

## Updated Checklist of the Pentatomidea (*Heteroptera*: *Pentatomomorpha*) of Uzbekistan

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**Abstract:** - This article presents the results of scientific research conducted in 2019-2021 on the study of species belonging to the *Pentatomidae* family distributed in Uzbekistan. Also, the information was filled from the collection materials and literature kept at the Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan. A complete list of 3 subfamilies (Asopinae, Pentotominae, Podopinae), 10 tribes, 46 genera, 3 subgenera and 103 species belonging to the *Pentatomidae* family is provided for the first time in Uzbekistan. In the fauna, the specie of *Alloeoglypta pretiosa* Kiritshenko, 1952 was recorded for the first time. The purpose of this study is to present new records and an updated checklist of the Pentatomoidea of Uzbekistan. Also, the results of the scientific work conducted by various researchers on the study of the species of bugs belonging to the Pentatomidae family distributed in Uzbekistan and material of the collected species were deposited in the collection established by the fourth author, which is kept in the Laboratory of Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan.

**Key-Words:** - Asopinae, endemic, fauna, Heteroptera, new species, Pentatomomorpha, Pentatomidae, Pentotominae, Podopinae, Uzbekistan.

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### 1 Introduction

Nowadays, the suborder of Heteroptera includes more than 45,000 species and is distributed around the world, and it includes 6 large infraorders. The superfamily *Pentatomoidea* constitutes one of the most important insect groups of the suborder Heteroptera. The country includes the slopes of the Western Tien-Shan (Ugam, Pskem, Chatkal and Kurama mountain ranges) and Pamir-Alai (Zarafshan, Turkestan, Hisar, Kohitangtog and Boysuntog mountain ranges) mountains. The republic borders Kazakhstan to the north and northeast, Kyrgyzstan and Tajikistan to the east and southeast, Turkmenistan to the west, and Afghanistan to the south, [1], [2].

It includes 1080 genera and 5907 species belonging to 16 families of which the Cydnidae, Pentatomidae, Scutelleridae and Tessaratomidae are the most important; 94% of the species belong to these four families, [3], [4]. Pentatomidae is the fourth most numerous families within Heteroptera with more

than 4700 species, commonly known as stink bugs, [5]. *Halyomorpha halys* is a polyphagous stink bug native to China, Korea, Japan and Taiwan, [6]. It was introduced into the United States in the mid-1990s, resulting in losses of apples, peaches, tomatoes and other important crops, [7].

Until recently, it has been recorded in many European countries including Greece, [8], and it is considered a potential threat to agricultural productivity in all these regions, [9], [10], since it has a broad host range and is capable to disperse long-distance by flight, [11]. Oshanin published his first special hemipterological paper on Mid-Asia "Zoogeographical characteristic of Turkestan Hemiptera" in 1891. This work contained a detailed zoogeographical analysis and a list of about 540 species of the Mid-Asian Hemiptera. After the publication of the fundamental works by Oshanin, many systematic and faunistic papers on Mid-Asia were issued during the following 50 years, [12].

The faunistic-systematic paper by Kiritshenko on the terrestrial Heteroptera of Pamir; Alay, which

contained the material of the Pamirs expedition in 1928 appeared in 1931 and included a list of 60 species of Heteroptera, the description of 9 new species, and a brief zoogeographical account of the Mid-Asian Hemiptera. Pazhitnova gave an annotated list of 62 species of terrestrial Heteroptera from Uzbekistan (the North slope of Turkestan ridge) and their brief ecological characteristic, in the paper “To the study of Hemiptera-Heteroptera of Guralash juniper reserve”, [12]. Understanding the family Pentatomidae in Uzbekistan may assist in distinguishing the species belonging to this family from other families and will provide a more accurate answer to this family for identifying pests in the future. The purpose of this study is to present new records and an updated checklist of the Pentatomoidea of Uzbekistan.

## 2 Material and Methods

The Republic of Uzbekistan is located between the Amudarya and Syrdarya rivers, and its total area is 448,900 km<sup>2</sup>. The territory of the republic is 1,425 km from east to west and 930 km from north to south. 1/5 of the territory of the republic is made up of mountain and sub-mountain regions. The eastern region consists of medium and high mountain relief [13], [14]. Bugs were collected with a net trap (a diameter of 38-40 cm) and a light trap (Fig.1).



Fig. 1: Map of research areas

Collection sites for each species are presented in the same fashion as Drosopoulos et al., [15]. The reported locations for the collection sites were identified based on GIS, [16]. The material was collected in different agro-and biocenoses of the Republic of Uzbekistan in 2019-2021. Insect material was collected using sweeping nets and glass containers, or by glass tube aspirators (Fig.2).



Fig. 2: Exhauster and sweeping nets

The research was carried out according to standard entomological methods. Night species were collected with a special trap on plants, roadsides, tree trunks and leaves. The samples killed in the killing bottles are then placed in petri dishes with blotter paper and information slips indicating when, where and from which plant they were collected. Insects were killed in glass tubes with ethyl-acetate or were directly stored in 70% ethyl-alcohol, [17], [18].

Genitalia was prepared for observation under a Carl Zeiss Stemi 305 binocular stereoscope and Olympus CX23 binocular microscope by maceration in 10% potassium hydroxide (KOH). All specimens were identified by the authors, according to keys and descriptions in references, [15]. The species and modern classification, and nomenclature of stink bugs were determined from scientific sources, [19], [20]. and information on species synonyms and distribution areas was used from, [21]. Also, the results of the scientific work conducted by various researchers on the study of the species of bugs belonging to the Pentatomidae family distributed in Uzbekistan and material of the collected species were deposited in the collection established by the fourth author, which is kept in the Laboratory of Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan.

## 3 Results and Discussion

A complete list of 3 subfamilies (Asopinae, Pentotominae, Podopinae), 10 tribes, 45 genera, 3 subgenera and 102 species belonging to the Pentatomidae family is provided for the first time in Uzbekistan. In the fauna, The specie of *Alloeoglypta pretiosa* Kiritshenko, 1952 was recorded for the first time.

### Order Hemiptera

#### Suborder Heteroptera

#### Infraorder Pentotomomorpha

#### Superfamily Pentatomoidea Reuter, 1910

#### Family Pentatomidae Leach, 1815

#### Subfamily Asopinae Amyot & Serville, 1843

Genus *Arma* Hahn, 1832

*Arma custos* Fabricius, 1794

(syn. *Cimex custos* Fabricius, 1794, *Arma custos* var. *scutellaris* Stichel, 1961)

**Distribution in Uzbekistan.** Tashkent region Yangiyul district, I. Juravleva, 16.Jul.1953, 1♂. Box № 28, ID: HIM000447 (CZIUz).

**General distribution.** Palearctic, [22].

**Comments.** Predator of *Hyphantria cunea* Drury, 1773, [19], [21].

Genus *Jalla* C.W.Hahn, 1832

*Jalla dumosa* Linnaeus, 1758

(syn. *Cimex dumosus* Linnaeus, 1758)

**Distribution in Uzbekistan.** 2. Avg.1981, 1♂. Box № 28, ID: HIM000449, (CZIUz), [20].

**General distribution.** Kazakhstan, Uzbekistan, Kirgizia, Mongolia, and Far East Russia, [12].

Genus *Picromerus* Amyot & Serville, 1843

*Picromerus bidens* Linnaeus, 1758

(syn. *Cimex bidens* Linnaeus, 1758)

**Material examined:** Surkhan National Reserve, 28.May.2020, 2♂, 38°85'88.8"N, 66°17'34.75"E.

**Distribution in Uzbekistan.** Namangan region Nanay district, 1♀, 2500 m. Box № 28, ID: HIM000451 (CZIUz).

**General distribution and hosts.** Palearctic, a predator of gypsy moth larvae, *Lymantria dispar* L.

Genus *Rhacognathus* Fieber, 1860

*Rhacognathus punctatus* Linnaeus, 1758

(syn. *Asopus punctatus* Linnaeus, 1758; *Cimex punctatus* Linnaeus, 1758)

**Distribution in Uzbekistan.** 1 ♀, Box № 28, ID: HIM000445, (no author and locality cited, CZIUz).

Genus *Pinthaeus* Stål, 1868

*Pinthaeus sanguinipes* J.C.Fabricius, 1781

(syn. *Cimex sanguinipes* Fabricius, 1781).

