

FAUNISTIC STUDY ON HEMIPTERA IN ARASBARAN AREA (EAST AZARBAIJAN PROVINCE, IRAN)

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ABSTRACT: In the course of studying insect fauna in Arasbaran area (in East Azarbaijan Province), a survey was conducted on Hemiptera in townships of Kaleibar, Khod Afarin, Varzeghan and Horand during 1998-2001. The specimens were collected on trees, shrubs and herbaceous plants and were identified as 50 species belonged to 43 genera, 13 families. Among the determined specimens the following five genera (are specified with an asterisk) and 10 species are newly recorded from Iran as **Aquarius lacustris*, **Blepharidopterus angulatus*, **Cylloceria hystrix*, **Dicranocephalus agilis*, **Dicranocephalus medius*, **Heterogaster affinis*, **Peirates hybridus*, **Picromerus bidens*, **Sehirus luctuosus*, **Trichocorixa* sp., **Hesperocorixa scabricula*.

KEY WORDS: Arasbaran area, Hemiptera, fauna, new record, Iran.

The Heteroptera, or “true bugs”, are among the most diverse groups within the Hemiptera, and are usually identified by the strong odor produced by the metathoracic scent glands. The Hemiptera is the fifth largest group of insects with at least 80.000 described species with the Heteroptera being the largest group with more than 35.000 species (Forero, 2006; Gullan & Cranston, 1994).

The Heteroptera insects feed on plant juices or live as predators and parasites. Many of such insects that feed on the plant are known as serious plant pests (Safavi, 1993). The damage caused by the insect as a result of sucking sap from food plants, is often increased by the salivary enzymes, which may considerably alter the quality of plant products. On the other hand, many predators, catch other insects and Acarina, and very beneficial from agricultural point of view (Hassazadeh et al., 2009). Terrestrial species may be very important agricultural pests, pest controlling predators, or vectors of disease. Aquatic species help control nuisance insects, some are used for human or pet food, some are biting nuisances, some may feed on hatchery fish, only corixids are normally fed upon by fish (Slater, 1981).

The study of the true bugs fauna of Iran was started by M. Safavi in the 1940s and later by other researchers has continued. They were studied mainly on visible and big size hemipterans (Safavi, 1991; Safavi, 1993; Linnavuori & Modarres Awal, 1998; Modarres Awal, 2002; Yarmand et al., 2004; Sedghian et al., 2004; Askari, 2009; Hassazadeh et al., 2009 and Khaghaninia et al., 2010), and published some lists of the Hemiptera species which had been described or recorded from Iran, with identification key for 27 families. Even so, the true bugs that occur in Iran are poorly known especially the aqueous bugs. The data for many groups is sparse and no comprehensive account or checklist exists for the country. The number of recorded true bugs species in Iran is not more than 700 according to published papers.

Arasbaran is one of the important forest areas in Iran. The area is characterized by special climatic characteristics, high biodiversity, presence of rare fauna and flora and vegetation elements associated with various climates. This has placed the area as a biosphere reserve under the UNESCO's MAB program.

The aim of this paper is to improve our understanding and to provide more information about the fauna and distribution of the true bugs of Arasbaran forest and rangelands (townships of Kaleibar, Khodafarin, Varzeghan and Horand) in Azarbaijan province, North West of Iran.

MATERIAL AND METHODS

Hemipterans were sampled with irregular surveys at different locations in the Arasbaran area on grasslands and forest trees during 1998- 2001. Most of the examined materials were collected by using a short-handled net, by sweeping back and forth among herbaceous vegetation, aspirator and light trap, the net can also be placed underside the plant and shaken. In aquatic collecting, nets were used to sweep the top of the water. In the laboratory, true bugs specimens were mounted and pinned for identification soon after collection using the usual methods. All of the specimens were identified and confirmed by third author. The examined material of the hemipteran species were deposited at Agricultural and Natural Resource Research Center of East Azarbaijan, Plant Pests and Diseases Research Institute, Tehran, Iran.

