

## Additional records on the Halyini, Carpocorini, Aeliini and Eysarcorini (Hemiptera: Pentatomidae: Pentatominae) of the Kelkit Valley, Turkey

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**Abstract.** In this study, the research material consists of samples collected from Kelkit Valley between 2005–2007. In Kelkit Valley and surroundings, 2 species belonging to 2 genera of Halyini, 14 species belonging to 8 genera of Carpocorini, 7 species belonging to 2 genera of Aeliini and 6 species belonging to 2 genera of Eysarcorini, totally 29 species from 14 genera, from 57 different localities were identified. Of those, *Mustha spinosula* (Lefebvre, 1831), *Apodiphus amygdali* (Germar, 1817), *Palomena prasina* (Linnaeus, 1761), *Palomena viridissima* (Poda, 1761), *Chlorochroa juniperina* (Linnaeus, 1758), *Carpocoris melanocerus* (Mulsant & Rey, 1852), *Holcogaster fibulata* (Germar, 1831), *Aelia albovittata* Fieber, 1868, *Aelia virgata* Klug, 1841, *Eysarcoris venustissimus* (Schrank, 1776), *Eysarcoris aeneus* (Scopoli 1763), *Stagonomus bipunctatus* (Linnaeus, 1758), *Stagonomus amoenus* (Brullé, 1832) are new records for the particular research area of Kelkit Valley and *Stagonomus devius* Seidenstücker, 1965 was recorded for the first time in the research area of Kelkit Valley and Black Sea region. *Eysarcoris venustissimus*, *Chlorochroa juniperina* and *Stagonomus devius* are rare species in the fauna of Turkey.

**Key words:** Halyini, Carpocorini, Aeliini, Eysarcorini, Kelkit Valley, Turkey, additional records.

### Introduction

All species of the tribes Halyini Amyot & Serville, 1843, Carpocorini Mulsant & Rey, 1866, Aeliini Douglas & Scott, 1865 and Eysarcorini Mulsant & Rey, 1866 contain important phytophagous insects. During this study, 7 species from 3 genera of Halyini, 37 species from 14 genera of Carpocorini, 15 species from 2 genera of Aeliini and 6 species from 2 genera of Eysarcorini have been reported from Turkey. Of those, 6 species were originally described from Turkey (Lodos et al. 1989, 1998, Fent & Aktaç 1999, 2007, Önder et al. 2006, Rider 2006, Memon & Ahmad 2008, Fent 2010 and Fent et al. 2010).

Many detailed studies have been carried out on Pentatomidae in Turkey. In the studies of Horváth (1883, 1891, 1897, 1901), Reuter (1890), Puton & Noualhier (1895), Kiritshenko (1918, 1924), Fahringer (1922), Hoberlandt (1956), Seidenstücker (1957, 1958, 1960, 1965, 1975), Wagner (1959, 1966), Linnavuori (1965), Awel (1977), Lodos et al. (1989, 1998), Kiyak (1990, 1993, 2000), Fent & Aktaç (1999, 2007, 2008, 2009), Awad (2000), Ribes & Gapon (2006), Dursun & Kartal (2008a,b), (Memon & Ahmad (2008), Fent (2010), and Fent et al. (2010) faunistic records on Pentatomidae of Turkey have been given.

The studies performed so far by Dursun (2009) and Dursun & Fent (2009, 2010, 2011) on different families, i.e. Alydidae, Rhopalidae, Stenocephalidae, Coreidae, Pentatomidae (Scutelleridae, Acanthosomatidae, Cydnidae, Thyreocoridae and Plataspidae), in Kelkit Valley were carried on with the aim of contributing to the Heteroptera fauna of the region. However, no detailed study on Pentatominae subfamily exists in Kelkit Valley, thus making this present study a pioneering one related to the subject.

### Materials and Methods

The research material consists of 849 adult samples collected from 57

localities with different vegetation and habitat properties in Bayburt, Erzincan, Giresun, Gümüşhane, Sivas and Tokat provinces located in and around Kelkit Valley between 2005–2007. The samples were collected from herbaceous vegetation with a sweep net and from trees and shrubs with Japanese umbrella. Male genitalia were used to identify some of the species. For preparation of genitalia, samples were softened in 5% acetic acid (CH<sub>3</sub>COOH) and their genitalia were extracted. Tamanini (1959), Stichel (1961), Seidenstücker (1965), Awel (1977), Awad (2000), Ribes et al. 2006, 2007 and Ribes & Pagola-Carte 2009 were followed in the identifications of the collected material. The system and nomenclature follows Rider (2006) and subsequent papers (Derjanschi & Péricart 2005; Ribes & Gapon 2006, Ribes et al. 2006, Belousova 2007, Ribes et al. 2008, Ribes & Pagola-Carte 2009).

Host plants, from which the specimens were collected, were identified by Dr. Fergan Karaer (Ondokuz Mayıs University, Samsun). The study material is deposited in collections of Arts & Sciences Faculty of Amasya University.

### Results

#### Pentatomidae Leach, 1815

#### Pentatominae Stål, 1864

#### Halyini Amyot & Serville, 1843

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

Material examined: Giresun, Şebinkarahisar, Güzelyurt, 40°17'22"N, 38°20'40"E, 1230 m, 21.VI.2006, 3♀, 1♂; Sivas, Suşehri, Akçaağıl, 40°13'16"N, 38°03'21"E, 748m, 16.V.2006, 1♀, 1♂; Tokat, Erbaa, Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VIII.2005, 1♀; Niksar, Muhtardüzü, 40°28'46"N, 37°01'11"E, 352 m, 28.VI.2006, 1♀, 1♂.

Host plants: *Ilex crenata*, *Platanus orientalis*, *Phillyrea latifolia*.

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

Material examined: Tokat, Erbaa, Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VI.2005, 1♂.

Host plants: *Eleagnus angustifolia*.

