

Contribution to the knowledge of Lygaeidae and Miridae (Hemiptera: Heteroptera) in East Anatolia

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ABSTRACT: In this paper, 11 species of the family Lygaeidae and Miridae belonging to the subordo Heteroptera (Hemiptera) recorded from Elazığ, Tunceli and Malatya provinces of Eastern Anatolia, Turkey, are discussed. Among them, belonging to Lygaeidae family *Peritrechus meridionalis* Puton, 1877, *Pezocoris apicimacula* (A. Costa, 1853), *Tropistethus fasciatus* Ferrari, 1874, *Horvathiolus superbus* (Pollich, 1781) and belonging to Miridae family *Globiceps (Globiceps) sphaegiformis* (Rossi, 1790), *Psallus quercus* (Kirschbaum, 1856), *Grypocoris melanopygus* Horváth, 1906, *Acetropis carinata* (Herrich-Schäffer, 1842) are reported for the first time from Eastern Anatolia of Turkey. In addition, many species are newly reported to studied provinces.

KEYWORDS: Contribution, Fauna, East Anatolia, Lygaeidae, Miridae, Heteroptera.

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INTRODUCTION

The Lygaeidae and Miridae family species of the Eastern Turkey are still little known. The Heteroptera (Hemiptera) fauna of Eastern part of Turkey is still little known compared to the one of the other parts of Anatolia. Önder et al. (2006) listed a total of 1526 heteropteran species/subspecies for the whole Turkey, in which they included eastern species Last papers (Matocq et al., 2014; Çerçi et al., 2018, Dioli and Özgen, 2018, Özgen and Dioli, 2018 a, b. gave good review of the studies realized in this area. The bugs specimens were collected in the

area near Elazığ, and Tunceli country (Eastern Turkey), in different localities.

MATERIAL AND METHODS

Specimens were caught by sweep-netting the herbaceous vegetation by the first author. They were identified by the second author. All the material is preserved in the Collections of Firat University, Engineering Faculty, Bioengineering Department, Elazığ, Turkey.

RESULTS AND DISCUSSION

Taxonomic status of the family of Lygaeidae follows Aukema & Rieger (2001). Ge-

neral distribution, when not otherwise specified, is referred to the Catalogue of Palaearctic Region (Aukema & Rieger 1999 and 2001; Aukema et al., 2013).

Lygaeidae Schilling, 1829

***Lygaeus simulans* Deckert, 1985**

Material examined: Elazığ, Baskil, 26.06.2018, 3 ♂, leg. Özgen (Figure 1.).

Distribution in the World: Europe: Albania (van der Heiden & Dioli, 2019), Austria, Bulgaria, Czech Republic, Kazakhstan, France, Great Britain (vagrant), Germany, Hungary, Italy, Macedonia, Moldavia, Poland, Romania, Western Russia, Slovakia, Spain, Switzerland, Ukraine, Yugoslavia. Asia: Azerbaijan, Afghanistan, Kazakhstan, Armenia, Turkey, China (NO NW WP), Cyprus, Georgia, Iran, Kirgizia, Mongolia, Eastern Russia, (WS) Taiwan, Tadjikistan, Turkmenistan, Uzbekistan.

Distribution in Turkey: Ankara, Elazığ, İzmir, Kahramanmaraş, Kayseri, Malatya, Nevşehir, Niğde (Péricart, 1998a)

Remarks: reports in Turkey, prior to 1985, are dubious and must be controlled. Infact the species, in the past, was confused with the congeneric *Lygaeus equestris* (Linnaus, 1758) with whom it often coexists, generally in mountain areas, above 700-800 meters of altitude. (Dioli et al., 1994)

***Peritrechus meridionalis* Puton, 1877**

Material examined: Malatya, Arguvan, Omikan, 27.10.2018, 1 ♂, leg. Özgen.

