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A fauna study of plant bugs (Hemiptera: Miridae) in Malayer (Hamedan province, Iran)

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Abstract

The fauna of plant bugs (Hemiptera: Miridae) was studied in Malayer, Hamedan province, Iran. A total of 13 plant bugs species belonging to 7 genera, from the subfamilies of Deraeocorinae, Mirinae and Phylinae were collected from different host plants and identified. among collected specimens, 3 species were predaceous and 10 species were plant feeder, which Among them 7 species *Deraeocoris serenus, Trigonotylus pulchellus, Trigonotylus ruficornis, Polymerus vulneratus, Adelphocoris bimaculicollis, Agnocoris reclairei, Amblytylus concolor* were reported for the first time from the Hamedan province.

Key words: Miridae, Fauna, Malayer, Hamedan, Iran

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Introduction

Plant bugs which belong to the Miridae family are the biggest family of Hemiptera that have about 1500 genera and more than 11000 species in all over the world (Schuh & Slater, 1995; Kerzhner & Josifov, 1999; Cassis & Schuh, 2012). This family includes 8 subfamilies: Isometopinae, Psallopinae, Cylapinae, Bryocorinae, Deraeocorinae, Mirinae, Phylinae, and Orthotylinae. The body length of these insects varies between 2-15 mm (Schuh & Slater, 1995). In spite of various morphologic differences The members of this family specially having Cuneus and 1 or 2 cells on the base of membrane are identifiable from all the close families (Ross *et al*., 1982; Dolling , 1991; Wheeler, 2001).

Their antenna and beak have usually four segments. Some of the family members are Brachypterus and in some, sexual dimorphism can be seen. The species of this family appear in nature on different kinds of host plants from spring to fall. The existing species of this family have a wide range of hosts including those which are plant feeder or predaceous (Slater & Baranowski, 1978). The Plant bug family Miridae comprises many genera rich in species. Among them some are either harmful or beneficial. The harmful bugs are those that suck the plant sap and injure the plant or damage the reproductive organ. In contrast the beneficial bugs are those that prey on and destroy the harmful arthropods that feed on plant (Schuh & Slater, 1995). Many of plant feeders in this family like *Lygus* Hahn and *Adelphocoris* Reuter can directly damage the generative organs of plants, shoots and fruits by feeding from plants sap and also indirectly damage them by potentially transferring plant pathogens. Species in *Deraeocoris* Kirschbaum genus are predaceous and by feeding on some pests such as aphids can decrease the population of them. Some of predaceous species in this family have also been used for biological control of pests (Alomar *et al*. 2006)

There are number of publications on Iranian plant bugs in different regions. Miridae of Iran were studied rather well in a number of scattered contributions (Hosseini 1997; Linnavuori 1997, 1998, 1999, Linnavuori & Hosseini 1998; Hosseini *et al*., 2000, 2000a, b, 2002a, 2002 b; Arkani *et al*. 2011; Lashkari *et al*. 2011; Lashkari & Hosseini 2012; Ebrahimi *et al*. 2012; Hosseini 2013a, b, c), Because of the importance of mirid bugs in different concepts of biology, faunal study of them is essential and need to be elucidated.

