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***Orijinal araştırma* (*Original article*)**

Insect species associated with cereals in Lakes Region of Turkey with distributional remarks and a new record

Türkiye Göller Bölgesi hububat alanlarında bulunan böcek türleri, yayılışları ve yeni bir kayıt

Ozan DEMİRÖZER[1*] Serdar BİLGİNTURAN[2]

Summary

This study was conducted in various dates in 2010 in cereal fields of Lakes Region, samples were collected from 54 different localities and altitudes ranging from 800 to 1450 m from 15th May to 23rd June of 2010. Collected materials were put into jars containing ethyl acetate for killing, and then pinned in laboratory. Results revealed the presence of a total of 66 species of insects belonging to 56 genera spread over 29 families and 6 orders. Of these, Coleoptera was the most abundant order in the present study areas with 29 species, followed by, Hemiptera (14), Hymenoptera (13), Thysanoptera (7), Diptera (2) and Lepidoptera (1).

Eurypogon niger (Melsheimer, 1846) (Coleoptera: Artemopodidae), is recorded for the first time from Turkey.

Key words: Entomofauna, cereals, Lakes Region, new record, Turkey

Özet

Bu çalışma, Göller Bölgesi'nde bulunan hububat ekim alanlarında 800-1450 m yükseltiye sahip 54 farklı lokalitede 15 Mayıs - 23 Haziran 2010 tarihleri arasında yürütülmüştür. Elde edilen örnekler etil asetatlı kaplarda öldürüldükten sonra labaratuvarda iğnelenmiştir. Sonuç olarak 6 takıma bağlı 29 familyadan 56 cins içerisinde toplam 66 tür saptanmıştır. Çalışılan alanlar içerisinde, Coleoptera 29 türle en baskın takım olarak saptanmış, diğer takımlar ise Hemiptera (14), Hymenoptera (13), Thysanoptera (7), Diptera (2) ve Lepidoptera (1) tür sayılarıyla takip etmişlerdir.

Eurypogon niger (Melsheimer, 1846) (Coleoptera: Artemopodidae), Türkiye'de ilk kez bu çalışmada kaydedilmiştir.

Anahtar sözcükler: Entomofauna, hububat, Göller Bölgesi, yeni kayıt, Türkiye

[1] Department of Plant Protection, Faculty of Agriculture, Süleyman Demirel University, 32260, Isparta, Turkey
[2] Department of Agricultural Biotechnology, Faculty of Agriculture, Süleyman Demirel University, 32260, Isparta, Turkey
* Sorumlu yazar (Corresponding author) e-mail: ozandemirozer@sdu.edu.tr
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Introduction

The Lakes Region is situated in the western part of the Mediterranean region of Turkey and it covers provinces of Antalya, Burdur and Isparta with varied topography. Being under the influence of different climatic conditions of the Mediterranean, Aegean and Central Anatolia, Lakes Region has a rich agronomic product range. There are nine lakes (Acıgöl, Akşehir, Burdur, Beyşehir, Eber, Eğirdir, Ilgın, Kovada and Suğla) in the region. The climatic condition of this region is greatly affected by these lakes and has considerable influence on agricultural production. In the region, pome and stone fruits and also vegetable and medicinal and aromatic crops are cultivated in different production conditions (open field and greenhouse). In 2013, on average, 1.2268.133 tons of fruit and 556.201 tons of vegetable were produced. Cereals are also important crops of the region; the total production was 4.011.560 tons in 2013. Despite the biological diversity and high amount wheat production in the region, number of studies conducted to determine the insect species of cereal production areas of Lakes Region are limited (Altınayar,1981; Lodos et al., 1999; Karsavuran et al., 2008; Korkmaz et al., 2010a; Tunç et al., 2012).

In this study, we aimed to determine insect species in cereals production areas of Lakes Region within different topographies.

