



Egyptian Journal of Plant
Protection Research Institute

www.ejppri.eg.net



A faunistic study on Heteroptera (Insecta) in some regions of Iran
Najmeh, Samin¹; Hamid, Sakenin Chelav²; İnanç, Özgen³; Sandeep, Kushwaha⁴ and
Seyed, Afshin Hosseini Boldaji⁵

¹Department of Entomology, Science and Research Branch, Islamic Azad University, Tehran, Iran.

²Department of Plant Protection, Qaemshahr Branch, Islamic Azad University, Mazandaran, Iran.

³Plant Protection, Department of Agricultural Faculty of Dicle University, Diyarbakır, Turkey.

⁴Zoological Survey of India, M Block New Alipore Kolkata, India.

⁵Department of Biology, Yadegar- e- Imam Khomeini (RAH) Shahre Rey Branch, Islamic Azad University, Tehran, Iran.

ARTICLE INFO

Article History

Received:17 /10 /2020

Accepted:21 /12 /2020

Keywords

Heteroptera, true bug, fauna, new records and Iran.

Abstract:

Present study deals with faunistic surveys conducted in different regions of Iran. In total 29 species in 12 families were collected and identified: Acanthosomatidae (One species), Aradidae (One species), Berytidae (One species), Blissidae (One species), Coreidae (Two species and two genera), Lygaeidae (Two species and two genera), Miridae (Two species and two genera), Oxycarenidae (Two species and two genera), Reduviidae (Four species and four genera), Rhyparochromidae (Three species and three genera), Scutelleridae (Three species and two genera), and Tingidae (Seven species and six genera). Five species, *Berytinus consimilis* (Horváth, 1885) (Berytidae), *Rhynocoris bipustulatus* (Fieber, 1861), *Stenolemus novaki* Horváth, 1888 (Both Reduviidae), *Acalypta gracilis gracilis* (Fieber, 1844), and *Catoplatus distinctus* Montandon, 1895 (Both Tingidae) are newly recorded from Iran.

Introduction

True bugs (Heteroptera) with more than 40,000 described species worldwide are one of the most important insects (Weirauch and Schuh, 2011). Many species are economically important as crop pests, biological control agents of phytophagous insect pests (Schaefer, 2000), or vectors of diseases (Schofield and Dolling, 1993; Schaefer, 2000 and Garcia *et al.*, 2000). Suborder Heteroptera has been divided into seven Infraorders (including terrestrial and Waterbugs) Nepomorpha, Gerromorpha and

Leptopodomorpha these are aquatic, semiaquatic and riparian respectively; terrestrial Heteroptera has been divided into four Infraorders viz Enicocephalomorpha, Dipsocoromorpha, Cimicomorpha, and Penatatomomorpha. Enicocephalomorpha is an infraorder containing about 450 described numbers of species Dipsocoromorpha having about 300 species this is a very rare collected group of true bugs; Cimicomorpha is one of the largest infraorders in which family Miridae and

Reduviidae having the maximum number of species. Penatatomomorpha is having about 15,000 known species around the world (Schuh and Slater, 1995).

The fauna of Iranian Heteroptera was studied rather well which all the families have been catalogued (Ghahari *et al.*, 2009a, b, 2010a, b, 2012a, b, 2013a, b, 2014, 2016; Ghahari and Moulet, 2012a, b, 2013; Ghahari and Heiss, 2012; Ghahari and Cherot, 2014 and Ostovan *et al.*, 2017). The aim of study is representing the hetroptera

fauna different regions of Iran and introducing of some new country records.

Materials and methods

Classification, nomenclature, host plants and distributional data provided by Aukema and Rieger (1995, 1996 and 1999), and Aukema *et al.* (2013) have been followed. More faunastic survey and literature-based study is needful for enriching the faunal diversity of Iran. The provinces of Iran are represented in Figure (1).



Figure (1): Map of Iran with boundaries of provinces.

Results and discussion

During the present study 29 species in 12 families were collected and identified . Five of them are newly recorded from Iran.

Suborder Heteroptera Latreille, 1810

1. Infraorder Cimicomorpha Leston, Pendergrast and Southwood, 1954

1.1. Superfamily Reduioidea Latreille, 1807

1.1.1. Family Reduviidae Amyot & Serville, 1843

1.1.1.1. *Coranus kerzhneri* Putshkov, 1982

Material examined: East Azarbaijan province, Kaleybar, 2♂♂, August 2009.