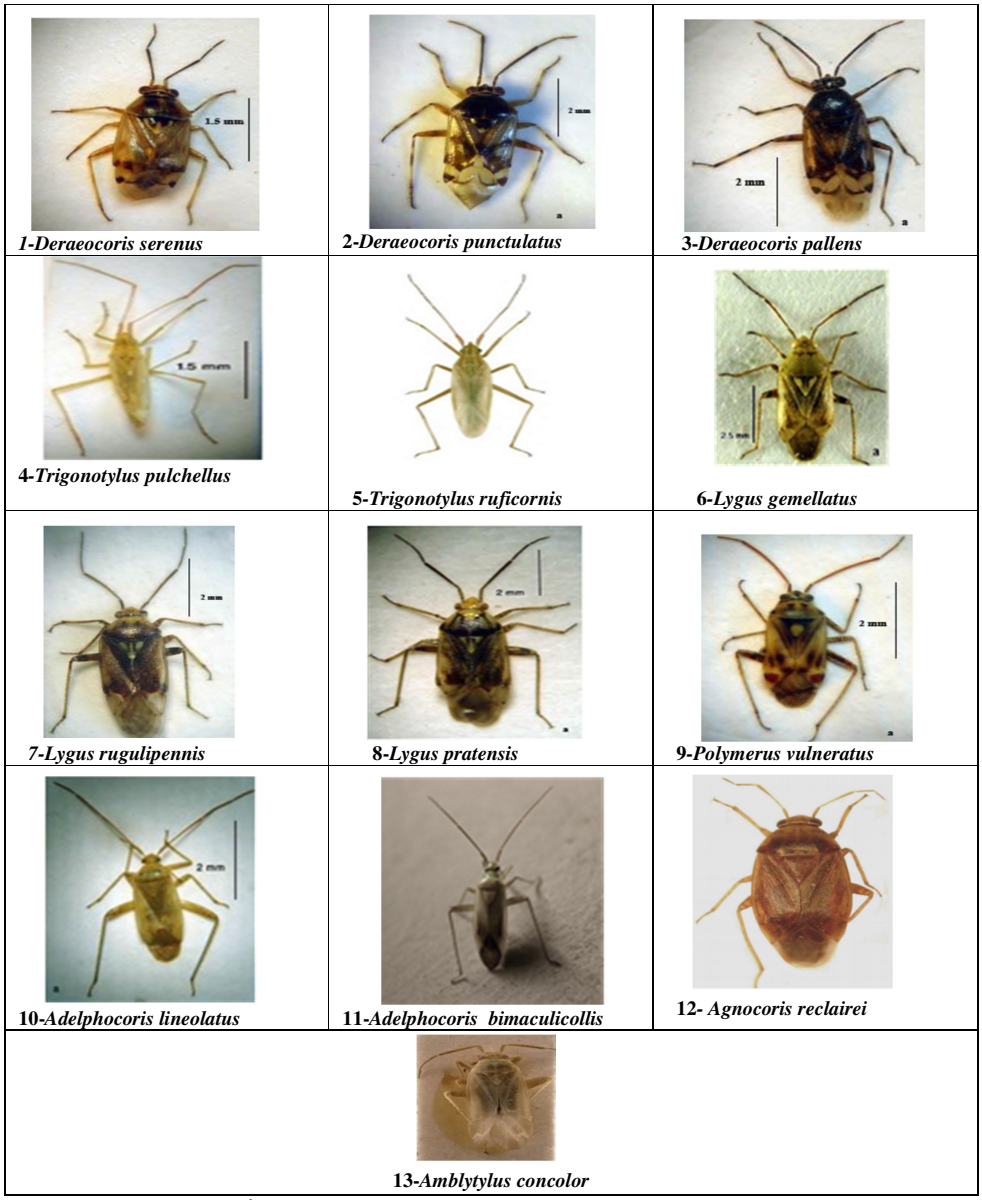
Materials and Methods

In order to study the fauna of plant bugs, the specimens were collected from different locations during 2014-2015. Collection of the Mirid bugs was done randomly from gardens and fields on different host plants. via an ordinary insect net (45cm diameter and 75cm length) or a bush net, by sweeping on vegetations in different habitats or beating the trees' branches inside the bush net (the net with large diameter). The collected specimens were killed promptly in a small tube contains Ethyl acetate. Collected specimens were transferred in to the small containers containing 70 % ethanole. In laistay the specimens were laboratory were mounted on triangular labels. From the males, genitalia were separated and mounted on slides by using canada balsam as the permanent mounting medium. The identified insects were deposited at insects collection of the Department of Entomology, College of Agriculture, Islamic Azad University, Arak Branch (Arak, Iran) and Natural Museum of Arak University (Markazi province, Iran).

Results and Discussion

In total 13 species of Miridae from 7 genera were collected from Malayer, Hamedan province, which the list of species is given below (Fig. 1, 1-13).

In the current study, 13 plant bugs species including 3 predaceous and 10 plant feeder species are reported from Malayer, Hamedan province, Iran. The information on distribution and host plants for each Mirid bug species is also provided.



1-Deraeocoris serenus | *2-Deraeocoris punctulatus* | *3-Deraeocoris pallens*

4-Trigonotylus pulchellus | *5-Trigonotylus ruficornis* | *6-Lygus gemellatus*

7-Lygus rugulipennis | *8-Lygus pratensis* | *9-Polymerus vulneratus*

10-Adelphocoris lineolatus | *11-Adelphocoris bimaculicollis* | *12- Agnocoris reclairei*

13-Amblytylus concolor

Fig. 1-13- The specimens of this research were collected by Author

Key to Subfamilies of Miridae

1-Mainly oval or almost rounded, shining. Dorsum or only pronotum distinctly punctate. ……..... Deraeocorinae

2- Body from rounded-oval to strongly elongate, right paramere small, not flattened, more or less cylindrical, left paramere with long hypophysis often situated in one plane with the sensory lobe, Penis of Mirinae type ……..…. Mirinae

3-right paramere flat, usually leaf-like, left paramere with more or less parallel sensory lobe and hypophysis, aedeagus usually strongly sclerotized, C– or S-shaped; theca fused with wall of genital segment ……..... Phylinae

Key to Tribes of Miridae

1-Hemelytra as distinctly punctate as posterior part of pronotum, membrane not pilose, always complete ..... Deraeocorini
2-1-3rd antennal segment shorter than 2nd antennal segment. Vertex without groove;1st segment of hind tarsi shorter or slightly longer than 2nd segment, antennae not longer or hardly longer than body ……. Mirini
2-2-Usually species with narrow, elongate body, more commonly greenish or yellowish. living on grasses and sedges…….…….. Stenodemini
3- elongate or rounded. Coloration varying, Aedeagus C- or S-shaped, usually with well marked secondary gonopore…….....……...…….…….. Phylini

Key to Genera of Miridae

1- 2nd and 3rd segment of hind tarsi combined 1.5-2.5 times as long as 1st segment, Claw with a stout basal tooth, scutellum not punctate .....…… …..…. *Deraeocoris*
2- Head longer than width, hind tibiae with long, slender, erect setae, without spines. Not shorter than 7.5, hind tibiae with very short recumbent setae, with short black spines..... .....*Trigonotylus*
3-Antennal fossa situated markedly dorsal to ventral margin of eye, outer side of tibia with dark spot at the knee and another dark spot distal to the first one, pronotum and hemelytra with coarse punctation and scutellum flat ..... *Lygus*
4- Collar of pronotum usually not longer than width of 2nd antennal segment, Body covered dorsally and ventrally with more or less flattened, golden or silvery setae (easily rubbed off!), length of collar of pronotum equals to width of 2nd antennal segment…… *Polymerus*
5- Vertex without longitudinal groove, antennae and legs very long, The bigger cell in membrane part of hemelytra with a cone angle at the top, The spicule of vesica is comb like…….……*Adelphocoris*
6- Pronotum at posterior margin 1.6-2.3 times as wide as head. Antennae usually attached some what above ventral margin of eyes. Length of 2nd antennal segment less than or equals to width of head……..... *Agnocoris*
7- ground colour whitish green; tiblal spines brown; anterolateral margins of pronotum without ridges; labium reaching the middle of abdomen…….....….. *Amblytylus*

Key to Species of Miridae

Key to the *Deraeocoris* species

1- Short and fat body, Scutellum with two black stripe with W-shaped, antennal segment II 1/2 times the sum of third and fourth…….....…. *D. serenus*
2- Scutellum distinctly punctate, Not longer than 5. 1st antennal segment shorter than width of vertex. Dirty yellow, with black or dark ..... *D. punctulatus*
3- Body length shorter than *Deraeocoris punctulatus*, antennal segment 1/41 times the sum of the 3rd and 4th segment. Scutellum with dispersed pores. ……..….....….... *D. pallens*

Key to the *Trigonotylus* species

1-Ventral side with longitudinal red blood stripes. Front, from above, acuminate above the lorum. posterior angies of pronotum acute. Rear corners the pronotum strongly above……..…….....……..... *T. pulchellus*
2-The 1st antennal segment is largely red with pale longitudinal stipes. These are much more diffuse, body length is 5-6 mm……..... *T. ruficornis*

Key to the *Lygus* species

1- Body color greyish green or brownish red, pronotum has two small black spots..…….…….... *L. gemellatus*

2- Scutellum with median black stripe, less commonly without stripe or with W-shaped black spot…….....……*L. rugulipennis*

