

**PENTATOMIDAE (HEMIPTERA: HETEROPTERA)  
OF ARAS FREE ZONE AND VICINITY, NW IRAN**

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**ABSTRACT:** Pentatomids may cause direct and indirect damage to important crop plants but some are as natural enemies in agricultural ecosystems (predators of pests). During 2011-2013 several sampling was conducted to study of Pentatomidae fauna from Aras free zone and its vicinity (East Azarbaijan Province, North West of Iran). Totally 29 species from 24 genera and 3 subfamilies including Asopinae, Pentatominae, Podopinae were determined.

**KEY WORDS:** Hemiptera, Heteroptera, Pentatomidae, Fauna, Aras Free Zone, Iran.

Aras Free Zone with an area of 51,000 hectares including three parts of Jolfa , Nardozi and Khodafarin is located in northwest of Iran at the border neighboring Nakhchivan Autonomous Republic, Armenia and Azerbaijan countries. This reserve is adjoined with Arasbaran region in Khodafarin town (Fig. 1). Arasbaran protected area contains mountains up to 2,200 meters (altitude between 250 and 2 887 meters above sea level), high alpine meadows, semi-arid steppes, meadows and forests, rivers and springs.

The Stink Bugs (Hemiptera: Heteroptera: Pentatomidae) are world wide in distribution which may cause direct and indirect damage to important agricultural plants (Silva & Oliveira, 2010), but some species developed predatory habits and they are common during insect outbreaks (Ferreira et al., 2008; Zanuncio et al., 2008; Holtz et al., 2009). However, some of the pentatomid predators can feed on plant that also can benefit them (Azevedo et al., 2007; Guedes et al., 2007; Holtz et al., 2009).

Pentatomids are easily recognized from other true bugs by their round or ovoid shape and five - segmented antenna, three tarsal segmented, Scutellum narrowed behind, more or less triangular in shape, rarely almost covering the abdomen (Borror et al., 1989). Although a few species have 4-3 antennal segments and scutellum covered specially Asopinae and Podopinae (Rider, 2006).

### **MATERIAL AND METHOD**

Specimens were collected by sweeping net, light trap and directly with forceps from different regions of Aras Free Zone and its vicinity (East Azarbaijan Province, North west Iran). Collected materials were put in ethanol 70% for identification in suitable time. Specific name, author and description date, locality and date of collection are provided. The system and nomenclature follow principally Aukema & Rieger (2006).

## RESULTS

In the current survey totally 29 species of three subfamilies were collected from Aras free Zone and its adjacent area.

### **Family Pentatomidae Leach, 1815** **Subfamily Pentatominae Leach, 1815**

#### ***Aelia acuminata* (Linnaeus, 1758)**

Material examined: Golibaglo of Khodafarin (3 specimens) 22 May 2012; Jolfa grasslands (5 specimens), 1 June 2013; Siah Rod (4 specimens), 25 July 2013.

#### ***Aelia rostrata* Boheman, 1852**

Material examined: Marand (5 specimens), 23 August 2013; Siah Rod (2 specimens), 30 April 2011; Nordoz (4 specimens), 10 June 2012.

#### ***Carpocoris* (*Carpocoris*) *coreanus* Distant, 1899**

Material Examined: Marand (3 specimens), 23 August 2013; Alamdar (1 specimen), 5 June 2011; Scent Stepanus Church grasslands (2 specimens), 18 June 2013; Kordasht (8 specimens), 13 May 2011.

#### ***Carpocoris* (*Carpocoris*) *fuscispinus* (Boheman, 1849)**

Material examined: Khodafarin (5 specimens), 4 August 2013; Marand (6 specimens), 26 May 2013; Near of Scent Stepanus Church (6 specimens), 15 June 2013.

#### ***Codophila varia* (Fabricius, 1787)**

Material Examined: Jananlo of Khodafarin (4 specimens), 6 August 2011.

