

CIMICOMORPHA AND PENTATOMOMORPHA (HETEROPTERA) OF ALFALFA FROM MASHHAD AND VICINITY, NE IRAN

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ABSTRACT: The representatives of the insect order Heteroptera are active as pests or natural enemies on deferent agricultural crops. During 2006-2007, several sampling projects were conducted to identify active true bugs on Alfalfa in Mashhad and its environs (northeast Iran, Khorasan-Razavi province). In total, 34 species belonging to 24 genera and 8 families were identified. Among them *Orius niger* Wolff, 1804 (Anthocoridae) was the predominant species for Alfalfa fields in the studied area. In additional to the faunistic survey, distribution of all the species is reviewed.

KEY WORDS: Alfalfa, True Bugs, Heteroptera, Distribution, Predominant Species, Mashhad, Iran

Khorasan with an area of 315,686 km² is the largest region in Iran, located in its North East, and divided recently into three provinces: North Khorasan, Khorasan Razavi and South Khorasan. Khorasan Razavi Province (150,000 km²) is situated between North and South Khorasan, also surrounded by Semnan and Yazd in the west, and Turkmenistan and Afghanistan in the east. From a climatic viewpoint, this province is placed in the Northern temperate zone. Mashhad County (ca. 992–1184 m above sea level) is as a center for this province.

Heteroptera fauna of Khorasan was so far studied and published by Modarres Awal (1993, 2008) and Linnavuori & Modarres Awal (1998, 1999a,b) in different regions and several hosts plants, but the reasearch was not focused on particular crops so far. The present research is thus focused on Alfalfa to determine species of pests and predatory bugs and their dominance in Mashhad County.

MATERIAL AND METHOD

The sampling of the material was performed by sweeping of the plants by insect net and the collected bugs were taken directly by forceps. Specimens were collected at 10 different localities: Esmailabad, Bozmarghi, Chenaran, Soran, Shabani, Shirhesar, Kazemabad, Golmakan, Fields of Astane Ghods and Agriculture field of Ferdowsi Unversity. For identifying the material the following papers by Anufriev et al. (1988), Pericart (1972, 1998), Kment & Jindra (2008), Safavi (1979) and Borrer (1989) were used. The distributional of data are based on papers by Aukema & Rieger (2006), Study Khorasan fauna (Awal (1993, 1998, 2008), Linnavuori (2007a,b,c, 2008), Linnavouri & Awal (1998, 1999a,b), Hoberlandt (1954, 1984, 1995), China & Miller (1959), Erfanfar & Ostovan, (2002), Pour-Abad (2000) and Ghahari et al. (2009), as well as the insect

collection of Agriculture College of the Ferdowsi University and material collected by the first author. All examined materials are preserved in the insect collection of Ferdowsi University.

RESULTS

In total, 34 species of 24 genera representing 8 families (i.e., Alydidae, Anthocoridae, Berytidae, Lygaeidae, Nabidae, Miridae, Pentatomidae, Rhopalidae) were collected from Mashhad and its vicinity. List of the species is given below.

SUBORDER CIMICOMORPHA

Anthocoridae Amyot and Serville, 1843

Anthocorinae Fieber, 1836

Anthocoris pilosus Jakovlev, 1877

Material examined: Bozmarghi, 3 spec., 25.VII.2006; Shirhesar, 2 spec., 12.IX.2007. **Distribution in Khorasan:** Anbaran of Mashhad, Kharg of Qouchan, Nodeh of Bojnord. **Distribution in Iran:** East Azarbaijan, Fars. **Range:** Widespread in Europe and Palaearctic Asia.

Orius niger Wolff, 1804

Material examined: Esmailabad, many spec., 12.VII.2006 & 18.V.2007; Soran, many spec., 14.VI.2006 & 15.VI.2007; Kazemabad, 8 spec., 13.VII.2007; Bozmarghi, many spec., 20.VII.2006 & 27.VI.2007; Shabani, many spec., 11.V.2007; Field of Astane Ghods, many spec., 17.IX.2007; Golmakan, many spec., 23.VI.2006 & 27.V.2007; Field of Agriculture college, many spec., 12.IX.2007; Shirhesar, many spec., 12.IX.2007; Chenaran, 4 spec., 14.VII.2006 & 1 spec., 27.V.2007. **Distribution in Khorasan:** Esfarayen, Shirvan, Ashkhaneh, Nodeh of Bujnord, Qouchan. **Distribution in Iran:** East Azarbaijan, Fars, Hamedan, Isfahan, Kermanshah, Kordestan, Markazi, Semnan, Tehran, West Azarbaijan. **Range:** Widespread in Europe (from Great Britain to Russia), North Africa (Algeria, Egypt, Libya, Morocco, Tunisia), and Palaearctic Asia (from Turkey to India and China).