3- Body color varies from gray to bright red is 2.2 times the width of along the head, The W-shaped pronotum without spots, Scutellum black spot at the base of is almost the 4-shaped …….....…….....… *L. pratensis*

Key to the *Polymerus* species

1- On head in addition to 2 spots near eyes at least lora, Strawcolored or greenish with some brown or black spots and lines on pronotum and hemelytra, Cuneus with purple-red spot and sometimes with a narrow black stripe at outer margin..... *P. vulneratus*

Key to the *Adelphocoris* species

1- Body color greenish or reddish brown.…….....*A. bimaculicollis*

2- Body color greenish or grayish with two black spot on pronotum.…..…..... *A. lineolatus*

Key to the *Agnocoris* species

1- Left paramere with apical process almost straight, distinctly elongated; paramere body strongly right broad-ened; paramere broadened; antennal segment II as long as or slightly longer than head width ……..... *A. reclairei*

Key to the *Amblytylus* species

1-Dorsal pubescence uniform, pale; ground colour whitish green; tiblal spines brown; anterolateral margins of pronotum without ridges; labium reaching the middle of abdomen. ……..……..……*A. concolor*

Collected predator

Subfamily: D e r a e o c o r i n a e

***Deraeocoris serenus* (Douglas & Scott, 1868)**

M a t e r i a l e x a m i n e d : Iran, Hamedan , Malayer: Mangavi, 1740 m, N= 34˚ 70′09″, E= 48˚ 59′ 10″, 4.ix.2014, ex: *Medicago sativa* (Leguminosae), (M. Rouzbahani); Rezvankadeh, 1720 m, N= 34˚ 18′ 15″, E= 47˚ 43′ 13″, 20.ix.2014, ex: *Triflium* sp. (Leguminosae), (M. Rouzbahani); Varchagh, 1739 m, N= 34˚ 19′ 19″, E= 49˚ 14′ 13″,5.iv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Sharif Abad, 1715 m, N= 34˚39′ 12″, E= 46˚ 31′ 01″, 7.iv.2015, ex:*Zea mays* (Poaceae), (M. Rouzbahani); Haram Abad, 1718 m, N= 34˚ 18′ 03″, E= 48˚ 05′ 12″, 2. iiv.2015, ex: *Avena fatua* (Graminae), (M. Rouzbahani); Tocheghaz, 1750 m, N= 34˚ 18′ 07″, E= 48˚ 42′ 12″, 4. iiv.2015, ex: *Z. mays*(Poaceae), (M. Rouzbahani).

D i s t r i b u t i o n : Holomediterranean, extending to Central Europe and Central Asia(Linnavuori 2009)

Europe, North Africa and Asia (Aukema & Rieger, 1999).

***Deraeocoris punctulatus* (Fallen, 1807)**

M a t e r i a l e x a m i n e d : Iran, Hamedan , Malayer: Shirin Abad, 1699 m, N= 34˚ 21′ 03″, E=48˚ 46′ 11″, 27.iiiv. 2014, ex: *Medicago sativa* (Leguminosae), (M. Rouzbahani); Khan Abad, 1743 m, N= 34˚ 28′ 03″, E= 48˚ 57′ 13″, 8.ix.2014, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Salar Abad, 1728 m, N= 34˚ 26′ 43″, E= 48˚ 57′ 44″, 27.iiiv.2014, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Eznav, 1718 m, N= 34˚ 19′ 28″, E= 48˚ 51′05″, 24.ix.2014, ex: *Pirus malus* (Rosaceae), (M. Rouzbahani); Jokar, 1713m, N=34˚ 41′ 21″, E= 48˚ 67′ 10″, 31.ix.2014, ex: *Trifolium* sp. (Leguminosae), (M. Rouzbahani); Tocheghaz, 1749 m, N = 34˚ 18′

26″, E= 48˚ 23′ 31″, 15. x.2014, ex: *T. sp*(Leguminosae), (M. Rouzbahani); Namileh, 1722m, N= 34˚18′ 32″, E= 47˚ 33′ 33″, 10. xi.2014, ex: M. *sativa* (Leguminosae), (M. Rouzbahani); Zarbe Ali: 1735 m, N= 34˚ 17′ 38″, E= 48˚ 77′ 28″, 20. xi.2014, ex: *Avena fatua* (Graminae), (M. Rouzbahani); Yangi Kand, 1748 m, N=34˚63′ 41″, E= 48˚ 74′ 31″, 13. i. 2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Mangavi, 1741 m, N= 34˚ 72′06″, E= 48˚ 55′ 14″, 26. i.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Ghajarab Olia, 1738 m, N= 34˚ 25′ 06″, E= 48˚ 57′ 14″, 5. iv.2015,ex:*Triticum sativum*(Graminae), (M. Rouzbahani); Gheshlagh Shirazi, 1739 m, N= 34˚ 23′09″, E= 48˚ 56′ 14″, 20. iv.2015,ex: *Avena fatua* (Graminae), (M. Rouzbahani); Pir khodaverdi,1728 m, N= 34˚ 18′ 43″, E= 48˚ 55′ 16″, 4.iiv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Younes, 1730m, N= 34˚ 11′ 13″, E= 48˚ 66′16″, 17.iiv.2015, ex: *T.sp.* (Leguminosae), (M. Rouzbahani); Marvil,1760m, N= 34˚ 20′10″, E= 56˚12′ 59″, 5.iiiv.2015, ex: *Phasaeolous Vulgaris* (Leguminosae), (M. Rouzbahani).

D i s t r i b u t i o n : Holarctic (Linnavuori, 2009), Europe, North Africa and Asia (Aukema & Rieger, 1999).

