

FAUNISTIC STUDY OF HETEROPTERA OF ZANJANROUD REGION IN ZANJAN PROVINCE OF IRAN

Omid Askari*, Reza Farshbaf Pourabad*
and Samad Khaganinia*

* Department of Plant Protection, Faculty of Agriculture, University of Tabriz, Tabriz – IRAN. E-mail address: rfpourabad@yahoo.com

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ABSTRACT: A survey was conducted on Heteroptera fauna of Zanjanroud region, in west of Zanjan province during 2006-2007. As many as 1780 specimens were collected from trees, weeds, cereal fields, overwintering places, soil and water. In this study 39 species belonging to 16 families were collected and identified. Three specimens of which genus belonging to Lygaeidae, Scutelleridae and Reduviidae were identified at the genus level. Among them The species *Anthocoris nemorum* (Linnaeus, 1761), *Nabis pseudoferus* (Romane, 1949), *Notonecta viridis* (Delcourt, 1909), *Velia affinis* (Kolenati, 1857), *Gerris maculatus* (Tamanini, 1946), *Hydrometra stagnorum* (Linnaeus, 1758), are predators. Species belonging to Pentatomidae had the most frequency. All species are first records from the studied region.

KEY WORDS: Fauna, Zanjanroud, Heteroptera.

The Heteroptera are very important insects from agricultural point of view. In this suborder there are aquatic, semi-aquatic and terrestrial species some of which are serious agricultural and silvicultural pests. On the other hand, predacious bugs reduce the number of agricultural pests and may be used in biological control. Because of these reasons; identification of Heteroptera is important (Linnavuori & Hosseini, 2000).

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, 1973).

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 such as the baking quality of wheat. On the other hand, many predators, catch other insects and Acarina, and very beneficial from agricultural point of view (Linnavuori & Hosseini, 2000).

MATERIAL AND METHODS

Zanjan is a province located in the North-West of Iran with the Zanjan City being its center. Zanjan province with an area of 36,400 km² has a mostly rural, population of 1.7 million. The province lies 330 km northwest of Tehran, connected to it via a freeway. Zanjanroud region is in west of Zanjan province, The climate is cold, semidried with the annual rainfall of 250-350 mm. Agriculture is the principal occupation, and crops include rice, corn (maize), oilseeds, fruits and potatoes. No faunistic study has been carried out on insects in this region, this is the first report of Heteroptera fauna from it.

This study was performed during 2006 - 2007. Samples collected from 20 localities in the west part of Zanjan. Heteroptera insects of Zanjanroud region collected from different plant hosts by different methods.

The visible specimens that weren't very swift trapped by hand but small species collected by aspirator, some of the bugs are collected by sweep net from weeds and some of them by light trap. The specimens were put into tubes filled with 70% alcohol.

RESULTS

In this study 39 species belonging to 16 families were collected and identified.

Family Tingidae Laport, 1877

Stephanitis pyri (Fabricius, 1775)

Material examined: 25 specimens (15♀, 10♂), June 2006 on apple garden.

Note: This species has been collected from different regions of Iran on apple, pear, peach, japans quince, pyrus, white-thorn, plum, roses, malus, cerasus, alder, oak (Modarres Awal, 2002).

Family Miridae Hahn, 1831

Adelphocoris lineolatus Geoze, 1778

Material examined: 78 specimens (45♀, 33♂), June 2006 on sugar-beet.

Note: The species is commonly distributed in Iran on sugar-beet, cotton, tamarisk, sainfoin (Modarres Awal, 2002).

Deraecoris pallens Reuter, 1904

Material examined: 40 specimens (30♀, 10♂), June 2006 on sugar-beet.

Stenodema turanica Reuter, 1904

Material examined: 27 specimens (20♀, 7♂), June 2006 on sugar-beet.

Polymerus brevirostris (Knight, 1925)

Material examined: 19 specimens (14♀, 5♂), June 2006 on sugar-beet.

Lygus rugulipennis Poppius, 1911

Material examined: 100 specimens (55♀, 45♂), June 2006 on sugar-beet.

Lygus pratensis (Linnaeus, 1758)

Material examined: 130 specimens (75♀, 55♂), June 2006 on potato.

Family Anthocoridae (Fieber, 1836)

Anthocoris nemorum Linnaeus, 1761

Material examined: 18 specimens (15♀, 3♂), July 2006 on apple garden.

Note: Predator of *Psylla pyricola*, *Anthonomus pomorum*, *Euzophera bigella*, *Hyponomeuta malinellus* and aphids (Modarres Awal, 2002).

Family Lygaeidae (Schilling, 1829)

Afanus rolandri (Laporte, 1833)

Material examined: 11 specimens (10♀, 1♂), July 2006 on apple garden.

Emblethis Fieber, 1860

Material examined: 25 specimens (20♀, 5♂), July 2006 on apple garden.

Nysius senecionis (Schilling, 1829)

Material examined: 60 specimens (35♀, 25♂), July 2006 on apple garden.

Family Nabidae Costa, 1852

Nabis Pseudoferrus Remane, 1949

Material examined: 33 specimens (18♀, 15♂), April 2006 on Lucerne.

Note: The species is predator and collected on sainfoin and Lucerne (Modarres Awal, 2002).

Family Coreidae Leach, 1815)

Coreus marginatus Linnaeus, 1758

Material examined: 44 specimens (19♀, 25♂), May 2006, 20 specimens, June 2007 on cirsium.