Materials and Methods

The fieldworks of the study were performed in cereals production areas in the Lakes Region in 2010 (Figure 1). Samples were collected from 54 different localities and altitudes ranging from 800 to 1450 m from 15th May to 23rd June in 2010. Data of collected materials were given in Table 1.

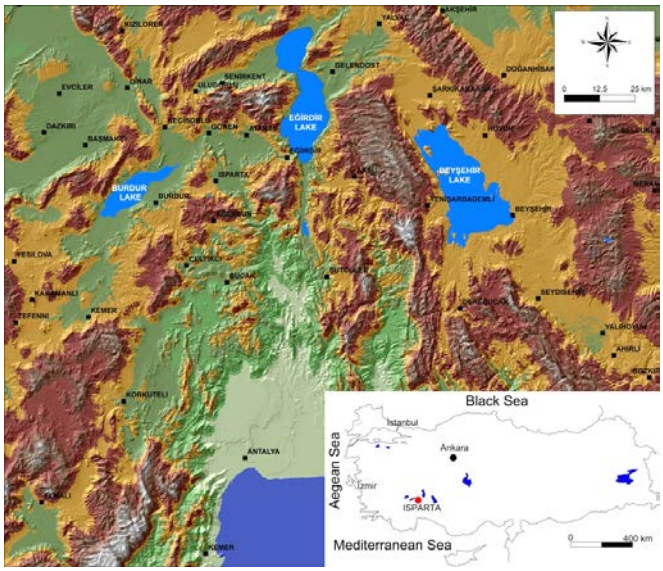

Figure 1. The research areas in Lakes Region, Turkey

Specimens were collected by sweeping net, insect mouth aspirator and by hand in every sampling point. From each sampling point 100 times sweeping were done. Collected materials were put into jars containing ethyl acetate for killing, and then pinned in laboratory properly. Moreover, from each sampling field a total of 100 plants were collected and carried to laboratory by using cold box, leaves, stem and roots were examined under stereomicroscope and the specimens obtained were kept into vials containing 70% ethyl alcohol for further studies.

