [1]. The family of Araneidae in the Caucasus regions has been studied by many authors [2–4]. However, the spider fauna in Armenia is not well studied. The genus of *Argiope* has 89 species worldwide. The spiders of genus *Argiope* have been described in neighboring countries, with the exception of Iran, but are not documented in Armenia.

Here we present the first record of the orb-weaver spider Araneidae in Armenia, found in Lori, Tavush and Armavir Regions – in different parts of Armenia. This study was carried out in 2020–2022 to provide an inventory of the Araneidae fauna. Due to its geographical location, Armenia has a very rich biodiversity. We sampled in different regions of Armenia, particularly in Lori and Tavush Regions. Lori Region is located in the northern part of the country bordering Georgia. Tavush Region is located in the north-east of Armenia and borders on Georgia from the north and Azerbaijan from the east. Armavir Region is located in the western part of Armenia and borders on Turkey. Mountain-steppe landscapes with numerous lakes provide habitats for many flora and fauna species, which remain poorly investigated. In this paper, the author presents two species of *Argiope* genus that are recorded for the fauna of Armenia for the first time: *Argiope bruennichi* (Scopoli, 1772) and *Argiope lobata* (Pallas, 1772). *Argiope* (Audouin, 1826) is nested in the subfamily Argiopinae (Simon, 1890) together with the genera

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Gea (Koch, 1843) and *Neogea* (Levi, 1983). The spiders of the genus comprise sexually dimorphic species well known for their showy colorful females and unique web stabilimenta (Levi, 1983; Tan, 2018) [5, 6].

Materials and Methods. The specimens were collected during 2020–2021 from different parts of Armenia. All specimens were collected by beating shrubs, pitfall traps, sifter, or hand collecting and were preserved in 96% ethanol. The key data points from the studies that were specified in the protocol – GPS (Decota 10), weather conditions, habitat and vegetation type – were recorded in a spreadsheet. The specimens are stored in the collections of the Faculty of Biology, Chair of Zoology, YSU. Materials were identified by the collectors. For identification we use the guidelines World Spider Catalog [7], Araneae Spiders of Europe [8] and Caucasian spider [3]. The specimens were examined with a Nikon 11-2486 stereomicroscope. Photographs of the copulatory organs and habitus were taken with a Canon EOS 90 D camera mounted on a Nikon 11-2486 compound microscope. Compound focus images were generated using Canon Macro Photo Lens MP-E65 mm f/2.8 1–5X. In this work, we have used measurements in millimeters, which are presented as femur-patella-tibia-metatarsus-tarsus (total). Additionally, we give results for total length (TL) and the cephalothorax (CL) length.

Results and Discussion. Four individuals of spiders belonging to the genus *Argiope*, new for Armenia, from the family Araneidae are presented below.

Argiope bruennichi (Scopoli, 1772).

Material. 2♀, Lori Province, Dendropark, 2021.

Distribution. Russia, Azerbaijan, Turkey, Georgia, Central and Eastern Europe and other countries [5].

Habitats in Armenia. The specimen was found on 21 July 2021 in Sochut Dendropark, near Stepanavan City in sunny day weather at 20°C. The spider was on a pine tree, sitting under its cobweb, which was almost 2 m above the ground. *Argiope* was found on the web in a species-specific shape (X), head down and L1–L2 and L3–L4 legs stretched in pairs.

GPS Coordination. 40°93557'N, 44°480209'E (1513 m above sea level).



Fig. 1. The general appearance of females *A. bruennichi* (a);
The epigyne appearance of females *A. bruennichi* (b).

Description. Fig. 1. Female (YSU-AK-20210721-001), female (YSU-AK-20210721-013). The TL of the specimen measures around 12.05 mm, while the CL states

8.04 mm. The leg measurements: L1 – 5.10-1.78-4.43-5.67-2.25 (19.23); L2 – 5.92-1.47-4.05-5.66-2.09 (19.19); L3 – 3.99-1.12-3.39-2.77-1.42 (12.69); L4 – 6.54-1.46-5.83-4.99-1.71 (20.53).

Prosoma female: silver, shiny. Sternum dark brown, with yellow median spot. Legs yellowish, annulated with brown.

Opisthosoma female: dorsally with numerous white or yellow transverse stripes, ventrally dark brown with yellow longitudinal stripes and some spots.

Argiope lobata (Pallas, 1772).

Material. 1 ♀, Tavush Province, Tavush Village, 2020.

Distribution. Central and Eastern Europe Azerbaijan, Turkey, Georgia, Russia and other countries [8].

Habitats in Armenia. The specimen was found on 29 May 2020 in Tavush Village in warm day weather at 19°C. The spider was found at 50 cm height above the ground at the verbs in the rocky area out of granite in a get-at-able crevice sitting on the underside of its web, which was situated almost parallel to the ground. In an *Argiope* species-specific manner, it posed in the center of its web the legs L1–L2 and L3–L4 pairwise stretched out.

GPS Coordination. 40°543119°N, 4524239°E (1000 m above sea level).