**Distribution in Uzbekistan.** 1♀, Box № 28, ID: HIM00048 CZIUz (no author and locality cited.).

**General distribution and hosts.** Trans Palearctic, [4].

Genus *Troilus* Stål, 1868

*Troilus luridus* Fabricius, 1775

(syn. *Cimex luridus* Fabricius, 1775).

**Distribution in Uzbekistan.** 2♂, Box № 28, ID: HIM00046 CZIUz (no author and locality cited).

**General distribution and hosts.** Euro-Siberian, India. Predator lives on numerous trees and feeds upon caterpillars and soft-bodied larvae of several insects.

Genus *Zicrona* Amyot & Serville, 1843

*Zicrona caerulea* Linnaeus, 1758

(syn. *Cimex caeruleus* Linnaeus, 1758; *Cimex caeruleus* Gmelin, 1790).

**Material examined:** Zaamin National Park, 14.Jul.2021, 2♀, 4♂, 39°36'32.13"N, 68°27'03.98"E, Karakalpak part of the Ustyurt

Plateau, 8. May.2021, 1♀, 3♂, 44°21'29.69" N, 56°26'39.20"E.

**Distribution in Uzbekistan.** Tashkent region Yangiyul district, L. Zimin, 07.May.1927, 3♂. Box № 28, ID: HIM000444, (CZIUz), Western Tien-Shan, Fergana and Ugam ridges 26.May.1958., 2♂, 900 m, Western Tien-Shan, [2].

**General distribution and hosts.** Palearctic. A predator of caterpillars and larvae of Coleoptera (mainly Chrysomelidae) in wet biotopes.

Subfamily PENTATOMINAE Leach, 1815

Tribe AELIINI Douglas & Scott, 1865

Genus *Aelia* Fabricius, 1803

*Aelia acuminata* Linnaeus, 1758.

(syn. *Cimex acuminata* Linnaeus, 1758; *Pentatoma acuminata* Linnaeus, 1758).

**Material examined:** Kyzylkum desert, 23.Jun.2020., 1♂, Karakalpak part of the Ustyurt Plateau, Kasarma, 15.May.2021, 1♀, 2♂, 42°44'35'48.66"N, 58°02'33.62"E.

**Distribution in Uzbekistan.** Tashkent region Yangiyul district, L. Zimin, 07.May.1927, 3♂. Box № 28, ID: HIM000446, (CZIUz). Western Tien-Shan, Fergana and Ugam ridges 26.May.1958., 3♀, 900 m, Western Tien-Shan, [22].

**General distribution and hosts.** Palearctic. A predator of caterpillars and larvae of Coleoptera (mainly Chrysomelidae) in wet biotopes, [8].

*Aelia alticola* Kiritshenko, 1914.

(syn. *Aelia satunini* Kiritshenko, 1930: 452.)

**Material examined:** Kyzylkum desert, 23.Jun.2020., 1♂, Karakalpak part of the Ustyurt Plateau, Kasarma, 15.May.2021, 3♀, 4♂, 42°44'35'48.66"N, 58°02'33.62"E,

**Distribution in Uzbekistan.** Tashkent region Yangiyul district, L. Zimin, 07.May.1927, 3♂. Box № 28, ID: HIM000446, (CZIUz). Western Tien-Shan, Fergana and Ugam ridges 26.May.1958., 2♂, 900 m, Western Tien-Shan, [12], 1906 (no locality cited), [22].

**General distribution and hosts.** Palearctic. A predator of caterpillars and larvae of Coleoptera (mainly Chrysomelidae) in wet biotopes, [8].

*Aelia furcula* Fieber, 1868.

(syn. *Aelia furcula* Fieber, 1868; *Aelia simillima* Reuter, 1900)

**Material examined:** Qashqadarya region, Nishan district, 28-30.May.2019, 38°36'50.10"N, 65°42'08.09"E, 357 m, 3♂, 2♀, Qashqadarya region, Qarshi district, 08.Jul.2019, 39°07'05.25"N, 66°59'04.28"E, 654 m, 5♂, 4♀, Djizzak region, Zamin reserve 18-20.Jul.2020., 39°36'32.13"N, 68°27'03.98"E.

**Distribution in Uzbekistan.** Kyzylkum desert, Box № 28, ID: HIM000418 (CZIUz). Kharezmi region [20], Karakalpakistan [12].

**General distribution and hosts.** Ponto-Mediterranean and Central Asia Greece, Turkey, European Russia, Ukraine, Afghanistan, Armenia, Azerbaijan, Tadjikistan, Turkmenistan, Uzbekistan (Derjanschi & Péricart 2005, [21], [22], [24], [25]. On Poaceae, [8].

***Aelia sibirica* Reuter, 1884**

**Distribution in Uzbekistan.** Tashkent region Uzinbulak village, 02.May.1919, (no author) 2♂, Box № 28, ID: HIM000420 (CZIUz).

Genus ***Neottiglossa* W. Kirby, 1837**

***Neottiglossa leporina* (Herrich-Schaeffer, 1830).**

(syn. *Neottiglossa irana* Wagner, 1963)

**Material examined:** Karakalpakistan, Baday-Tugay Reserve, 12.Jun.2020, 41°59'39.70"N, 60°21'44.06"E, 2♀, Sarykamysh (Ustyurt plateau), 42°14'58.65"N, 57°03'11.30"E, 02.May.2017., 2♂.

**Distribution in Uzbekistan.** Fergana region KaraAlma, Ugam ridge, Syjak village (Western Tien-Shan), 1600-1900 m. Box № 28, ID: HIM000421 CZIUz), Ugam ridge - Humsan; Tashkent, [2], Gissar ridge - Kondara, Kvak, [23].

**General distribution.** Palaearctic region, [21].

***Neottiglossa lineolata* Mulsant & Rey, 1852**

**Distribution in Uzbekistan.** Kuljantay, 15.May.1975, 1♀, (no author) Box № 28, ID: HIM000422 (CZIUz).

Tribe **CARPOCORINI Mulsant & Rey, 1866**

Genus ***Alloeoglypta* Kiritshenko, 1952**

***Alloeoglypta pretiosa* Kiritshenko, 1952.**

(syn. *Alloeoglypta arnoldii* Kiritshenko, 1952b: 158)

**Material examined:** Hissar National Reserve (Qashqadaryya region), 16.Jul.2022, 39°01'06.86"N, 67°29'42.94"E, 3♀.

**Distribution in Uzbekistan.** New record for Uzbekistan.

**General distribution and hosts.** Afghanistan, Iran, Kazakhstan (Asian part), Kirgizia, Tadjikistan, Turkmenistan. On *Amaranthus graecizans* (Amaranthaceae), *Tribulus terrestris* (Zygophyllaceae), [22], [24].

Genus ***Anthemina* Mulsant & Rey, 1866.**

***Anthemina pusio pusio* Kolenati, 1846.**

(syn. *Carpocoris pusio* Kolenati, 1846: 48; *Carpocoris* (*Anthemina*) *kirgisicus* Jakovlev, 1905: 100;)

**Material examined:** Khorezm region, 41,62621°N 60,71946°E, 19.Avg.2019, 1♀, Lysaya (Ustyurt plateau), 44°21'29.69"N, 56°26'39.20"E. 1♂, 11.Jul.2021.

**Distribution in Uzbekistan.** Central Tien-Shan Ilisk, [20], Tchatkal ridge, Arkit, 1♀, 1600 m, Gissar ridge "Tigrovaya Balka" reserve, [2].

**General distribution.** Southern Europe, Turkey, the South-European, Caucasus, Mid-Asia, Southern Siberia, [22].

***Anthemina varicornis* Jakovlev, 1874**

(syn. *Mormidea varicornis* Jakovlev, 1874; *Dolycoris baicalensis* Jakovlev, 1894)

**Material examined:** Tchatkal ridge, (Central Tien-Shan), 41°09'17.33"N 70°22'35.25"E, 13.Sep.2019, 1♀.

**Distribution in Uzbekistan.** Central Tien-Shan, Fergana valley, [2].

**General distribution and hosts.** Euro-Mediterranean, Pontian, Central Asia, China, [22]. According to Putshkov (1965) *A. varicornis* lives in wet biotopes, [20].

***Anthemina lunulata* Goeze, 1778**

(syn. *Cimex lunulata* Goeze, 1778; *Cimex lynx* Fabricius, 1794)

**Material examined:** Tashkent region, Parkent district, Chatkal Ridge (So'qoq). 41°14'28.51"N, 69°49'32.41"E, 16.Jun.2022, 2♂, 1♀.