Deraeocoris pallens (Reuter, 1904)

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Goloshejerd, 1722 m, N= 34˚ 17′ 53″, E=48˚ 26′ 21″, 25.iiiv.2014, ex: *Medicago sativa* (Leguminosae), (M. Rouzbahani); Sharif Abad, 1716 m, N= 34˚ 04′ 43″, E= 48˚ 33′ 44″,27.iiiv.2014, ex: *Trifolium sp* (Leguminosae), (M. Rouzbahani); Zereshki, 1737 m, N= 34˚ 17′ 14″, E= 48˚ 77′23″, 30.ix.2014, ex: *Avena fatua* (Graminae), (M. Rouzbahani); Pirsavaran, 1739 m, N= 34˚ 13′ 20″, E= 48˚ 32′ 49″,5.iv.15, ex: *Trictium sativum* (Graminae), (M. Rouzbahani); Zarbe Ali, 1734 m, N= 34˚ 13′ 23″, E=48˚36′ 39″,

6.iv.2015. ex: *Pisum sativum* (Leguminosae), (M. Rouzbahani); Amiral Omara,1728 m, N= 34˚ 14′ 20″, E= 48˚ 61′ 49″, 6.iv.2015. ex: *Vicia sativa*. (Fabaceae), (M. Rouzbahani); Marvil, 1759 m, N= 34˚ 18′ 03″, E= 56˚ 13′ 13″, 8.iv.2015. ex: *T.sativum*(Graminae), (M. Rouzbahani); Shirin Abad, 1698 m, N= 34˚ 20′ 16″, E= 48˚ 44′59″, 9.iv.2015, ex: *T.sativum* (Graminae), (M. Rouzbahani); Ghajarab Sofla, 1736m, N= 35˚ 07′ 39″, E= 48˚ 32′ 23″, 16.ix.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Goldareh, 1723 m, N= 34˚ 29′ 27″, E= 48˚ 56′ 04″, 25.iv.2015, ex: *Hordeum vulgare* (Graminae), (M. Rouzbahani); Pirkhoda Verdi, 1727m, N= 34˚ 15′ 45″, E= 48˚ 50′18″, 25.iv.2015, ex: *T.sativum* (Graminae), (M. Rouzbahani); Younes, 1731 m, N= 34˚12′ 55″, E= 48˚ 60′ 46″,25.iv.2015, ex: *H. vulgare* (Graminae), (M. Rouzbahani); Mangavi, 1741 m, N= 34˚ 69′ 30″, E= 48˚ 57′ 20″, 30.iv.2015, ex: *T.sativum* (Graminae), (M. Rouzbahani); Karkan, 1770 m, N= 34˚ 20′ 31″, E= 48˚41′56″, 1.iiv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Tocheghaz, 1751 m, N= 34˚ 19′25″, E= 48˚ 45′ 48″, 3.iiv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Afsarieh, 1695 m, N= 34˚ 29′ 11″, E= 48˚ 27′ 19″, 3.iiv.2015, ex: *Trifolium sp.* Leguminosae), (M. Rouzbahani); Haram Abad, 1718 m, N= 34˚ 17′ 13″, E= 48˚ 10′ 20″,10.iiv.2015, ex: *T.* sp. (Leguminosae), (M. Rouzbahani); Khan Abad, 1742 m, N= 34˚ 22′ 33″, E= 47˚ 27′13″, 31.x.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Nanaj, 1712m, N= 34˚ 17′ 16″, E= 46 31′ 48″, 11.iiv.2015, ex: *A.fatua* (Graminae), (M. Rouzbahani); Zaman Abad, 1757m, N= 34˚ 39′ 43″, E= 48˚ 26′ 16″, 15.iiv.2015, ex: *Vitis vinifera* (Vitacceae), (M. Rouzbahani); Kamazan, 1762 m, N= 34˚ 24′ 58″, E= 46˚ 18′07″,15.iiv.2015. ex: *Pirus malus* (Rosaceae), (M. Rouzbahani); Yangi Kand, 1747 m, N= 34˚ 63′ 60″, E= 48˚ 74′52″, 19.iiv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Azandariyan, 1718 m, N= 34˚ 25′ 23″, E= 48˚ 44′ 10″, 19.iiv.2015, ex:*Juglans sp.(*Juglandaceae), (M. Rouzbahani) ;Ghajarab Olia, 1737 m,N = 34˚ 22′ 04″,E= 48˚ 55′ 60″, 22.iiv.2015, ex:*A. fatua* (Graminae), (M. Rouzbahani); Mahmod Abad, 1736 m,N= 34˚ 19′ 23″, E= 49˚ 02′ 16″, 22. iiv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Varchagh, 1738 m, N= 34˚ 16′ 51″, E= 48˚ 14′ 08″,30.iiv.2015, ex: *T.* sp. (Leguminosae), (M. Rouzbahani); Namileh, 1723 m, N= 34˚ 16′ 04″, E= 48˚ 31′ 50″, 30.iiv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Eznav, 1719 m, N= 34˚ 14′ 51″, E= 48˚50′ 22″,5.iiiv.2015, ex:*V.vinifera* (Vitaceae), (M. Rouzbahani); Sang Sefid,

1710 m, N= 34˚ 29′55″, E= 48˚ 29′ 26″, 5.iiiv.2015, ex: *T.* sp. (Leguminosae), (M. Rouzbahani); Nazol,1752m, N= 34˚ 11′ 23″, E= 48˚ 25′16″, 8. iiiv.2015, ex: *P.malus* (Rosaceae), (M. Rouzbahani).

D i s t r i b u t i o n : Italy, Afghanistan, Turkey (Asian part), Iran, Iraq, Israel and Syria, saudi Arabia and Yaman (Aukema & Rieger 1999).

Collected plant feeders

Subfamily: M i r i n a e

Trigonotylus pulchellus (Hahn,A 1834)

M a t e r i a l e x a m i n e d : Iran, Hamedan , Malayer: Tocheghaz, 1751 m, N= 34˚ 19′20″, E= 48˚ 43′ 49″, 20.iiv.2015, ex: *Trifolium sp.* (Leguminosae), (M. Rouzbahani); Karkan, 1769m, N= 34˚ 21′ 23″, E= 48˚ 45′ 16″, 8.

iv.2015,ex:*Triticum sativum* (Graminae), (M. Rouzbahani).

D i s t r i b u t i o n : West-Palaearctic (Linnavuori, 2007), Europe, Asia and North Africa (Kerzhner & Josifov, 1999).

Trigonotylus ruficornis (Geoffroy, 1785)

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Mangavi, 1740 m, N= 34˚ 79′20″, E= 48˚58′ 49″, 18.iiv.2015,ex: *Triticum sativum* (Graminae), (M. Rouzbahani).

D i s t r i b u t i o n: Europe, Turkey (Asian part), Cyprus, Iran, Ibrael and Syria (Kerzhner & Josifov, 1999).