Table 1. Data of collected materials

PROVINCE & TOWN ABBREVIATIONS	DISTRICT NUMBERS	COORDINATES		ALTITUDES (meter)
BURDUR (BUR)				
AĞLASUN (AGL1)	190	N 37° 37'527''	E 30° 37'425''	951
AĞLASUN (AGL2)	191	N 37° 38'455''	E 30° 36'100''	965
AĞLASUN (AGL3)	238	N 37° 38'052''	E 30° 06'353''	888
AĞLASUN (AGL4)	194	N 37° 37'347''	E 30° 31'164''	1147
AĞLASUN (AGL5)	192	N 37° 38'721''	E 30° 34'543''	1038
AĞLASUN (AGL6)	243	N 37° 38'358''	E 29° 48'123''	1107
AĞLASUN (AGL7)	195	N 37° 36'532''	E 30° 32'003''	1040
AĞLASUN (AGL8)	193	N 37° 39'359''	E 30° 31'268''	1093
AĞLASUN (AGL9)	196	N 37° 35'475''	E 30° 32'525''	1025
BUCAK (BUC1)	201	N 37° 18'465''	E 30° 21'117''	799
BUCAK (BUC2)	204	N 37° 23'031''	E 30° 31'453''	798
BUCAK (BUC3)	198	N 37° 18'116''	E 30° 27'548''	984
BUCAK (BUC4)	200	N 37° 18'229''	E 30° 24'055''	801
BUCAK (BUC5)	203	N 37° 20'037''	E 30° 30'009''	804
CENTRAL PROVINCE (CP1)	235	N 37° 35'486''	E 31° 05'064''	1095
YEŞİLOVA (YOV1)	245	N 37° 34'029''	E 29° 46'459''	1160
YEŞİLOVA (YOV2)	246	N 37° 39'047''	E 29° 46'319''	1191
YEŞİLOVA (YOV3)	239	N 37° 42'770''	E 29° 57'752''	879
YEŞİLOVA (YOV4)	242	N 37° 40'362''	E 29° 50'666''	1078
YEŞİLOVA (YOV5)	240	N 37° 41'942''	E 29° 56'123''	950
YEŞİLOVA (YOV6)	241	N 37° 41'916''	E 29° 52'381''	1124
ISPARTA (ISP)				
ATABEY (ATB1)	186	N 37° 56'561''	E 30° 37'361''	990
ATABEY (ATB2)	187	N 37° 55'425''	E 30° 33'541''	1006
CENTRAL PROVINCE (CP1)	177	N 37° 53'340''	E 30° 31'068''	1029
CENTRAL PROVINCE (CP2)	178	N 37° 53'570''	E 30° 30'449''	941
CENTRAL PROVINCE (CP3)	184	N 37° 55'466''	E 30° 33'201''	1006
EĞİRDİR (EGR1)	259	N 37° 57'401''	E 30° 59'154''	1224
EĞİRDİR (EGR2)	257	N 37° 54'224''	E 31° 00'554''	1430
EĞİRDİR (EGR3)	260	N 37° 35'486''	E 30° 05'064''	1095
EĞİRDİR (EGR4)	255	N 37° 52'303''	E 30° 58'565''	1380
EĞİRDİR (EGR5)	256	N 37° 53'864''	E 31° 01'430''	1396
EĞİRDİR (EGR6)	257	N 37° 54'374''	E 31° 00'925''	1432
GÖNEN (GON1)	179	N 37° 56'458''	E 30° 30'365''	967
GÖNEN (GON2)	181	N 37° 57'075''	E 30° 29'023''	1011
GÖNEN (GON3)	180	N 37° 57'091''	E 30° 30'280''	994
GÜNEYKENT (GNK1)	182	N 37° 56'594''	E 30° 28'405''	1018
GÜNEYKENT (GNK2)	183	N 37° 56'375''	E 30° 28'458''	1015
İSLAMKÖY (ISK1)	188	N 37° 55'410''	E 30° 40'105''	994
ŞARKİKARAAĞAÇ (SKR1)	223	N 38° 07'102''	E 31° 20'064''	1160
ŞARKİKARAAĞAÇ (SKR2)	220	N 38° 01'007''	E 31° 16'597''	1147
ŞARKİKARAAĞAÇ (SKR3)	224	N 38° 09'022''	E 31° 17'225''	1175
ŞARKİKARAAĞAÇ (SKR4)	222	N 38° 06'438''	E 31° 20'154''	1158
ŞARKİKARAAĞAÇ (SKR5)	221	N 38° 04'224''	E 31° 20'304''	1145
YALVAÇ (YAL1)	229	N 38° 16'431''	E 31° 09'546''	1026
YALVAÇ (YAL2)	225	N 38° 11'128''	E 31° 16'275''	1180
YALVAÇ (YAL3)	227	N 38° 11'449''	E 31° 12'229''	1094
YALVAÇ (YAL4)	228	N 38° 11'092''	E 31° 07'452''	1054
YENİŞARBADEMLİ (YBD1)	218	N 37° 41'673''	E 31° 25'750''	1135
YENİŞARBADEMLİ (YBD2)	215	N 37° 58'385''	E 31° 17'473''	1202
YENİŞARBADEMLİ (YBD3)	216	N 37° 45'573''	E 31° 25'143''	1138
KONYA (KON)				
BEYŞEHİR (BEY1)	207	N 37° 42'522''	E 31° 42'577''	1126
BEYŞEHİR (BEY2)	209	N 37° 43'031''	E 31° 42'234''	1128
BEYŞEHİR (BEY3)	211	N 37° 45'063''	E 31° 39'285''	1127
BEYŞEHİR (BEY4)	206	N 37° 42'200''	E 31° 42'505''	986

The following information is given for the materials listed: administrative districts (province), localities (town), dates, number of districts (record number of sampling point), number of specimen, and the total numbers (in square brackets at the end of each species) of the species. Localities and elevation data were abbreviated as in the Table 1. Materials were preserved in EMIT (Entomological Museum of Isparta, TURKEY) in Süleyman Demirel University, Faculty of Agriculture, Department of Plant Protection.