**Distribution in Uzbekistan.** Djizzak region Achchi valley, 03.07.1976, 1♀, (no author) Box № 28, ID: HIM000454 (CZIUz).

**General distribution and hosts.** General distribution. Euro-Siberian, known in Algeria and Pakistan. On Asteraceae, [21], [23].

Genus ***Carpocoris* Kolenati, 1846**

***Carpocoris coreanus* Distant, 1899**

(syn. *Carpocoris coreanus* Distant, 1899; *Carpocoris iranum* Tamanini, 1958)

**Material examined:** Qashqadaryya region, Nishan distract, 28-30.May.2019, 38°36'50.10"N, 65°42'08.09"E, 357 m, 2♂, 1♀.

**Distribution in Uzbekistan.** Qashqadaryya region, Qarshi distract, 25.09.1972, 2♂, 3♀, (no author) Box № 28, ID: HIM000431 (CZIUz).

**General distribution and hosts.** Russia, Caucasian Region, Central Asia, Near East, China, Pakistan, [22]. On wild Poaceae, [8].

***Carpocoris fuscispinus* Boheman, 1851**

(syn. *Cimex fuscispinus* Boheman, 1851; *Carpocoris fuscispinus* var. *rugicollis* Seabra, 1925)

**Material examined:** Hissar National Reserve (Qashqadaryya region), 16.Jul.2022, 39°01'06.86"N, 67°29'42.94"E, 2♂, 1♀. Navoiy region, Qiziltepa district, 09.Aug.2020., 39°91'13.46"N, 64°95'59.26"E, 247 m, 2♂, 1♀.

**Distribution in Uzbekistan.** Djizzak region Bakhmal distract, 13.Jul.1976, 2♂, 3♀, Avanesova, Box № 28, ID: HIM000430 (CZIUz). Fergarta ridge: KaraAlma, Tchatkal ridge: Arkit, Parkent reserve, Pskem ridge: Pskem, Ugam ridge: Syjak, Nanay, 1600-2000 m, [2]. Kyzylkum desert,

Kharezm region, [12], [20] and Karakalpakstan [12].

**General distribution and hosts.** General distribution. Palearctic, Indian, Sentral Asia, [22]. On lucerne, [24], [25].

***Carpocoris purpureipennis* De Geer, 1773**

(syn. *Cimex purpureipennis* De Geer, 1761; *Carpocoris pudicus* var. *fumarius* Stichel, 1924)

**Distribution in Uzbekistan.** Tashkent region Chatkal ridge, Aksakata, 08.Jul.1975, 1♂, (no author), Box № 28, ID: HIM000431 (CZIUz).

**General distribution and hosts.** Palearctic, Indian subcontinent (Pakistan) Sentral Asia, [22]. On *Verbascum* sp. (Scrophulariaceae), [8].

**Genus *Cellobius* Jakovlev, 1885**

***Cellobius abdominalis* Jakovlev, 1885.**

(syn. *Cimex purpureipennis* De Geer, 1761; *Carpocoris pudicus* var. *fumarius* Stichel, 1924)

**Distribution in Uzbekistan.** Tashkent region, 14.Apr.1918, 4♂, (no author), Box № 28, ID: HIM000459 (CZIUz).

**General distribution.** Palearctic, Sentral Asia, Afghanistan, [22].

**Genus *Codophila* Mulsant & Rey, 1866**

***Codophila varia* Fabricius, 1787**

(Accepted name- *Orthops kalmii* Linnaeus, 1758)

**Distribution in Uzbekistan.** Prevalent species. Palearctic, Sentral Asia, Afghanistan, [22].

**Genus *Dolycoris* Mulsant & Rey, 1866**

***Dolycoris penicillatus* Horváth, 1904.**

(syn. *Dolycoris penicillatus* Horváth, 1904: 580)

**Material examined:** Surkhan National Reserve (Surkhandarya region), 15-18.Jun.2022, 37°51'32.25"N, 66°38'05.08"E. Hissar National Reserve (Qashqadarya region), 16.Jul.2022, 39°01'06.86"N, 67°29'42.94"E, 2♂, 1♀. Navoiy region, Qiziltepa district, 09.Aug.2020., 39 91'13.46"N, 64°95'59.26"E, 247 m, 2♂, 1♀. Djizzak region, Zamin reserve 20.Jul.2020., 39°36'32.13"N, 68°27'03.98"E, 3♂, 5♀.

**Distribution in Uzbekistan.** Qashqadarya region, Qarshi distract 22.Aug.1973, 2♂, 3♀, P.Tuychiev, Box № 28, ID: HIM000455 (CZIUz). Fergarta ridge: KaraAlma, Tchatkal ridge: Arkit, Parkent reserve, Pskem ridge: Pskem, Ugam ridge: Syjak, Nanay, 1600-2000 m. Kyzylkum desert, Kharezm region, [12], [20] and Karakalpakstan, [12].

**General distribution and hosts.** General distribution. Palearctic, India, Sentral Asia, Afghanistan, [22]. On turnip, [8], [24], [25]. Asteraceae, Brassicaceae, Poaceae, Fabaceae, [8].

***Dolycoris baccarum* Linnaeus, 1758**

(syn. *Carpocoris baccarum* Linnaeus, 1758; *Carpocoris verbasci* De Geer, 1773, *Cimex baccarum* Linnaeus, 1758)

**Material examined:** Surkhan National Reserve (Surkhandarya region), 15.Jun.2022, 37°51'32.25"N 66°38'05.08"E, 2♂. Hissar National Reserve (Qashqadarya region), 16.Jul.2022, 39°01'06.86" N, 67°29'42.94", 3♀.

**Distribution in Uzbekistan.** Djizzak region Zomin distract, 02.Jun.1977, 1♂, (no auther), Box № 28, ID: HIM000456 (CZIUz).

**Genus *Mimula* Jakovlev, 1889**

***Mimula alata* Kiritshenko, 1931**

**Distribution in Uzbekistan.** Wesern Tien-Shan, Uzbekistan, [22].

***Mimula arnoldii* Belousova, 1997**

**Distribution in Uzbekistan.** Hissar National Reserve (Qashqadarya region), [22].

**General distribution.** Central Asia, Uzbekistan, [12].

***Mimula dungana* Kiritshenko, 1912**

**General distribution.** Kazakhstan, China, Kyrgyzstan, Uzbekistan, [22].

***Mimula maureri* Jakovlev, 1889**

**General distribution.** Tadjikistan, Uzbekistan, [22].

***Mimula nigrita* Jakovlev, 1889**

**Distribution in Uzbekistan.** Tchatkal ridge (Tashkent region), Sary-Tchilek lake, 1♂, 2♀, 2800 m. In the subalpine and alpine meadows. It extends to 4500 m.

**General distribution.** This species is known in the Mid-Asian from Pamir Sary-Kol ridge, Nayza-Tash, [12], Tadjikistan, Kyrgyzstan, [22].

**Genus *Ochyrotylus* Jakovlev, 1885**

***Ochyrotylus helvinus* Jakovlev, 1885.**

**Distribution in Uzbekistan.** Surkhandarya region Termiz distract, 1♂.

**General distribution.** Iran, Azerbaijan, Central Asia, [22], [24].

**Genus *Peribalus* Mulsant & Rey, 1866**

***Peribalus strictus* Jakovlev, 1889**

(Syn. *Holcostethus strictus* Fabricius, 1803; *Holcostethus capitatus* Jakovlev, 1889).

**General distribution.** Palearctic, Indian, Sentral Asia, [22].

***Peribalus nitidus* Kiritshenko, 1914**

(Syn. *Holcostethus nitidus* Kiritshenko, 1914)

**General distribution.** Afghanistan, Tajikistan, Uzbekistan, [19].

***Peribalus tianshanicus* Belousova, 2007**

**General distribution.** Pskem ridge Uzbekistan, Kazakhstan, [22].

**Genus *Risibia* Horváth, 1888**

***Risibia xanthochila* Horváth, 1888.**

**General distribution.** Samarkand Uzbekistan, Afghanistan, Iran, Central Asia, [22].

**Tribe EYSARCORINI Mulsant & Rey, 1866**

**Genus *Eysarcoris* Hahn, 1834**

***Eysarcoris ventralis* Westwood, 1837.**

**Distribution in Uzbekistan.** Western Tien-Shan Utchterek, 1♂, 1400 m, [12], This species has been recorded in the Mid-Asian part of the Central Tien-Shan, Tashkent, Bukhara, Gissar ridge, [2], [20].