#### ***Dolycoris baccarum* (Linnaeus, 1758)**

Material Examined: Oshtobin (3 specimens), 1 July 2011; Marand (5 specimens), 10 July 2013; Golan (5 specimens), 12 June 2012; Oshtobin (6 specimens), 7 July, 2011. Jolfa (1 specimen), 25 August 2011; Nordoz (7 specimens), 10 June 2012; Misan (3 specimens), 30 May 2011; Kordasht (2 specimens), 28 May 2011.

#### ***Dolycoris penicillatus* Horváth, 1904**

Material examined: Oshtobin (1 specimen), 1 July 2011; Siah Rod (7 specimens), 30 May 2011; Misan (1 specimen) 3 June 2012; Eshgali ojagi of Khodafarin (5 specimens), 7 July, 2011; Jolfa grasslands (3 specimens), 1 June 2013.

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

Material examined: Eshgali ojagi of Khodafarin (2 specimens), 7 July, 2011; Aynalo forests of Khodafarin (3 specimens), 20 May 2013; Golan (1 specimen), 12 June 2012; Oshtobin (1 specimen), 7 June, 2011.

#### ***Anthemina lunulata* (Goeze, 1778)**

Material examined: Oshtobin (1 specimen), 1 July 2011; Siahrod (2 specimens), 2 July 2012; Golan (3 specimens), 1 June 2012.

#### ***Holcostethus strictus vernalis* Wolf, 1804**

Material Examined: Siah Rod (2 specimens), 30 May 2011; Marand (5 specimens), 10 July 2013; Oshtobin (1 specimen), 7 July, 2011.

#### ***Eysarcoris ventralis* (Westwood, 1837)**

Material Examined: Khomarlo of Khodafarin (1 specimen), 2 July 2013; Marand (5 specimens), 10 July 2013; Haras (4 specimens) 4 June 2012.

#### ***Apodiphus amygdali* (Germar, 1817)**

Material Examined: Oshtobin (1 specimen), 1 July 2011; Siah Rod (7 specimens), 30 May 2011; Kordasht (1 specimen), 13 May 2011; Haras (2 specimens) 4 June 2012; Alamdar (2 specimens), 5 June 2011; Near Scent Stepanus Church (2 specimens) 18 June 2013; Marand (4 specimens), 26 May 2013.

#### ***Mustha spinosula* (Lefebvre, 1831)**

Material Examined: Jananlo of Khodafarin (1 specimen), 12 August 2013; Oshtobin (3 specimens), 7 July, 2011.

#### ***Brachynema germarii* (Kolenati, 1846)**

Material Examined: Mardanagum (2 specimens), 30 June 2013; Alamdar (2 specimens), 5 June 2011.

***Brachynema signatum* Jakovlev, 1879**

Material Examined: Marzabad (1 specimen); Siah Rod (1 specimen), 30 May 2011.

***Nezara viridula* (Linnaeus, 1758)**

Material Examined: Larijan Gharmadoz (4 specimens), 5 July 2012; Misan (1 specimen), 3 July 2011.

***Acrosternum breviceps* (Jakovlev, 1889)**

Material Examined: Jolfa grasslands (2 specimens), 1 July 2013; Aynalo forests of Khodafarin (2 specimens), 5 June 2012.

***Palomena prasina* (Linnaeus, 1761)**

Material Examined: Golan (2 specimens), 1 June 2012.

***Pentatoma (Pentatoma) rufipes* (Linnaeus, 1758)**

Material Examined: Aynalo forests of Khodafarin (2 specimens), 20 August 2013; Kiamaki (2 specimens), 15 June 2012.

***Rhaphigaster nebulosa* (Poda, 1761)**

Material Examined: Kordasht (2 specimens), 28 May 2011.

***Sciocoris (Sciocoris) sulcatus* Fieber, 1851**

Material Examined: Kordasht (2 specimens), 13 May 2011; Misan (1 specimen), 30 May 2011; Marand (4 specimens), 20 May 2012; Oshtobin (3 specimen), 7 July, 2011.

***Bagrada (Nitilia) stolidia* (Herrich-Schaeffer, 1839)**

Material Examined: Ayanlo forests grasslands (2 specimens) 4 June 2013; Oshtobin (1 specime), 7 July, 2011.