Results and Discussion

At the end of the study, the results revealed that there were 66 species from 29 families belonging to 6 orders of Insecta. Out of 66 species 7 of them were identified up to genus level. While 41 of them were determined to be phytophagous, 25 of them were identified as beneficial for the entomofauna of the Lakes Region according to previous literature. Additionally, *Eurypogon niger* (Melsheimer) was identified as new record for the insect fauna of Turkey.

The most common species associated with cereals in Lakes Region were given according to Triplehorn & Johnson, 2005.

Order: Hemiptera

Family: Aphididae

Sitobion avenae (Fabricius, 1775)

Material examined: Burdur: BUC2, 30.v.2010, 204, (13); Isparta: CP2, 15.v.2010, 178, (11); CP3, 184, (13); SKR1, 02.vi.2010, 223, (14); YAL1, 02.vi.2010, 229, (6); EGR2, 23.vi. 2010, 257, (14); EGR1, 23.vi.2010, 259, (11). Konya: BEY1, 01.vi.2010, 207, (10). [92]

Distribution in Turkey: Common (Düzgüneş et al., 1982; Lodos, 1982; Elmalı & Toros 1994; Kıran, 1994; Özder & Toros, 1999; Ölmez Bayhan, 2000; Toros et al., 2002; Aslan & Uygun, 2005).

Remark: The species was only detected from wheat fields within sampling areas between mid May and end of June. It was found as the most common aphid species.

Family: Pentatomidae

Aelia rostrata Boheman, 1852

Material examined: Burdur: AGL2, 30.v.2010, 191, (3); AGL5, 30.v.2010, 192, (3); AGL6, 17.vi.2010, 243, (1); Isparta: CP1, 15.v.2010, 177, (2); GON1, 15.v.2010, 179, (21); GON2 15.v.2010, 181, (4); GNK1, 15.v.2010, 182, (1); ISK1, 15.v.2010, 188, (1); YBD1, 01.vi.2010, 218, (1); SKR2, 02.vi.2010, 220, (2); YAL2: 02.vi.2010, 225, (1); EGR2, 23.vi.2010, 257, (1); Konya: BEY2, 01.vi.2010, 209, (1); BEY3, 01.vi.2010, 211, (2). [44]

Distribution in Turkey: Common (Duran, 1958; Dikyar, 1981; Lodos, 1982).

Remark: The genus *Aelia* comprises 12 species in Turkey, *A. rostrata* was reported the most harmful species within the genus (Lodos, 1982).

Family: Scutelleridae

Eurygaster maura (Linnaeus, 1758)

Material examined: Burdur: AGL2, 191, (3); AGL5, 192, (2); AGL8, 193, (3); AGL4, 194, (3); AGL7, 195, (4); AGL9, 196, (2); BUC3, 30.v.2010, 198, (3); BUC2, 204, (4); CP1, 17.vi.2010, 235, (6); AGL3, 17.vi.2010, 238, (4); Isparta: CP1, 15.v.2010, 177, (12); CP2, 178, (4); GON1, 179, (11); GON2, 181, (6); GNK1, 15.v.2010, 182, (1); ATB1, 186, (7); ATB2, 15.v.2010, 187, (3); ISK1, 188, (4); SKR3, 02.vi.2010, 224 (1); YAL3, 02.vi.2010, 227, (1); EGR4, 23.vi.2010, 255, (1); EGR5, 256, (1); Konya: BEY1, 01.vi.2010, 207, (1); BEY3, 211, (1); BEY4, 01.vi.2010, 204, (1). [85]

Distribution in Turkey: Common, Thrace, Aegean, Mediterranean, Central and East Anatolia Regions (Lodos, 1981; Koçak et al., 2014).