**General distribution.** Central and Southern Europe, North Africa, Israel, Syria, Iraq, Turkey, Iran, the European part of the Russia (the steppe and forest-steppe zones), Caucasus, Mid-Asia, and also the Oriental and Ethiopian regions, [22], [24].

Subgenus ***Stagonomus* Gorski, 1852**

***Stagonomus amoenus* Brullé, 1832**

(Syn. *Cimex bipunctatus* Fabricius, 1781; *Cimex italicus* Gmelin, 1790)

**Material examined:** Hissar National Reserve (Qashqadarya region), 16.Jul.2022, 39°01'06.86"N, 67°29'42.94"E, 3♀.

**Distribution in Uzbekistan.** Surkhandarya region Sherabad distract 19.May.1973, 3♂, Kashkarya region 27.May.1966, 1♂, (no author), Box № 29, ID: HIM000423 (CZIUz). Fergana ridge Kara-Alma, 1600-1800 m, Ugam ridge Nanay, 1600 m (Popov, 1960). Tashkent region Alatau-Humsan, [25].

**General distribution.** Southern Europe, North Africa, Israel, Syria, Iraq, Turkey, Iran, Mid-Asia, [22], [25].

***Stagonomus bipunctatus* Linnaeus, 1758**

(Syn. *Cimex bipunctatus* Linnaeus, 1758; *Pentatoma pusillus* Herrich-Schäffer, 1833)

**Material examined:** Surkhan National Reserve (Surkhandarya region), 15-18. Jun. 2022, 37°51'32.25"N 66°38'05.08"E, 2815 m, 2♀.

**Distribution in Uzbekistan.** Fergana ridge Kara-Alma, 1600-1800 m, Pskem ridge, 3 ♀, 1800 m. Gissar ridge Kondara, [8].

**General distribution.** Southern Europe, North Africa, Israel, Syria, Turkey, the South-European part of the Russia, Mid-Asia, [22], [25].

Tribe **HALYINI Amyot & Serville, 1843**

Genus ***Apodiphus* Spinola, 1837**

***Apodiphus integriceps* Horváth, 1888.**

(Syn. *Apodiphus integriceps* Horváth, 1888; *Neonevisanus rugosus* Distant, 1918)

**Material examined:** Widespread in Uzbekistan. Tashkent Botanical Garden, 41°20'44.43"N, 96°19'03.54"E, 12 Jul 2019. 2♂, 3♀. Bukhara region, Olat district 15.Aug.2020., 37°36'04.40"N, 67°29'32.25"E, 226 m, 2♂, 1♀.

**Distribution in Uzbekistan.** Central Fergana Yazyavan, 13.Jul.1961, 3 ♀, (no author), Box № 29, ID: HIM000410 (CZIUz). Fergana Valley - Andijan, Djalal-Abad, Leninabad, Aival; BagaShamaf; Zeravshan and Gissar ridges; Samarkand, Tashkent, Khiva; Djulek and other

places of the foothills of the Karatau ridge, and also from the Darvaz ridge, [12].

**General distribution and hosts.** Central Asia (Kazakhstan (Asian part), Iran, Kirgizia, Tadjikistan, Turkmenistan, Uzbekistan), Indian Peninsula (India, Pakistan). On *Rubus fruticosus* (Rosaceae), *Olea europea* (Oleaceae), [22].

Tribe **MENIDINI Atkinson, 1888**

Genus ***Desertomenida* Kiritschenko, 1914**

***Desertomenida albula* Kiritschenko, 1914**

(Syn. *Desertomenida albula* Kiritschenko, 1914)

**General distribution and hosts.** Central Asia: Kazakhstan (Asian part), China (northwestern), Iran, Kirgizia, Tadjikistan, Turkmenistan, Uzbekistan, [22]. In saline steppes with *Atriplex halimus*, *Suaeda* sp. (both Amaranthaceae), *Cynodon dactylon* (Poaceae), *Tamarix* sp. (Tamaricaceae), [21].

***Desertomenida jakowleffi* Horváth, 1907**

(Syn. *Menida poecila* Jakovlev, 1903)

**General distribution.** Kazakhstan, Iran, Turkmenistan, Uzbekistan, [22].

***Desertomenida quadrimaculata* Horváth, 1892**

**General distribution.** Central Asia, Uzbekistan, [22].

Tribe **Nezarini Atkinson, 1888**

Genus ***Brachynema* Mulsant & Rey, 1852**

***Brachynema germarii* Kolenati, 1846**

(Syn. *Cimex virens* Klug, 1845; *Rhaphigaster germarii* Kolenati, 1846; *Pentatoma anabasis* Becker, 1867; *Pentatoma tetrastigma* Walker, 1867)

**Material examined:** Widespread in Uzbekistan. Hissar National Reserve (Qashqadarya region), 16.Jul.2022, 39°01'06.86"N, 67°29'42.94"E, 3♂, 4♀. Navoiy region, Qiziltepa district, 09.Aug.2020, 39°91'13.46"N, 64°95'59.26"E, 247 m, 2♂, 3♀.

**Distribution in Uzbekistan.** Qashqadarya region, Qarshi distract, 25.Sep.1972, 4♂, 3♀, P.Tuychiev, Box № 29, ID: HIM000457 (CZIUz). Zeravshan and Gissar ridges; Samarkand, Tashkent, Khiva; Djulek and other places of the foothills of the Karatau ridge, and also from the Darvaz ridge [20]. Ugam ridge: Syjak, Nanay, 1600-2000 m. Kyzylkum desert, Kharezim region, [12], [20] and Karakalpakistan, [12].

**General distribution and hosts.** Western Mediterranean Europe, North Africa (Canary Archipelago), Near East, Central Asia extending to Mongolia, China, Pakistan. On wild Poaceae, [8].

Genus ***Chroantha* Stål, 1872**

***Chroantha ornatula* Herrich-Schaeffer, 1842**

(Sin. *Cimex ornatulus* Herrich-Schaeffer, 1842; *Cimex notatus* Klug, 1845)

**Distribution in Uzbekistan.** Palearctic, Sentral Asia, Afghanistan, [22].

Genus ***Nezara* Amyot & Serville, 1843**

***Nezara viridula* Linnaeus, 1758**

(Syn. *Cimex viridulus* Linnaeus, 1758; *Cimex torquatus* Fabricius, 1775)

**Material examined:** Widespread in Uzbekistan. Hissar National Reserve (Qashqadarya region), 16.Jul.2022, 39°01'06.86"N, 67°29'42.94"E, 2♂, 3♀. Navoiy region, Qiziltepa district, 09.Aug.2020, 39°91'13.46"N, 64°95'59.26"E, 247 m, 2♂, 4♀.

**Distribution in Uzbekistan.** Djizzak region Bakhmal district, 13.Jul.1976, 1♂, 1♀, P.Tuychiev, Box № 2, ID: HIM000434 (CZIUz).

**General distribution and hosts.** Mediterranean basin, Near East, Central and Far Eastern Asia (Japan), tropical and subtropical Africa and Asia, [21], it is also known from Argentina to the southern half of the United States. the In cotton field, [21].

Tribe **PENTATOMINI** Leach, 1815

Genus ***Acrosternum* Fieber, 1860**

***Acrosternum arabicum* Wagner, 1959**

(Syn. *Acrosternum arabicum* Wagner, 1959)

**General distribution and hosts.** Greece, the Middle East, Central Asia, [22].

***Acrosternum breviceps* Jakovlev, 1889**

(Syn. *Nezara breviceps* Jakovlev; *Nezara sahlbergi* Reuter, 1900)

**Distribution in Uzbekistan.** Djizzak region Bakhmal district, 13.Jul.1976, 1♂, 1♀, P.Tuychiev, Box № 2, ID: HIM000434 (CZIUz).

**General distribution and hosts.** Asia from the Asian part of Turkey, Caucasus, Central Asia and Saudi Arabia. On *Pinus* sp. (Pinaceae), [21], [25], alfalfa, [12]. Also, in Azerbaijan lives (gap egasi malummas) on shrubs, in wet meadows, on halophytes or cotton (*Gossypium* spp.) (Malvaceae), [23].