Lygus gemellatus (Herrich-Schaeffer, 1835)

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Zerashki, 1738 m, N= 34˚ 14′ 53″, E=48˚ 74′ 21″, 22.iiiv.2014, ex: *Medicago sativa* (Leguminosae), (M. Rouzbahani); Zarbe Ali, 1734m, N= 34˚ 14′ 43″, E= 48˚ 33′ 44″, 25. iv.2015, ex: *Trifolium* sp. (Leguminosae), (M. Rouzbahani); Marvil, 1761m, N= 34˚ 25′ 06″, E= 48˚ 56′ 09″, 5.iiiv. 2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Eznav, 1718 m, N=34˚ 15′ 18″, E= 48˚55′ 26″, 6.iv.2015, ex: *Avena fatua* (Graminae), (M. Rouzbahani); Namileh, 1722 m, N= 34˚ 15′ 14″, E= 47˚ 30′ 33″, 7.iv.2015, ex: *A. fatua* (Graminae), (M. Rouzbahani); Yangi Kand, 1748 m, N= 34˚ 68′ 31″, E= 48˚ 76′ 07″,20.iv.2015, ex: *Solanum tuberosum* (Solanaceae), (M. Rouzbahani); Jokar, 1713 m, N= 34˚ 44′39″, E= 48˚ 69′ 29″, 26.ix.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Tocheghaz, 1750 m, N= 34˚ 19′ 21″, E= 48˚ 44′ 36″, 22.iv.2015, ex: *A. fatua* (Graminae), (M. Rouzbahani); Hosien Abad, 1763 m, N= 34˚16′ 31″, E= 48˚ 25′ 07″, 25.iv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Khan Abad, 1742m, N= 34˚ 25′ 54″, E= 48˚ 52′ 40″, 25.iv.2015, ex: *Hordeum vulgare* (Graminae), (M. Rouzbahani); Ghajarab Olia, 1737m, N= 34˚ 25′ 50″, E= 48˚ 55′ 00″, 30.iv.2015,ex: *T.* sp. (Leguminosae), (M. Rouzbahani);Ghajarab Sofla, 1736m, N= 34˚ 27′ 07″, E= 48˚ 54′41″, 30.iv.2015, ex: *T.* sp. (Leguminosae), (M. Rouzbahani); Shirin Abad, 1698m, N= 34˚ 27′ 11″, E= 48˚ 45′ 10, 1.iiv.2015, ex: *Zea mays* (Poaceae), (M. Rouzbahani); Pir khodaverdi, 1727 m, N= 34˚ 16′ 09, E= 48˚ 51′ 18″, 3.iiv.2015, ex: *M. sativa*, (Leguminosae), (M. Rouzbahani); Karkan, 1770m, N= 34˚ 23′ 30″, E= 48˚ 59′ 10″, 3.iiv.2015,ex: *Phasaeolous vulgaris* (Leguminosae), (M. Rouzbahani);Mahmod Abad,1736m, N= 34˚ 13′ 30″, E= 49˚ 04′20″,10.iiv.2015,ex:*Cynodon dactylon* (Graminae), (M. Rouzbahani); Varchagh, 1739m, N= 34˚ 17′01″, E= 49˚ 13′19″, 15.iiiv.2015,ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Kahriz, 1750m, N= 34˚ 16′01″, E= 49˚ 00′ 19″, 20. iiv.2015, ex: *T.* sp. (Leguminosae), (M. Rouzbahani); Sharif Abad, 1715.2m, N= 35˚ 31′ 55″, E= 46˚ 35′ 26″, 20.iiv.2015, *M. sativa* (Leguminosae), (M. Rouzbahani); Ghozan, 1717m, N= 34˚48′ 15″, E= 35˚ 30′ 26″, 25.iiv.2015,ex: *S. tuberosum* (Solanaceae), (M. Rouzbahani).

D i s t r i b u t i o n : Holopalaearctic (Linnavuori, 2007), Europe, Asia, North Africa, North India, Nepal, Pakistan (Aukema & Rieger, 1999).

***Lygus rugulipennis*(Poppius, 1911)**

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Kartil Abad, 1751 m, N=34˚ 18′ 06″, E= 48˚ 38′ 59″, 25.iiiv.2014, ex: *Medicago sativa* (Leguminosae), (M. Rouzbahani); Dasht Abad, 1743m, N= 34˚ 46′ 47″, E= 48˚ 22′ 36″,27.iiv.2014,ex: *Triflium.* sp. (Leguminosae), (M. Rouzbahani); Kheradmand, 1778m, N= 34˚52′ 15″, E= 48˚ 30′ 20″, 30.iiiv.2014, *M. sativa* (Leguminosae), (M. Rouzbahani); Ghajarab Sofla, 1735m, N=35˚ 08′ 19″, E= 48˚ 22′ 03″, 30.iiiv.2014, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Nazol, 1750m, N= 34˚ 15′ 24″, E= 48˚ 35′06″, 31.iiiv.2014, ex: *Pirus malus* (Rosaceae), (M. Rouzbahani); Haram Abad, 1719 m, N= 34˚ 07′ 10″, E= 48˚ 32′ 10″, 5.ix.2014, ex: *Triflium* sp. (Leguminosae), (M. Rouzbahani); Sang Sefid,1711m, N= 34˚ 21′ 17″, E= 48˚ 24′ 23″, 8.iv.2015, ex: *Triticum sativum* (Graminae), (M. Rouzbahani); Zaman Abad, 1756m, N= 34˚ 19′ 03″, E= 48˚ 20′ 10″, 9. iv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Zarbe Ali, 1735 m, N= 34˚ 03′ 07″, E=48˚30′ 09″, 9.iv.2015. ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Karim Abad, 1746m, N= 34˚ 36′ 17″, E= 48˚ 53′ 23″, 10.iv.2015, ex: *T.sativum* (Graminae), (M. Rouzbahani); Rezvankadeh, 1720 m, N= 34˚ 20′ 05″, E= 47˚ 40′10″, 17.iv.2015, ex: *T.* sp. (Leguminosae), (M. Rouzbahani); Karkan,1770m, N= 34˚ 11′00″, E= 48 45′ 03″, 19. iv.2015,ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Amiral Omara,1728 m, N= 34˚ 20′ 00″, E= 48˚ 51′ 09″, 25.iv.2015. ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Manyzan, 1729m, N = 34˚ 14′ 07″, E= 48˚ 37′ 03″, 31.iv.2015, ex:*Vitis vinifera* (Vitaceae), (M. Rouzbahani); Tasbandi, 1756m, N= 34˚ 37′ 17″, E= 47˚ 30′ 03″, 31.iv.2015, ex: *Solanum tuberosum* (Solanaceae), (M. Rouzbahani); Khan Abad, 1743m, N= 34˚ 26′ 17″, E= 48˚ 53′ 23″, 10.iv.2015, ex: *T.sativum* (Graminae), (M. Rouzbahani); Shirin Abad, 1698m, N= 34˚ 26′ 11″, E= 48˚ 43′ 20″, 10.iiv.2015, ex*: T.sativum* (Graminae*),* (M. Rouzbahani); Marvil,1759m, N= 34˚ 22′ 10″, E= 56˚ 54′ 13″, 12.iiv.2015, ex: *M.sativa* (Leguminosae), (M. Rouzbahani)*;* Namileh,1722m, N= 34˚ 15′ 11″, E=47˚ 34′ 18″, 15.iiv.2015, ex: *Vicia sativa*. (Fabaceae)*,* (M. Rouzbahani); Tocheghaz, 1750m, N= 34˚ 16′ 17″, E= 48˚ 43′ 23″,20.iiv.2015, ex: *M.sativa* (Leguminosae)*,* (M. Rouzbahani); Abasieh, 1725m, N= 34˚ 21′ 17″, E= 48˚ 11′ 20″, 20.iiv.2015, ex:*Avena fatua* (Graminae), (M. Rouzbahani); Kamazan ,1762 m, N= 34˚ 21′ 17″, E= 48˚ 14′ 23″, 25.iiv.2015, ex: *T.* sp. (Leguminosae), (M. Rouzbahani); Eznav, 1719m, N= 34˚ 21′ 07″, E= 48˚ 52′ 13″, 30.iiv.2015, ex: *P.malus* (Rosaceae), (M. Rouzbahani).