**Carpocorini Mulsant & Rey, 1866*****Staria lunata* (Hahn, 1835)**

Material examined: Giresun, Alucra, Arda, 40°13'38"N, 38°50'33"E, 1515 m, 17.V.2006, 2♀♀, 1♂; Gümüşhane, Kelkit, Karaçayır, 40°08'07"N, 39°28'38"E, 1421 m, 22.VI.2007, 2♀♀, 2♂♂; Sivas, Gölova, Boğazköy, 40°05'02"N, 38°31'17"E, 1160 m, 21.IX.2007, 2♀♀, 2♂♂; Tokat, Erbaa, Karanlıkdere, 40°10'25"N, 36°23'18"E, 385 m, 29.VI.2005, 2♀♀, 2♂♂; Niksar, Gürçeşme, 40°38'14"N, 36°45'01"E, 361 m, 07.VIII.2006, 3♀♀, 4♂♂; 08.VIII.2007, 2♂♂; Kümbetli, 40°38'19"N, 36°45'03"E, 385 m, 20.VI.2006, 1♀♀, 3♂♂; Osmaniye, 40°27'42"N, 37°14'13"E, 550 m, 28.VIII.2005, 2♀♀, 2♂♂; Reşadiye, Çakmak, 40°25'06"N, 37°12'02"E, 507 m, 29.06.2005, 2♀♀, 3♂♂.

Host plants: *Astrodaucus orientalis*, *Avena fatua*, *Barbarea vulgaris*.

***Palomena prasina* (Linnaeus, 1761)**

Material examined: Sivas, Suşehri, Akçaağıl, 40°13'16"N, 38°03'21"E, 748 m, 16.V.2006, 2♀♀, 2♂♂; Tokat, Erbaa, Ağcaalan, 40°03'01"N, 38°07'18"E, 227 m, 26.VIII.2005, 1♀.

Host plants: *Corylus avellana*, *Rubus* sp.

***Palomena viridissima* (Poda, 1761)**

Material examined: Giresun, Alucra, Belen, 40°16'23"N, 38°55'28"E, 1688 m, 22.IX.2007, 3♀♀, 2♂♂.

Host plants: *Corylus avellana*, *Rubus* sp.

***Peribalus (Peribalus) strictus strictus* (Fabricius, 1803)**

Material examined: Bayburt, Demirözü, Güneşli, 40°11'15"N, 39°55'54"E, 1669m, 22.VI.2007, 1♀; Giresun, Alucra, Arda, 40°13'38"N, 38°50'33"E, 1515 m, 17.V.2006, 1♂; Sivas, Koyulhisar, Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 30.VI.2005, 1♀, 1♂; Suşehri, Arpacı, 40°15'06"N, 38°05'07"E, 840 m, 21.VI.2006, 1♀, 1♂; Yalnıztepe, 40°15'05"N, 37°56'10"E, 698 m, 16.V.2006, 2♀♀; Tokat, Erbaa, Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VIII.2005, 1♀, 2♂♂; Yoldere, 40°51'09"N, 36°28'29"E, 280 m, 25.VI.2005, 3♂♂; Niksar, Centrum, 40°29'22"N, 36°58'52"E, 315 m, 20.VI.2006, 2♀♀, 2♂♂; Reşadiye, Centrum, 40°22'22"N, 37°24'41"E, 508 m, 08.VIII.2007, 3♀♀, 2♂♂; Akıncı, 40°27'06"N, 37°06'10"E, 401m, 20.VI.2006, 1♀, 2♂♂.

Host plants: *Centaurea virgata*, *Coryllus avellana*, *Verbascum* sp.

***Chlorochroa (Rhytodolomia) juniperina juniperina* (Linnaeus, 1758)**

Material examined: Tokat, Erbaa, Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 20.IX.2007, 1♀, 1♂.

Host plants: *Juniperus oxycedrus*.

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

Material examined: Giresun, Alucra, Belen, 40°16'23"N, 38°55'28"E, 1688 m, 01.VIII.2007, 2♀♀; Sivas, Suşehri, Akçaağıl, 40°13'16"N, 38°03'21"E, 748 m, 30.VI.2005, 1♂; 16.V.2006, 1♀, 1♂; Tokat, Erbaa, Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VIII.2005, 2♂♂; Karayaka, 40°44'27"N, 36°35'05"E, 285 m, 25.VI.2005, 2♂♂; Akıncı, 40°27'06"N, 37°06'10"E, 401m, 29.VI.2005, 1♀, 1♂; Niksar, Osmaniye, 40°27'42"N, 37°14'13"E, 550 m, 28.VIII.2005, 1♂; Reşadiye, Çakmak, 40°25'06"N, 37°12'02"E, 507 m, 29.VI.2005, 2♀♀, 1♂.

Host plants: *Cirsium arvense*, *Daucus carota*, *Eryngium creticum*, *Verbascum* sp.