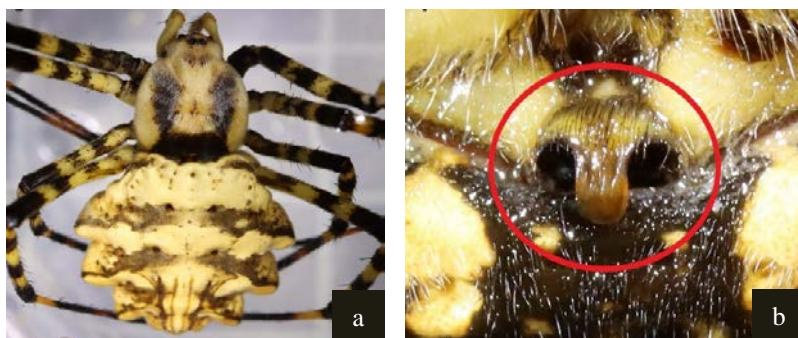


Fig. 2. The general appearance of females *A. lobata* (Pallas, 1772) (a);
The epigyne appearance of females *A. lobata* (Pallas, 1772) (b).

Description. Fig. 2. Female (YSU-AK-20200529-048). The TL of the specimen measures around 19.64 mm, while the CL states 13.80 mm. Leg measurements: L1 – 10.22-3.31-7.08-11.03-3.07 (34.71); L2 – 10.31-3.58-6.33-10.13-2.73 (33.08); L3 – 6.41-2.05-3.83-4.63-1.81 (18.73); L4 – 11.38-2.70-6.21-10.20-2.72 (33.21).

Prosoma female: prosoma shiny silver. Sternum yellowish-brown, bright medially. Legs yellow, with narrow brown annulations.

Opisthosoma female: is uniformly yellowish, darker ventrally, not lobed laterally.

Body length female: 16.8–25.5 mm.

Additional Information. The size of the individual we studied corresponds to the defined size of 19.64 mm for the species.

Argiope lobata (Pallas, 1772).

Material. 1 ♀, Armavir Province, Vanand Village, 2020.

Distribution. Central and Eastern Europe Azerbaijan, Turkey, Georgia, Russia and other countries [8].

Habitats in Armenia. The specimen was found on 2 August 2020 in Vanand Village in hot day weather at 25°C. The spider was found 40 cm above the ground, from a rocky section of dry grass in the bottom of its web. In an *Argiope* species-specific manner, it posed in the center of its web the legs L1–L2 and L3–L4 pairwise stretched out.

GPS Coordination. 40°06'11.5"N 43°49'22.3"E (1025 m above sea level).



Fig. 3. The general appearance of females *A. lobata* (Pallas, 1772) in the habitat (a); The epigyne appearance of females *A. lobate* (b).

Description. Fig. 3. Female (YSU-AK-20200802-001). The TL of the specimen measures around 17.37 mm, while the CL states 10.40 mm. Leg measurements: L1 – 10.93-3.14-7.28-10.20-3.05 (34.61); L2 – 10.38-3.36-7.45-9.95-3.03 (34.17); L3 – 6.63-2.25-3.54-4.84-2.13 (19.39); L4 – 11.44-3.27-6.91-10.88-3.19 (35.69).

Additional Information. The size of the individual we studied corresponds to the defined size of 17.37 mm for the species.

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ARGIOPE ՑԵՂԻ, ԸՆՏԱՆԻՔ ARANEIDAE՝
ARGIOPE BRUENNICHI (SCOPOLI, 1772) ԵՎ *ARGIOPE LOBATA*
(PALLAS, 1772) ԱՌԱՋԻՆ ԳՐԱՆՑՈՒՄԸ ՀԱՅԱՍՏԱՆՈՒՄ

Հոդվածում ներկայացնում ենք *Argiope* ցեղի՝ Araneidae ընտանիքի գնդագործ սարդի առաջին գրանցումը Հայաստանում: *Argiope bruennichi* (Scopoli, 1772) տեսակի երկու էգ նմուշները հայտնաբերվել են Լոռու մարզում (հյուսիսային մաս), իսկ *Argiope lobata* (Pallas, 1772) տեսակի երկու իգական սարդ գրանցվել է Տավուշի մարզում (հյուսիս-արևելք) և Արմավիրի մարզում (հարավ-արևմուտք) Հայաստանում 2020–2022 թթ.

A. M. КОСЯН

ПЕРВЫЕ ЗАПИСИ О РОДЕ *ARGIOPE* СЕМЕЙСТВА
ARANEIDAE: *ARGIOPE BRUENNICHI* (SCOPOLI, 1772)
И *ARGIOPE LOBATA* (PALLAS, 1772) В АРМЕНИИ

В статье представлены первые данные о роде *Argiope* паука-кругопряда из семейства Araneidae в Армении. Две самки *Argiope bruennichi* (Scopoli, 1772) были обнаружены в Лорийской области (в северной части), а две самки паука *Argiope lobata* (Pallas, 1772) были отмечены в Тавушской (северо-восток) и Армавирской (юго-запад) областях Армении в 2020–2022 гг.