Orius horvathi Reuter, 1884

Material examined from alfalfa fields Shirhesar, 7 spec., 12.IX.2007; Golmakan, 1 spec., 23.VI.2006 & 2 spec., 27.V.2007; Field of Agriculture College, 4 spec., 17.IX.2007; Shabani, 3 spec., 7.IX.2007; Bozmargi, 1 spec., 20.VII.2006 & 2 spec., 31.VIII.2007; Field of Astane Ghods, many spec., 16.IX.2007; Esmailabad, many spec., 18.V.2007; Soran, 6 spec., 13.IV.2007; Kazemabad, 2 spec., 13.VII.2007. **Distribution in Khorasan:** Kharg of Qouchan, Nodeh of Bojnord. **Distribution in Iran:** Fars, Kerman. **Range:** Widespread in Europe (from France to Russia), Morocco, and Palaearctic Asia (from Turkey to China).

Nabidae Reuter, 1890

Nabinae Reuter, 1890

Nabis palifer Seidenstücker, 1954

Material examined: Field of Astane Ghods, 3 spec., 17.IX.2007; Field of Agriculture College, 2 spec., 17.IX.2007; Soran, 4 spec. 15.VI.2006 & 3 spec., 15.VI.2007. **Distribution in Khorasan:** Anbaran of Mashhad, Daragaz, Dehshor, Kashmar, Kharg of Qouchan, Lake Bazangam of Sarakhs, Lotfabad of Mashhad, Parvand of Sabzevar, Sazevar, Tabas, Zamansoofi of Bojnord, Mashhad. **Distribution in Iran:** East Azarbaijan, Fars, West Azarbaijan. **Range:** From the Balkan Peninsula and the Middle East to China.

Nabis pseudoferus Remane, 1949

Material examined: Field of Astane Ghods, 1 spec., 17.IX.2007; Soran, 6 spec., 15.VI.2007; Bozmargi, 1 spec., 27.VII.2007; Shabani, 1 spec., 11.V.2007; Esmailabad, 1

spec., 20.IV.2007. **Distribution in Khorasan:** Golestan National Park of Bojnord, Golmakan and Torghabeh of Mashhad, Mashhad, Qouchan, Gadamgah of Nishabour. **Distribution in Iran:** East Azarbaijan. **Range:** European extending to Azerbaijan, Armenia, Turkey and Georgia.

Miridae Hahn, 1831

Mirinae Amyot and Serville, 1843

***Adelphocoris lineolatus* Goeze, 1778**

Material examined: Golmakan, 6 spec., 23.VI.2006 & 1 spec., 27.V.2007; Bozmargi, 14 spec., 20.VII.2006 & 8 spec., 7.IX.2007; Field of Astane Ghods, many spec., 17.IX.2007; Field of Agriculture College, many spec., 17.IX.2007; Soran, many spec., 15.VI.2007; Shabani, 3 spec., 11.V.2007; Esmailabad, many spec., 18.V.2007; Kazemabad, 2 spec., 13.VII.2007, Chenaran, many spec., 4.VII.2006. **Distribution in Khorasan:** Bojnord, Golestan Park & Nodeh of Bojnord, Daragaz, Feyzabad, Kashmar, Khalkanlod & Kharg of Qouchan, Lotabad, Lake Bazangan, Mashhad, Torogh of Mashhad, Sabzevar, Sarakhs, Tabas, Esfarayen, Ashkhaneh, Jajrom, Shirvan. **Distribution in Iran:** General distribution. **Range:** Holopalaearctic.