***Carpocoris (Carpocoris) fuscispinus* (Boheman, 1851) (forma *mediterraneus* Tamanini, 1958)**

Material examined: Bayburt, Demirözü, Güneşli, 40°11'15"N, 39°55'54"E, 1669 m, 23.VI.2007, 2♀♀, 2♂♂; Giresun, Alucra, Aktepe, 40°13'20"N, 39°46'15"E, 1660 m, 09.VIII.2007, 3♀♀, 3♂♂; Belen, 40°16'23"N, 38°55'28"E, 1688 m, 09.VIII.2007, 2♀♀, 1♂; Şebinkarahisar, Centrum, 40°17'44"N, 38°23'24"E, 1465 m, 09.VIII.2007, 2♀♀, 3♂♂; Çamlıbel, 40°20'44"N, 38°31'24"E, 1111 m, 19.V.2006, 3♀♀, 3♂♂; Dereköy, 40°17'33"N, 38°13'22"E, 1010 m, 21.VI.2006, 2♂♂; Güzelyurt, 40°17'21"N, 38°20'39"E, 1230 m, 21.VI.2006, 1♂; Gümüşhane, Kelkit, Karaçayır, 40°08'07"N, 39°28'38"E, 1421 m, 22.VI.2007, 1♀, 1♂; Şiran, Çilhoroz, 40°10'15"N, 39°16'09"E, 1587 m, 23.VI.2007, 1♀, 1♂; Sivas, Akıncılar, Yağlıcaayır, 40°06'50"N, 38°17'36"E, 859 m, 17.V.2006, 1♂; 08.VIII.2007, 1♂; Çamoluk, Kaledere, 40°08'03"N, 38°48'40"E, 1069 m, 21.IX.2007, 1♀, 1♂; Gölova, Boğazköy, 40°05'02"N, 38°31'17"E, 1160 m, 21.IX.2007, 1♀, 3♂♂; Koyulhisar, Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 30.VI.2005, 2♀♀, 3♂♂; 20.VI.2006, 4♀♀, 3♂♂; Gölcük, 40°15'45"N, 37°54'07"E, 673 m, 20.IX.2007, 1♀, 1♂; Yeşilyurt, 40°18'15"N, 37°41'08"E, 655 m, 30.VI.2005, 3♀♀, 2♂♂; Suşehri, Akçaağıl, 40°13'16"N, 38°03'21"E, 748 m, 28.VI.2005, 3♀♀, 2♂♂; Solak, 40°10'14"N, 38°07'33"E, 911 m, 20.IX.2007, 4♀♀, 3♂♂; Yalnıztepe, 40°15'05"N, 37°56'10"E, 698 m, 16.V.2006, 2♂♂; Tokat, Erbaa, Değirmenli, 40°10'25"N, 36°30'35"E, 390 m, 25.VI.2005, 2♀♀, 4♂♂; Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VI.2005, 1♀, 1♂; Karanlıkdere, 40°10'25"N, 36°23'18"E, 385 m, 29.VI.2005, 1♀, 2♂♂; 27.VIII.2005, 4♀♀, 3♂♂; Karayaka, 40°44'27"N, 36°35'05"E, 285 m, 07.VIII.2007, 1♀, 2♂♂; Yoldere, 40°51'09"N, 36°28'29"E, 280 m, 23.VI.2005, 2♀♀, 2♂♂; Niksar, Buzköy, 40°38'11"N, 36°49'35"E, 331 m, 27.VIII.2005, 2♀♀, 2♂♂; Kümbetli, 36°45'03"E, 40°38'19"N: 385m; 27.06.2005, 1♀, 1♂; Muhtardüzü, 40°28'46"N, 37°01'11"E, 352 m, 27.VIII.2005, 5♀♀, 2♂♂; 20.IX.2007, 2♀♀, 2♂♂; Yakınca, 40°03'01"N, 36°31'50"E, 258 m, 27.VI.2005, 2♀♀, 4♂♂; 20.VI.2006, 2♀♀, 2♂♂; Reşadiye, Cemel, 40°24'21"N, 37°17'07"E, 560 m, 22.VI.2006, 4♀♀, 3♂♂; Çakmak, 40°25'06"N, 37°12'02"E, 507 m, 29.VI.2005, 2♀♀, 2♂♂; Dilekli, 40°14'51"N, 37°57'12"E, 707 m, 16.V.2007, 2♂♂; Reşadiye, Karaağaç, 40°18'04"N, 37°31'49"E, 615 m, 29.VI.2005, 2♂♂; 28.VIII.2005, 1♀, 2♂♂; Mutluca, 40°25'43"N, 37°06'47"E, 401 m, 27.VIII.2005, 2♀♀, 2♂♂; Zinav, 40°28'24"N, 37°15'28"E, 1161 m, 08.VIII.2007, 1♀, 4♂♂.

Host plants: *Cirsium arvense*, *Daucus carota*, *Eryngium creticum*, *Verbascum* sp.

***Carpocoris (Carpocoris) fuscispinus* (Bohemen, 1846) (typical form)**

Material examined: Giresun, Şebinkarahisar, Dereköy, 40°17'33"N, 38°13'22"E, 1010 m, 21.VI.2006, 1♀, 1♂; Sivas, Koyulhisar, Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 20.VI.2006, 2♀♀, 1♂; Tokat, Erbaa, Karanlıkdere, 40°10'25"N, 36°23'18"E, 385 m, 27.VIII.2005, 1♀, 2♂♂.

Host plants: *Rumex acetosella*.

***Carpocoris (Carpocoris) pudicus* (Poda, 1761)**

Material examined: Giresun, Alucra, Aktepe, 40°13'20"N, 39°46'15"E, 1660 m, 09.VIII.2007, 3♂♂; Şebinkarahisar, Centrum, 40°17'44"N, 38°23'24"E, 1465 m, 22.IX.2007, 1♂; Dereköy, 40°17'33"N, 38°13'22"E, 1010 m, 21.VI.2006, 1♀; Fındıklıbeli, 40°15'58"N, 38°56'29"E, 1700 m, 22.IX.2007, 1♂; Gümüşhane, Akçahisar, 40°08'07"N, 39°28'38"E, 1421 m,

22.VI.2007, 1♂; Sivas, Akıncılar, Yağlıçayır, 40°06'50"N, 38°17'36"E, 859 m, 21.IX.2007, 1♀, 1♂; Boğazköy, 40°05'02"N, 38°31'17"E, 1160 m, 21.IX.2007, 2♀♀, 3♂♂; Koyulhisar, Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 30.VI.2005, 1♀, 2♂♂; 08.VIII.2006, 1♀, 1♂; Yeşilyurt, 40°18'15"N, 37°41'08"E, 655 m, 30.VI.2005, 1♂; Suşehri, Akçaağıl, 40°13'16"N, 38°03'21"E, 748 m, 30.VI.2005, 1♂; Arpacı, 40°15'06"N, 38°05'07"E, 840 m, 21.VI.2006, 1♀; Solak, 40°10'14"N, 38°07'33"E, 911 m, 20.IX.2007, 1♀, 2♂♂; 16.V.2007, 3♀♀, 2♂♂; Yalnıztepe, 40°15'05"N, 37°56'10"E, 698 m, 16.V.2006, 2♀♀, 2♂♂; Tokat, Erbaa, Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VIII.2005, 1♂; Niksar, Kümbetli, 36°50'08"E, 40°03'02"N, 258 m, 27.VI.2005, 1♀; Osmaniye, 40°27'42"N, 37°14'13"E, 550 m, 28.VIII.2005, 1♀, 1♂; Reşadiye, Cemel, 40°24'21"N, 37°17'07"E, 560m.; 22.VI.2006, 1♂; Mutluca, 40°25'43"N, 37°06'47"E, 401 m, 27.VIII.2005, 1♂.