D i s t r i b u t i o n: Holopalaearctic (Linnavuori, 2007), Europe, Asia, North America (Aukema & Rieger, 1999).

***Lygus pratensis* (Linnaeus, 1758)**

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Yangi Kand, 1748 m, N= 34˚ 65′03″, E= 48˚ 73′ 44″, 25.iiiv.2014, ex: *Medicago sativa* (Leguminosae), (M. Rouzbahani); Sharif Abad, 1715m, N= 34˚ 35′03″, E= 46˚ 33′ 04″, 27.iiiv.2014,ex: *Triflium* sp. (Leguminosae), (M. Rouzbahani); Khan Abad, 1743m, N= 34˚ 25′03″, E= 48˚ 53′ 04″, 8.ix.2014,ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Younes, 1730 m, N= 34˚ 15′03″, E= 48˚ 63′ 04″, 5.iv.2015,ex: *T.* sp. (Leguminosae), (M. Rouzbahani); Pir Savaran, 1739m, N= 34˚ 12′13″, E= 48˚ 33′ 04″, 9.iv.2015,ex: *T.* sp. (Leguminosae), (M. Rouzbahani); Nazol, 1752m, N= 34˚ 14′13″, E= 48˚ 23′ 02″, 10.iv.2015,ex: *Vitis vinifera* (Vitaceae), (M. Rouzbahani); Varchagh, 1739m, N=34˚ 17′03″, E= 48˚13′ 02″, 12.iv.2015,ex: *Avena fatua* (Graminae), (M. Rouzbahani); Nanaj, 1712m, N= 34˚ 16′10″, E= 46˚ 32′ 04″, 15.iiv.2015,ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Jokar, 1716m, N= 34˚ 44′13″, E= 48˚63′ 00″, 20.iiv.2015,ex: *Phasaeolous vulgaris* (Leguminosae), (M. Rouzbahani); Mangavi, 1740m, N= 34˚ 74′13″, E= 48˚ 53′ 02″,22.iiv.2015,ex: *A.fatua* (Graminae), (M. Rouzbahani); Salar Abad, 1728m, N= 34˚ 25′13″, E= 48˚ 55′ 00″,25.iiv.2015,ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Shirin Abad ,1698m, N= 34˚ 22′03″, E= 48˚ 45′ 08″,15.iiiv.2015,ex: *Pisum sativum* (Leguminosae), (M. Rouzbahani); Namileh,1722m, N= 34˚ 16′14″, E= 47˚ 32′ 08″,17.iiiv.2015, ex: *T.* sp (Leguminosae), (M. Rouzbahani); Jorab,1724m, N= 34˚ 18′12″, E= 48˚22′ 08″, 19.iiiv.2015, ex: *Echinochloa*.

Crusgalli (Graminae),(M. Rouzbahani); Ghozan,1717m, N= 34˚ 18′15″, E= 48˚44′18″, 25.iiiv.2015, ex: *V.vinifera* (Vitaceae), (M. Rouzbahani); Tocheghaz, 1749m, N= 34˚ 48′02″, E= 48˚44′ 08″, 22.iiiv.2015,ex: *M. sativa* (Leguminosae), (M. Rouzbahani).

D i s t r i b u t i o n : Holopalaearctic (Linnavuori, 2007), Europe, Asia, North Africa, India (Aukema & Rieger, 1999).

Polymerus vulneratus (Panzer, 1805)

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Jokar, 1713 m, N= 34˚ 45′18″, E= 48˚ 61′ 26″, 25.iiiv.2014, ex: *Medicago*. *sativa* (Leguminosae), (M. Rouzbahani); Mangavi, 1741m, N= 34˚ 77′ 23″, E= 48˚ 58′ 16″, 28.iiiv.2014, ex: *Trifolium sp.* (Leguminosae), (M. Rouzbahani); Kamazan, 1762m, N= 34˚27′ 20″, E= 46˚ 18′ 10″, 8.ix.2014, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Tocheghaz,1749m, N= 34˚17′ 00″, E= 48˚ 44′ 10″, 5.iv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Namileh,1723m, N= 34˚15′ 09″, E= 47˚ 34′ 15″, 9.iv.2015, ex: *T. sp.* (Leguminosae), (M. Rouzbahani); Marvil,1759m, N= 34˚22′ 10″, E= 48˚ 14′ 00″, 10.iiv.2015, ex: *Vitis vinifera* (Vitaceae), (M. Rouzbahani); Sharif Abad, 1715m, N= 34˚39′ 17″, E= 46˚ 34′ 10″, 12.iiv.2015, ex: *Avena fatua* (Graminae), (M. Rouzbahani); Yangi Kand,1747m, N = 34˚65′ 17″, E = 48˚ 74′ 22″, 15.iiv.2015, ex: *Solanum tubercum* (Solanaceae), (M. Rouzbahani); Ghajarab Olia, 1737m, N= 34˚65′ 07″, E= 48˚ 54′ 20″, 20.iiv.2015, ex: *Cucumis sativus* (Cucurbitaceae), (M. Rouzbahani).