***Eurystylus bellevoeyi* Reuter, 1879**

Material examined: Golmakan, 1 spec., 27.V.2007; Field of Astane Ghods, many spec., 17.IX.2007; Field of Agriculture College, many spec., 17.VIII.2007; Shirhesar, 2 spec., 12.VIII.2007; Bozmargi, many spec., 7.IX.2007; Kazemabad, many spec., 13.VII.2007. **Distribution in Khorasan:** Canchiroc of Tabas, Feyzabad, Shandiz of Mashhad. **Distribution in Iran:** Gilan, Kerman, Zanjan. **Range:** Eremian with a wide range in the Holomediterranean and Sudanese subregions.

***Lygus gemellatus* Herrich-Schaeffer, 1835**

Material examined: Kazemabad, 2 spec., 13.VII.2007; Soran, 10 spec., 15.VI.2007; Chenaran, 8 spec., 4.VII.2006 & 7 spec., 27.V.2007. **Distribution in Khorasan:** Anbaran and Tous of Mashhad, Sarakhs, Mashhad, Fariman Bojnord. Golestan Park. Zaman Soofi & Nodeh, of Bojnord, Daragaz, Feyzabad, Kashmar, kalkan & khargh of Qouchan, Lake Bazangan of Sarakhs, Lotfabad, Sabzevar-Near Parand, Tabas, Zoshk of Shandiz. **Distribution in Iran:** Ardabil, East Azarbaijan, Gilan, Golestan, Mazandaran, Tehran. **Range:** Holopalaearctic.

***Lygus pratensis* Linnaeus, 1758**

Material examined: Golmakan, many spec., 27.V.2007; Field of Astane Ghods, 4 spec., 17.IX.2007; Field of Agriculture College, 3 spec., 17.VIII.2007; Bozmarghi, 2 spec., 7.IX.2007; Shabani, many spec., 11.V.2007; Esmailabad, 9 spec., 18.V.2007; Soran, many spec., 15.VI.2007. **Distribution in Khorasan:** Golestan Park of Bojnord, Fariman, Mashhad, Shirvan, Sarakhs, Torghabeh, Zoshk and Tous of Mashhad. **Distribution in Iran:** Generally distributed. **Range:** Holopalaearctic.

***Lygus rugulipennis* Poppius, 1911**

Material examined: Field of Astane Ghods, 1 spec., 17.IX.2007; Field of Agriculture College, 3 spec., 17.VIII.2007; Shirhesar, 1 spec., 12.IX.2007; Soran, many spec., 15.VI.2007; Chenaran, 2 spec., 27.V.2007; Kazemabad, 10 spec., 13.VII.2007; Esmailabad, 3 spec., 18.V.2007; Bozmargi, 1 ex, 20.VII.2006 & 1 spec., 7.IX.2007; Shabani, 2 spec., 11.V.2007. **Distribution in Khorasan:** Mashhad, Shirvan, Lake Bazangan, Khal Kanlod Lotfabad of Qouchan, Bojnord-Nodeh, Sarakhs, Zoshk of Shandiz. **Distribution in Iran:** Ardabil, East Azarbaijan, Hamedan, Golestan, Tehran, Zanjan. **Range:** Holopalaearctic.

***Polymerus cognatus* Fieber, 1858**

Material examined: Field of Astane Ghods, 1 spec., 17.IX.2007. **Distribution in Khorasan:** Nodeh of Bojnord, Sabzevar. **In Iran provinces:** Ardabil, Gilan, Golestan, Tehran, Zanjan. **Range:** Holopalaearctic.

***Polymerus vulneratus* Panzer, 1806**

Material examined: Field of Astane Ghods, 1 spec., 17.IX.2007; Field of Agriculture College, 2 spec., 17.VIII.2007; Chenaran, 8 spec., 4.VII.2006 & 6 spec., 27.V.2007; Esmailabad, many spec., 18.V.2007; Bozmargi, many spec., 7.IX.2007; Shabani, 8 spec., 11.V.2007; Soran, many spec., 14.VI.2006 & 15.VI.2007; Kazemabad, many spec., 13.VII.2007. **Distribution in Khorasan:** Daragaz, Lotfabad, Sarakhs, Bazangan of Mashhad. **Distribution in Iran:** Ardabil, East Azarbaijan, Gilan, Tehran, Zanjan. **Range:** Holopalaeartic.