Host plants: *Carthamus glaucus*, *Centaurea virgata*, *Cirsium arvense*, *Eryngium creticum*, *Onopordum tauricum*, *Pictis strigosa*.

***Carpocoris (Carpocoris) melanocerus* (Mulsant & Rey, 1852)**

Material examined: Giresun, Şebinkarahisar, Dereköy, 40°17'33"N, 38°13'22"E, 1010 m, 21.VI.2006, 1♂; Sivas, Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 20.VI.2006, 1♀; Gümüşhane, Tekkeköy, 40°24'55"N, 39°33'14"E, 1219 m, 23.VI.2007, 1♀; Tokat, Niksar, Centrum, 40°29'22"N, 36°58'52"E, 315 m, 20.VI.2006, 1♂; Kümbetli, 40°03'3"N, 36°50'08"E, 258 m, 20.VI.2006, 1♂; Reşadiye, Cemel, 40°24'21"N, 37°17'07"E, 560 m, 22.VI.2006, 1♂.

Host plants: *Senecio* sp, *Verbascum* sp.

***Anthemina lunulata* (Goeze, 1778)**

Material examined: Giresun, Şebinkarahisar, Centrum, 40°18'03"N, 38°26'34"E, 1221 m, 09.VIII.2007, 1♀; Sivas, Akıncılar, Sevindik, 40°05'42"N, 38°26'04"E, 1000 m, 21.IX.2007, 1♀; Gölova, Boğazköy, 40°05'02"N, 38°31'17"E, 1160 m, 21.IX.2007, 1♂; Tokat, Niksar, Buzköy, 40°38'11"N, 36°49'35"E, 331 m, 27.VIII.2005, 2♀♀, 1♂; Kümbetli, 40°38'19"N, 36°45'03"E, 385 m, 27.VI.2005, 1♀, 1♂; 20.VI.2006, 2♀♀, 1♂; Reşadiye, Cemel, 40°24'21"N, 37°17'07"E, 560 m, 22.VI.2006, 1♂.

Host plants: *Lavatera bryoniifolia*, *Nerium oleander*.

***Codophila varia* (Fabricius, 1787)**

Material examined: Giresun, Alucra, Aktepe, 40°19'16"N, 38°40'25"E, 1457 m, 09.VIII.2007, 2♂♂; Arda, 40°13'38"N, 38°50'33"E, 1515 m, 17.V.2006, 1♀, 1♂; Şebinkarahisar, Centrum, 40°18'23"N, 38°26'34"E, 1221m. 09.VIII.2007, 5♀♀, 3♂♂; Gümüşhane, Şiran, Çilhoroz, 40°10'15"N, 39°16'09"E, 1587 m, 22.IX.2007, 2♀♀, 4♂♂; Sivas, Akıncılar, Yağlıçayır, 40°06'50"N, 38°17'36"E, 859 m, 08.VIII.2007, 5♀♀, 3♂♂, 21.IX.2007, 3♂♂; Sevindik, 40°05'42"N, 38°26'04"E, 1000 m, 21.IX.2007, 2♀♀, 1♂; Gölova, Boğazköy, 40°05'02"N, 38°31'17"E, 1160 m, 21.IX.2007, 1♀, 2♂♂; Sivas, Koyulhisar, Yeşilyurt, 40°18'15"N, 37°41'08"E, 655 m, 30.VI.2005, 2♀♀, 2♂♂; Gölcük, 40°15'45"N, 37°54'07"E, 673 m, 20.IX.2007, 2♀♀, 4♂♂; Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 08.VIII.2007, 2♀♀, 1♂; Çamoluk, Kaledere, 40°08'03"N, 38°48'40"E, 1069 m, 21.IX.2007, 2♀♀, 1♂; Suşehri, Akçaağıl, 40°13'16"N, 38°03'21"E, 748 m, 30.VI.2005, 2♀♀, 2♂♂; Arpacık, 40°15'06"N, 38°05'07"E, 840 m, 21.VI.2006, 2♀♀; Tokat, Niksar, Gürçeşme, 40°38'14"N, 36°45'01"E, 361 m, 07.VIII.2006, 2♀♀, 3♂♂;

Muhtardüzü, 40°28'46"N, 37°01'11"E, 352 m, 27.VIII.2005, 3♀♀, 1♂; 20.IX.2007, 3♂♂; Reşadiye, Centrum, 40°22'22"N, 37°24'41"E, 508m, 08.VIII.2007, 7♀♀, 5♂♂; Çakmak, 40°25'06"N, 37°12'02"E, 507 m, 21.VI.2005, 2♀♀, 1♂; Karaağaç, 40°18'04"N, 37°31'49"E, 615 m, 28.VIII.2005, 2♀♀, 2♂♂.

Host plants: *Carthamus glaucus*, *Lavatera bryoniifolia*, *Scolymus hispanicus*, *Torilis leptophylla*.