RESULTS

In this study the faunistic information, geographical distribution and locality data including altitude and GPS cordination (Latlon = latitude & longitude) for each species for 50 species of Arasbaran area belonging to 43 genera, 13 families from Hemiptera are presented. Of which five genera (*Aquarius*, *Blepharidopterus*, *Peirates*, *Trichocorixa* and *Hesperocorixa*) and 10 species are newly recorded from Iran based on the records scattered in the literature (Safavi, 1991; Safavi, 1993; Linnavuori, 1997; Linnavuori & Modarres Awal, 1998; Modarres Awal, 2002; Yarmand et al., 2004; Sedghian et al., 2004; Hassazadeh et al., 2009 and Khaghaninia et al., 2010). The newly reported genera and species are marked with one and two asterisks, respectively.

Family Acanthosomatidae Signoret, 1864 (Shield Bugs)

Acanthosoma haemorrhoidale (Linnaeus, 1758)

Material examined: 8 specimens, Khoda Afarin, Kalaleh, 1250 m.

GPS cordination: N38 40.57 E46 32.05

Note: This species has been collected on different forest trees especially *Crataegus meyeri* and *Quercus* spp from Iran (Sadaghian et al., 2004).

Family Coreidae Leach, 1815 (Leaffooted Bugs)

Ceraleptus gracilicornis (Herrich-Schäffer, 1835)

Material examined: 8 specimens, Kaleibar, Hejrandoost, 1350 m.

GPS cordination: N38 52.551 E46 57.54

Coreus marginatus (Linnaeus, 1758)

Material examined: 15 specimens, Khoda Afarin, Choulan, 800 m.

GPS cordination: N38 48.28 E46 32.16

Gonocerus acuteangulus (Goeze, 1778)**Material examined:** 17 specimens, Khoda Afarin, Choulan, 750 m.**GPS cordination:** N38 48.28 E46 32.16***Syromastus rhombeus*** (Linnaeus, 1767)**Material examined:** 5 specimens, Khoda Afarin, Research Forest, 1350 m.**GPS cordination:** N38 53.27 E46 46.50***Camptopus lateralis*** (Germar 1817)**Material examined:** 2 specimens, Khoda Afarin, Choulan, 810 m.**GPS cordination:** N38 48.28 E46 32.16**Family Cydnidae Billberg, 1820 (Burrowing Bugs)*****Sehirus luctuosus***** Mulsant & Rey, 1866**Material examined:** 2 specimens, Kaleibar, Makidy village, 1600 m.**GPS cordination:** N39 00.44 E46 41.33**Note:** This species similar to Pentatomidae but with strong spines on tibiae and burrow in the ground where it feed on plant roots.**Family Lygaeidae Schilling, 1829 (Seed Bugs)*****Lygaeus saxatilis*** (Scopoli, 1763)**Material examined:** 6 specimens, Khoda Afarin, Kalaleh village, 1350 m.**GPS cordination:** N38 40.57 E46 32.05***Lygaeus pandarus*** (Scopoli, 1763)**Material examined:** 20 specimens, Kaleibar, Naposhteh village, 1510 m.**GPS cordination:** N38 51.715 E46 56.14***Lygaeus equestris*** (Linnaeus, 1758)**Material examined:** 11 specimens, Khoda Afarin, Research Forest, 1350 m.**GPS cordination:** N38 53.27 E46 46.50***Eremocoris* sp.****Material examined:** 3 specimens, Khoda Afarin, Research Forest, 1350 m.**GPS cordination:** N38 53.29 E46 46.53***Heterogaster affinis***** Herrich-Schäffer, 1835**Material examined:** 1 specimen, Khoda Afarin, Kalaleh, 1360 m.**GPS cordination:** N38 56.33 E46 45.60***Lasiocoris amomalus*** (Kolenati, 1845)**Material examined:** 2 specimens, Khoda Afarin, Forest Nursery, 1350 m.**GPS cordination:** N38 56.33 E46 45.60***Rhyparochromus* sp.****Material examined:** 6 specimens, Kaleibar, Makidy, 1580 m and Varzeghan, Tazekand, 1142 m.**GPS cordination:** N39 00.44 E46 41.33 and N38 52.39 E46 49.88***Tropidothorax leucopterus*** (Goeze, 1778)**Material examined:** 2 specimens, Kaleibar, Makidy village, 1700 m.**GPS cordination:** N39 00.44 E46 41.33

Family Miridae Hahn, 1831 (Leaf Bugs)

Rhabdomiris striatellus striatellus (Fabricius, 1794)

Material examined: 5 specimens, Kaleibar, Makidy village, 1750 m.