Genus ***Palomena* Mulsant & Rey, 1866**

***Palomena prasina* Linnaeus, 1761**

**General distribution.** Kazakhstan, Iran, Turkmenistan, Uzbekistan, [22].

Subgenus ***Mesoliogaster* Kiritshenko, 1931**

Genus ***Rhaphigaster* Laporte, 1833**

***Rhaphigaster brevispina* Horváth, 1889.**

**General distribution.** Middle East, Central Asia, Iran, [22].

***Rhaphigaster nebulosa* Poda, 1761**

(Syn. *Rhaphigaster mongolica* Puton, 1899; *Rhaphigaster nebulosa* Bodenheimer, 1937)

**General distribution.** Central Asia extends to China and Mongolia, as mentioned by Israel, [22].

Tribe **Piezodorini** Atkinson, 1888

Genus ***Piezodorus* Fieber, 1860**

***Piezodorus lituratus* Fabricius, 1794**

(Syn. *Cimex bilobus* Gmelin, 1790; *Cimex lituratus* Fabricius, 1794)

**General distribution and hosts.** Palearctic except for Scandinavia. On *Medicago sativa*, [25].

Tribe **SCIOCORINI** Amyot & Serville, 1843

Genus ***Menaccarus* Amyot & Serville, 1843**

***Menaccarus deserticola* Jakovlev, 1900**

(Syn. *Menaccarus transparentis* Jakovlev, 1900; *Menaccarus eremita* Jakovlev, 1903)

**General distribution and hosts.** European Russia, Iran, Kazakhstan, Tadjikistan, Turkmenistan, Uzbekistan; mentioned doubtfully from Algeria by Derjanschi & Péricart (2005), [22].

***Menaccarus divaricatus* Jakovlev, 1877**

**General distribution.** Iran, Tadjikistan, Turkmenistan and Uzbekistan, [22].

Genus ***Sciocoris* Fallén, 1829**

***Sciocoris capitatus* Jakovlev, 1882**

(Syn. *Sciocoris (Parasciocoris) denticeps* Wxagner, 1965)

**General distribution.** Central Asia. On undergrowth in citrus gardens (Rutaceae), [21].

***Sciocoris consobrinus* Kiritshenko, 1952.**

(Syn. *Sciocoris consobrinus* Kiritshenko, 1952)

**General distribution.** Iran, Kazakhstan (Asian part), Kirgizia, Tadjikistan, Turkmenistan, Uzbekistan, [22], [21].

***Sciocoris deltocephalus* Fieber, 1861**

(Syn. *Sciocoris deltocephalus* Fieber, 1861)

**Distribution in Uzbekistan.** Fergan ridge Kara-Alma, 1600-1800 m. Tchatkal ridge Arkit, 1600-1800 m. Sary-Tchilek lake, 2000-2200 m. Pskem ridge: Pskem, 1600 m. Ugam ridge: Syjak, 1600-1900 m.

**General distribution.** Ponto-Mediterranean: Balkanic region, Turkey, Russia (European part), Ukraine, Caucasus, Central Asia, [22], [24], [25].

***Sciocoris dilutus* Jakovlev, 1903**

(Syn. *Sciocoris agnatus* Jakovlev, 1903)

**General distribution.** Central Asia extends to China and Mongolia, [21], [22].

***Sciocoris distinctus* Fieber, 1851**

**Material examined:** Tashkent region, Parkent district, Chatkal Ridge. 41°14'28.51"N, 69°49'32.41"E, 16.Jun.2022, 1♀.

**Distribution in Uzbekistan.** Djizzak region Achchi valley, 11.May.1957, 1♀, (no author) Box № 29, ID: HIM000416 (CZIUz).

**General distribution and hosts.** Mediterranean basin extending to Canary Archipelago and Central Asia. Under *Artemisia* sp. (Asteraceae), [8].

***Sciocoris kiritshenkoi* Wagner, 1965**

**Distribution.** Djizzak region Zeravshan ridge (Uzbekistan), Central Asia, Iran, [22].

***Sciocoris sulcatus* Fieber, 1851**

(Syn. *Sciocoris angustipennis* Mulsant & Rey, 852; *Sciocoris lautus* Horváth, 1903)

**Material examined:** Kyzylkum desert, 23.Jun.2020., 2♂, Karakalpak part of the Ustyurt

Plateau, Kasarma, 15.May.2021, 2♀, 1♂, 42°44'35"48.66"N, 58°02'33.62"E.

**Distribution in Uzbekistan.** Djizzak region Achchi valley, 11.May.1957, 1♀, (no author) Box № 29, ID: HIM000442 (CZIUz). Central TienShan, [25]. Golodnaya Desert, [12], Tashkent [2]. Gissar ridge Obi-Garm, Sary-Dju, [25].

**General distribution and hosts.** Mediterranean basin (except Egypt and Libya), extending to Central Asia (Tadjikistan, Turkmenistan). On Poaceae, [24], under stone and crucibles, [8].

Tribe **STRACHIINI Mulsant & Rey, 1866**

**Subgenus *Baglura* Kerzhner, 1972**

***Bagrada kaufmanni* Oshanin, 1870**

(Syn. *Stenozygum kaufmanni* Oshanin, 1871; *Bagrada kaufmanni* var. *pallida* Kiritshenko, 1914)

**Distribution in Uzbekistan.** Djizzak 21.May.1957, 1♀. Qashqadaryya, 13.May.1967, Tashkent regions, 11.May.1957, 1♀, (no authors) Box № 29, ID: HIM000443 (CZIUz). Central TienShan (Oshanin, 1960). This species has been recorded in the Mid-Asia. Tashkent region, Zeravshan ridge - Yakkabak (Oshanin, 1910), Golodnaya Desert, [12], Samarkand, [25], Gissar ridge, [12].

**General distribution and hosts.** Afghanistan, China (northwestern), Iran, Kazakhstan (Asian part), Tadjikistan, Turkmenistan, Uzbekistan, [22].

***Bagrada rubra* Horváth, 1936**

**Distribution in Uzbekistan.** Changir nr Khatyrchi Navoiy region, 1♀ (Derzhansky et al., 2002, [22]).

Genus ***Eurydema* Laporte, 1833**

***Eurydema oleracea* Linnaeus, 1758**

(Syn. *Cimex oleraceus* Linnaeus, 1758; *Cimex flavatus* Schrank, 1776)

**Material examined:** Qashqadaryya region, Nishan district, 28-30.May.2019, 38°36'50.10"N, 65°42'08.09"E, 357 m, 2♂, 2♀, Qashqadaryya region, Qarshi district, 08.Jul.2019, 39°07'05.25"N, 66°59'04.28"E, 654 m, 1♂, 2♀, Djizzak region, Zamin reserve 18-20.Jul.2020., 39°36'32.13"N, 68°27'03.98"E, 2♂.

**Distribution in Uzbekistan.** Kyzylkum desert, Davletshina, 1960, Box № 29, ID: HIM000436 (CZIUz). Kharezmi region, [12], [20].

**General distribution and hosts.** Ponto-Mediterranean and Central Asia Greece, Turkey, European Russia, Ukraine, Afghanistan, Armenia, Azerbaijan, Tadjikistan, Turkmenistan, Uzbekistan, [21], [22], on Poaceae, [8].

***Eurydema ornata* Linnaeus, 1758**

(Syn. *Cimex ornatus* Linnaeus, 1758; *Eurydema decoratum* (Herrich-Schäffer, 1833)

**Material examined:** Widespread in Uzbekistan. Hissar National Reserve (Qashqadaryya region), 16.Jul.2022, 39°01'06.86"N, 67°29'42.94"E, 2♂, 2♀. Navoiy region, Qiziltepa district, 09.Aug.2020.,

39°91'13.46"N, 64°95'59.26"E, 247 m, 2♂, 3♀. Qashqadaryya region, Nishan district, 28-30.May.2019, 38°36'50.10"N, 65°42'08.09"E, 357 m, 2♂, 2♀, Qashqadaryya region, Qarshi district, 08.Jul.2019, 39°07'05.25"N, 66°59'04.28"E, 654 m, 1♂, 2♀, Djizzak region, Zamin reserve 18-20.Jul.2020., 39°36'32.13"N, 68°27'03.98"E, 2♂.

**Distribution in Uzbekistan.** Qashqadaryya region, Qarshi district, 22.Aug.1973, 1♂, 2♀, P.Tuychiev, Box № 28, ID: HIM000455 (CZIUz). Fergarta ridge: KaraAlma, Tchatkal ridge: Arkit, Parkent reserve, Pskem ridge: Pskem, Ugam ridge: Syjak, Nanay, 1600-2000 m. Kyzylkum desert, Kharezmi region, [12], [20], and Karakalpakistan, [12].