***Dolycoris baccarum* (Linnaeus, 1758)**

Material examined: Giresun, Alucra, Arda, 40°13'38"N, 38°50'33"E, 1515 m, 29.VI.2006, 1♀; 17.V.2006, 1♀, 1♂; Şebinkarahisar, Dereköy, 40°17'33"N, 38°13'22"E, 1010 m, 21.VI.2006, 1♀, 3♂♂; Fındıkbeli, 40°15'58"N, 38°56'29"E, 1700 m, 17.V.2006, 1♀, 1♂; 22.VI.2007, 1♀, 2♂♂; Gümüşhane, Şiran, Çilhoroz, 40°10'15"N, 39°16'09"E, 1587 m, 21.VI.2007, 2♀♀, 1♂; 22.IX.2007, 1♀, 2♂♂; Sivas, Koyulhisar, Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 20.VI.2006, 1♀, 2♂♂; Yeşilyurt, 40°18'15"N, 37°41'08"E, 655 m, 30.VI.2005, 2♀♀, 2♂♂; Suşehri, Akçaağıl, 40°13'16"N, 38°03'21"E, 748 m, 16.V.2006, 1♀; Tokat, Erbaa, Değirmenli, 40°10'25"N, 36°30'35"E, 390 m, 25.VI.2005, 1♀; Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VI.2005, 1♂; 25.VIII.2005, 7♀♀, 5♂♂; Karayaka, 40°44'27"N, 36°35'05"E, 285 m, 25.VI.2005, 1♂; Niksar, Centrum, 40°29'22"N, 36°58'52"E, 315 m, 20.VI.2006, 2♀♀, 2♂♂; Buzköy, 40°38'11"N, 36°49'35"E, 331 m, 27.VIII.2005, 1♂; Kümbetli, 40°38'19"N, 36°45'03"E, 385 m, 27.VI.2005, 7♀♀, 6♂♂; 20.VI.2006, 1♀, 1♂; Muhtardüzü, 40°28'46"N, 37°01'11"E, 352 m, 27.VIII.2005, 1♂; Yakınca, 40°03'05"N, 36°50'08"E, 315 m, 27.VI.2005, 1♀; Reşadiye, Centrum, 40°22'22"N, 37°24'41"E, 508 m, 08.VIII.2007, 1♀, 1♂; Akıncı, 40°27'06"N, 37°06'10"E, 401m, 20.VI.2006, 1♀; Mutluca, 40°25'43"N, 37°06'47"E, 401 m, 27.VIII.2005, 1♀; Zinav, 40°28'24"N, 37°15'28"E, 1161 m, 08.VIII.2007, 2♂♂.

Host plants: *Carthamus glaucus*, *Cirsium arvense*, *Corylus avellana*, *Echium vulgare*, *Lavatera bryoniifolia*, *Rubus* sp., *Gladiolus italicus*, *Hypericum perforatum*, *Sideritis taurica*, *Verbascum* sp., *Vicia lutea*.

***Holcogaster fibulata* (Germar, 1831)**

Material examined: Sivas, Koyulhisar, Dilekli, 40°14'51"N, 37°57'12"E, 707 m, 20.IX.2007, 1♀; Tokat, Erbaa, Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 07.VIII.2007, 2♀♀; Niksar, Gürçeşme, 40°38'14"N, 36°45'01"E, 361 m, 07.VIII.2006, 2♀♀, 1♂; Kümbetli, 40°38'19"N, 36°45'03"E, 385 m, 20.VI.2006, 1♀, 1♂; Reşadiye, Karaağaç, 40°18'04"N, 37°31'49"E, 615 m, 28.VIII.2005, 5♀♀, 6♂♂.

Host plants: *Juniperus oxycedrus*, *Cupressus* sp.

**Aeliini Douglas & Scott, 1865**

***Aelia acuminata* (Linnaeus, 1758)**

Material examined: Bayburt, Demirözü, Güneşli, 40°11'15"N, 39°55'54"E, 1669 m, 22.VI.2007, 2♀♀, 2♂♂; Giresun, Alucra, Arda, 40°13'38"N, 38°50'33"E, 1515 m, 17.V.2006, 2♀♀; Aktepe, 40°19'16"N, 38°40'25"E, 1457 m, 09.VIII.2007, 1♂; Belen, 40°16'23"N, 38°55'28"E, 1688 m, 22.IX.2007, 1♂; 09.VIII.2007, 1♀, 1♂; Şebinkarahisar, Dereköy, 40°17'33"N, 38°13'22"E, 1010 m, 21.VI.2006, 2♀♀; Gümüşhane, Köse, Salyazı, 40°14'49"N, 39°48'28"E, 1678 m, 22.VI.2007, 4♀♀, 3♂♂; Sivas, Gölova, Boğazköy, 40°05'02"N, 38°31'17"E, 1160 m, 21.IX.2007, 2♂♂; Koyulhisar, Gökdere, 40°19'03"N,