D i s t r i b u t i o n : Holopalaearctic (Linnavuori, 2007), Europe, Asia, North Africa and North America (Aukema & Rieger, 1999).

Adelphocoris lineolatus (Goeze, 1778)

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Hosien Abad, 1763 m, N= 34˚ 15′28″, E= 48˚ 23′ 05″, 25.iiiv.2014, ex: *Medicago sativa* (Leguminosae), (M. Rouzbahani) ; Dasht Abad,1743m, N= 34˚ 45′20″, E= 48˚ 23′ 05″, 27.iiiv.2014, ex: *Triflium* sp. (Leguminosae), (M. Rouzbahani); Total,1776m, N= 34˚ 52′00″, E= 48˚ 33′ 03″, 5. iv.2015,ex: *Triticum aestivum* (Graminae), (M. Rouzbahani); Tajar Alavi, 1744m, N= 34˚ 49′30″, E= 48˚ 31′ 03″, 5. iv.2015, ex:*T. aestivum* (Graminae), (M. Rouzbahani); Namileh, 1723m, N= 34˚ 19′15″, E= 47˚ 31′ 03″, 6. iv.2015, ex: *Saliva officinalis* (Labiatae), (M. Rouzbahani); Avarzaman, 1765m, N= 34˚ 16′05″, E= 48˚ 30′ 06″, 6. iv.2015,ex: *T. aestivum* (Graminae), (M. Rouzbahani); Kartil Abad, 1751m, N= 34˚ 20′15″, E= 48˚ 37′ 03″, 8. iv.2015,ex: *T. aestivum* (Graminae), (M. Rouzbahani); Shoshab,1697m, N= 34˚ 21′05″, E= 48˚ 37′ 17″, 9. iv.2015,ex: *T. aestivum* (Graminae), (M. Rouzbahani); Tocheghaz, 1749m, N= 34˚ 16′05″, E= 48˚ 44′ 07″, 15. iv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Babolghani, 1726m, N= 34˚ 14′25″, E= 48˚ 30′ 12″, 15. iv.2015, ex: *Vitis vinifera* (Vitaceae), (M. Rouzbahani); Eskanan, 1698m, N= 34˚ 21′20″, E= 48˚ 39′ 02″, 25. iv.2015,ex: *T. aestivum* (Graminae), (M. Rouzbahani); Afsarieh, 1695m, N= 34˚ 28′35″, E= 48 29′ 17″, 25. iv.2015,ex: *Hordeum vulgare* (Graminae), (M. Rouzbahani); Kahriz, 1755m, N= 34˚ 18′05″, E= 48 09′ 07″, 30. iv.2015, ex: *T. aestivum* (Graminae), (M. Rouzbahani); Sharif Abad,1715m, N= 34˚ 38′05″, E= 48 33′ 00″, 1. iiv.2015, ex: *M.sativa* (Leguminosae), (M. Rouzbahani); Mahmod Abad, 1736m, N= 34˚ 18′29″, E= 48 03′ 00″, 3. iiv.2015, ex: *M.sativ* (Leguminosae), (M. Rouzbahani); Varchagh,1739m, N= 34˚ 15′09″, E= 48 13′ 38″, 3. iiv.2015, ex: *T.sp. a* (Leguminosae), (M. Rouzbahani); Marvil, 1760m, N= 34˚ 22′29″, E= 48 13′ 10″, 10. iiv.2015, ex: *Dacus carota* (Umbeliferae), (M. Rouzbahani); Abasieh, 1725m, N= 34˚ 23′00″, E= 48 12′ 19″, 11. iiv.2015, ex: *M.sativa* (Leguminosae), (M. Rouzbahani); Kamazan, 1762m, N= 34˚ 25′20″, E= 48 17′ 12″, 15. iiv.2015, ex: *V. vinifera* (Vitaceae), (M. Rouzbahani); Tasbandi, 1756m, N = 34˚ 35′17″, E= 47 32′ 03″, 20. iiv.2015, ex: *M.sativa* (Leguminosae), (M. Rouzbahani); Karkan, 1770m, N= 34˚ 21′07″, E= 48 42′ 13″, 25. iiv.2015, ex:*Juglans sp.*(Juglandaceae), (M. Rouzbahani). D i s t r i b u t i o n : Holopalaearctic species (Linnavuori, 2007), Europe and Asia including Pakistan and Kashmir, North Africa (Algeria & Tunisia) and North America (Kerzhner& Josifov, 1999).

Adelphocoris bimaculicollis (Lindberg, 1948)

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Hosien Abad, 1763 m, N = 34˚ 16′15″, E = 48˚ 25′ 11″, 25.iiiv.2014, ex: *Medicago sativa* (Leguminosae), (M. Rouzbahani); Yangi Kand,1748m, N= 34˚ 65′20″, E= 48˚ 7314″, 24.iiiv.2014, ex: *Triflium* sp. (Leguminosae), (M. Rouzbahani); Total,1775m, N= 34˚ 54′02″, E= 48˚ 35′ 13″, 5. iv.2015, ex:*Triticum aestivum* (Graminae), (M. Rouzbahani); Tajar Alavi, 1744m, N= 34˚ 47′04″, E= 48˚ 35′ 10″, 5. iv.2015, ex: *Hordeum vulgare* (Graminae), (M. Rouzbahani); Afsarieh,1693m, N= 34˚ 29′19″, E= 48 27′ 10″, 6. iiv.2015,ex:*Glycyrrhiza glbra* (Leguminosae), (M. Rouzbahani); Kamazan, 1761m, N= 34˚ 24′14″, E= 48 18′ 18″, 10. iiv.2015,ex: *V. vinifera* (Vitaceae), (M. Rouzbahani); Abasieh, 1725m, N = 34˚ 21′18″, E = 48 10′ 20″, 18. iiv.2015,ex*: Vitis vinifera* (Vitaceae), (M. Rouzbahani); Varchagh,1738m, N = 34˚ 19′14″, E = 48 14′ 08″, 30. iiv.2015,ex: *M. sativa* (Leguminosae), (M. Rouzbahani).