**General distribution and hosts.** Central and Southern Europe, North Africa, Israel, Syria, Turkey, Iran, Afghanistan, the European, Caucasus, Mid-Asia, India, China, [22].

***Eurydema fieberi* Fieber, 1837**

(Syn. *Eurydema armeniacum* Kolenati, 1846; *Strachia meyeri* Fieber, 1861)

**Material examined:** Qashqadaryya region, Nishan district, 28-30.May.2019, 38°36'50.10"N, 65°42'08.09"E, 357 m, 1♂, 2♀, Djizzak region, Zamin reserve 18-20.Jul.2020., 39°36'32.13"N, 68°27'03.98"E, 2♂, 2♀.

**Distribution in Uzbekistan.** Qashqadaryya region, Qarshi district, 22.Aug.1973, 1♂, 1♀, P.Tuychiev, Box № 29, ID: HIM000441 (CZIUz).

**General distribution and hosts.** Europe and Central Asia, India, [22]. On cabbage, colza, mustard, raddish, turnip and other cultivated and wild crucifers, [8].

***Eurydema maracandica* Oshanin, 1871**

**Material examined:** Surkhan National Reserve (Surkhandaryya region), 15-18.Jun.2022, 37°51'32.25"N 66°38'05.08"E. Hissar National Reserve (Qashqadaryya region), 16.Jul.2022, 39°01'06.86"N, 67°29'42.94"E, 2♂, 1♀.

**Distribution in Uzbekistan.** Qashqadaryya region, Qarshi district, 17.Jun.1961, 1♂, 1♀, (no author), Box № 29, ID: HIM000437 (CZIUz).

**General distribution** Widely distributed in Asia: Azerbaijan, Asian Kazakhstan, Iran, Turkmenistan, Tadjikistan, Mongolia, China, [21], [22], [24].

***Eurydema pulchrigena* Kiritshenko, 1925**

**Material examined:** Tashkent Botanical Garden, 41°20'44.43"N, 96°19'03.54" E, 12 Jul 2019. 1♂, 3♀. Tashkent region, Parkent district, Chatkal Ridge (So'qoq). 41°14'30.64"N, 69°49'26.62"E, 41°14'28.51"N, 69°49'32.41"E, 16. Jun.2022, 1♂, 1♀.

**General distribution.** Central Asia: Azerbaijan, Iran, Tadjikistan, Uzbekistan, [21], [22], [24].

***Eurydema wilkinsi* Distant, 1879**



**Distribution in Uzbekistan.** Fergana region (Yazyavan), 21. Jun.1961, 2♂, 1♀, (no auther), Box № 29, ID: HIM000438 (CZIUz).

**General distribution** Kazakhstan, Iran, Turkmenistan, Tadjikistan, Uzbekistan, China, [22].

***Eurydema ventralis* Kolenati, 1846**

**Distribution in Uzbekistan.** Fergana region (Yazyavan), 21. Jun.1961, 2♂, 1♀, (no auther), Box № 29, ID: HIM000438 (CZIUz). Fergana ridge KaraAlma, Tchatkal ridge Arkit, Pskem ridge Pskem, Ugam ridge Syjak. Djizak, Zeravshan Valley – Yagnob, [12], Turkestan ridge - Guralash reserve [12], and Gissar ridge – Kondara, [25].

**General distribution.** Central and Southern Europe, Algeria, Egypt, Israel, Syria, Turkey, Kazakhstan, Iran, Turkmenistan, Tadjikistan, Uzbekistan, [22], [24].

***Eurydema gebleri* Kolenati, 1846**

**Distribution in Uzbekistan.** Fergana region (Yazyavan), 21. Jun.1961, 2♂, 1♀, (no auther), Box № 29, ID: HIM000438 (CZIUz).

**General distribution** Kazakhstan, Iran, Turkmenistan, Tadjikistan, Uzbekistan, China.

Subfamily **PODOPINAE** Amyot & Serville, 1843  
Tribe **GRAPHOSOMATINI** Mulsant & Rey, 1865

Genus ***Ancyrosoma*** Amyot & Serville, 1843

***Ancyrosoma leucogrammes* Gmelin, 1790**

(Syn. *Cimex albolineatus* Fabricius, 1781; *Cimex leucogrammes* Gmelin, 1789)

**Material examined:** Surkhandarya region, Termez district, 37°36'06.40"N, 67°29'32.25"E, 07. Apr.2022, 37,36556°N, 67,28479°E, 05. Apr.2022, 1♂

**Distribution in Uzbekistan.** Tashkent region Yangiyul district, 1953, 2♂, (no author), Box № 29, ID: HIM000401 (CZIUz). Fergana ridge: KaraAlma, 1600 m, Gissar ridge – Kondara, [25].

**General distribution.** Mediterranean basin, Caucasus and Central Asia extending to Siberia and Mongolia, [22].

Genus ***Derula*** Mulsant & Rey, 1856

***Derula longipennis* Oshanin, 1871**

**Distribution in Uzbekistan.** Fergana ridge KaraAlma, 1600-1800 m. Ugam ridge Syjak, 1600-1800 m. Ugam Fergana, Zeravshan and Gissar ridges (Kiritshenko, 1952). Samarkand region Urgut, [22].

**General distribution.** Kyrgyzstan, Tajikistan, Uzbekistan, [22].

Genus ***Graphosoma*** Laporte, 1833

***Graphosoma consimile* Horváth, 1903**

(Syn. *Graphosoma consimile* var. *personatum* Horváth, 1903; *Graphosoma consimile* var. *rubrum* Kiritshenko, 1914)

**Material examined:** Qashqadarya region, Qarshi district, 08. Jul.2019, 39°07'05.25" N, 66°59'04.28" E, 654 m, 5♂, 4♀.

**Distribution in Uzbekistan.** Samarkand region Nuratau, 07. Jun.1991, 1♀, V. Kreysberg, Box № 29, ID: HIM000407 (CZIUz). Fergana ridge: KaraAlma, 1600 m, (Popov, 1960), Gissar ridge - Kondara (Kiritshenko, 1951a).

**General distribution** Afghanistan, Iran, Turkey, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, [22].

***Graphosoma lineatum* Linnaeus, 1758**

(Syn. *Cimex lineatus* Linnaeus, 1758; *Cimex nigrolineatus* Fabricius, 1781)

**Material examined:** Djizzak region, Zamin reserve 18-20. Jul.2020., 39°36'32.13"N, 68°27'03.98"E, 39°36'31.26"N, 68°27'04.95"E, 247 m, 3♀

**Distribution in Uzbekistan.** Tashkent region, 02. Apr.1961, 1♀, (no author), Box № 29, ID: HIM000405 (CZIUz). Fergana ridge: KaraAlma, 1600 m.

**General distribution** Afghanistan, Iran, Turkey, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, [22], [24].

***Graphosoma semipunctatum* Fabricius, 1775**

(Syn. *Cimex semipunctatus* Fabricius, 1775; *Graphosoma wilsoni* A. White, 1839)

**Distribution in Uzbekistan.** Tashkent region, 02. Jul.1911, 1♀, (no author), Box № 29, ID: HIM000407 (CZIUz).

**General distribution** Mediterranean Basin, Black Sea Region, Central Asia, [22].

***Graphosoma stali* Horvath, 1881**

**Distribution in Uzbekistan.** Box № 29, ID: HIM000408 (CZIUz) (No author and localted).

***Graphosoma italicum* O.F. Müller, 1766**

**Distribution in Uzbekistan.** Tashkent region, (No author), Box № 29, ID: HIM000409 (CZIUz).

Genus ***Hybocoris*** Kiritshenko, 1913

***Hybocoris brachypterus* Kiritshenko, 1913**

**Distribution in Uzbekistan.** Uzbekistan (Sherabad), Tajikistan, Turkmenistan, [22].

Genus ***Leprosoma*** Baerensprung, 1859

***Leprosoma tuberculatum* Jakovlev, 1874.**

(Syn. *Leprosoma tuberculatum* Jakovlev, 1874; *Leprosoma inaequale* Horváth, 1911)

**Distribution in Uzbekistan.** Tashkent region, 07. Aug.1980, 1♀, (no author), Box № 29, ID: HIM000499 (CZIUz). Central Tien-Shan, Golodnaya Desert, Fergana Valley (Oshanin, 1910), Gissar ridge – Kondara, [12].