1.1.1.2. *Rhynocoris bipustulatus* (Fieber, 1861)

Material examined: Kordestan province, Baneh, 1♀, June 2013.

1.1.1.3. *Sphedanolestes pulchellus* (Klug, 1830)

Material examined: Kordestan province, Saqez, 1♀, July 2009.

1.1.1. Egypt. J. Plant Prot. Res. Inst. (2020), 3 (4):

4. *Stenolemus novaki* Horváth, 1888
Material examined: Khuzestan province, Andimeshk, 2♀♀, April 2014.

1.2. Superfamily Tingoidea Laporte, 1832

1.2.1. Family Tingidae Laporte de Castelnau, 1833

1.2.1.1. *Acalypta gracilis gracilis* (Fieber, 1844)

Material examined: Guilan province, Talesh (Subatan), 1♀, 14.vi.2009.

1.2.1.2. *Acalypta marginata* (Wolff, 1804)

Material examined: Golestan province, Golestan National Park, 2♀♀, April 2015.

1.2.1.3. *Catoplatus distinctus* Montandon, 1895

Material examined: East Azarbaijan province, Varzeghan, 1♂, August 2014.

1.2.1.4. *Dictyla lupulii* (Herrich-Schaeffer, 1837)

Material examined: East Azarbaijan province, Arasbaran forest, 3♀♀, September 2013.

1.2.1.5. *Dictyonota horvathi* (Kiritshenko, 1914)

Material examined: West Azarbaijan province, Piranshahr, 1♀, 1♂, July 2009.

1.2.1.6. *Monosteira lobulifera* Reuter, 1888

Material examined: Kermanshah province, Paveh, 1♂, June 2013.

1.2.1.7. *Tingis grisea* Germar, 1835

Material examined: Mazandaran province, Savadkooh, 1♂, August 2011.

1.3. Superfamily Miroidea Hahn, 1833

1.3.1. Family Miridae Hahn, 1833

1.3.1.1. *Campyloneura virgula* (Herrich-Schaeffer, 1835)

Material examined: West Azarbaijan province, Makoo, 1♂, September 2014.

1.3.1.1. *Dimorphocoris debilis debilis* (Reuter, 1880)

Material examined: East Azarbaijan province, around Aras River, 2♀♀, July 2010.

2. Infraorder Pentatomomorpha Leston, Pendergrast and Southwood, 1954

2.1. Superfamily Pentatomoidea Leach, 1815

2.1.1. Family Acanthosomatidae Signoret, 1864

2.1.1.1. *Elasmucha grisea grisea* (Linnaeus, 1758)

Material examined: Guilan province, Talesh (Subatan), 2♀♀, 1♂, September 2009.

2.1.2. Family Scutelleridae Leach, 1815

2.1.2.1. *Eurygaster austriaca* (Schrunk, 1776)

Material examined: Ardebil province, Aslanduz, 2♂♂, June 2008.

2.1.2.2. *Odontoscelis litura* (Fabricius, 1775)

Material examined: Kermanshah province, Paveh, 2♂♂, July 2011.

2.1.2.3. *Odontoscelis minuta* Jakovlev, 1882

Material examined: West Azarbaijan province, Sardasht, 1♂, August 2012.

2.2. Superfamily Coreoidea Leach, 1815

2.2.1. Family Coreidae Leach, 1815

2.2.1.1. *Anoplocerus lutens* (Fieber, 1861)

Material examined: Chaharmahal & Bakhtiari province, Koohrang, 1♀, 1♂, September 2016.

2.2.1.2. *Ceraleptus lugens* Horváth, 1898

Material examined: Golestan province, Golestan National Park, 1♀, April 2015.

2.3. Superfamily Lygaeoidea Schilling, 1829

2.3.1. Family Berytidae Fieber, 1851

2.3.1.1. *Berytinus consimilis* (Horváth, 1885)

Material examined: Ardebil province, Germi, 2♀♀, August 2014.

2.3.2. Family Blissidae Stål, 1862

2.3.2.2. *Blissus putoni* Jakovlev, 1875

Material examined: Ardebil province, Germi, 1♂, August 2014.

2.3.3. Family Lygaeidae Schilling, 1829

2.3.3.1. *Hormopleurus nysioides* Horváth, 1884

Material examined: Khuzestan province, Andimeshk, 1♀, 2♂♂, April 2010.

