

FAUNISTIC STUDY ON PENTATOMID AND SCUTELLERID BUGS (HEM.: HETEROPTERA) FROM BIRJAND COUNTY AND SUBURBS IN SOUTH KHORASAN PROVINCE (IRAN)

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[**Golestan, M. N. & Awal, M. M.** 2012. Faunistic study on pentatomid and scutellerid bugs (Hem.: Heteroptera) from Birjand county and suburbs in South Khorasan province (Iran). *Munis Entomology & Zoology*, 7 (1): 462-466]

ABSTRACT: The faunistic study was carried out during 2005-2006 on Pentatomidae and Scutelleridae families of Birjand county in South Khorasan province. Totally 29 species belonging to 22 genera were collected. All species were identified based on male genitalia and some other morphological characters. All species were reported for the first time from South Khorasan province.

KEY WORDS: Pentatomidae, Faunistic, Birjand, South Khorasan province.

Pentatomids are with approximately 760 genera and 4100 species known and one of the largest Heteroptera families. The majority of economically important them belong to the subfamily Pentatominae.

The first faunistic studies on Iran's Pentatomids and Scutellerids started as early as last 1800s by foreign scientists. Jakovlev (1877), Signoret (1880), Oshanin (1906-1912), Kiritshenko (1911, 1938, 1949 & 1966), Lindberg (1938), China (1938), Siedenstucker (1957), Brown (1962-1966), Wagner (1968) and Hoberlandt (1970, 1973 & 1977) reported a great number of species from Iran (Hoberlandt, 1995). Safavi (1959, 1973, 1974 & 1976) and Modarres Awal (1981, 1985, 1997, 2008 & 2011) have performed the most native studies to discover pentatomids and Scutellerids fauna in Iran.

MATERIALS AND METHODS

South Khorasan province has an area of 102460 square kilometers. This province is located between 57° -1' and 60° - 57' degrees of east longitude and the 30° - 32' and 34° - 36' degrees of north latitude. Birjand is the east Iranian, provincial capital of South Khorasan and the centre of the county Birjand.

High mountains and vast open plains affect the climate of this area. Nearness to the Central Desert and open plains gives this area an arid climate with hot summers. On the other hand the east-west Mountains gives a reprieve from heat and makes the general climate more moderate than adjoining areas. The annual rainfall is about 167 millimeters most which falls during the winter and spring seasons. The lack of permanent rivers, the little rainfall and the climatic conditions have limited the agricultural products. The important crops are saffron, jujube and barberry.

Sampling performed by the ways of common sampling, including net working, light trap and collecting by observation. Also the specimens mostly collected from intact regions including plains, desert. Genital organs of male (Pygophore and parameres) and female (spermatheca and genal plates) was sand out and was

supplied constant preparation so important genital organs in identification were drawn.

All specimens are collected by author and preserved in the Department of Entomology of Islamic Azad University, Birjand Branch.

RESULTS

Family Pentatomidae Leach, 1815 Subfamily Pentatominae (Amyot & Serville, 1843)

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

Ark road (33Km, West of Birjand): 1 Nymph of stage 3, 1585m., 11. III. 2006, On *Artemisia* Sp., Chahardeh-e-Bala (10Km, North of Birjand): 1male, 1820m., 4. VIII. 2006, On *Juglans regia* L.

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

Birjand: 1male, 1300m., 27. IX. 2006, On *Prunus armeniaca* L., Chah-e-Kalateh-Arab(74Km, South of Birjand): 1female, 1474m, 28. VI. 2006, On *Prunus domestica* L., Ark (80Km, West of Birjand): 1male, 1female, 10. VI. 2006, On *Malus domestica* Borkh., Ali-Abad (100Km, South of Birjand): 2males, 1462m, 9. VI. 2006, On *Pistaca* Sp., Noozad: 1male, 1female, 23. X. 2006, On fruits with low density.

***Sciocoris sulcatus* Feiber, 1851**

Arian-Shahr (73Km, North East of Birjand): 1female, 13. V. 2006, Under *Artemisia* Sp.

***Sciocoris helferi* (Fieber, 1851)**

Khoor plain (62Km West of Birjand): 1male, 1401m, 8. IV. 2006, Under *Artemisia* Sp., Arian-shahr: 1male, 1female, 17. IV. 2006, Under *Artemisia* Sp.