**General distribution** Afghanistan, Iran, Turkey, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, [22], [24].

***Leprosoma tenuimarginatum* Gapon, 2008.**

**Distribution.** Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, [22].

Genus *Oplistocheilus* **Jakovlev, 188**

*Oplistocheilus pallidus* **Jakovlev, 1887.**

**Distribution in Uzbekistan.** Samarkand region (Chashma), 05.Set.1962, 1♀, (no author), Box № 29, ID: HIM000402 (CZIUz).

**General distribution.** Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, [22].

Genus *Putonia* **Stål, 1872**

*Putonia asiatica* **Jakovlev, 1885.**

**Distribution in Uzbekistan.** Djizzak region, 25.-26.Mar.1957, 1♀, (no author), Box № 29, ID: HIM000400 (CZIUz).

**General distribution.** Central Asia extends to China, both in Asian and European parts of Kazakhstan, [22].

Genus *Sternodontus* **Mulsant & Rey, 1856**

*Sternodontus ampliatus* **Jakovlev, 1887**

**Material examined:** Karakalpak part of the Ustyurt Plateau, Kasarma, 15.May.2021, 1♀, 42°44'35"48.66"N, 58°02'33.62"E,

**General distribution.** Azerbaijan, Iran, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, [21], [22].

Genus *Tholagmus* **Stål, 1860**

*Tholagmus flavolineatus* **Fabricius, 1798**

**Distribution in Uzbekistan.** Surkhandarya region (Sherabad), 20.May.1973, 3♀, (no author), Box № 29, ID: HIM000403 (CZIUz).

**General distribution.** Central Asia extends to China, both in Asian and European parts of Kazakhstan, [22].

*Tholagmus breviceps* **Jakovlev, 1883**

(Syn. *Tholagmus nigricornis* Reuter, 1900)

**General distribution.** Afghanistan, Iran, Kazakhstan, Tajikistan, Turkmenistan, Kyrgyzstan, Uzbekistan, [22].

Genus *Tshingisella* **Kiritshenko, 1913.**

*Tshingisella bella* **Kiritshenko, 1913.**

**Material examined:** Qashqadarya region, Nishan distract, 28-30.May.2019, 38°36'50.10"N, 65°42'08.09"E, 357 m, 2♂, 2♀.

**General distribution and hosts.** Azerbaijan, Armenia, Syria, Iran, Iraq, Turkmenistan, Tajikistan, Uzbekistan (Derbent), [22]. Under *Astragalus* sp., [8].

Genus *Ventocoris* **Hahn, 1834**

*Ventocoris advena* **Horváth, 1896**

**General distribution.** Iran, Tajikistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Uzbekistan, [22]. *Ventocoris ceriferus* **Horváth, 1889**

**Distribution in Uzbekistan.** Djizzak region (Gallaoral), 13.Jun.1977, 1♀, (no author), Box № 29, ID: HIM000497 (CZIUz). Tashkent and Samarkand regions, [22].

**General distribution.** Tajikistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Uzbekistan, [22].

*Ventocoris cribrosus* **Horváth, 1889**

**General distribution.** Turkmenistan, Kazakhstan, Uzbekistan, [22].

*Ventocoris fischeri* **Herrich-Schaeffer, 1851**

**General distribution.** Widespread. Tajikistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Uzbekistan, [22].

*Ventocoris halophilus* **Jakovlev, 1874**

**General distribution.** Ukraine, south of Russia, Turkey, Azerbaijan, Central Asia, Uzbekistan, [22].

*Ventocoris martini* **Horváth, 1889**

**General distribution.** North Africa, the Middle East, Caucasus, Uzbekistan, [19].

*Ventocoris oschanini* **Horváth, 1889**

**Material examined:** Karakalpakistan, Sarykamysh (*Ustyurt plateau*), 42°14'58.65"N, 57°03'11.30"E, 02.May.2017., 1♂.

**Distribution in Uzbekistan.** Box № 29, ID: HIM000421(CZIUz) 15.may,1966, (no author and lakalted).

**General distribution.** Iran, Tajikistan, Uzbekistan, [22].

*Ventocoris productus* **Jakovlev, 1885**

**Distribution in Uzbekistan.** Surkhandarya Bobotog' ridge, Djizzak ridge 05.May.1976, 3♂, Box № 29, ID: HIM000498 (CZIUz), (no author).

**Distribution.** Kazakhstan, Turkmenistan, Tajikistan, Uzbekistan, [22].

*Ventocoris trigonus* **Krynicky, 1871**

**Distribution in Uzbekistan.** Kyrgyzstan (Maylisay), 01.Jun.1952, 1♂, Box № 29, ID: HIM000494 (CZIUz), (no author).

**Distribution.** Kazakhstan, Turkmenistan, Tajikistan, Uzbekistan, [22].

*Ventocoris tataricus* **Kirkaldy, 1909**

**Distribution.** Armenia, Pakistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, [22].

Genus *Vilpianus* **Stål, 1860**

*Vilpianus galii* **Wolff, 1802**

**General distribution host plants.** Ukraine, south of Russia, Turkey, Azerbaijan, Central Asia Uzbekistan, [22], [24]. On Rubiaceae particularly species of the genus *Galium* (*G. verum*, *G. ruthenicum*), and also on *Asperula* sp., [19].

Genus *Tarisa* **Amyot & Serville, 1843.**

*Tarisa ciliaris* **Jakovlev, 1901**

**Distribution.** Kazakhstan, Turkmenistan, Tajikistan, Uzbekistan, [22].

*Tarisa elevata* **Reuter, 1901**

(Syn. *Tarisa subspinosa* Lethierry & Puton; *Tarisa elevata* Reuter, 1901)

**Material examined:** Khorezm region, 41,62621°N, 60,71946°E, 19.Avg.2019, 1♀. Lysaya (*Ustyurt*

plateau), 44°21'29.69"N, 56°26'39.20"E. 1♂, 11.Jul.2021, 2♂, 1♀.

**Distribution in Uzbekistan.** Qashqadarya region, Qarshi district, 22.Aug.1973, 1♂, 1♀, P.Tuychiev, Box № 29, ID: HIM000389 (CZIUz). Fergana Valley - Andijan, Osh., [21] and also from Tashkent and Turkmenia - Repetek, Mulli-Kara, [2], [21]. Kyzylkum desert, [20].

**General distribution.** Ponto Asian: Kazakhstan (both Asian and European parts), Russia (southern regions), Central Asia extending to China and Mongolia, [22].

#### ***Tarisa pallescens* Jakovlev, 1871**

**Material examined:** Karakalpakistan, Baday-Tugay Reserve, 41°59'39.70"N 60°21'44.06"E, 22.Aug.1973, 2♂. Bukhara region, Olat district. 15.Aug.2020., 37°36'04.40" N, 67°29'32.25" E, 226 m, 2♂, 1♀.

**Distribution in Uzbekistan.** Navoiy region Zarefshan district, 03.Jun.1957, 2♂, 1♀, (no author), Box № 29, ID: HIM000389 (CZIUz). Kyzylkum desert.

**General distribution.** Ukraine, south of Russia, Armenia, Kyrgyzstan, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, [22].

#### ***Tarisa subspinosa subspinosa* Germar, 1839**

(Syn. *Graphosoma subspinosa* Germar, 1839)

**Material examined:** Navoiy region, Qiziltepa district, 09.Aug.2020., 39°91'13.46"N, 64°95'59.26" E, 247 m, 2♂, 1♀.

**Distribution in Uzbekistan.** Kizilkum desert, 05.Apr.1963, 2♂, 1♀, (no author), Box № 29, ID: HIM000391 (CZIUz).

**General distribution.** Russia, Azerbaijan, Turkey, Armenia, Syria, Kyrgyzstan, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, [22].

#### ***Tarisa virescens* Herrich-Schaeffer, 1851**

(Syn. *Odontotarsus notoceras* Kolenati, 1857; *Tarisa virescens* var. *obtutior* Reuter, 1901)

**Distribution in Uzbekistan.** Samarkand region Zarafshan desert, 17.May.1965, 1♀, (no author), Box № 29, ID: HIM000390 (CZIUz).

**General distribution.** Russia (southern territories), Caucasus and Central Asia, [21]. According to the subfamilies distribution of the species belonging to the family Pentatomidae, it was found that 63 species (61.8%) belong to the Pentatominae subfamily 26 genera. Also, 7 genera and 7 species (6.9%) belonged to the Asopinae subfamily and 13 genera and 32 species (31.4%) belonged to the Podopinae subfamily found in Uzbekistan.