Distribution in the World: Europe: Albania, Austria, Bosnia Hercegovina, Bulgaria, Croatia, France, Greece, Hungary, Italy, Malta, Montenegro, Romania, Russia (CT ST), Serbia, Spain, Ukraine. North Africa: Algeria, Egypt, Libya, Morocco, Tunisia. Asia: Azerbaijan, Afghanistan, Kazakhstan, Armenia, Turkey, Georgia, Iran, Mongolia, Syria, Tadjikistan, Turkmenistan, Uzbekistan.

Distribution in Turkey: Ağrı, Ankara, Balıkesir, Çankırı, Kayseri, Kırşehir, Kon-

ya, Nevşehir, Sakarya, İzmir (Önder et al., 2006, Abacıgil et.al., 2010, Anonymous, 2018, Çerçi, 2019).

Note: First record in East Anatolia.

***Pezocoris apicimacula* A. Costa, 1853**

Material examined: Elazığ, Maden, Kavak village, 07.04.2018, 2 ♂, leg. Özgen.

Distribution in the World: Europe: Albania, Bosnia Hercegovina, Bulgaria, Greece, Italy, Macedonia, Romania, Russia (ST), Spain, Ukraine. North Africa: Algeria, Morocco. Asia: Azerbaijan, Kazakhstan, Armenia, Turkey, Georgia, Iran, Israel, Kirgizia, Syria, Tadjikistan, Uzbekistan.

Distribution in Turkey: Ankara, Balıkesir, Burdur, Bursa, Kayseri, Sivas, Tatvan (Pericart, 1998, Dursun, 2016).

Remarks: Rare species in the considered area, in dried soil often with stones (Pericart, 1998).

Note: First record in Elazığ province.

***Tropistethus fasciatus* Ferrari, 1874**

Material examined: Elazığ, Baskil, Kaya-beyli village, 30.03.2018, 3 ♂ leg. Özgen.

Distribution in the World: Europe: Albania, Bosnia Hercegovina, Bulgaria, Greece, Italy, Macedonia, Romania, Russia (ST), Spain, Ukraine. North Africa: Algeria, Morocco. Asia: Azerbaijan, Kazakhstan, Armenia, Turkey, Georgia, Iran, Israel, Kirgizia, Syria, Tadjikistan, Uzbekistan.

Distribution in Turkey: Ankara, Bolu, Çankırı, Zonguldak (Önder et al., 2006).

Remarks: Rare species in the considered area.

Note: First record in East Anatolia

***Lasiocoris anomalus* Kolenati, 1845**

Material examined: Malatya, Kale, 18.03.2018, 3 ♂, leg. Özgen.

Distribution in the World: Europe: Andorra, Bosnia Hercegovina, Bulgaria,

Croatia, France, Greece, Italy, Macedonia, Portugal, Russia (ST), Slovenia, Spain, Ukraine. North Africa: Algeria, Morocco. Asia: Azerbaijan, Armenia, Turkey, Cyprus, Georgia, Iran, Israel, Jordan, Turkmenistan.

Distribution in Turkey: Adana, Ağrı, Ankara, Bursa, Diyarbakır, Elazığ, Gaziantep, Hakkari, Iğdır, Karaman, Konya, Malatya, Niğde (Önder et al., 2006; Durşun and Fent., 2017).

***Horvathiolus superbus* Pollich, 1781**

Material examined: Elazığ, Güney çevre village, 30.03.2018, 5 ♂, 2 ♀ specimens, leg. Özgen.

Distribution in the World: Europe: Albania, Andorra, Austria, Belgium, Bosnia Hercegovina, Bulgaria, Croatia, Czech Republic, France, Great Britain (Jersey), Germany, Greece, Hungary, Italy, Luxembourg, Malta, Macedonia, The Netherlands, Poland (doubtful), Portugal, Romania, Russia (ST), Serbia, Slovakia, Spain, Switzerland, Ukraine. North Africa: Canary Islands, Madeira. Asia: Azerbaijan, Afghanistan, Kazakhstan, Armenia, Turkey, China (NW), Cyprus, Georgia, Iran, Iraq, Israel, Kirgizia, Mongolia, Tadzhikistan, Turkmenistan, Uzbekistan.

