

A Study on Determination of Insect Fauna of Karagöl-Sahara Natural National Park (Artvin, Turkey)

Karagöl-Sahara Milli Parkı (Artvin, Türkiye) Böcek Faunasının Tespiti Üzerine Bir Çalışma

Research Article

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ABSTRACT

Karagöl-Sahara Natural National Park, settled on Şavşat county in Artvin province. The Natural National Park consist of two parts as Sahara and Karagöl. There aresome studies encountered related to the insect fauna of the study field and surroundings. Species, which are directly related to study field given from literature (1, 2), are mentioned with "Lit." on Table 1. In the studies for the determination of insect fauna in Karagöl-Sahara Natural National Park, 139 species that belong to 40 families have been determined.

Key Words

Karagöl-Sahara Natural National Park, Insect Fauna, Turkey.

ÖZET

Karagöl-Sahara Milli Parkı, Artvin ili Şavşat ilçesi sınırları içinde yer almaktadır. Milli Park Sahara ve Karagöl olmak üzere iki kısımdan oluşmaktadır. Çalışma alanı ve civarından, böcek faunası ile ilgili bazı çalışmalarbulunmaktadır. Literatürden, çalışma alanı ile doğrudan alakalı olan türler, "Lit." olarak Tablo 1'de verilmiştir. Karagöl-Sahara Milli Parkı böcek faunası teşhis çalışmalarında 40 familyadan 139 tür tespit edilmiştir.

Anahtar Kelimeler

Karagöl-Sahara Milli Parkı, Böcek Faunası, Türkiye.

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INTRODUCTION

Karagöl-Sahara National Park is located within the boundaries of Artvin-Şavşat. The National Park is composed of two parts. Sahara section is composed of an area that is 2600 m. high and including forests which are scarce in lower parts and gets dense towards upper parts. During field studies, the vegetation which influences insect density in the area was analyzed and it was observed that annual herbaceous plant density was scarce. Karagöl section is covered with dense and various trees compared to Sahara section. It was observed that annual plant density is quite more than Sahara. Insects from stations determined considering vegetation of both sections of National Park and from the fields which are thought to include insects were collected and included in the collection.

MATERIAL AND METHOD

Insect samples were collected during May-October 2004. Insect net and light trap were used in collecting insects. The samples were processed with standard methods and added to the collection. Lodos [3,4,5], Pehlivan [6], Southwood & Leston [7], Whalley & Lewington [8] resources were used for determination of insects. Each group of those samples were identified by the specialists. Both the personal collections (Prof. Dr. Neşe Çağatay-Lygaeidae, Prof. Dr. Selim S. Çağlar-different families of Hemiptera, Assoc. Prof. Bekir Keskin-Tenebrionidae) were examined and identified or they were asked to be identified. The names of the specialists and the groups they identified are as follows: Prof. Dr. Nedim Uygun and Assist. Prof. Derya Şenal (Coccinellidae), Prof. Dr. Abdullah Hasbenli (Diptera), Assist. Prof. Orhan Mergen (Bruchidae), Assoc. Prof. Hüseyin Özdikmen ve Semra Turgut (Cerambycidae and Chrysomelidae), Assoc. Prof. Selma Seven Çalışkan (Lepidoptera), Assoc. Prof. A. Murat Aytekin (Apoidae), Dr. Yasemin Güler (Megachilidae), Assoc. Prof. Hasan Sevgili (Orthoptera), Esra Ada (Odonata), Dr. Mahmut Kabalak (Elateridae), Dr. Neslihan Kocatepe (Carabidae), Dr. E. Elif Aydın (Formicidae), Res. Assist. Emine Demir (Homoptera). Species which can be identified were given in Table 1 as faunistic list. Localities from where the species were

collected were identified with the help of GPS and written in front of each species together with the name and date of location.

RESULTS AND DISCUSSION

As a result of this study, 139 species belonging to 113 genera, 40 families and 9 order were collected from Karagöl-Sahara National Park. The taxonomic conditions and ordo levels have been presented in Table 1.