## 4 Conclusion

In Uzbekistan, until the present work, very few studies have been conducted on the Heteroptera fauna, to which 62 species of terrestrial Heteroptera are referred. In 1950 and 2020, respectively, only sporadic references are made by numerous researchers, considering the Uzbek fauna as part of a wider Central Asia. In the present study, 1 species (*Alloeoglypta pretiosa*) are recorded in Uzbekistan for the first time, raising the number of the Uzbek fauna to 103 species. Our study provides one step toward the enriched family of the Pentatomidea fauna of Uzbekistan, which will hopefully trigger a more comprehensive taxonomic study of the entire family.

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#### *References:*

- [1] Antonios Tsagkarakis, Zoi Thanou, Aikaterini Chaldeo, Ioanna Moschou, Argyro Kalaitzaki, and Sakis Drosopoulos. New Records and Updated Checklist of the Pentatomidae (Hemiptera: Heteroptera) of Greece. *Insects*. 2022 Aug; 13(8): 749. Published online 2022 Aug 19. doi:10.3390/insects13080749.
- [2] Musaev, D., Kholmatov, B., Sattarov, N., Amirov, I., Musayeva M., Abdurakhmonov. Sh., Cotton shredder bug *Creontiades pallidus* (Rambur, 1839) damage to cotton crop in Surkhandara region of South Uzbekistan // *EurAsian Journal of BioSciences*.- Turkey, 2020. 14. -4683-4687 pp.
- [3] Schaefer C.W., Panizzi A.R. *Heteroptera of Economic Importance*. CRC Press; Boca Raton, FL, USA: 2000. [Google Scholar].
- [4] Zhao Ling, Jiufeng Wei, Wanqing Zhao, Chao Chen, Xiaoyun Gao, and Qing Zhao The complete mitochondrial genome of *Pentatoma rufipes* (Hemiptera, Pentatomidae) and its phylogenetic implications. *Zookeys*. 2021; 1042: 51–72. Published online 2021 Jun 8. doi:10.3897/zookeys.1042.62302.

- [5] Grazia J., Panizzi A.R., Greve C., Schwertner C.F., Campos L.A., De Garbelotto T.A., Fernandes J.A.M. True Bugs (Heteroptera) of the Neotropics. Springer; Berlin/Heidelberg, Germany: 2015. Stink Bugs (Pentatomidae) pp. 681–756. [Google Scholar].
- [6] Hoebeke E.R., Carter M.E. *Halyomorpha Halys* (Stål) (Heteroptera: Pentatomidae): A Polyphagous Plant Pest from Asia Newly Detected in North America. Proc. Entomol. Soc. Wash. 2003;105:225–237. [Google Scholar].
- [7] Leskey T.C., Nielsen A.L. Impact of the Invasive Brown Marmorated Stink Bug in North America and Europe: History, Biology, Ecology, and Management. Annu. Rev. Entomol. 2018; 63:599–618. doi: 10.1146/annurev-ento-020117-043226. [CrossRef] [Google Scholar].
- [8] Mylonas P., Partsinevelos G. First Report of Brown Marmorated Stink Bug *Halyomorpha halys* Stål (Hemiptera: Pentatomidae) in Greece. Bull. OEPP/EPPO. 2014; 44:183-186. doi: 10.1111/epp.12129. [CrossRef] [Google Scholar].
- [9] Bariselli M., Bugiani R., Maistrello L. Distribution and Damage Caused by *Halyomorpha halys* in Italy. Eppo Bull. 2016;46:332–334. [Google Scholar].
- [10] Garipey T.D., Bruin A., Haye T., Milonas P., Véték G. Occurrence and Genetic Diversity of New Populations of *Halyomorpha halys* in Europe. J. Pest Sci. 2015; 88:451–460. DOI: 10.1007/s10340-015-0672-0. [CrossRef] [Google Scholar].
- [11] Lee D.-H., Leskey T.C. Flight Behavior of Foraging and Overwintering Brown Marmorated Stink Bug, *Halyomorpha halys* (Hemiptera: Pentatomidae) Bull. Entomol. Res. 2015; 105:566–573. DOI: 10.1017/S0007485315000462. [PMC free article] [CrossRef] [Google Scholar].
- [12] Khamraev A.Sh. Soil organisms and entomocomplexes in Khorezm and Karakalpakstan (Uzbekistan) ZEF Work Papers for Sustainable Development in Central Asia, No. 6. Tashkent, June 2003. Project internet site: <http://www.khorezm.uni-bonn.de>.
- [13] Abdullaev, U., Abdullaev, I., Gandjaeva, L. The social WASP fauna of riparian tuqai forest in Khorezm region Uzbekistan (HYMENOPTERA, VESPIDAE) International Journal of Current Research and Review, 2020, 12(14), pp. 96–99.
- [14] Ganieva, Z.A., Kholmatov, B.R., Karimov, F., Zhuginisov, T.I., Mirzaeva, G.S. Habitat plants and foraging preferences in termites of the genus *anacanthotermes* (2019) International Journal of Scientific and Technology Research, 8 (11), pp. 2863-2870.
- [15] Ribes J., Pagola-Carte S. Hémiptères Pentatomoidea Euro-Méditerranéens. Faune de France Fédération Française des Sociétés de Sciences Naturelles; Paris, France: 2013. [Google Scholar].
- [16] Ruzmetov Rasu, Abdullaev Ikram, Gandjaeva Lola, Matyakubov Zafarbek, Razzakov Kakhramon, Iskandarov Abdulla, Otaev Odilbek, Ibragimov Shodlik. Fundamentals of using Geographical Information Systems in predicting the distribution of *Helicoverpa armigera* (Lepidoptera: Noctuidae). Biodiversitas, 2022, 23(6), стр. 3251–3256 10.13057/biodiv/d230653.
- [17] Kholmatov, B. and Hudayberdiev, M. (2019). Formation of relational structures of information identification models for insecta orthoptera bioobject. In: 2019 International Conference on Information Science and Communications Technologies. ICISCT.
- [18] Ruzmetov R., Matyakubova Y., Abdullaev I. Cytosporosis diseases of apple trees (*Reinette simirenkomalus*) and its distribution in the lower Amudarya region. International Journal of Current Research and Review, 2020, 12 (14), Pp. 62-67. DOI: 10.31782/IJCRR.2020.121413.
- [19] Rider DA (2014) Pentatomoidea home page. North Dakota State University, Fargo.
- [20] Gandjaeva L. Fauna, morphology and ecology of the true bugs (Heteroptera) in the territory of the lower Amudarya river. dissertation abstract of the doctor of biological sciences. Tashkent, 2020. 300 p.
- [21] Linnavuori, R.E. Studies on Pyrrhocoroidea, Coreoidea, and Pentatomoidea of Khuzestan and the adjacent provinces in Iran (Hemiptera: Heteroptera). Acta Entomologica Musei Nationalis Pragae, 2012, 52 (1), 67–88.
- [22] Aukema, B., Rieger, C. & Rabitsch, W. Catalogue of the Heteroptera of the Palaearctic Region. Volume 6. Supplement. The Netherlands Entomological Society, Amsterdam, 2013, xxiv + 629 pp.

- [23] Nateq Golestan, N. & Modarres Awal, M. Faunistic study on pentatomid and scutellerid bugs (Hem.: Heteroptera) from Birjand county and suburbs in South Khorasan province (Iran). 2012, *Munis Entomology & Zoology*, 7 (1), 462–466.
- [24] Mammedova T.R., Mustafaeva E.F. Study of Pentatomidae (Heteroptera) species distributed in different regions of Azerbaijan. *Agrarian science*. 2021; (10):74-77. <https://doi.org/10.32634/0869-8155-2021-353-10-74-77>.
- [25] Meral Fent, Ahmet Dursun, Serdar Tezcan First record of *Graphosoma inexpectatum* (Hemiptera, Pentatomidae, Podopinae) from Turkey with a description of the female *ZooKeys*, 2008, 319: 51–57. Doi: 10.3897/zookeys.319.4298.

### **Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)**

Abdulla Iskandarov and other authors conceived of the presented idea. Abdulla Iskandarov developed the theory and performed the computations. Other authors verified the analytical methods. All authors discussed the results and contributed to the final manuscript. All authors contributed to the article and approved the submitted version.

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