***Stenodema turanicum* Reuter, 1904**

Material examined: Soran, 1 spec., 15.VI.2007. **Distribution in Khorasan:** Bojnord, Nodeh & Zamansoofi of Bojnord, Kharag of Qouchan, Zoshk near Shandiz, Tabas, Tous of Mashhad, Khangiran of Sarakhs. **Distribution in Iran:** Balouchestan, East Azarbaijan, Kerman, Markazi. **Range:** Bulgaria, Greece, Macedonia, South of Russia, Middle East including Iraq extending to central Asia, Mongolia and China.

Phylinae Douglas and Scott, 1865***Campylomma diversicornis* Reuter, 1878**

Material examined: Field of Astane Ghods, 1 spec., 17.IX.2007. **Distribution in Khorasan:** Tabas, Chirco & Dehshor of Tabas, Feyzabad, Lotfabad, Sabzevar, Paevand of Sabzevar, Sarakhs. **Distribution in Iran:** Widespread. **Range:** Bulgaria, Greece, Middle East, including Iraq, Israel, Saudi Arabia, extending to central Asia, China and Pakistan.

***Campylomma verbasci* Meyer-Dür, 1843**

Material examined: Field of Astane Ghods, 4 spec., 17.IX.2007; Chenaran, 8 spec., 27.V.2007; Shabani, 5 spec., 11.V.2007; Esmailabad, 8 spec., 12.VII.2006 & 5 spec., 18.V.2007; Bozmarghi, 3 spec., 7.IX.2007; Shirhesar, 2 spec., 12.IX.2007; Golmakan, 7 spec., 27.V.2007. **Distribution in Khorasan:** Bojnord, Zaman Soofi, Nodeh & Zard of Bojnurd, Khalkanlod of Qouchan, Feyzabad, Tabas. **Distribution in Iran:** Ardabil, Gilan, Khuzestan, Tehran, Zanjan, West Azarbaijan. **Range:** Holoartic.

Deraeocorinae Douglas and Scott, 1865***Deraeocoris punctulatus* Fallen, 1807**

Material examined: Field of Astane Ghods, many spec., 17.IX.2007; Shirhesar, 3 spec., 12.IX.2007; Kazemabad, 2 spec., 13.VII.2007; Field of Agriculture Collage, 1 spec., 17.VIII.2007; Shabani, many spec., 11.V.2007; Chenaran, many spec., 27.V.2007; Soran, many spec., 15.VI.2007. **Distribution in Khorasan:** Nodeh of Bojnord, Daragaz, Tabas, Dehshor of Tabas, Feyzabad, Khalkanlod of Qouchan, Zaman Soofi, Sazevar, Hesar and Torogh of Mashhad. **Distribution in Iran:** Ardabil, Gilan, Fars, Isfahan, Tehran, Zanjan. **Range:** Euro-Siberian.

***Deraeocoris serenus* Douglas-Scott, 1868**

Material examined: Field of Astane Ghods, 2 spec., 17.IX.2007; Soran, 3 spec., 15.VI.2007; Esmailabad, 1 spec., 18.V.2007; Chenaran, 1 spec., 27.V.2007; Shabani, 2 spec., 11.V.2007; Kazemabad, many spec., 13.VII.2007. **Distribution in Khorasan:** Bojnord, Nodeh of Bojnord, Daragaz, Kashmar, Khalkanlood & Kharag of Qouchan, Lotfabad, Sabzevar, Parand of Sabzevar, Tabas, Shandiz and Torogh of Mashhad. **Distribution in Iran:** Generally distributed. **Range:** Holomediterranean.

SUBORDER PENTATOMORPHA**Berytidae Fieber, 1851****Metacanthinae Douglas and Scott, 1865**

***Metacanthus meridionalis* Costa, 1843**

Material examined: Field of Agriculture College, 1 spec., 17.IX.2007. **Distribution in Khorasan:** Mashhad. **Distribution in Iran:** Gilan. **Outside Iran:** North-Mediterranean, extending to Middle East and Middle Asia.

Lygaeidae Schilling, 1829**Geocorinae Stål, 1862*****Geocoris arenarius* Jakovlev, 1867**

Material examined: Field of Astane Ghods, 3 spec., 17.IX.2007. **Distribution in Khorasan:** Gezel Hesar of Chenaran, Akhlamad of Mashhad. **Distribution in Iran:** Ardabil. **Range:** in Europe. Italy, Hungary, Romania, Ukraine, South Russia and Ghafghaz.