Distribution in Turkey: Balıkesir, Edirne, Isparta (Fent and Aktaç, 2008, Abacıgil et al., 2010; Fent and Japoshvili, 2012).

Note: First record in East Anatolia

Miridae Hahn, 1833

***Globiceps sphaegiformis* Rossi, 1790**

Material examined: Elazığ, Sütluçe, 15.05.2018, 2 ♂, leg. Özgen.

Distribution in the World: Central and South Europe, extending to Turkey and Caucasus, Iran (Linnavuori, 2007). Europe: Albania, Andorra, Austria, Belgium, Bosnia Hercegovina, Bulgaria, Byelorussia, Croatia, Czech Republic, Estonia, Turkey, France, Germany, Greece, Hun-

gary, Italy, Macedonia, Moldavia, Montenegro, Netherlands, Poland, Portugal, Romania, Russia (CT ST), Serbia, Slovakia, Slovenia, Spain, Switzerland, Ukraine, Yugoslavia. Asia: Azerbaijan, Turkey, Cyprus, Georgia, Iran.

Distribution in Turkey: Afyonkarahisar, Ankara, Antalya, Artvin, Bartın, Bilecik, Bolu, Bursa, Çanakkale, Çankırı, Denizli, Diyarbakır, Karaman, Kastamonu, Kayseri, Konya, Kütahya, Mersin, Muğla, Tekirdağ, Uşak. (Önder et al., 2006; Matocq et al., 2014; Anonymous, 2019).

Remarks: Rare species in the considered area.

Note: First faunistic report in East Anatolia. It lives on *Fagus* sp. and *Quercus* sp. (Linnavuori, 2007).

***Brachycoleus steini* Reuter, 1877**

Material examined: Elazığ, Günbağı, 21.06.2018, 7 ♂, leg. Özgen.

Distribution in the World: Europe: Bulgaria, Turkey, Greece, Italy, Macedonia, Romania. Asia: Azerbaijan, Armenia, Turkey, Georgia, Iran.

Distribution in Turkey: Antalya, Kahramanmaraş, Kayseri, Kırşehir, Konya, Niğde, Afyon, Aydın, Balıkesir, Burdur, Bursa, Çanakkale, Denizli, Edirne, Gaziantep, Isparta, İstanbul, İzmir, Kahramanmaraş, Kayseri, Kırklareli, Kırşehir, Konya, Kütahya, Manisa, Muğla, Muş, Niğde, Tekirdağ, Uşak (Lodos et al., 2003; Önder et al., 2006).

***Rhabdomiris striatellus wagneri* Kerzhner & Schuh 1998**

Material examined: Elazığ, Günbağı, 11.06.2018, 8 ♂, 2 ♀, leg. Özgen.

Distribution in the World: Asia: Turkey (endemic).

Distribution in Turkey: Ankara, Elazığ (Keban) (Matocq et al., 2014).

Remarks: a new name for *Rhabdomiris striatellus fasciatus* Wagner, 1960, homonym with *Calocoris fasciatus* Jakovlev, 1875.

Note: It was found on *Quercus* also in the area of findings.

***Psallus (Phyllidea) quercus*
Kirschbaum, 1856**

Material examined: Elazığ, Baskil, Sultanuşağı, 30.0.2018, 2 ♂, 1 ♀, leg. Özgen; Tunceli, Pertek, 21.05.2018, 3 ♂ specimen, leg. Özgen.

Distribution in the World: Europe: Austria, Belgium, Bosnia Hercegovina, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Great Britain, Germany, Hungary, Ireland, Italy, Liechtenstein, Luxembourg, Macedonia, Moldavia, Netherlands, Norway, Poland, Portugal, Romania, Russia (ST), Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, Yugoslavia. Asia: Asian Turkey, Azerbaijan, Georgia.

Distribution in Turkey: Artvin, Bartın, Diyarbakır, Kahramanmaraş, Kastamonu, Kayseri (Önder et al., 2006; Matocq et al., 2014).