GPS coordination: N39 02.43 E46 41.36

Note: The species has been collected for the first time from Arasbaran forests, East Azarbaijan province in Iran (Yarmand et al., 2004).

*Cyllecoris histrionius*** (Linnaeus, 1767)

Material examined: 2 specimens, Kaleibar, Shojae Abad, 1780 m.

GPS coordination: N38 55.53 E 46 46.21

Lygus rugulipennis Poppius, 1911

Material examined: 2 specimens, Kaleibar, Makidy village, 1750 m.

GPS coordination: N39 02.43 E46 41.36

Deraeocoris lutescens Schilling, 1837

Material examined: 3 specimens, Khoda Afarin, Kalaleh, 1350 m.

GPS coordination: N38 40.57 E46 32.05

Adelphocoris seticornis (Fabricius 1775)

Material examined: 2 specimens, Khoda Afarin, Kalaleh Sofla, 1300 m.

GPS coordination: N38 56.33 E46 45.60

*Blepharidopterus*angulatus*** Fallen, 1807

Material examined: 3 specimens, Kaleibar, Aliabad, 1650 m.

GPS coordination: N38 53.77 E46 62.49

Adelphocoris vandalicus (Rossi, 1790)

Material examined: 4 specimens, Khoda Afarin, Kalaleh Sofla, 850 m.

GPS coordination: N38 56.31 E46 44.62

Lygus gemellatus gemellatus (Herrich-Schaeffer, 1835)

Material examined: 2 specimens, Kaleibar, Aliabad, 1550 m.

GPS coordination: N38 52.79 E46 61.48

Oncotylus viridiflavus viridiflavus (Goeze, 1778)

Material examined: 4 specimens, Kaleibar, Shojae Abad, 1780 m.

GPS coordination: N38 55.53 E 46 46.21

Note: This species is commonly distributed in Iran on *Tamarix* spp (Modarres Awal, 2002).

Family Nabidae Costa, 1852 (Damsel Bugs)

Nabis sp.

Material examined: 8 specimens, Kaleibar, Shojae Abad, 1780 m.

GPS coordination: N38 55.53 E 46 46.21

Prostemma guttula (Fabricius, 1787)

Material examined: 5 specimens, Kaleibar, Makidy village, 1750 m ,1 specimensKhoda Afarin, Kalaleh Sofla, 850 m.

GPS coordination: N39 02.43 E46 41.36, N38 56.31 E46 44.62

Family Reduviidae Latreille, 1807 (Assassin Bugs)

Peirates hybridus*** (Scopoli, 1763)

Material examined: 13 specimens, Khoda Afarin, Kalaleh Sofla, 800 m.