37°39'04"E, 596 m, 30.VI.2005, 3♀♀, 1♂; Karaağaç, 41°06'16"N, 38°06'20"E, 615 m, 29.VI.2005, 1♀, 3♂♂; 28.VIII.2005, 1♀; Suşehri, Akçağıl, 40°13'16"N, 38°03'21"E, 748 m, 28.VI.2005, 2♀♀, 2♂♂; 16.V.2006, 1♀, 1♂; 29.IX.2007, 2♂♂; Tokat, Erbaa, Ağcaalan, 40°03'01"N, 38°07'18"E, 227 m, 27.VI.2005, 1♀; Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VI.2005, 3♀♀, 3♂♂; Karayaka, 40°44'27"N, 36°35'05"E, 285 m, 25.VI.2005, 1♂; 07.VIII.2007, 2♂♂; Yoldere, 40°51'09"N, 36°28'29"E, 280 m, 25.VI.2005, 8♀♀, 11♂♂; 25.VIII.2005, 2♀♀, 1♂; Niksar, Centrum, 40°29'22"N, 36°58'52"E, 315 m, 27.VI.2005, 1♂; 20.VI.2007, 3♀♀, 3♂♂; Ada, 40°29'22"N, 36°58'52"E, 315 m, 20.VI.2006, 2♂♂; Niksar, Buzköy, 40°38'11"N, 36°49'35"E, 331 m, 27.VIII.2005, 1♀, 3♂♂; Değirmenteş, 40°10'25"N, 36°30'35"E, 390 m, 26.VI.2005, 1♀; Dörtöy, 40°32'32"N, 36°55'01"E, 301 m, 07.VIII.2007, 1♀, 3♂♂; Gürçeşme, 40°38'14"N, 36°45'01"E, 361 m, 07.VIII.2006, 2♀♀, 2♂♂; 08.VIII.2007, 1♀, 3♂♂; Kümbetli, 40°38'19"N, 36°45'03"E, 385 m, 20.VI.2006, 1♀; Muhtardüzü, 40°28'46"N, 37°01'11"E, 352 m, 26.VI.2005, 1♀, 2♂♂; Osmaniye, 40°27'42"N, 37°14'13"E, 550 m, 28.VIII.2005, 2♀♀; Yakınca, 40°03'01"N, 36°50'08"E, 315 m, 27.VI.2005, 2♀♀, 2♂♂; Reşadiye, Centrum, 40°22'22"N, 37°24'41"E, 508 m, 08.VIII.2007, 2♂♂; Akıncı, 40°27'06"N, 37°06'10"E, 401 m, 17.V.2006, 1♂; 20.VI.2006, 1♂; Mutluca, 40°25'43"N, 37°06'47"E, 401 m, 27.08.2005, 5♀♀, 5♂♂; Zinav, 40°28'24"N, 37°15'28"E, 1161 m, 08.VIII.2007, 2♂♂.

Host plants: *Avena fatua* var. *fatua*, *Bromus squarrosus*, *Cynosurus echinatus*, *Hordeum bulbosum*, *Lathyrus nissolia*, *Plantuga lanceolata*, *Poa trivialis*, *Stipa bromoides*.

#### *Aelia rostrata* Boheman, 1852

Material examined: Erzincan, Çavuşköy, 39°58'25"N, 38°40'06"E, 1571 m, 21.VI.2007, 2♀♀; Refahiye, Olgunlar, 39°54'17"N, 38°48'16"E, 1603 m, 21.VI.2007, 1♀, 1♂; Giresun, Alucra, Arda, 40°13'38"N, 38°50'33"E, 1515 m, 17.V.2006, 3♀♀; Belen, 40°16'23"N, 38°55'28"E, 1688 m, 22.IX.2007, 1♂; 09.VIII.2007, 2♀♀; Gümüşhane, Şiran, Çilhoroz, 40°10'15"N, 39°16'09"E, 1587 m, 23.VI.2007, 1♀, 1♂; Sivas, Koyulhisar, Dilekli, 40°14'51"N, 37°57'12"E, 707 m, 24.V.2007, 4♀♀; Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 20.VI.2006, 1♀; Yeşilyurt, 40°18'15"N, 37°41'08"E, 655 m, 30.VI.2005, 3♀♀, 1♂; Suşehri, Arpacı, 38°05'07"E, 40°15'06"N, 840 m, 21.VI.2006, 2♀♀; Tokat, Erbaa, Değirmenteş, 40°10'25"N, 36°30'35"E, 390 m, 25.VI.2005, 2♀♀, 2♂♂; Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VI.2005, 2♂♂; Karayaka, 40°44'27"N, 36°35'05"E, 285 m, 25.VI.2005, 2♀♀; Yoldere, 40°51'09"N, 36°28'29"E, 280 m, 25.VI.2006, 3♀♀, 2♂♂; Niksar, Değirmenteş, 40°10'25"N, 36°30'35"E, 390 m, 25.VI.2005, 2♂♂; Kümbetli, 40°38'19"N, 36°45'03"E, 385 m, 27.VI.2005, 1♂; Yakınca, 40°03'01"N, 36°31'50"E, 258 m, 27.VI.2005, 2♀♀; Reşadiye, Akıncı, 40°27'06"N, 37°06'10"E, 401m, 20.VI.2006, 3♀♀, 2♂♂; Cemel, 40°24'21"N, 37°17'07"E, 560 m, 22.VI.2006, 2♀♀; Çakmak, 40°25'06"N, 37°12'02"E, 507 m, 21.07.2005, 3♀♀, 5♂♂; Karaağaç, 40°18'04"N, 37°31'49"E, 615 m, 29.VI.2005, 2♂♂; Zinav, 40°28'24"N, 37°15'28"E, 1161 m, 08.VII.2007, 1♂.

Host plants: *Bromus squarrosus*, *Cynosurus echinatus*, *Hordeum bulbosum*, *Poa trivialis*, *Stipa bromoides*.

#### *Aelia albivittata* Fieber, 1868

Material examined: Sivas, Koyulhisar, Gölcük, 40°15'45"N, 37°54'07"E, 673 m, 20.IX.2007, 1♂; Suşehri, Değirmenteş, 40°14'23"N, 38°03'38"E, 745 m, 21.VI.2006, 2♀♀, 3♂♂; Solak, 40°10'14"N, 38°07'33"E, 911 m, 16.V.2007, 1♂; Tokat, Re-

şadiye, Centrum, 40°22'22"N, 37°24'41"E, 508 m, 08.VIII.2007, 1♀, 1♂; Karaağaç, 40°18'04"N, 37°31'49"E, 615 m, 29.VI.2005, 2♂♂.

Host plants: *Bromus squarrosus*, *Poa trivialis*.

#### *Aelia alticola* Kiritschenko, 1914

Material examined: Erzincan, Refahiye, Çavuşköy, 39°58'25"N, 38°40'06"E, 1571 m, 21.VI.2007, 2♀♀; Örenbel, 39°57'07"N, 39°24'36"E, 1693 m, 22.VI.2007, 1♀; Sivas, Akıncılar, Sevindik, 40°05'42"N, 38°26'04"E, 1000 m, 17.V.2006, 2♀♀; Gölova, Boğazköy, 40°05'02"N, 38°31'17"E, 1160 m, 01.VII.2006, 1♂; Koyulhisar, Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 30.VI.2005, 2♀♀; Yeşilyurt, 40°18'15"N, 37°41'08"E, 655 m, 30.VI.2005, 2♀♀.