2.3.3.2. *Melanotelus villosulus* (Stål, 1855)

Material examined: Sistan & Baluchestan province, 1♂, October 2009.

2.3.4. Family Oxycarenidae Stål, 1862

2.3.4.1. *Auchenodes costalis* (Lethierry, 1877)

Material examined: East Azarbaijan province, Varzeghan, 1♀, 1♂, August 2014.

2.3.4.2. *Camptotelus lineolatus lineolatus* (Schilling, 1829)

Material examined: Kordestan province, Baneh, 2♀♀, June 2013.

2.3.5. Family Rhyparochromidae Amyot & Serville, 1843

2.3.5.1. *Drymus (Sylvadrymus) brunneus confinis* Reuter, 1893

Material examined: Zanjan province, Mahneshan, 1♀, June 2010.

2.3.5.2. *Hyalochilus dolosus* Horváth, 1897

Material examined: Northern Khorasan province, Lojley, 1♀, April 2012.

2.3.5.3. *Icus angularis* Fieber, 1861

Material examined: Golestan province, Minudasht, 3♀♀, 2♂♂, July 2011.

2.4. Superfamily Aradoidea Brulle, 1836

2.4.1. Family Aradidae Brullé, 1836

2.4.1.1. *Aradus cinnamomeus* Panzer, 1806

Material examined: West Azarbaijan province, Makoo, 1♀, September 2014.

The results of this faunistic investigation indicate that the species diversity of Iranian Heteroptera is very diverse and on the other hand rather unknown, because all the areas have not been sampled systematically. With considering of these five new country records, total number of Iranian Heteroptera (with 50 recorded families) reaches to 1588 species from 508 genera (see Ghahari *et al.*, 2016). Iran is a large country with various geographical regions and climates, so several other new records will be discovered after exact faunistic surveys in all the regions.

Acknowledgements

The authors are grateful to the late R.E. Linnavuori (Finland) and P. Moulet (France) for identification of some specimens, J. Rastegar and A. Hadian for loaning of some materials, and two anonymous reviewers for review of the manuscript and insightful comments. This research was supported by Islamic Azad University, and Director Zoological survey of India Kolkata.

References

- Aukema, B. and Rieger, C. (1995):** Catalogue of the Heteroptera of the Palaearctic Region. Volume 1. Enicocephalomorpha, Dipsocoromorpha, Gerromorpha and Leptopodomorpha. Amsterdam: The Netherlands Entomological Society, xxvi + pp. 222.
- Aukema, B. and Rieger, C. (1996):** Catalogue of the Heteroptera of the Palaearctic Region. Volume 2. Cimicomorpha I. Amsterdam: The Netherlands Entomological Society, xiv + pp.361 .