***Sciocoris angusticollis* Puton, 1895**

Kooshk (30Km North of Birjand): 2females, 1836m, 16. III. 2006, Khoor plain: 1male, 1401m, 8. IV. 2006, Under *Artemisia* Sp., Arian-Shahr: 17. IV. 2006, Under *Artemisia* Sp.

***Aelia melonata* Feiber, 1868**

Siujan (24Km West of Birjand): 2females, 1373m, 27. VII. 2006, On *Atriplex* Sp. and *Hordeum vulgare* L.

***Aelia rostrata* Boheman, 1852**

Dorokhsh (67Km North East of Birjand): 1male, 1722m, 25. V. 2006, On *Pyrethrum* Sp.

***Holcostethus vernalis* Wolff, 1804**

Majan plain (80Km South of Birjand): 1male, 1female, 1480m, 28. IV. 2006, On *Hordeum vulgare* L., Sar-Chah-e-Ammari (105Km South of Birjand): 1male, 1248m, 9. VI. 2006, On *Cynodon dactylon* (L.), Ark: 1female, 10. VI. 2006, On *Rubia* L., Tarogh (160Km South East of Birjand): 2males, 1820m, 25. VII. 2006, On *Mentha* Sp., Siujan: 1female, 1373m, 27. VII. 2006, On *Atriplex* Sp.

***Carpocoris purpureipennis* (De Geer, 1773)**

Chahardeh-e-Bala: 3males, 1600m, 21. IV. 2006, On *Euphorbia* Sp., Giv and Mokhtaran plains (110Km South of Birjand): 2males, 1450m, 28. IV. 2006, On *Hordeum vulgare* L., Salm-Abad (67Km East of Birjand): 1female, 1784m, 16. V. 2006, On *Triticum aestivum* L., Roshnavand (45Km North of Birjand): 2males, 20. V. 2006, On *Acroptilon repens* (L.), Dorokhsh: 3females, 1722m, 25. V. 2006, On *Triticum aestivum* L. and *Hordeum vulgare* L., Kalateh-Molla (80Km North East of Birjand): 1female, 2005m, 25. V. 2006, On *Berberis vulgaris* L. and *Scropholaria* Sp., Khan (88Km North East of Birjand): 2males, 2066m, 25. V. 2006, On grasses, Bojd plain (15Km East of Birjand): 1male, 1600m, 8. VI. 2006, On *Alhagi* Sp., Sar-Chah-e-Ammari: 2female, 1248m, 9. VI. 2006, On grasses, Ark: 1male, 10. VI. 2006, *Allium Cepa* L., Chah-e-Kalateh-Arab: 1female, 1474m, 28. VI. 2006, On

Chenopodium Sp., Eilaki-e-Payen (83Km South of Birjand): 1male, 1female, 2101m, 15. VII. 2006, On Asteraceae specially *Scorzonera* Sp., Darmian (68Km North East of Birjand): 3females, 1935m, 19. VII. 2006, On *Kochia* Sp. and *Zygophyllum eurypterum* Boiss. & Buhse., Siujan: 1female, 1373m, 27. VII. 2006, On *Taraxacum* Sp. and *Atriplex* Sp., Saghi (34Km North of Birjand): 1female, 2035m, 28. VII. 2006, On *Kochia* Sp., *Alhagi* Sp., *Prunus domestica* L. and *Allium Cepa* L., Khong (46Km North of Birjand): 2males, 1839m, 28. VII. 2006, On *Zygophyllum eurypterum* Boiss. & Buhse., *Allium Cepa* L. and *Pimpinella anisum* L., Kalateh-Soleyman (67Km South East of Birjand): 4males, 1862m, 29. VII. 2006, On *Allium Cepa* L., *Solanum tuberosum* L. and *Lycopersicum esculentum* L., Fanood (54Km South East of Birjand): 2males, 2074m, 29. VII. 2006, On *Clematis* Sp. and *Melissa* Sp., Boorgan (133Km South East of Birjand): 1male, 2females, 1775m, 6. IX. 2006, *Kochia* Sp., Liski (140 Km South East of Birjand): 1male, 1907m, 6. IX. 2006, On *Kochia* Sp. Note: This species was cosmopolite in the region and its density on *Allium cepa* L. and grasses was more than others.