Order: Thysanoptera

Family: Thripidae

Frankliniella tenuicornis (Uzel, 1895)

Material examined: Burdur: AGL7, 195, (1); BUC2, 204, (1); Isparta: ATB1, 15.v.2010, 186, (1); ATB2, 187, (2); YAL3, 227, (3); YAL1, 229, (4). [12]

Distribution in Turkey: Adana, Afyon, Amasya, Ankara, Antalya, Balıkesir, Çorum, Eskişehir, Gaziantep, Hatay, Isparta, İzmir, Kahramanmaraş, Konya, Manisa, Mersin, Samsun (Eltez et al., 2006; Karsavuran & Gücük, 2006; Tunç et al., 2012).

Family: Phlaeothripidae

Haplothrips tritici (Kurdjumov, 1912)

Material examined: Burdur: BUC, 30.v.2010, BUC2, 204, (9); AGL7, 30.v.2010, 195, (3); Isparta: CP1, 15.v.2010, 177, (14); CP2, 178, (8); GNK1, 182, (6); GNK2, 183, (5); ATB1, 186, (11); ATB2, 187, (3); YBD2; 01.vi.2010, 215, (23); SKR3, 02.vi.2010, 224, (8); YAL1, 02.vi.2010, 229, (10), YAL3, 227, (17);Konya: BEY3, 01.vi.2010, 211, (5). [122]

Distribution in Turkey: Common thrips species on grains in Turkey (Tunç, 1978; Lodos, 1984; Tunç, 1992).

Remark: In every examined location, great numbers of *H. tritici* larvae were found in the ear of grains.

Order: Coleoptera

Family: Dasytidae

Enicopus pilosus (Scopoli, 1763)

Material examined: Burdur: AGL6, 17.vi.2010, 243, (6); AGL9, 30.v.2010, 196, (8); BUC2, 30.v.2010, 204, (2); BUC4, 200, (1); BUC1, 201, (3); Isparta: CP2, 15.v.2010, 178, (1); SKR2, 02.vi.2010, 220, (12). [43]

Distribution in Turkey: Afyon, Denizli, Eskişehir, Isparta, Konya, Sivas, Yozgat (Altınayar, 1981; Sert & Kabalak, 2010).

Family: Artemopodidae

Eurypogon niger (Melsheimer, 1846)

Material examined: Burdur: YOV1, 17.vi.2010, 245, (1); YOV2, 246, (1). [2]

Distribution in Turkey: New record for the fauna of Turkey.

Remark: Artematopodids superficially resemble pubescent click beetles (Elateridae). However, their prosternal keel is less developed than in elaterids, and they lack their frontal ridge. A characteristic feature of the family is a tongue-like process located on the ventral surface of the elytral apex (Young, 2002).

Family: Rutelidae

Anisoplia segetum (Herbst, 1783)

Material examined: Burdur: BUC1, 30.v.2010, 201, (5); BUC5, 203, (6); Isparta: GON2, 15.v.2010, 181, (2); ISP: SKR, 02.vi.2010, 220, (3). [16]

Distribution in Turkey: Central Anatolia, Adana (Duran et al., 1975; Sayan, 2010)

Family: Coccinellidae

Adalia bipunctata (Linnaeus, 1758)

Material examined: Burdur: CP1, 17.vi.2010, 235, (2); YOV3, 17.vi.2010, 239, (2); YOV4, 17.vi.2010, 242, (1); Isparta: SKR3, 02.vi.2010, 224, (1). [6]

Distribution in Turkey: Common, Adana, Adıyaman, Afyon, Ankara, Antalya, Artvin, Bilecik, Bursa, Diyarbakır, Edirne, Erzurum, Hakkari, Isparta, Kahramanmaraş, Konya, Malatya, Manisa, Mardin, Mersin, Rize, Şanlıurfa, Van (Karaca et al., 2006; Portakaldalı, 2008; Kaya & Yaşar, 2011; Gözüaçık et al., 2012).

Remark: The species is known to be predator of aphids distributed in Europe, Central Asia and North America.