- Aukema, B. and Rieger, C. (1999):** Catalogue of the Heteroptera of the Palaearctic Region. Volume 3. Cimicomorpha II. Amsterdam: The Netherlands Entomological Society, pp.577.
- Aukema, B.; Rabitsch, W. and Rieger, C. (2013):** Catalogue of the Heteroptera of the Palaearctic Region. VI. Supplement. The Netherlands Entomological Society, Amsterdam, xxiii + pp. 629.
- Garcia, E.S.; De Azambuja, P. and Dias, J.C.P. (2000):** Triatominae (Reduviidae), In: Schaefer, C.W. and Panizzi, A.R. (eds.), Heteroptera of Economic Importance. CRC Press, Boca Raton, Florida, 539-551.
- Ghahari, H. and Cherot, F. (2014):** An annotated catalog of the Iranian Miridae (Hemiptera: Heteroptera: Cimicomorpha). Zootaxa, 3845(1): 1-101.
- Ghahari, H. and Heiss, E. (2012):** Annotated catalog of Iranian Aradidae (Hemiptera: Heteroptera: Pentatomomorpha: Aradoidea). Zootaxa, 3571: 81-86.
- Ghahari, H. and Moulet, P. (2012a):** An annotated catalog of the Iranian Lygaeoidea (excluding Berytidae and Piesmatidae) (Hemiptera: Heteroptera: Pentatomomorpha). Zootaxa, 3408: 1-33.
- Ghahari, H. and Moulet, P. (2012b):** An annotated catalog of the Iranian Berytidae and Piesmatidae (Hemiptera: Heteroptera: Pentatomomorpha: Lygaeoidea). Zootaxa, 3547: 35-45.
- Ghahari, H. and Moulet, P. (2013):** An annotated catalog of the Iranian Pyrrhocoridae (Hemiptera: Heteroptera: Pentatomomorpha: Pyrrhocoroidea). Zootaxa, 3609(3): 335-342.
- Ghahari, H.; Carpintero, D.L. and Ostovan, H. (2009a):** An annotated catalogue of the Iranian Anthocoridae (Hemiptera: Heteroptera: Cimicomorpha). Acta Entomologica Musei Nationalis Pragae, 49: 43-58.
- Ghahari, H.; Carpintero, D.L.; Moulet, P.; Linnavuori, R.E. and Ostovan, H. (2010a):** Annotated catalogue of the Iranian broad-headed bugs (Hemiptera: Heteroptera: Alydidae). Acta Entomologica Musei Nationalis Pragae, 50(2): 425-436.
- Ghahari, H.; Cherot, F.; Linnavuori, R.E. and Ostovan, H. (2009b):** Annotated catalogue of Iranian burrower bugs (Heteroptera, Pentatomoidea, Cydnidae). ZooKeys, 26: 1-31.
- Ghahari, H.; Linnavuori, R.E.; Moulet, P. and Ostovan, H. (2010b):** An annotated catalogue of the Iranian Nabidae (Hemiptera: Heteroptera). Acta Entomologica Musei Nationalis Pragae, 50: 33-44.
- Ghahari, H.; Montemayor, S.I.; Moulet, P. and Linnavuori, R.E. (2012a):** An annotated catalogue of the Iranian Tingidae (Hemiptera: Heteroptera). Zootaxa, 3207: 22-39.
- Ghahari, H.; Moulet, P. and Ostovan, H. (2016):** An annotated catalog of the Iranian Cimicidae and Largidae (Hemiptera: Heteroptera) and in memoriam Carl Walter Schaefer (1934–2015). Zootaxa, 4111(2): 194-200.
- Ghahari, H.; Moulet, P. and Rider, D.A. (2014):** An annotated

- catalog of the Iranian Pentatomoidea (Hemiptera: Heteroptera: Pentatomomorpha). *Zootaxa*, 3837(1): 1-95.
- Ghahari, H.; Moulet, P.; Cai, W. and Karimi, J. (2013b):** An annotated catalog of the Iranian Reduvioidea (Hemiptera: Heteroptera: Cimicomorpha). *Zootaxa*, 3718(3): 201-238.
- Ghahari, H.; Moulet, P.; Linnavuori, R. and Ostovan, H. (2012b):** An Annotated Catalog of the Iranian Coreidae, Rhopalidae, and Stenocephalidae (Hemiptera: Heteroptera: Pentatomomorpha: Coreoidea). *Zootaxa*, 3519: 1-31.
- Ghahari, H.; Moulet, P.; Ostovan, H. and Linnavuori, R.E. (2013a):** An annotated catalog of the Iranian Dipsocoromorpha, Enicocephalomorpha, Gerromorpha, Leptopodomorpha and Nepomorpha (Hemiptera: Heteroptera). *Zootaxa*, 3641(4): 301-342.
- Ostovan, H.; Ghahari, H. and Moulet, P. (2017):** Updated catalogue of Iranian Anthocoridae (Hemiptera: Heteroptera: Cimicomorpha). *Zootaxa*, 4311(4): 451-479.
- Schaefer, C.W. (2000):** Bed bugs (Cimicidae), pp. 519-538. In: Schaefer, C.W. and Panizzi, A.R. (eds.), *Heteroptera of economic importance*. CRC Press, Boca Raton, Florida, pp. 828.
- Schofield, C.J. and Dolling, W.R. (1993):** Bed bugs and kissing-bugs (bloodsucking Hemiptera), pp. 483-516. In: Lane, R.P. and Crosskey, R.W. (eds.), *Medical Insects and Arachnids*. London: Chapman and Hall, XV + pp. 723.
- Schuh, R.T. and Slater J.A. (1995):** True Bugs of the world (Hemiptera: Heteroptera) Classification and Natural History. Ithaca, New York: Comstock Publishing Associates, Cornell University Press Cornell University. Press, Ithaca, NY and London.p.336.
- Weirauch, C. and Schuh, R.T. (2011):** Systematics and evolution of Heteroptera: 25 years of progress. *Annual Review of Entomology*, 56: 487-510.