***Dolycois baccarum* (Linnaeus, 1758)**

Noferest (32Km East of Birjand): 2males, 24. IV. 2006, On grasses, Salm-Abad: 1female, 2males, 1784m, 16. V. 2006, On *Triticum aestivum* L., Roshnavand: 1male, 21. V. 2006, *Acroptilon repens* (L.), Dorokhsh: 2males, 1722m, 25. V. 2006, On grasses, Kalateh-Molla: 1male, 2005m, 25. V. 2006, On *Berberis vulgaris* L. and *Scropholaria* Sp., Khan: 2males, 2066m, 25. V. 2006, On grasses, Ark: 1female, 10. VI. 2006, On *Cousinia* Sp. and *Daucus carota* L., Chah-e-Kalateh-Arab: 3female, 1474m, 28. VI. 2006, On *Gossypium hirsutum* L., Darmian: 1male, 1935m, 19. VII. 2006, On *Kochia* Sp., Tarogh: 2males, 1820m, 25. VII. 2006, On *medicago* Sp. and *Erysimum hieraciifolium* L., Siujan: 1male, 1373m, 27.VII. 2006, On *Atriplex* Sp. and *Taraxacum* Sp., Saghi: 2males, 2035m, 28. VII. 2006, On *Kochia* Sp. and *Alhagi* Sp., Khong: 1male, 1female, 1839m, 28. VII. 2006, On *Kochia* Sp., Kalateh-Soleyman: 2males, 1862m, 29. VII. 2006, On *Solanum tuberosum* L., Fanood: 1male, 2074m, 29. VII. 2006, On *Melissa officinalis* L., *Clematis* Sp. and *Alangium* Sp.

***Antheminia pusio* Kolenati, 1846**

Gloon-Abad (47Km South East of Birjand): 3males, 1975m, 13. III. 2006, Under *Artemisia* Sp., Arian-Shahr: 1male, 17. IV. 2006, On *Artemisia* Sp., Majan plain: 1male, 1480m, 28. IV. 2006, On *Hordeum vulgare* L., Roshnavand: 1male, 20. V. 2006, On *Acroptilon repens* (L.), Chah-e-Kalateh-Arab: 2males, 1474m, 28. VI. 2006, On *Allium Cepa* L., Saghi: 2females, 2035m, 28. VII. 2006, On *Allium Cepa* L. and *Euphorbia* Sp.

***Codophila varia* Fabricius, 1787**

Kooshk (30Km North Birjand): 1male, 1836m, 5. V. 2006, On *Berberis vulgaris* L., Salm-Abad: 2males, 1784m, 16. V. 2006, On *Raphanus* Sp., Roshnavand: 1male, 20. V. 2006, On *Acroptilon repens* (L.), Kalateh-Molla: 2females, 2005m, 25. V. 2006, On *Marrubium* Sp., Siujan: 1male, 1373m, 27. VII. 2006, On *Hordeum vulgare* L., *Taraxacum* Sp. and *Atriplex* Sp.

***Codophila maculicollis* (Dallas, 1851)**

Sfah-Rood (20Km East of birjand): 1female, 1950, 8. VI. 2006, On *Amygdalus scoparia* Spach.

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

Arian-Shahr: 1male, 17. IV. 2006, On *Artemisia* Sp., Ali-Abad (100Km South of Birjand): 1male, 2females, 14. V. 2006, Collected by light trapping, Ark: 1male, 17. V. 2006, Collected by light trapping.

***Pitedia juniperina* (Linnaeus, 1758)**

Ark: 1female, 17. V. 2006, Collected by light trapping, Amir-Abad (20Km West of Birjand): 13. V. 2006, On *Morus alba* L., Ali-Abad (100Km South of Birjand): 1male, 29. VIII. 2006, Collected by light trapping.

***Brachynema germari* (Kolenati, 1846)**

Ark Road: 1male, 1585m 11. III. 2006, On *Ephedra major* Host., Arian-Shahr: 2males, 1706m, 17. IV. 2006, On *Artemisia* Sp. with high density, Giv and Mokhtaran plains: 2males, 1450m, 28. IV. 2006, On barley fields, Gloom-abad: 1male, 1975m, 13. III. 2006, On *Artemisia* Sp., Ali-abad: 2males, 1466m, 29. VI. 2006, Collected by light trapping. Boorgan: 1male, 1775m, 6. IX. 2006, On *Kochia* Sp.