***Geocoris megacephalus* Rossi, 1790**

Material examined: Field of Astane Ghods, 1 spec., 17.IX.2007. **Distribution in Khorasan:** Sharif Abad & Akhlamad of Mashhad. **In Iran Province:** Gilan, Golestan, Tehran, Zanjan. **Range:** Holomediterranean, extending to the Middle East and Middle Asia.

Orsillinae Stål, 1872***Nysius cymoides* Spinola, 1837**

Material examined: Bozmarghi, 1 spec., 7.VIII.2007; Shirhesar, 2 spec., 12. VII.2007. **Distribution in Khorasan:** Gazi of Bojnord, Hakim Abad of Chenaran, Sharif Abad of Mashhad, Khangiran of Sarakhas. **Distribution in Iran:** Ardabil, Gilan, Golestan, Mazandaran, Semnan, Tehran, Zanjan. **Range:** Holomediterranean, extending to Central Europe, the Middle Asia and Sudan.

Oxycareninae Stål, 1862***Leptodemus minutus* Jakovlev, 1876**

Material examined: Field of Astane Ghods, 3 spec., 17.IX.2007. **Distribution in Khorasan:** Nasrabad of Torbate Jam, Mashhad. **Distribution in Iran:** Tehran, Gilan, Zanjan, Kerman. **Range:** South Europe, Middle East, Middle Asia, Sudan.

Alydidae Amyot and Serville, 1843**Alydinae Amyot and Serville, 1843*****Camptopus lateralis* Germar, 1817**

Material examined: Field of Agriculture College, 1 spec., 12.IX.2007; Soran, 2 spec., 15.VI.2006 & 1 spec., 13.VIII.2007; Field of Astane Ghods, 1 spec., 17.IX.2007. **Distribution in Khorasan:** Fariman, Mashhad, Shandiz and Tous of Mashhad, kuje Hezar masjed of Kalate Naderi, Gadangah of Neishabour, Dolatabad of Sarakhas. **Distribution in Iran:** Ardabil, Baluchestan, East Azarbaijan, Fars, Gilan, Golestan, Khozestan, Markazi, Mazandaran, Semnan, Tehran, Zanjan. **Range:** Holomediterranean, extending to central Europe, the Middle East, Middle Asia and the Oriental region.

Rhopalidae Amyot and Serville, 1843**Rhopalinae Amyot and Serville, 1843*****Brachycareus tigrinus* Schilling, 1829**

Material examined: Soran, 1 spec., 13.VIII.2007. **Distribution in Khorasan:** Hakimabad of Chenaran, Fariman, Akhlamad-Delbaran & Golmakan of Mashhad, Nishabour. **Distribution in Iran:** Ardabil, Gilan, Golestan, Mazandaran, Tehran, Zanjan. **Range:** Holarctic.

***Liorhyssus hyalinus* Fabricius, 1794**

Material examined: Soran, 8 spec., 14.VI.2006 & 10 spec., 15.VI.2007; Field of Astane Ghods, 1 spec., 17.IX.2007; Kazemabad, 1 spec., 13.VII.2007; Esmalabad, 2 spec., 18.V.2007; Golmakan, many spec., 27.V.2007. **Distribution in Khorasan:** Gouch Galeh of Bojnord, Najaf Abad of Qouchan. **Distribution in Iran:** Ardabil, East Azarbaijan, Gilan, Golestan, Semnan, Tehran, Zanjan. **Range:** Pontomediterranean.

***Rhopalus parumpunctatus* Schilling 1829**

Material examined: Soran, 2 spec., 13.IV.2007; Golmakan, 1 spec., 27.V.2007. **Distribution in Khorasan:** Mashhad. **Distribution in Iran:** Ardabil, East Azarbaijan, Gilan, Golestan, Semnan, Tehran, Zanjan. **Range:** Holopalaeartic.

Pentatomidae Leach, 1815**Pentatominae Amyot and Serville, 1843*****Eysarcoris ventralis* Westwood, 1837**

Material examined: Field of Agriculture College, 2 spec., 12.IV.2007; Soran 4 spec. 15.VI.2006. **Distribution in Khorasan:** Bajgiran, Mashhad, Akhlamad of Mashhad, Nishabour, Najafabad of Qouchan, Shirvan. **Distribution in Iran:** Ardabil, Gilan, Golestan, Kerman, Markazi, Mazandaran, Semnan, Tehran, Zanjan. **Range:** Mediterranean origin, extending to Central Europe, the Middle East, Central Asia and far into the Oriental and Ethiopian regions.