Note: First record in East Anatolia.

***Grypocoris melanopygus* Horv., 1906**

Material examined: Tunceli, Pertek, Akdemir, 21.05.2018, 2 ♂, leg. Özgen.

Distribution in the World: Asian Turkey (endemic) (Rosenzweig, 1997).

Distribution in Turkey: Ankara, Kahramanmaraş, Kastamonu, Kayseri, Konya, Nevşehir, Osmaniye (Önder et al., 2006), Beynam (Hoberlandt, 1955; Kıyak & Akar, 2010).

Remarks: "occurring on undergrowth below *Pinus nigra* of wooded hill formation" (Hoberlandt, 1955).

Note: First record in East Anatolia.

***Acetropis carinata* H.-Sch., 1842**

Material examined: Elazığ, Kayabeyli village, 13.09.2018, 1 ♂, leg. Özgen.

Distribution in the World: Europe: Austria, Belgium, Bosnia Hercegovina,

Bulgaria, Byelorussia, Croatia, Czech Republic, Denmark, Kazakhstan, France, Germany, Greece, Hungary, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Moldavia, Netherlands, Poland, Romania, Russia (CT ST), Serbia, Slovakia, Spain, Switzerland, Ukraine. North Africa: Algeria, Tunisia (dubtful). Asia: Azerbaijan, Kazakhstan, Armenia. Turkey.

Distribution in Turkey: Ankara, Bayburt, Bursa, Erzurum, Kayseri, Kütahya, Mersin (Önder et al., 2006; Yazıcı and Yıldırım, 2017).

It was given to habitus for some species (Figure 2a and 2b).

REFERENCES

- Abacıgil, T.Ö., Varlı, S.V., Tezcan., S., 2010, Edremit (Balıkesir) Körfezi Çevresindeki zeytin bahçelerinde kışlak tuzaklarla saptanan Heteroptera türleri, *Türk. Entomol. derg.*, 34 (1): 105-115.
- Aukema, B., Rieger, C., 1999, *Catalogue of the Heteroptera of the Palaearctic Region, Vol. 3, Cimicomorpha II*. The Netherlands entomological Society, Amsterdam, XIV, 577 p.
- Aukema, B., Rieger, C., 2001, *Catalogue of the Heteroptera of the Palaearctic Region, Vol. 4, Pentatomorpha I*. The Netherlands entomological Society, Amsterdam, XIV, 346 p.
- Aukema, B., Rieger C., Rabitsch, W., 2013, *Catalogue of the Heteroptera of the Palaearctic Region, Vol. 6. Supplement*, The Netherlands entomological Society, Amsterdam, XXIV, 629 p.
- Çerçi, B., Özgen, İ., Dioli, P., 2018, Additional Faunistic Notes on Heteroptera (Hemiptera: Insecta) in East Anatolia (Turkey), *Journal of Entomology and Zoology Studies*, 6 (1): 1225-1231.
- Çerçi, B., 2019, <https://www.flickr.com/photos/hetero-pteran/14742061596>. (Last access: 23.08.2019).
- Dioli, P., Faraci F., Rizzotti Vlach., M., 1994, Osservazioni morfologiche ecorologiche su *Lygaeus simulans* Deckert, 1985 in Italia (Heteroptera: Lygaeidae), *Atti XVII Congresso nazionale italiano di Entomologia*, Udine (13-18 giugno 1994): 195-198.