With a general evaluation as a result of obtained insect species and study analysis, it was determined that Sahara section is weak while Karagöl section is rich in insect fauna. In the light of observation and data obtained from Camuz patlatan and district in Sahara section and Göller region in Okurlar street district in Karagöl section, Karagöl district, Gamabostan (Guretba) Lake; these areas were found to be important areas considering food chain. Due to herbaceous plants grown along the streamside it is seen that it must be considered in the sense of insect potential. Therefore all the streamside can be considered as important areas.

It is thought that important areas mentioned in Karagöl Sahara National Park should be protected against human intervention. It would be beneficial to prevent grass mowing or allocate habitat for insects by leaving specific area for them.

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Table 1. List of the Insect Species on Karagöl-Sahara Natural National Park. Herein, given is the list of 139 insect species belonging to 40 families that could be identified and obtained from literature.

Scientific Name	Collecting Area	UTM Coordinates	Collector
Ordo: ODONATA			
Family: Aeshnidae			
<i>Aeshna juncea</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 26.06.2004; Karagöl, 16.10.2004.	38 T 0288711 UTM 4574474; 38 T 0288857 UTM 4574601	O. Sert
<i>Aeshna mixta</i> Latreille, 1805	Guretba (Gamabostan) lake, Karagöl, 19.09.2004	38 T 0288863 UTM 4578448	O. Sert
Family: Coenagrionidae			
<i>Erythromma viridulum orientale</i> Schmidt, 1960	Göller region, Okurlar district, Karagöl, 26.06.2004; Guretba lake, Karagöl, 25.07.2004	38 T 0288711 UTM 4574474; 38 T 0288900 UTM 4577875	O. Sert
Family: Lestidae			
<i>Lestes dryas</i> Kirby, 1890	Çakırlı district, Karagöl, 26.06.2004	38 T 0291047 UTM 4576313	O. Sert
<i>Lestes sponsa</i> (Hansemann, 1823)	Guretba lake, Karagöl, 25.07.2004	38 T 288900 UTM 4577875	O. Sert
<i>Lestes</i> sp.	Göller region, Okurlar district, Karagöl, 26.06.2004; Guretba lake, Karagöl, 25.07.2004	38 T 0288857 UTM 4574601; 38 T 0288900 UTM 4577875	O. Sert
Family: Libellulidae			
<i>Libellula depressa</i> Linnaeus, 1758	Camuzpatlatan, 27.06.2004; Kocabey Kışlası, 24.07.2004.	38 T 0285855 UTM 4568326; 38 T 0286383 UTM 4566865.	O. Sert
<i>Sympetrum flaveolum</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 26.06.2004; Camuzpatlatan, 27.06.2004.	38 T 0288711 UTM 4574474; 38 T 0285855 UTM 4568326	O. Sert
<i>Sympetrum meridionale</i> (Sélys, 1841)	Laşet surroundings, Sahara, 24.07.2004.	38 T 0285123 UTM 4567511.	O. Sert
<i>Sympetrum striolatum</i> (Charpentier, 1840)	Göller region, Okurlar district, Karagöl, 26.06.2004; Guretba lake, Karagöl, 25.07.2004	38 T 0288711 UTM 4574474; 38 T 0288900 UTM 4577875	O. Sert
Ordo: ORTHOPTERA			
Family: Acrididae			
<i>Calliptamus barbarus</i> (O.G. Costa, 1836)	Göller region, Okurlar district, Karagöl, 16.10.2004;	38 T 0288711 UTM 4574474	O. Sert
<i>Oedipoda coeruleascens</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 19.09.2004;	38 T 0288711 UTM 4574474	O. Sert
<i>Psophus stridulus</i> (Linnaeus, 1758)	Göller region, Sahara, 18.09.2004; 19.09.2004, Gamabostan (Guretba) lake	38 T 0287003 UTM 4567332	O. Sert
Family: Gryllidae			
<i>Gryllus campestris</i>	Kocabey Military post, Sahara, 24.07.2004	38 T 0286383 UTM 4566865	O. Sert
Family: Tettigoniidae			
<i>Paradrymadusa brevicerca</i> Karabağ, 1956	Göller region, Okurlar district, Karagöl, 26.06.2004	38 T 0288857 UTM 4574601	O. Sert
<i>Poecilimon similis</i> Retowski, 1889	Laşet, Sahara, 24.07.2004	38 T 0284580 UTM 4567735	O. Sert
<i>Psorodonotus specularis</i> (Fischer de Waldheim, 1846)	Guretba lake, Karagöl, 25.07.2004	38 T 0288863 UTM 4578448	O. Sert