Coccinella septempunctata Linnaeus, 1758

Material examined: Burdur: AGL5, 30.v.2010, 192, (1); AGL8, 193, (5); AGL4, 194, (5); AGL9, 196, (3); BUC1, 30.v.2010, 201, (8); AGL3, 17.vi.2010, 238, (2); YOV1, 17.vi.2010, 245, (3); YOV3, 239, (6); YOV5, 240, (16); YOV6, 241, (2); YOV4, 242, (2); AGL6, 17.vi.2010, 243, (1); CP1, 17.vi.2010, 235, (1); Isparta: GON3, 15.v.2010, 180, (11); SKR2, 02.vi.2010, 220, (4); SKR5, 221, (1); SKR3, 224, (1); YAL1, 02.vi.2010, 229, (2); EGR5, 23.vi.2010, 256, (1); EGR6, 257, (3); Konya: BEY4, 01.vi.2010, 204, (4); BEY1, 207, (7); BEY3, 211, (7). [96]

Distribution in Turkey: Adana, Adıyaman, Ankara, Antalya, Artvin, Balıkesir, Bursa, Çankırı, Denizli, Diyarbakır, Edirne, Erzincan, Erzurum, Gaziantep, Hatay, Isparta, Kahramanmaraş, Konya, Malatya, Mardin, Rize, Siirt, Sivas, Şanlıurfa, Van (Altınayar, 1981; Karaca et al., 2006; Portakaldalı, 2008; Demirözer & Karaca, 2011; Kaya & Yaşar, 2011; Gözüaçık et al., 2012).

Hippodamia (*Adonia*) *variegata* (Goeze, 1777)

Material examined: Burdur: AGL2, 30.v.2010, 191, (2); AGL5, 192, (1); AGL9, 195, (1); BUC1, 30.v.2010, 201, (5); AGL3, 17.vi.2010, 238, (4); YOV5, 17.vi.2010, 240, (1); YOV4, 242, (21); BUR: CP1, 17.vi.2010, 235, (3); Isparta: SKR4, 02.vi.2010, 222, (2); Konya: BEY1, 01.vi.2010, 207, (1). [41]

Distribution in Turkey: Adana, İzmir (Yoldaş et al., 2007; Sayan, 2010)

Remark: The coccinellid species is a widespread aphidophagous predator (Hodek & Honek, 1996). It has been recorded feeding on 19 different aphid species in Turkey (Aslan & Uygun, 2005).

Family: Melyridae

Malachius bipustulatus (Linnaeus, 1758)

Material examined: Burdur: AGL2, 30.v.2010, 191, (9); AGL9, 196, (43); BUC1, 30.v.2010, 201, (3); BUC3, 198, (4); BUC4, 200, (3); Isparta: GON2, 15.v.2010, 181, (2); SKR2, 02.vi.2010, 220, (3); SKR5, 221, (1); YAL1, 02.vi.2010, 229, (1); Konya: BEY3, 01.vi.2010, 211, (1). [70]

Distribution in Turkey: Turkey, given in Catalogue of Palaearctic Coleoptera Volume 4 without a precise locality, (Mayor, 2007).

Family: Alleculidae

Omophlus flavipennis Kuster, 1850

Material examined: Burdur: AGL2, 30.v.2010, 191, (1); Isparta: CP2, 15.v.2010, 178, (1); GON2, 15.v.2010, 181, (2); GNK1, 15.v.2010, 182, (1); ATB2, 15.v.2010, 187, (1); SKR3, 02.vi.2010, 224, (7); YAL1, 02.vi.2010, 229, (1); YAL3, 227, (29); YAL4, 228, (1); Konya: BEY4, 01.vi.2010, 206, (1); BEY3, 211, (28); BEY2, 209, (16). [90]

Distribution in Turkey: Erzurum, Isparta (Kılıç & Yıldırım, 2009; Demirözer & Karaca, 2011).