***Aelia acuminata* Linnaeus, 1758**

Material examined: Soran, 4 spec., 15.VI.2006 & 13.IV.2007. **Distribution in Khorasan:** Radkan of Chenaran, Anbaran and Torogh of Mashhad, Mashhad, Dolat Abad-Lake Bazangan of Sarakhs, Tabas, Daregaz, Golestan park of Bojnord. **Distribution in Iran:** Ardabil, East Azarbaijan, Esfahan, Fars, Gilan, Golestan, Kerman, Kermanshah, kuordestan, Lorestan, Mazandaran, Tehran, West Azarbaijan, Zanjan. **Range:** Turkey, Azerbaijan, Armenia, Iraq and Central Asia.

***Eurydema ventralis* Kolenati, 1846**

Material examined: Field of Agriculture College, 1 spec., 17.VIII.2007. **Distribution in Khorasan:** Mashhad. **Distribution in Iran:** East Azarbaijan. **Range:** Central and South Europe, North of Africa, Middle East including Iraq, Afghanistan, China.

***Eurydema ornatum* Linnaeus, 1758**

Material examined: Golmakan, 3 spec., 27.V.2007; Bozmarghi, 1 spec., 7.IX.2007; Chenaran, 2 spec., 4.VII.2006. **Distribution in Khorasan:** Ghazi of Bojnord, Daregaz, Fariman, Zoshk of Mashhad, Darroud of Neishabour, Shirvan. **Distribution in Iran:** Ardabil, East Azarbaijan, Fars, Gilan, Golestan, kerman, Ilam, Mazandaran, Tehran, West Azarbaijan, Zanjan. **Range:** Holopalaeartic, extending to Ethiopia, India, and Pakistan.

***Dolycoris baccarum* Linnaeus, 1758**

Material examined: Golmakan, 2 spec., 27.V.2007; Soran, 1 spec., 13.IV.2007; Chenaran, 3 spec., 4.VII.2006. **Distribution in Khorasan:** Ashkhaneh of Bojnord, Daregaz, Delbaran of Mashhad, Shandiz of Mashhad, Golshan of Neishabour, Hasanabad of Qouchan, Lottabad of Sabzevar, Gonbadli of Sarakhs, Ziyarat of Shirvan, Torbate Jam. **Distribution in Iran:** Ardabil, East Azarbaijan, Fars, Isfahan, Gilan, Golestan, Tehran, West Azarbaijan, Zanjan. **Range:** Holopalaeartic, also in India and Pakistan.

***Dolycoris penicillatus* Horvath, 1904**

Material examined: Golmakan, 1 spec., 27.V.2007; Field of Agriculture College, 1 spec., 12.IV.2007. **Distribution in Khorasan:** Bildar of Mashhad, Golmakan of Mashhad, Golshan of Neishabour, Farouj of Qouchan, Bojnord, Dolatabad of Sarakhs. **Distribution in Iran:** Ardabil, Bushehr, East Azarbaijan, Chahar Mahal, Fars, Ghazvin, Hormozgan,

Isfahan, Kermanshah, Kerman, Kohkiloye & Boyeir Ahmad, Khuzestan, Lorestan, Markazi, Semnan, Sistan & Baluchestan, Tehran, Yazd. **Range:** Middle-Asian from Afghanistan, Kazakhstan, Kirgizia, Tadjikistan, Turkmenistan, Uzbekistan, and China.

***Holcostethus strictus* Fieber, 1803**

Material examined: Bozmarghi, 1 spec., 27.VII.2007

Distribution in Khorasan: Golkhandan of Daregaz, Delbaran-Vakilabad of Mashhad, Jafarabad of Qouchan, Norouzabad of Sarakhs.

Distribution in Iran: Ardabil, East Azarbaijan, Kerman.

Range: The Middle East.

***Carpocoris coreanus* Distant, 1899**

Material examined: Kazemabad, 2 spec., 13.VII.2007; Shabani, 2 spec., 11.V.2007; Soran, 2 spec., 15.VI.2007; Field of Astane Ghods, 1 spec., 17.IX.2007; Chenaran, 2 spec., 4.VII.2006.