Ordo: MANTODEA				
Family: Mantidae				
Mantis religiosa (Linnaeus, 1758)	Laşet, Sahara, 24.07.2004		38 T 0284580 UTM 4567735	O. Sert
Ordo: HEMIPTERA				
Family: Coreidae				
Corizus hyoscyami (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 26.06.2004; Guretba lake, Karagöl, 25.07.2004, 19.09.2004		38 T 0288711 UTM 4574474; 38 T 288863 UTM 4578448 38 T 0289538 UTM 4576070;	O. Sert
Coreus marginatus (Linnaeus, 1758)	Karagöl, 15.05.2004; Karagöl surroundings, Karagöl, 26.06.2004, Guretba lake, Karagöl, 25.07.2004		38 T 0289538 UTM 4576070, 38 T 0288863 UTM 4578448	O. Sert
Family: Lygaeidae				
Lygaeus equestris (Linnaeus, 1758)	Karagöl surroundings, Karagöl, 26.06.2004		38 T 289538 UTM 4576070	O. Sert
Family: Pentatomidae				
Dolycoris baccarum (Linnaeus, 1758)	Guretba lake, Karagöl, 25.07.2004		38 T 0288863 UTM 4578448	O. Sert
Palomena prasina (Linnaeus, 1761)	Göller region, Okurlar district, Karagöl, 26.06.2004		38 T 0288711 UTM 4574474	O. Sert
Family: Scutelleridae				
Graphosoma italicum (O. F. Müller, 1766)	15.05.2004 Karagöl Göller region, Okurlar district, Karagöl, 26.06.2004; Guretba lake, Karagöl, 25.07.2004		38 T 0289538 UTM 4576070; 38 T 0288711 UTM 4574474; 38 T 0288900 UTM 4577875	O. Sert
Ordo: HOMOPTERA				
Family: Cercopidae				
Cercopis intermedia (Kirschbaum, 1868)	Karagöl, 26.06.2004; Guretba lake, Karagöl, 25.07.2004		38 T 0289544 UTM 4576245; 38 T 0288900 UTM 4577875	O. Sert
Family: Cicadellidae				
Lepyronia coleoptera (Linnaeus, 1758)	Karagöl; 26.06.2004		38 T 0289544 UTM 4576245	O. Sert
Ordo: COLEOPTERA				
Subordo: Adepnaga				
Family: Cicindelidae				
Cicindela hybrida (Linnaeus, 1758)	Sahara, 15.05.2004; Göller region, Sahara, 24.07.2004		38 T 0287003 UTM 4567332	O. Sert
Family: Carabidae				
Amara concinna Zimmermann, 1831	Büyük Çökek crossroads, Sahara, 14.05.2004; Guretba lake, Karagöl, 25.07.2004		38 T 0285170 UTM 4567786; 38 T 0288900 UTM 4577875	O. Sert
Calathus melanocephalus (Linnaeus, 1758)	Büyük Çökek crossroads, Sahara, 14.05.2004		38 T 0285170 UTM 4567786	O. Sert
Carabus convexus Fabricius, 1775	Festival area, Sahara, 14.05.2004		38 T 0286354 UTM 4567267	O. Sert
Harpalus affinis (Schrank, 1781)	Festival area, Sahara, 14.05.2004		38 T 0286354 UTM 4567267	O. Sert