***Eurydema fieberi* Fieber, 1837**

Material Examined: Ayanlo forests grasslands (2 specimens) 4 June 2013; Near of Scent Stepanus Church (4 specimens) 18 June 2013.

***Eurydema ornata* (Linnaeus, 1758)**

Material Examined: Oshtobin (5 specimens), 1 July 2011; Marand (25 specimens), 10 July 2013; Golan (7 specimens), 12 June 2012; Jolfa 25 August 2011 (1 specimen); Nordoz (7 specimens), 10 June 2012; Misan (3 specimens), 30 May 2011; Kordasht (22 specimens), 28 May 2011; Near of Scent Stepanus Church (12 specimens) 18 June 2013.

***Eurydema putoni* Jakovlev, 1877**

Material examined: Aynalo grasslands (2 specimens), 3 May 2011; Jolfa grasslands (3 specimens), 1 June 2013.

**Subfamily Asopinae Amyot & Serville, 1843*****Picromerus bidens* (Linnaeus, 1758)**

Material examined: Kordasht (3 specimens), 13 May 2011.

**Subfamily Podopinae Amyot & Serville, 1843*****Derula flavoguttata* Mulsant & Rey, 1856**

Material Examined: Aynalo forest grasslands of Khodafarin (5 specimens), 18 June 2010.

Comment: This species was reported for the first time from Iran by Havaskary (2012), Havaskary et al. (2014).

***Graphosoma lineatum lineatum* (Linnaeus, 1758)**

Material Examined: Golan (3 specimens) 2 June 2011; Oshtobin (2 specimens), 1 July 2011; Marand (2 specimens), 10 July 2013; Golan (1 specimen), 12 June 2012.

***Tholagmus flavolineatus* (Fabricius, 1798)**

Material examined: Khodafarin (1 specimen), 29 August 2013.

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

Material Examined: Jolfa grasslands (2 specimens), 1 June 2013.

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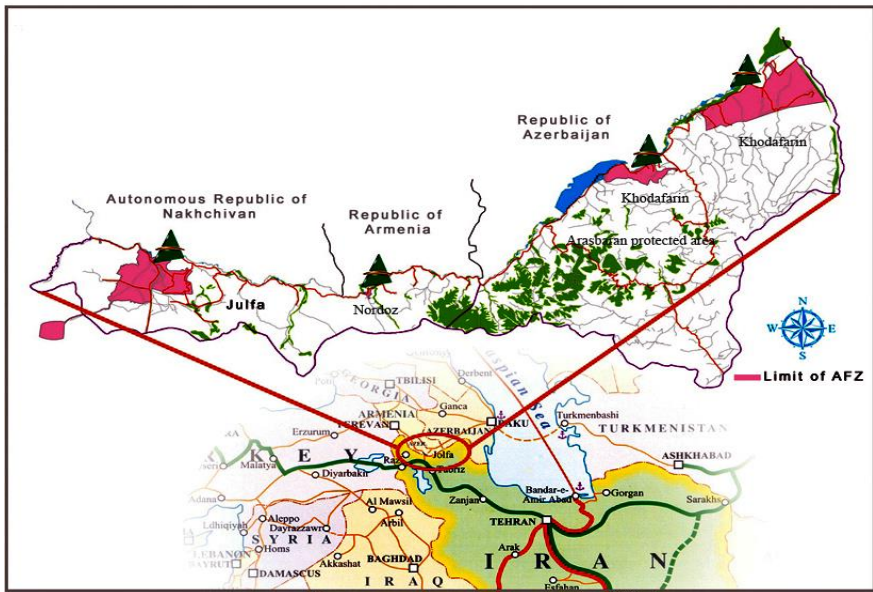


Figure 1. Map of Aras Free Zone limited area in Julfa, Nordoz and Khodafarin towns (Red portions which marked by green triangle with red line cutter as logo of AFZ official organization) at the border of Autonomous Republic of Nakhchivan, Armenia and Azerbaijan countries with Islamic Republic of Iran.