Remark: This species reported as pest of *Eleagnus angustofolia* L. and additionally, *O. lepturoides* is recorded as a pest for the cereals (Kılıç & Yıldırım, 2009).

Family: Ichneumonidae

Collyria coxator (Villers, 1789)

Material examined: Burdur: AGL2, 30.v.2010, 191, (1); AGL5, 192, (2); AGL8, 193, (1); BUC2, 30.v.2010, 204, (1); Isparta: CP1, 15.v.2010, 177, (1); CP2, 178, (1); GON1, 15.v.2010, 179, (1); ATB1, 15.v.2010, 186, (1); ATB2, 187, (1). [10]

Distribution in Turkey: Ankara, Batman, Diyarbakır, Elazığ, Isparta, İstanbul, Mardin, Sivas, Yozgat (Kırtay, 2008; Korkmaz et al., 2010 b).

Family: Cephicidae

Cephus pygmaeus (Linnaeus, 1767)

Material examined: Burdur: AGL2, 30.v.2010, 191, (8); 192, (4); Isparta: CP2, 15.v.2010, 178, (7); GON2, 15.v.2010, 181, (11); GNK1, 15.v.2010, 182, (13); ATB1, 15.v.2010, 186, (28); ATB2, 187, (17); SKR4, 02.vi.2010, 222, (5). [93]

Distribution in Turkey: Wheat stem sawfly is the most common and important pest in wheat production areas of Turkey (Tülek et al., 2011).

Order: Coleoptera

Family: Chrysomelidae

Oulema melanopus (Linnaeus, 1758)

Material examined: Burdur: BUC1, 30.v.2010, 201, (31); CP1, 17.vi.2010, 235, (4); AGL1, 17.vi.2010, 190, (3); Konya: BEY4, 01.vi.2010, 206, (3). [41]

Distribution in Turkey: Aksaray, Ankara, Çankırı, Diyarbakır, Eskişehir, Gaziantep, Karaman, Osmaniye, Samsun, Siirt, Sivas, Tekirdağ, Yozgat (Altınayar, 1981; Altay & Kıvan, 2007).

Family: Curculionidae

Pachytychius hordei (Brulle, 1832)

Material examined: Isparta: CP1, 15.v.2010, 177, (5); CP2, 15.v.2010, 178, (10); GON1, 15.v.2010, 179, (71); GON2, 181, (10); GNK, 15.v.2010, 182, (97); ATB2, 15.v.2010, 187, (59); Konya: BEY1, 01.vi.2010, 207, (1). [253]

Distribution in Turkey: Aegean, Central Anatolia and Mediterranean Regions (Zümreoğlu, 1972; Koyuncu, 1975; Kavut & Kaya, 1978; Şimşek, 1998).

Remark: This species is reported in previous studies as crucial pest of wheat and barley in Aegean, Central Anatolia and Mediterranean Regions (Zümreoğlu, 1972; Koyuncu, 1975; Kavut & Kaya, 1979; Şimşek, 1998). In this study, it was also found abundant species in the examined localities.

The other species found in Lakes District were given in Table 2.