<i>Harpalus honestus</i> (Duftschmid, 1812)	Büyük Çökek crossroads, Sahara, 14.05.2004	38 T 0285170 UTM 4567786	O. Sert
<i>Harpalus marginellus</i> Dejean, 1829	Büyük Çökek crossroads, Göller, Sahara, 27.06.2004	38 T 0285170 UTM 4567786	O. Sert
<i>Harpalus rubripes</i> (Duftschmid, 1812)	Festival area, Sahara, 25.07.2004	38 T 0286354 UTM 4567267	O. Sert
<i>Laemostenus terricola</i> (Herbst, 1783)	Büyük Çökek crossroads, Sahara, 14.05.2004; Karagöl 15.05.2004	38 T 0285170 UTM 4567786, 38 T 0289544 UTM 4576245	O. Sert
<i>Ophonus nitidulus</i> Stephens, 1828	Büyük Çökek crossroads, Sahara, 14.05.2004	38 T 0285170 UTM 4567786	O. Sert
<i>Ophonus stictus</i> Stephens, 1828	Büyük Çökek crossroads, Göller, Sahara, 24.07.2004	38 T 0285170 UTM 4567786	O. Sert
<i>Pterostichus</i> sp.	Büyük Çökek crossroads, Sahara, 14.05.2004	38 T 0285170 UTM 4567786	O. Sert
Subordo: Polyphaga			
Family: Bruchidae			
<i>Bruchidius seminarius</i> (Linnaeus, 1763)	Göller region, Okurlar district, Karagöl, 26.06.2004	38 T 0288658 UTM 4574374	O. Sert
<i>Bruchidius varius</i> (Olivier, 1795)	Göller region, Okurlar district, Karagöl, 26.06.2004	38 T 0288658 UTM 4574374	O. Sert
Family: Buprestidae			
<i>Agrillus</i> sp.	Okurlar district road, 26.06.2004	38 T 0288458 UTM 4574674	O. Sert
Family: Cerambycidae			
<i>Anastrangalia sanguinolenta</i> (Linnaeus, 1761)	Guretba lake, Karagöl, 25.07.2004; Şavşat (Veliköy, Karagöl) / Atila (Soğdibi) "Lit."	38 T 0288900 UTM 4577875	O. Sert
<i>Anastrangalia dubia</i> (Scopoli, 1763)	Guretba lake, Karagöl, 25.07.2004	38 T 0288900 UTM 4577875	O. Sert
<i>Dorcadion</i> sp.	Festival area, Sahara, 14.05.2004	38 T 0286354 UTM 4567267	O. Sert
<i>Hylotripes bajulus</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 26.06.2004; Şavşat (Yayla, Kocabay place "Lit.")	38 T 0288658 UTM 4574374	O. Sert
<i>Monochamus sartor</i> (Fabricius, 1787)	Karagöl; 26.06.2004; Şavşat; Veliköy; Borçka (Karşıköy/Karagöl) / Camili (Düzenli village "Lit.")	38 T 0289544 UTM 4576245	O. Sert
<i>Monochamus galloprovincialis</i> (Olivier, 1795)	Göller region, Okurlar district, Karagöl, 26.06.2004; Şavşat (Karagöl Forests / Veliköy (Çiğözü) "Lit.")	38 T 0288658 UTM 4574374	O. Sert
<i>Pogonocerus hispidulus</i> (Piller & Mitterpacher, 1783)	Göller region, Okurlar district, Karagöl, 26.06.2004; Şavşat (Akdamla, Çarlipınar Forests / Veliköy (Karagöl / Çiğözü) "Lit.")	38 T 0288658 UTM 4574374	O. Sert
<i>Prionus coriarius</i> (Linnaeus, 1758)	Camuzpatlatan, Sahara, 18.09.2004.	38 T 0285855 UTM 4568326	O. Sert
<i>Pseudovadonia livida</i> (Fabricius, 1776)	Göller region, Okurlar district, Karagöl, 26.06.2004	38 T 0288658 UTM 4574374	O. Sert
<i>Rhagium bifasciatum</i> (Fabricius, 1775)	Göller region, Okurlar district, Karagöl, 26.06.2004; Şavşat (Karagöl) / Borçka (Karagöl Forests) "Lit."	38 T 0288658 UTM 4574374	O. Sert
<i>Rhagium inquisitor</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 26.06.2004	38 T 0288658 UTM 4574374	O. Sert
<i>Stictoleptura rubra</i> (Linnaeus, 1758)	Karagöl surroundings, Karagöl, 26.06.2004; Şavşat (Yayla, Kocabay place / Veliköy, Karagöl) "Lit."	38 T 289538 UTM 4576070	O. Sert
<i>Tetropium fuscum</i> (Fabricius, 1787)	Guretba lake, Karagöl, 25.07.2004; Şavşat (Veliköy (Karagöl Forests); Şavşat (Karagöl) "Lit.")	38 T 0288900 UTM 4577875	O. Sert
<i>Vadonia unipunctata</i> (Fabricius, 1787)	Göller region, Okurlar district, Karagöl, 25.07.2004.	38 T 0288658 UTM 4574374	O. Sert