Distribution in Khorasan: Hakimabad of Chenaran, Fariman, Anbaran Sofla-Jagharg of Mashhad, Neishabour, Darroud of Neishabour, Hasanabad of Qouchan, Soltanabad of Sabzevar, Sarakhs, Shirvan, Ziyarat of Shirvan, Birjand. **Distribution in Iran:** Ardabil, East Azarbaijan, Gilan, Semnan, Tehran, Zanjan. **Range:** Eastern Palaearctic Asia, extending to southern Russia, the Middle East and Pakistan.

DOMINANCE

Based on statistic computations *Orius niger* Wolff, 1804 (Anthocoridae) resulted as the predominant species for Alfalfa fields in the studied area. Also *Adelphocoris lineolatus* Goeze, 1778 (Miridae) is a principal pest for Alfalfa between collected materials.

***Orius niger* Wolff, 1804 (Anthocoridae)**

Very small species, length 1.7-2.3 mm. Pronotum with narrow collar. Tibia without fossula spongiosa, circularly curved. Shiny black, antenna yellowish, 1st segment black. Hemelytra yellowish-brown, with cuneus and apical margin of corium black.

Membrane yellowish, femora, middle and hind tibiae black, fore tibiae and apices of fore femora pale yellowish. Antennae in male incrassate, in female gracile. Posterior lobe of pronotum fine punctate. (Adapted from Linnavouri & Hosseini, 2000).

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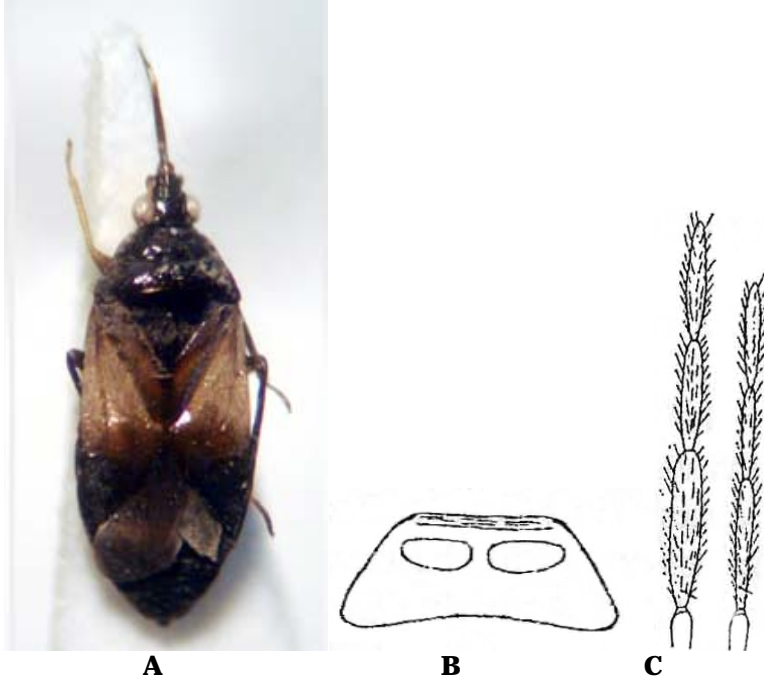


Figure 1. *Orius niger* Wolff, 1804 A. Original photo, B. Pronotum, C. Antenna in male and female.

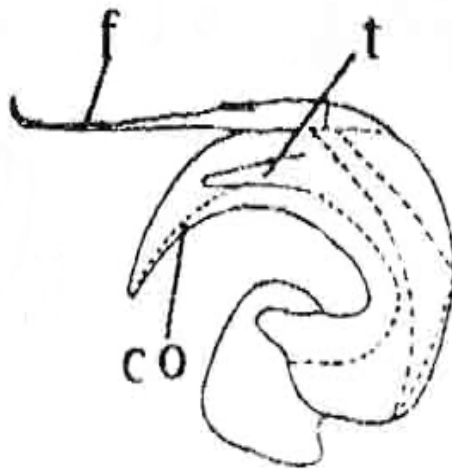


Figure 2. Style: (CO=Conical Process, t=tooth, f=flagellum) (After Pericart 1972).