- Dioli, P., Özgen, İ., 2018, *Rhyparochromus tisifone* Linnavuori, 1990, first record for Turkey, (Heteroptera: Rhyparochromidae), *Journal of Entomology and Zoology Studies*, 6 (6): 1153:1155.
- Dursun, G., 2016, Balıkesir Kent Ormanı ve Baun Çağış Yerleşkesindeki Heteroptera (Hemiptera) Faunasının Kışlak Tuzaklarla Belirlenmesi Üzerinde Araştırmalar. *Yüksek Lisans Tezi*, 95 s.
- Fent., M., Japoshvili, G., 2012, Heteroptera (Hemiptera) Fauna of Isparta Gölcük Natural Park with some rare and peculiar species and new records for Mediterranean Region of Turkey, *Türk entomol. bült.*, 2 (3): 149-163.
- Fent, M., Aktaç, N., 2008, Anmerkungen zu einigen im Adultstadium überwinterten Heteropteren und ihren Überwinter in der (Türkischen) provinz Edirne, *Heteropteron*, Heft 28: 11-15.
- Hoberlandt, L., 1955, Results of the Zoological Scientific Expedition of the National Museum in Praha to Turkey 18. Hemiptera IV. Terrestrial Hemiptera-Heteroptera of Turkey, *Acta Entomologica Musei Nationalis Pragae* 3 (suppl.): 1-264.
- Kiyak, S., Akar, E., 2010, Faunistic study of terrestrial Heteroptera of Çaldağ (Ankara, Turkey), *Munis Entomology & Zoology*, 5: 1104-1118.
- Önder, F., Karsavuran, Y., Tezcan, S., Fent, M., 2006, *Türkiye Heteroptera (Insecta) Kataloğu. Heteroptera (Insecta) Catalogue of Turkey*, İzmir, Turkey, 164 pp. [in Turkish].
- Özgen, İ., Dioli, P., 2018a, A new and interesting record on Miridae (Hemiptera) Fauna of Turkey: *Megacoelum quercicola* Linnavuori, 1965, *International Journal of Fauna and Biological Studies*, 5 (4): 104-105.
- Özgen, İ., Dioli, P., 2018b, Rare species in Tunceli province of Turkey, *Megalonotus seidenstueckeri*, Péricart, 1995., (Hemiptera: Rhyparochromidae), *International Journal of Fauna and Biological Studies*, 5 (4): 42-44.
- Linnavuori, R. E., 2007, Studies on the Miridae (Heteroptera) of Gilan and the adjacent provinces in northern Iran. II. List of species, *Acta Entomologica Musei Nationalis Pragae*. 47: 17-56.
- Matocq, A., Özgen, İ., 2010, A preliminary list of Heteroptera collected in Mardin and Siirt Provinces from Southeastern Anatolia of Turkey (Hemiptera), *Munis Entomology & Zoology*, 5 (suppl.): 1011-1019.
- Matocq, A., Sigwalt, D.P., Özgen, İ., 2014, Terrestrial Hemiptera (Heteroptera) Collected in South-East Anatolia (Diyarbakır, Mardin and Elazığ Provinces) (Turkey): Second list, *Munis Entomology & Zoology*, 9 (2): 884-930.
- Péricart, J., 1998a, *Hémiptères Lygaeidae euroméditerranéens*. 1. Faune de France, Vol. 84A. Fédération Française des Sociétés de Sciences Naturelles, Paris, i-xx + 468 pp.
- Péricart, J., 1998b, *Hemipteres Lygaeidae Euro-Mediterraneens*. Volume 3: Systematique: Troisieme Partie Ryparochrominae (2), Faune de France, 84C, 1-479.
- Rosenzweig, V. Y., 1997, Revised classification of the Calocoris complex and related genera (Heteroptera: Miridae), *Zoosystematica Rossica*, 6: 139--169.
- van der Heyden, T., Dioli, P., 2019, First records of *Lygaeus simulans* Deckert, 1985 for Albania (Hemiptera: Heteroptera: Lygaeidae: Lygaeinae). *Natural History Sciences*, 6(1), 33-36. <https://doi.org/10.4081/nhs.2019.395>.



Figure 1. The habitus of *Lygaeus simulans* Deckert, 1985.

Photo: inanç özgen

*Acetropis carinata* (Herrich-Schäffer, 1842)

Photo: inanç özgen

*Brachycoleus steini* (Reuter, 1877).**Figure 2a.** Habitus of some species.



Figure 2b. Habitus of some species.