Family: Chrysomelidae					
<i>Clytra</i> sp.	19.09.2004 Karagözü			38 T 0288723 UTM 4575604	O. Sert
<i>Cryptocephalus aureolus</i> Suffrian, 1847	Guretba lake, Karagözü, 25.07.2004			38 T 0288900 UTM 4577875	O. Sert
<i>Cryptocephalus concolor</i> Suffrian, 1847	Göller region, Okurlar district, Karagözü, 26.06.2004; Çayırılı district N.P border, Karagözü, 26.06.2004, Guretba lake, Karagözü, 25.07.2004			38 T 0288658 UTM 4574374; 38 T 0288504 UTM 4575170; 38 T 0288900 UTM 4577875	O. Sert
Family: Cleridae					
<i>Thanasimus formicarius</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagözü, 26.06.2004; Çayırılı district M.P. Sınırı Karagözü, 26.06.2004; Guretba lake, Karagözü, 25.07.2004			38 T 0288658 UTM 4574374; 38 T 0288504 UTM 4575170; 38 T 0288900 UTM 4577875	O. Sert
Family: Coccinellidae					
<i>Adalia bipunctata</i> (Linnaeus, 1758)	Karagözü, 15.05.2004			38 T 0289544 UTM 4576245	O. Sert
<i>Coccinella 7-punctata</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagözü, 26.06.2004			38 T 0288658 UTM 4574374	O. Sert
<i>Coccinella sinuatomarginata</i> (Faldermann, 1837)	Göller region, Okurlar district, Karagözü, 26.06.2004			38 T 0288658 UTM 4574374	O. Sert
<i>Coccinella undecimpunctata</i> (Linnaeus, 1758)	26.06.2004 Çayırılı district N.P border, Karagözü.			38 T 0288511 UTM 4575345	O. Sert
<i>Hippodamia (Adonia) variegata</i> (Goeze, 1777)	Göller region, Okurlar district, Karagözü, 26.06.2004			38 T 0288718 UTM 4574650	O. Sert
<i>Propylaea quatuordecimpunctata</i> (Linnaeus, 1758)	15.05.2004 Karagözü			38 T 0289544 UTM 4576245	O. Sert
<i>Subcoccinella vigintiquatuor punctata</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagözü, 26.06.2004			38 T 0288718 UTM 4574650	O. Sert
Family: Curculionidae					
<i>Eusomus ovulum</i> Germar, 1824	Göller region, Okurlar district, Karagözü, 26.06.2004			38 T 0288658 UTM 4574374	O. Sert
<i>Gymetron</i> sp.	Karagözü 26.06.2004			38 T 0289544 UTM 4576245	O. Sert
<i>Tychius meliloti</i> Stephens, 1831	Karagözü 26.06.2004; Göller region, Sahara, 24.07.2004			38 T 0289544 UTM 4576245	O. Sert
<i>Hypera postica</i> (Gyllenhal, 1813)	Karagözü 26.06.2004; Guretba Lake, Karagözü			38 T 0287003 UTM 4567332	O. Sert
<i>Larinus</i> sp.	Göller region, Sahara, 24.07.2004			38 T 0288870 UTM 4578624	O. Sert
<i>Magdalis</i> sp.	Sorasmele, Sahara, 27.06.2004			38 T 0287003 UTM 4567332	O. Sert
<i>Monanychus punctum album</i> (Herbst, 1784)	Laşet, Sahara, 14.05.2004			38 T 0284646 UTM 4567791	O. Sert
<i>Pissodes notatus</i> (De Geer, 1775)	Laşet, Sahara, 14.05.2004			38 T 0284587 UTM 4567728	O. Sert
<i>Pholicodes</i> sp.	Festival Area, 15.05.2004; Camuzpatlatan, Sahara, 27.06.2004			38 T 0284587 UTM 4567728	O. Sert
<i>Sitona lepidus</i> Gyllenhal, 1834	Göller region, Sahara, 24.07.2004			38 T 0286354 UTM 4567267	O. Sert
				38 T 0285855 UTM 4568326	O. Sert
				38 T 0287003 UTM 4567332	O. Sert