GPS coordination: N38 56.32 E46 45.63

Rhinocoris* sp.*Material examined:** 25 specimens, Khoda Afarin, Kalaleh Olia, 1350 m.**GPS coordination:** N38 40.57 E46 32.05**Family Rhopalidae Amyot & Serville, 1845 (Scentless plant Bugs)*****Corizus hyosciami* (Linnaeus, 1758)****Material examined:** 2 specimens, Kaleibar, Naposhteh village, 1410 m.**GPS coordination:** N39 00.69 E46 50.19***Maccevethus* sp.****Material examined:** 3 specimens, Kaleibar, Naposhteh, 1000 m.**GPS coordination:** N38 52.542 E46 57.53***Rhopalus parumpunctatus* Schilling, 1829****Material examined:** 30 specimens, Khoda Afarin, Research Forest, 1250 m.**GPS coordination:** N38 41.34 E46 34.07***Maccevethus caucasicus* (Kolenati, 1845)****Material examined:** 6 specimens, Khoda Afarin, Research Forest, 1350 m.**GPS coordination:** N38 57.36 E46 45.62**Family Pentatomidae Leach, 1815 (Stink Bugs)*****Carpocoris mediterraneus* Tamanini, 1958****Material examined:** 30 specimens, Kaleibar, Makidi, 1550 m.**GPS coordination:** N39 00.44 E46 41.33***Palomena prasina* (Linnaeus, 1761)****Material examined:** 9 specimens, Khoda Afarin, Research Forest, 1350 m.**GPS coordination:** N38 57.36 E46 45.62**Note:** This species is commonly called Green Shield Bug.***Piezodorus litearatus* (Fabricius, 1794)****Material examined:** 14 specimens, Khoda Afarin, Kalaleh Sofla, 800 m.**GPS coordination:** N38 56.33 E46 45.60***Pentatoma rufipes* (Linnaeus, 1758)****Material examined:** 15 specimens, Varzeghann, Khoinarood, 1495 m.**GPS coordination:** N38 48.37 E46 46.16**Note:** This species is commonly distributed on forest area and called Forest Bug.***Eurydema ornatum* Linnaeus, 1758****Material examined:** 10 specimens, Khoda Afarin, Kalaleh Sofla, 850 m., 10 specimens, Kaleibar, Vinag, 1350 m.**GPS coordination:** N38 56.33 E46 45.60, N39 00.69 E46 50.19***Eurydema putoni* Jakovlev, 1877****Material examined:** 6 specimens, Horand, Dehrood, 850 m., 10 specimens, Kaleibar, Gandomnan, 1350 m.**GPS coordination:** N38 52.158 E46 49.310, N38 59.53 E46**Note:** The two above mentioned species has been collected from different regions of Iran on many kinds of cultural plants (Modarres Awal, 2002).***Rhaphigaster nebolosa* (Poda, 1761)****Material examined:** 2 specimens, Kaleibar, Garmanab, 1650 m.**GPS coordination:** N38 55.66 E46 46.82

***Mustha* sp.**

Material examined: 30 specimens, Khoda Afarin, Ainalou, 1450 m.

GPS coordination: N38 53.27 E46 46.50

***Picromerus bidens* ** (Linnaeus, 1758)**

Material examined: 2 specimens, Varzeghan, Mardanaghom, 1020 m.

GPS coordination: N38 51.40 E46 49.46

Note: This species is predator of *Lymantria dispar* larvae in the forest areas of Iran.

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

Material examined: 15 specimens, Khoda Afarin, Garmanab, 1300 m.

GPS coordination: N38 55.66 E46 46.82

Family Scutelleridae Leach, 1815 (Shield-Backed Bugs)***Graphosoma italicum* (Linnaeus, 1758)**

Material examined: 18 specimens, Khoda Afarin, Kharil, 1350 m.

GPS coordination: N38 48.37 E46 46.16

***Eurygaster integriceps* Puton, 1881**

Material examined: 3 specimens, Kaleibar, Makidi, 1550 m.

GPS coordination: N 38 48.37 E46 51.58

***Ancyrosoma leucogrammes* (Gmelin, 1790)**

Material examined: 2 specimens, Horand, Tambakulo village, 1850 m.

GPS coordination: N38 56.053 E46 49.30

Family Stenocephalidae Dallas, 1852 (Spurgebugs)***Dicranocephalus medius*** (Mulsant et Rey, 1870)**

Material examined: 3 specimens, Horand, Khankandi village, 1400 m.

GPS coordination: N38 531.40 E46 37.410

Dicranocephalus agilis (Scopoli, 1763)**

Material examined: 4 specimens, Khoda Afarin, Tazehkand, 1300 m.

GPS coordination: N38 54.39 E46 48.06

Family Corixidae Leach, 1815 (Water Boatmen)***Trichocorixa** sp.**

Material examined: 2 specimens, Khoda Afarin, Ashgloo village, Aras river, 450 m.

GPS coordination: N38 57.282 E45 41.173

Hesperocorixa** *scabricula (Walley, 1936)**

Material examined: 2 specimens, Varzeghan, Khoinarood, 1750m.

GPS coordination: N38 71.02 E46 76.33

Family Gerridae Leach, 1815 (Water Striders)***Aquarius** (= *Gerris*) *lacustris*** (Linnaeus 1758)**

Material examined: 3 specimens, Varzeghan, Haft Cheshmeh, 2120.

GPS coordination: N38 55.20 E 46 46.45

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