Host plants: *Bromus squarrosus*, *Hordeum bulbosum*, *Poa trivialis*.

#### *Aelia virgata* Klug, 1841

Material examined: Tokat, Reşadiye, Cemel, 40°24'21"N, 37°17'07"E, 560 m, 22.VI.2006, 1♀, 1♂.

Host plants: *Cynosurus echinatus*

#### *Neottiglossa bifida* (Costa, 1847)

Material examined: Sivas, Koyulhisar, Gölcük, 40°15'45"N, 37°54'07"E, 673 m, 20.IX.2007, 1♂; Suşehri, Değirmenteş, 40°14'23"N, 38°03'38"E, 745 m, 21.VI.2006, 1♀, 1♂.

Host plants: *Stipa bromoides*.

#### *Neottiglossa leporina* (Herrich-Schäffer, 1830)

Material examined: Tokat, Erbaa, Ağcaalan, 40°03'10"N, 38°07'18"E, 227 m, 27.VI.2005, 1♀, 1♂; Niksar, Muhtardüzü, 40°28'46"N, 37°01'11"E, 352 m, 26.VI.2005, 2♀♀, 1♂.

Host plants: *Briza media*, *Holcus lanatus*, *Poa trivialis*.

#### *Eysarcorini* Mulsant & Rey, 1866

##### *Eysarcoris venustissimus* (Schrank, 1776)

Material examined: Gümüşhane, Kelkit, Karaçayır, 40°08'07"N, 39°28'38"E, 1421 m, 17.V.2006, 1♀, 2♂♂.

Host plants: *Salvia viridis*.

##### *Eysarcoris ventralis* (Westwood, 1837)

Material examined: Sivas, Koyulhisar, Gökdere, 40°19'03"N, 37°39'04"E, 596 m, 20.VI.2006, 2♀♀, 2♂♂; Yeşilyurt, 40°18'15"N, 37°41'08"E, 655 m, 30.VI.2005, 3♀♀, 2♂♂; Tokat, Erbaa, Ağcaalan, 40°03'01"N, 38°07'18"E, 227 m, 27.VI.2005, 1♀; Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VI.2005, 1♂; Karanlıkdere, 40°10'25"N, 36°23'18"E, 385 m, 27.VIII.2005, 2♀♀; Muhtardüzü, 40°28'46"N, 37°01'11"E, 352m, 28.VI.2005, 5♀♀, 2♂♂; 27.VIII.2005, 1♀, 2♂♂; 01.VII.2006, 2♀♀, 3♂♂; Yoldere, 40°51'09"N, 36°28'29"E, 280 m, 23.VI.2005, 2♀♀, 2♂♂; Niksar, Centrum, 40°29'22"N, 36°58'52"E, 315 m, 20.VI.2006, 15♀♀, 11♂♂; Yakınca, 40°03'01"N, 36°50'08"E, 315 m, 27.VI.2005, 14♀♀, 6♂♂; Reşadiye, Centrum, 508 m, 37°24'42"E, 40°22'22"N, 08.VIII.2007, 2♀♀; Akıncı, 40°27'06"N, 37°06'10"E, 401m, 20.VI.2006, 4♂♂, 8♀♀.

Host plants: *Calluna vulgaris*, *Echium vulgare*, *Salvia viridis*, *Stipa bromoides*.

##### *Eysarcoris aeneus* (Scopoli, 1763)

Material examined: Bayburt, Demirözü, Güneşli, 40°11'15"N, 39°55'54"E, 1669 m, 22.VI.2007, 2♀♀, 1♂.

Host plants: *Stipa bromoides*

***Stagonomus (Dalleria) bipunctatus* (Linnaeus, 1758)**

Material examined: Sivas, Suşehri, Arpacı, 40°15'06"N, 38°05'07"E, 840 m, 21.VI.2006, 1♀, 1♂; Tokat, Erbaa, Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VI.2005, 1♀, 2♂♂; Karayaka, 40°44'27"N, 36°35'05"E, 285 m, 25.VI.2005, 1♀, 1♂; Niksar, Muhtardüzü, 40°28'46"N, 37°01'11"E, 352 m, 27.VIII.2005, 2♀♀, 2♂♂; 28.VI.2005, 1♀, 1♂; 01.VII.2006, 1♀, 2♂♂; Yakınca, 40°03'01"N, 36°50'08"E, 315 m, 27.VI.2005, 1♀, 1♂.

Host plants: *Echium vulgare*, *Salvia viridis*.

***Stagonomus (Stagonomus) amoenus* (Brullé, 1832)**

Material examined: Sivas, Koyulhisar, Yeşilyurt, 40°18'15"N, 37°41'08"E, 655 m, 30.VI.2005, 2♀♀, 1♂; Tokat, Erbaa, Kaleköy, 40°46'08"N, 36°30'19"E, 210 m, 25.VI.2005, 1♂; Yoldere, 40°51'09"N, 36°28'29"E, 280 m, 23.VI.2005, 2♀♀; Niksar, Centrum, 40°29'22"N, 36°58'52"E, 315 m, 20.VI.2006, 4♀♀, 2♂♂; Dalkaya, 41°32'20"N, 37°35'02"E, 272m, 27.VI.2005, 2♂♂; Kümbetli, 40°38'19"N, 36°45'03"E, 385 m, 20.VI.2005, 1♀; Muhtardüzü, 40°28'46"N, 37°01'11"E, 352 m, 27.VIII.2005, 1♂; Cemel, 40°24'21"N, 37°17'07"E, 560 m, 22.VI.2006, 2♀♀; Reşadiye, Karaağaç, 40°18'04"N, 37°31'49"E, 615 m, 29.VI.2005, 2♂♂; 29.VI.2005, 2♀♀, 2♂♂.