Family: Elateridae				
<i>Adrastus limbatus</i> (Fabricius, 1776)	Karagöl yolu 26.06.2004 (030)	38 T 0288892 UTM 4575586	O. Sert	
<i>Ampedus</i> sp.	Karagöl, 15.05.2004	38 T 0289544 UTM 4576245	O. Sert	
<i>Anostirus marginatus</i> (Pic, 1931)	Between Guretba and Karagöl, 25.07.2004.	38 T 0288313 UTM 4577607	O. Sert	
<i>Anostirus purpureus</i> Poda, 1761	Camuzpatlatan, 15.05.2004	38 T 0285855 UTM 4568326	O. Sert	
<i>Ctenicera pectinicornis</i> (Linnaeus, 1758)	Camuzpatlatan, 27.06.2004	38 T 0285855 UTM 4568326	O. Sert	
<i>Drasterius bimaculatus</i> (Rossi, 1790)	Karagöl, 15.05.2004	38 T 0289544 UTM 4576245	O. Sert	
<i>Hemicrepidius niger</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 25.07.2004	38 T 289368 UTM 4575355	O. Sert	
<i>Kibunea minuta</i> (Linnaeus, 1758)	Laşet surroundings, Sahara, 14.05.2004;	38 T 0284587 UTM 4567728;	O. Sert	
<i>Lacon</i> (L.) lepidopterus(Panzer, 1801)	Camuzpatlatan, 15.05.2004.	38 T 0285855 UTM 4568326	O. Sert	
<i>Melanotus castanipes</i> (Paykull, 1800)	Camuzpatlatan, Sahara, 14.05.2004	38 T 0285855 UTM 4568326	O. Sert	
Family: Histeridae				
<i>Hister illigeri</i> Duftschmid, 1805	27.06.2004, Sorasmele surroundings, Sahara,	38 T 0284646 UTM 4567791	O. Sert	
<i>Dorcus</i> sp.	Festival area, Sahara, 18.09.2004	38 T 0286354 UTM 4567267	O. Sert	
Family: Scarabaeidae				
<i>Amphimallon solstitialis</i> (Linnaeus, 1758)	Kocabay Military post, Sahara, 25.07.2004	38 T 0286389 UTM 4567040	O. Sert	
<i>Cetonia aurata</i> (Linnaeus, 1763)	Guretba lake, Karagöl, 25.07.2004	38 T 0288313 UTM 4577607	O. Sert	
<i>Copris</i> sp.	Göller region, Sahara 24.07.2004	38 T 0287000 UTM 4567682	O. Sert	
<i>Hoplia</i> sp.	Karagöl surroundings, Karagöl, 26.06.2004	38 T 0289538 UTM 4576070	O. Sert	
<i>Oxythera cinctella</i> (Schaum, 1840)	Guretba lake, Karagöl, 25.07.2004	38 T 0288900 UTM 4577875	O. Sert	
<i>Polyphylla fullo</i> (Linnaeus, 1758)	Göller region, Sahara 24.07.2004	38 T 0287009 UTM 4567508	O. Sert	
Family: Scolitidae				
<i>Bostrychus capucinus</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 25.07.2004	38 T 289368 UTM 4575355	O. Sert	
<i>Ips typographus</i> Linnaeus, 1758	Camuzpatlatan, Sahara 15.05.2004;	38 T 0285855 UTM 4568326;	O. Sert	
Family: Silphidae	Karagöl surroundings, Karagöl, 26.06.2004.	38 T 0289538 UTM 4576070		
<i>Necrophorus</i> sp.	Karagöl road, 15.05.2004; Karagöl surroundings,	38 T 0289538 UTM 4576070;	O. Sert	
<i>Oiceoptoma thoracica</i> (Linnaeus,1758)	Karagöl, 26.06.2004; Guretba lake, Karagöl, 25.07.2004	38 T 0288900 UTM 4577875	O. Sert	
<i>Thanatophilus rugosus</i> (Linnaeus,1758)	Karagöl yolu 26.06.2004	38 T 0288892 UTM 4575586	O. Sert	
Family: Staphylinidae				
<i>Paederus litoralis</i> Gravenhorst, 1802	Karagöl yolu 26.06.2004	38 T 0288892 UTM 4575586	O. Sert	
Family: Tenebrionidae				
<i>Blaps</i> sp.	Göller region, Okurlar district, Karagöl, 25.07.2004	38 T 0289368 UTM 4575355	O. Sert	
	Guretba lake, Karagöl, 25.07.2004	38 T 288900 UTM 4577875	O. Sert	