Ceraleptus gracilicornis (Herrich-Schäffer, 1835)

Material examined: 12 specimens (7♀, 5♂), May 2006, 2 specimens, June 2007 on cirsium.

Family Pyrrhocoridae Dohrn, 1859

Pyrrhocoris apterus Linnaeus, 1768

Material examined: 27 specimens (12♀, 15♂), June 2006 on weeds.

Note: The species has been collected from East Azarbaijan, Khorasan, Tehran, Khozestan, Fars, Gilan and Gorgan provinces in Iran (Modarres Awal, 2002).

Family Rhopalidae Amyot and Servill, 1843

***Corizus hyoscyami* Linnaeus, 1758**

Material examined: 7 specimens (2♀, 5♂), May 2006; 2 specimens, June 2007 on weeds.

Family Cydnidae Billberg, 1820

***Cydnus aterrimus* Foster, 1771**

Material examined: 2 specimens (2♀), May 2007 on lucerne.

Cimicidae Linnaeus, 1758 Family

***Cimex lectularius* Linnaeus, 1758**

Material examined: 2 specimens (2♀), May 2007 on lucerne.

Family Scutelleridae Leach, 1815

***Eurygaster integriceps* Puton, 1886**

Material examined: 75 specimens (45♀, 30♂), June 2006 on wheat.

Note: This species has generally distribution in Iran (Modarrese Awal, 2002).

***Eurygaster maura* (Linnaeus, 1758)**

Material examined: 15 specimens (5♀, 10♂), May 2007 on wheat.

***Odontotarsus* Laporte, 1833**

Material examined: 6 specimens (6♀), May 2007 on weeds.

Family Pentatomidae Leach, 1815

***Aelia rostrata* Bohemann, 1852**

Material examined: 52 specimens (25♀, 27♂), June 2007 on wild graminiae

***Aelia virgata* Herrich & Schaeffer, 1841**

Material examined: 85 specimens (40♀, 45♂), June 2007 on wild graminiae.

Note: Wheat, barley and wild graminiae are the host of the species (Modarreas Awal, 2002).

***Apodiphus amygdali* Germar, 1817**

Material examined: 4 specimens (3♀, 1♂), July 2006 on apricot.

Note: This species has been collected from Tehran, Fars, Markazi, Kerman, Hormozgan, Semnan, Balouchestan, Esfahan provinces in Iran on poplar, almond, apricot, oriental plane, pistachio, tamarisk, oak, tung (Modarres Awal, 2002).

***Apodiphus integriceps* Horvath, 1888**

Material examined: 45 specimens (30♀, 15♂), June 2006 on poplar.

***Carpocoris fuscispinus* (Bohemann, 1849)**

Material examined: 42 specimens (17♀, 25♂), July 2006 on lucern.

Note: The species has distribution in East Azarbaijan, Mazandaran, Zanzan, Tehran, Esfahan, Khorasan, Lorestan in Iran on Lucerne, lupine, wheat, sugar-beet (Modarres Awal, 2002).

***Carpocoris lunata* Fallen, 1852**

Material examined: 60 specimens (25♀, 35♂), May 2006 on cereals.

***Carpocoris purpureipennis* (DeGeer, 1773)**

Material examined: 34 specimens (22♀, 12♂), August 2006 on weeds.

***Dolycoris baccarum* Linnaeus, 1758**

Material examined: 24 specimens (14♀, 10♂), June 2006 on Lucerne

***Dolycoris penicillatus* Horvath, 1904**

Material examined: 40 specimens (25♀, 15♂), August 2006 on weeds.

***Eurydema ornatum* (Linnaeus, 1758)**

Material examined: 32 specimens (20♀, 12♂), April 2006 on cabbage.

Note: the species has been collected from different regions of Iran on turnip, cabbage, colza, mustard, wheat, radish and cultivated and wild crucifereae family plants (Modarres Awal, 2002).

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

Material examined: 103 specimens (48♀, 55♂), June 2006 on wild crucifereae.

***Graphosoma semipunctatum* (Fabricius, 1775)**

Material examined: 15 specimens (10♀, 5♂), April 2006 on weeds.

***Neottiglossa irana* Wagner, 1963**

Material examined: 31 specimens (16♀, 15♂), April 2006 on weeds.

Ancyrosoma leucogrammes* (Gmelin, 1790)*Material examined:** 15 specimens (10♀, 5♂), April 2006 on weeds.**Family Reduviidae Latreille, 1807*****Reduvius Fabricius, 1775*****Material examined:** 1 specimen (1♂), April 2006 on weeds.**Family Hydrometridae*****Hydrometra stagnorum* (Linnaeus, 1758)****Material examined:** 6 specimens (4♀, 2♂), April 2006 on weeds.**Family Gerridae*****Gerris maculatus* Tamanini, 1946****Material examined:** 55 specimens (30♀, 25♂), April 2006 on weeds.**Family Veliidae*****Velia affinis* Kolenati, 1857****Material examined:** 305 specimens (170♀, 135♂), April 2006 on weeds.**Family Notonectidae Latreille, 1802*****Notonecta viridis* Delcourt, 1909****Material examined:** 75 specimens (40♀, 35♂), May 2006. From water

Among the species found in this study, Species belonging to Pentatomidae had the most frequency and convertibly family of *Tingidae* had the minimum one.

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