***Rhaphigaster nebulosa* Poda, 1761**

Mood: 1female, 1860m, 29. VII. 2006, On *Populus* sp. and *Prunus domestica* L.

***Piezodorus lituratus* Fabricius, 1794**

Behdan (30Km East of Birjand): 1male, 12. IV. 2006, On *Elaeagnus* sp., Birjand City: 1female, 1300m, 23. XI. 2006, Sarayan (150Km North West of Birjand): 1male, 18. XII. 2006.

***Eurydema ornata* Linnaeus, 1758**

Noferest (32Km East of Birjand): 3males, 12. IV. 2006, On *Lepidium* Sp., *Eruca sativa* L.) and *Descurainia sophia* (L.), Giv and Mokhtaran plains: 3males, 1450m, 28. IV. 2006, On *Medicago sativa* L., Salm-Abad: 4males, 1784m, 16. V. 2006, On *Raphanus* Sp., Sar-Chah-e-Ammari: 2males, 1248m, 9. VI. 2006, On *Veronica* Sp., Darmian: 3males, 2females, 1935m, 19. VII. 2006, On *Erysimum hieraciifolium* L., Tarogh: 1male, 2females, 1820m, 25. VII. 2006, On *Erysimum hieraciifolium* L. with high density.

Subfamily Podopinae Amyot & Serville, 1843***Ventocoris fischeri* (Herrich-Schaeffer, 1851)**

Mokhtaran plain: 1male, 1490m, 23. V. 2006, On *Bunium persicum* Bioss.

***Ventocoris oblongus* (Horváth, 1889)**

Khoor plain: 1male, 1female, 1401m, 8. IV. 2006, Under *Euphorbia* Sp.

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

Saghi: 2males, 2035m, 28. VII. 2006, On *Pimpinella anisum* L., Khong: 3males, 1839m, 28. VII. 2006, On *Carum copticum* Heirn.

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

Saghi: 4males, 2females, 2035m, 28, VII, 2006, On *Pimpinella anisum* L.

***Graphosoma consimile* Horváth, 1903**

Saghi: 1male, 2035m, 28. VII. 2006, On *Pimpinella anisum* L., Chahkand (34Km North of Birjand): 1male, 1female, 20. V. 2006, On *Alhagi* Sp.

***Tarisa fraudatrix* Horvath, 1891**

Sar-Chah-e-Ammari: 2males, 1female, 1248m, 9. VI. 2008, On *Kochia* Sp., Saghi: 2males, 2035m, 28. VII. 2006, On *Kochia* Sp., Khong: 2males, 1839m, 28. VII. 2008, On *Kochia* Sp.,

Note: This species was collected only on the *Kochia* in Birjand region in this study and seem the *Kochia* is specific host it. Also all of specimens were collected from cluster part of plant.

Family Scutelleridae Leach, 1815***Eurygaster integriceps* Puton, 1881**

Arish (51Km West of Birjand): 3males, 1319m, 8. IV. 2006, On *Hordeum vulgare* L., Mokhtaran plain: 2males, 3females, 1490m, 15. IV. 2006, On grasses, Salm-abad: 1male, 1784m, 16. V. 2006, On *Triticum aestivum* L., Dorokhsh: 4males, 1722m, 25. V. 2006, On grasses.

***Odontotarsus impictus* Jakovlev, 1886**

Roshnavand and Chahkand: 2males, 20. V. 2006, On *Acroptilon repens* (L.), Khong: 3males, 1839m, 28. VII. 2006, On *Carum copticum* Heirn

***Odontotarsus plicatulus* Horváth, 1906**

Roshnavand: 1male, 20. V. 2006, On *Acroptilon repens* (L.).

***Odontotarsus* sp.**

Chahkand: 1male, 20. V. 2006, On *Acroptilon repens* (L.).

***Psacasta exanthematica* (Scopoli, 1763)**

Kooshk: 2males, 1836m, 5. V. 2006, On *Berberis vulgaris* L.

ACKNOWLEDGEMENT

The authors are greatly grateful to the Dear Dr. A. Sarafrazi from Insect Taxonomy Research Department, Plant Pests & Diseases Research Institute, Tehran for confirmation of some species. Also we thank Dear M. S. Pouyan from Islamic Azad University, Birjand Branch for identification host species.

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