<i>Tentyria rotundata</i> (Brulle, 1832)	Çayırılı district M.P. Sınırı Karagöl, 26.06.2004	38 T 0288504 UTM 4575170	O. Sert
Ordo: HYMENOPTERA			
Family: Apidae			
<i>Bombus</i> (<i>Bombus</i>) <i>cryptorum armeniensis</i> Rasmont, 1983	Between Guretba and Karagöl, 25.07.2004, Göller region, 18.09.2004, Sahara, 19.09.2004, Karagöl	38 T 0288320 UTM 4577782	O. Sert
<i>Bombus</i> (<i>Melanobombus</i>) <i>lapidarius caucasicus</i> Radoszkowski, 1860	Between Guretba and Karagöl, 25.07.2004, Göller region, Sahara, 18.09.2004	38 T 0287000 UTM 4567682; 38 T 0289538 UTM 4576070;	O. Sert
<i>Bombus</i> (<i>Thracobombus</i>) <i>pascuorum</i> rehbinderi Vogt, 1909	Karagöl surroundings, Karagöl, 15.05.2004; Laşet, Sahara, 24.07.2004, 25.07.2004 Guretba lake, Karagöl	38 T 0285129 UTM 4567886; 38 T 0288906 UTM 4578050 38 T 289368 UTM 4575355;	O. Sert
<i>Xylocopa violacea</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 25.07.2004, Karagöl, 25.07.2004.	38 T 0289538 UTM 4576070	O. Sert
Ordo: DIPTERA			
Family: Tipulidae			
<i>Tipula</i> sp.	Yalnızçam Pass, Sahara, 25.06.2004	38 T 0289706 UTM 4564795	O. Sert
Ordo: LEPIDOPTERA			
Family: Lycaenidae			
<i>Lycaena phlaea</i> (Linnaeus, 1758)	14.05. 2004, Laşet, Sahara, Karagöl surroundings, Karagöl, 19.09.2004	38 T 0284587 UTM 4567728; 38 T 0289538 UTM 4576070	O. Sert
<i>Lysandra bellargus</i> (Rottemburg, 1775)	Kocabey Plateau, Sahara, 15.10.2004	-	O. Sert
<i>Thecla betulae</i> (Linnaeus, 1758)	Kocabey Plateau, Sahara, 15.10.2004	-	O. Sert
Family: Noctuidae			
<i>Agrotis</i> sp.	Laşet, Sahara, 27.06.2004	38 T 0284646 UTM 4567791	O. Sert
<i>Catocala nupta</i> (Linnaeus, 1767)	Karagöl surroundings, Karagöl, 19.09.2004	38 T 0289538 UTM 4576070	O. Sert
<i>Euclidia glyphica</i> (Linnaeus, 1758)	27.06.2004, Sorasmele surroundings, Sahara,	38 T 0284646 UTM 4567791	O. Sert
Family: Nymphalidae			
<i>Argynnis paphia</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagöl, 25.07.2004	38 T 0286805 UTM 4567893	O. Sert
<i>Argynnis adippe</i> (Denis & Schiffermüller, 1775)	Göller region, Okurlar district, Karagöl, 25.07.2004	38 T 0289368 UTM 4575355	O. Sert
<i>Aglais urtica</i> (Linnaeus, 1758)	Karagöl surroundings, Karagöl, 25.07.2004	38 T 0289538 UTM 4576070	O. Sert
<i>Boloria caucasica</i> (Lederer, 1852)	Karagöl surroundings, Karagöl, 16.10.2004	38 T 0289538 UTM 4576070	O. Sert
<i>Issoria lathonia</i> (Linnaeus, 1758)	Karagöl surroundings, Karagöl, 16.10.2004; Göller region, Okurlar district, Karagöl, 16.10.2004.	38 T 0289368 UTM 4575355	O. Sert
<i>Limenitis reducta</i> Staudinger, 1901	Guretba lake, Karagöl, 25.07.2004,	38 T 0288857 UTM 4574601	O. Sert
<i>Melictha athalia</i> (Rottemburg, 1775)	Guretba, Karagöl, 25.07.2004	38 T 0288906 UTM 4578050	O. Sert
<i>Melictha athalia</i> (Rottemburg, 1775)	Kocabey Plateau, Sahara, 15.10.2004	-	O. Sert
<i>Maniola jurtina</i> (Linnaeus, 1758)	26.06.2004, Samanpazarı, 19.09.2004, Karagöl 1 nolu specimen area	38 T 0288557 UTM 4578050; 38 T 0288511 UTM 4575345	O. Sert
<i>Pararge aegeria</i> (Linnaeus, 1758)	Karagöl surroundings, Karagöl, 15.05.2004	38 T 0289538 UTM 4576070	O. Sert
<i>Polygona c-album</i> (Linnaeus, 1758)	Karagöl surroundings, Karagöl, 19.09.2004, 16.10.2004	38 T 0289538 UTM 4576070	O. Sert