Host plants: *Calluna vulgaris*, *Echium vulgare*, *Hypericum androsaemum*, *Salvia viridis*.

***Stagonomus (Dalleria) devius* Seidenstücker, 1965**

Material examined: Tokat, Erbaa, Karayaka, 40°44'27"N, 36°35'05"E, 285 m, 27.VIII.2005, 1♂; Tepekişla, 40°06'08"N, 37°30'38"E, 220 m, 27.VI.2005, 1♂; Niksar, Derindere, 40°29'34"N, 36°54'28"E, 342 m, 28.VI.2005, 1♀; Kümbetli, 40°38'19"N, 36°45'03"E, 385 m, 26.VIII.2005, 1♀, 1♂; Reşadiye, Çakmak, 40°25'06"N, 37°12'02"E, 507 m, 29.VI.2005, 1♂.

Host plants: *Salvia* sp.

**Discussion and Conclusions**

The identification of the material collected from 57 different localities in Kelkit Valley revealed 2 species belonging to 2 genera of Halyini, 14 species belonging to 8 genera of Carpororini, 7 species belonging to 2 genera of Aeliini and 6 species belonging to 2 genera of Eysarcorini.

Halyini are represented in Turkey by 7 species belonging to 3 genera. Of those, *Mustha longispinis*, Reuter, 1890, *M. spinosula* (Lefebvre, 1831) and *M. izmirensis* Memon & Ahmad, 2008 (Type locality: İzmir-Turkey) have been described from Turkey (Horváth 1891, Memon & Ahmad, 2008). *Apodiphus amygdali* (Germar, 1817) and *Mustha spinosula* are distributed in Anatolia and Turkish Thrace. Remaining species of Halyini (*Mustha vicina* Hoberlandt, 1997 *Apodiphus integriceps* Horváth, 1888 and *Carenoplilus acutus* (Signoret, 1880)) are distributed only in Anatolia, according to the available records (Fent et al. 2010). *Mustha longispinis*, first recorded in Amasya, is known in Turkey from only its type locality Amasya (Horváth 1891) and from Ankara (Escherich 1897). But no other records have been reported so far for this species in the country except the present data. Kelkit Valley neighbours the region of Amasya. *M. longispinis* was found neither in Amasya (Dursun & Kartal 2008) nor in Kelkit Valley. *Mustha longispinis* currently represents a *nomen dubium* as the description is possibly

based on deformed, teratological specimen (P. Kment, pers. comm.).

Carpororini are represented in Turkey by 37 species belonging to 14 genera (Önder et al. 2006, Rider 2006). Of those, *Agatharchus escalerae* Horváth, 1901, *Agatharchus ponticus* Belousova, 1999, *Peribalus fissiceps* (Horváth, 1906), *P. hoberlandti* Lodos & Önder, 1980 and *Risibia verbasci* Lodos & Önder, 1980 have been described from Turkey. *Agatharchus ponticus*, *Peribalus fissiceps*, *P. hoberlandti*, and *Risibia verbasci* are endemic species to Anatolia, according to the available records (Awad 2000, Rider 2006).

Aeliini are represented in Turkey by 15 species belonging to 2 genera. Of those, *Neottiglossa lineolata* (Mulsant & Rey, 1852) is distributed only in Turkish Thrace and in a locality (Karabük-Eflani) from Anatolia (Fent & Aktaç 2007, Fent 2010). *Aelia acuminata*, *A. albovittata*, *A. rostrata*, *A. virgata*, *Neottiglossa bifida* and *N. leporina* are distributed in both Anatolia and Turkish Thrace (Fent & Aktaç 1999, Önder et al. 2006, Rider 2006, Fent 2010). The other species of Aeliini were known only from Anatolia.

Eysarcorini are represented in Turkey by 6 species belonging to 2 genera. Of those, *Stagonomus devius* has been described from Ankara (Seidenstücker 1965). This species is distributed only in Anatolia. The another species are distributed in Anatolia and Turkish Thrace (Fent & Aktaç 1999, Önder et al. 2006, Rider 2006).

In this study, *Stagonomus devius* was recorded for the first time in the research area of Kelkit Valley and Black Sea region. *Mustha spinosula*, *Apodiphus amygdali*, *Palomena prasina*, *P. viridissima*, *Chlorochroa juniperina juniperina*, *Carpororis fuscispinus* (forma *mediterraneus*), *C. melanocerus*, *Holcogaster fibulata*, *Aelia albovittata*, *A. virgata*, *Eysarcoris venustissimus*, *E. aeneus*, *Stagonomus bipunctatus*, and *S. amoenus* were firstly recorded in the research areas of Kelkit Valley.

In this study, the specimens of Halyini were caught mainly on Plantanaceae, Oleaceae, Aquifoliaceae and Elaeagnaceae families. The specimens of Carpororini were caught mainly on Asteraceae, Apiaceae, Betulaceae, Cupressaceae, Malvaceae and Scrophulariaceae. The specimens of Aeliini are known as pests of cereals. The specimens of Aeliini were caught on Poaceae and Plantaginaceae. The specimens of Eysarcorini were caught mainly on Boraginaceae, Ericaceae and Lamiaceae.

Among the identified species in the research area, the first records in Turkey of *Eysarcoris venustissimus* were identified in Bolu by Lodos et al. (1998) as *Eysarcoris fabricii* Kirkaldy, 1904 and in Amasya, Ordu, Samsun by Dursun & Kartal (2008). *Chlorochroa j. juniperina* was identified in Bursa and Kastamonu by Hoberlandt (1956) and in Çorum and Tokat by Dursun & Kartal (2008) as *Pitedia juniperina*. *Stagonomus devius* was identified in Ankara by Seidenstücker (1965) and in Kahramanmaraş by Lodos et al. (1998). These species are little known and rare in Turkey. On the other hand, the other species of these tribes are frequent and widely distributed in Turkey.

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