D i s t r i b u t i o n : Turkey (An endemic species is known from Anatolia), (Kıyak and Akar 2010).

Agnocoris reclairei (Wagner, 1949)

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Manyzan, 1729 m, N = 34˚ 14′25″, E= 48˚ 39′ 07″, 15. iiv.2015, ex: *V. vinifera* (Vitaceae), (M. Rouzbahani).

D i s t r i b u t i o n : Holopalaearctic (Linnavuori, 2007), Europe and Asia (Gorczyca & Wolskizolla, 2011).

Subfamily: P h y l i n a e

Amblytylus concolor (Jakovlev, 1877)

M a t e r i a l e x a m i n e d : Iran, Hamedan, Malayer: Mangavi, 1741 m, N = 34˚ 72′15″, E = 48˚ 56′ 19″, 23.iiiv.2014, ex: *Medicago sativa* (Leguminosae), (M. Rouzbahani); Yangi Kand, 1748 m, N= 34˚65′ 21″, E = 48˚ 72′ 01″, 30. iiiv. 2014, ex: *Triflium* sp. (Leguminosae), (M. Rouzbahani); Khan Abad, 1743m, N= 34˚ 28′08″, E= 48˚ 57′ 10″,15.ix.2014,ex: *Vitis vinifera* (Vitaceae), (M. Rouzbahani); Tajar Alavi,1745m, N= 34˚ 49′19″, E= 48˚ 31′ 11″, 23. ix.2014,ex: *Pirus malus* (Rosaceae), (M. Rouzbahani); Afsarieh, 1693m, N = 34˚ 27′29″, E = 48 25′ 00″, 25.

x.2014,ex: *Avena fatua* (Graminae), (M. Rouzbahani); Kamazan,1761m, N= 34˚ 21′24″, E= 48 15′ 15″,30.x.2014, ex: *V. vinifera* (Vitaceae), (M. Rouzbahani); Anjireh, 1739m, N= 34˚ 27′29″, E= 48 25′ 00″, 25. x.2014,ex: *Avena fatua* (Graminae), (M. Rouzbahani); Varchagh, 1738 m, N= 34˚ 15′12″, E= 48˚ 15′ 04″,5.iv.2015, ex: *Hordeum vulgare* (Graminae), (M. Rouzbahani); Pir khodaverdi, 1727 m, N= 34˚ 19′03″, E = 48˚ 54′ 06″, 6. iv.2015, ex: *Triticum aestivum* (Graminae), (M. Rouzbahani); Mahmod Abad ,1736m, N = 34˚ 19′17″, E= 48˚ 04′13″,16.iv.2015, ex*: T. aestivum* (Graminae), (M. Rouzbahani); Tasbandi, 1756m, N= 34˚ 36′07″, E= 4830′ 00″, 18. iv.2015, ex: *H. vulgare* (Graminae), (M. Rouzbahani); Shoshab, 1697m, N= 34˚ 22′05″, E= 48 37′ 10″, 18. iv.2015,ex*: T. aestivum* (Graminae), (M. Rouzbahani); Tocheghaz, 1749m, N= 34˚18′ 16″, E= 48˚ 42′ 12″, 10.iiv.2015, ex: *M. sativa* (Leguminosae), (M. Rouzbahani); Babolghani, 1726m, N= 34˚ 14′10″, E= 48˚ 32′30″, 23. iiv.2015, ex: *T.aestivum* (Graminae), (M. Rouzbahani); Bahareh, 1644m, N= 34˚ 1815″, E= 48˚ 30′11″, 24. iiv.2015, ex: *T.aestivum* (Graminae), (M. Rouzbahani); Manyzan, 1729 m, N= 34˚ 14′10″, E= 48˚ 39′ 07″, 25. iiv.2015, ex: *V. vinifera* (Vitaceae), (M. Rouzbahani); Zereshki, 1737 m, N= 34˚ 17′ 24″, E= 48˚ 75′ 03″,6.iiiv.2015,ex: *Pirus malus* (Rosaceae), (M. Rouzbahani); Eznav, 1718 m, N=34˚ 19′ 09″, E= 48˚51′ 15″, 8.iiv.2015, ex: *Juglans sp*.(Juglandaceae), (M. Rouzbahani); Younes,1730 m, N= 34˚ 11′11″, E= 48˚ 65′ 06″, 10.iiiv.2015,ex: *V. vinifera* (Vitaceae), (M. Rouzbahani); Jokar, 1716 m, N= 34˚ 41′11″, E= 48˚ 65′ 07″, 15.iiiv.2015, ex: *P.malus* (Rosaceae), (M. Rouzbahani) .

D i s t r i b u t i o n : widely distributed species in Mediterranean regions central Europe and central Asia (Matocq & Pluot- Sigwalt, 2012).

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بررسی فون خانواده Miridae در ملایر (استان همدان، ایران)

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چکیده

در شهرستان ملایر از استان همدان برای اولین‌بار فون سن‌های خانواده Miridae از راسته ناجوربالان مورد بررسی قرار گرفت. در مجموع ۱۳ گونه گیاهی متعلق به ۷ جنس از زیرخانواده Mirinae, Deraeocorinae و Phylinae ازمیزبان‌های مختلف گیاهی جمع‌آوری وشناسایی گردید. درمیان نمونه‌های جمع‌آوری شده ۳ گونه شکارگر و ۱۰ گونه گیاه‌خوار بودند، درمیان آن‌ها ۷ گونه *Deraeocoris serenus ,Trigonotylus pulchellus ,Trigonotylus ruficornis Polymerus vulneratus, Adelphocoris bimaculicollis, Agnocoris reclairei, Amblytylus concolor* برای اولین‌بار از استان همدان گزارش شد.

واژه‌های کلیدی: Miridae، فون، ملایر، همدان، ایران

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