Table 2. The other species found in Lakes District

Order	Family	Species	Location Numbers	Number of Specimens
Hemiptera				
	Aphididae	*Myzus persicae* (Sulzer, 1776)	201, 229, 259	37
		Rhopalosiphum maidis (Fitch, 1856)	178, 207	20
		Rhopalosiphum padi (Linnaeus, 1758)	178, 259, 229	46
	Lygaeidae	*Nysius punctipennis* (Herrich-Schäffer, 1838)	238	2
		Orsilinae sp.	220	4
	Miridae	*Deraeocoris schach* (Fabricius, 1781)	204	1
		Dicyphus sp.	194	1
	Pentatomidae	*Carpocoris fuscispinus* (Boheman, 1851)	235	2
		Eurydema ornatum (Linnaeus, 1758)	235	3
		Holcostethus vernalis (Wolff, 1804)	183, 195, 235	5
	Scutelleridae	*Eurygaster austriaca* (Schrank, 1776)	177, 179, 188, 192, 201	25
Thysanoptera				
	Aeolothripidae	*Aeolothrips intermedius* Bagnall,1934	177, 224	6
		Aeolothrips collaris Priesner, 1919	186, 204, 229	6
	Thripidae	*Thrips angusticeps* Uzel, 1895	187, 224	2
		Limothrips denticornis (Haliday, 1836)	187, 195, 229	4
		Sitothrips arabicus Priesner, 1931	183, 187, 211	5
Coleoptera				
	Carabidae	*Carabus* sp.	194	1
		Zabrus tenebrioides Goeze, 1777	182, 183	3
	Glaphyridae	*Pygopleurus vulpes* (Fabricius, 1781)	179, 181, 188	4
	Rutelidae	*Anisoplia austriaca* (Herbst, 1783)	245	3
	Scarabaeidae	*Pygopleurus vulpes* (Fabricius, 1781)	179, 181, 188	4
	Cantharidae	*Cantharis livida* (Linnaeus, 1758)	190	1
		Cantharis sp.	194	1
	Cleridae	*Trichodes quadriguttatus* Adams,1817	235	2
	Coccinellidae	*Coccinula quatuordecimpunctata* (Linnaeus, 1758)	206, 216, 235, 238, 239, 242, 257	11
		Psyllobora vigintiduopunctata (Linnaeus, 1758)	211, 235	2
		Propylea quatuordecimpunctata (Linnaeus, 1758)	242	1
		Scymnus bivulnerus Capra & Fürsch, 1967	192, 196, 207, 222	6
		Scymnus pallipediformis Günther, 1958	229	2
		Scymnus rubromaculatus (Goeze, 1778)	207	1
	Meloidae	*Mylabris calida* (Pallas, 1784)	215, 220	10
		Lytta vesicatoria (Linnaeus, 1758)	182	2
		Lytta sp.	182	2
	Chrysomelidae	*Gastrophysa polygoni* (Linnaeus, 1758)	204	2
		Chrysolina gypsophilae (Küster, 1845)	179, 182	2
		Clytra novempunctata Oliver, 1808	206	1
Hymenoptera				
	Ichneumonidae	*Pimpla spuria* Gravenhorst, 1829	178	1
		Monoblastus brachyacanthus (Gmelin, 1790)	177	1
		Scolobates sp.	207	1
		Erigorgus cerinops (Gravenhorst, 1829)	222	1
		Lissonota sp.	238	1
	Braconidae	*Bracon trucidator* Marshall, 1888	216, 243, 257	4
		Bracon pectoralis (Wesmael, 1838)	235, 238	9
		Bracon urinator (Fabricius, 1798)	238	1
	Cephicidae	*Trachelus tabidus* (Fabricius, 1775)	206, 229	13
	Scelionidae	*Trissolcus semistriatus* Nees, 1834	177	6
	Encyrtidae	*Ooencyrtus* sp.	179	3
Lepidoptera				
	Gelechiidae	*Syringopais temperatella* (Lederer, 1855)	206, 227, 240, 242	20
Diptera				
	Ulidiidae	*Melieria* sp.	178, 207, 206	4

During the study, *Eurygaster maura*, *Adalia bipunctata*, *Coccinella septempunctata*, *Hippodamia* (*Adonia*) *variegata*, *Haplothrips tritici*, *Omophlus flavipennis*, *Malachius bipustulatus*, *Sitobion avenae*, *Collyria coxator*, *Pachytychius hordei*, *Enicopus pilosus*, *Cephus pygmaeus*, were found the most

common insect species in the sampling points. Moreover, 21 species were determined as beneficial, the rest of 45 species out of 66 total specimens were found to be phytophagous in previous literature.

In the study, *Eurypogon niger* (Melsheimer, 1846) was determined as new record for the Turkish entomofauna and the importance of insect biodiversity of cereal production areas in Lakes Region of Turkey was emphasized.

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