<i>Vanessa atalanta</i> (Linnaeus, 1758)	Laşet, 14.05.2004; Göller region, Okurlar district, Karagözü, 25.07.2004	36 T 0284594 UTM 4567903; 38 T 0289368 UTM 4575355	O. Sert
<i>Vanessa cardui</i> (Linnaeus, 1758)	Göller region, Okurlar district, Karagözü, 25.07.2004	38 T 0289368 UTM 4575355	O. Sert
Family: Pieridae			
<i>Anthocaris cardaminensis</i> (Linnaeus, 1758)	Laşet, 14.05.2004	36 T 0284594 UTM 4567903	O. Sert
<i>Colias alfaccariensis</i> Berger, 1948	Göller region, Okurlar district, Karagözü, 25.07.2004, Kocabey Plateau, Sahara, 15.10.2004	38 T 0289368 UTM 4575355	O. Sert
<i>Colias crocea</i> (Fourcroy, 1785)	Göller region, Okurlar district, Karagözü, 26.06.2004; Guretba lake, Karagözü, 25.07.2004, Kocabey Plateau, Sahara, 15.10.2004	38 T 0288857 UTM 4574601; 38 T 0288900 UTM 4577875	O. Sert
<i>Ganopteryx rhamnii</i> (Linnaeus, 1758)	Karagözü surroundings, Karagözü, 16.10.2004	38 T 0289538 UTM 4576070	O. Sert
Leptidae sinapsis (Linnaeus, 1758)	Laşet, 14.05.2004; Göller region, Okurlar district, Karagözü, 26.06.2004; Guretba lake, Karagözü, 25.07.2004	36 T 0284594 UTM 4567903; 38 T 0288857 UTM 4574601; 38 T 0288900 UTM 4577875	O. Sert
<i>Pieris napi psudorapae</i> (Linnaeus, 1758)	Karagözü, 19.09.2004	38 T 0288511 UTM 4575345	O. Sert
<i>Pieris rapae</i> (Linnaeus, 1758)	Laşet, 14.05.2004; Göller region, Okurlar district, Karagözü, 16.10.2004	36 T 284594 UTM 4567903; 38 T 288857 UTM 4574601	O. Sert
<i>Pieris bryoniae</i> (Hübner, 1806)	Göller region, Okurlar district, Karagözü, 26.06.2004	38 T 0288857 UTM 4574601	O. Sert
Family: Papilionidae			
<i>Iphiclydes podalirius</i> (Linnaeus, 1758)	Karagözü surroundings, Karagözü, 24.07.2004	38 T 289538 UTM 4576070	O. Sert
Family: Satyridae			
<i>Coenonympha arcania</i> (Linnaeus, 1761)	26.06.2004, Samanpazarı	38 T 0288557 UTM 4578050	O. Sert
<i>Erebia aethiops melusina</i> Herrich-Schäffer, [1847]	Çakırlı district Karagözü, 26.06.2004	38 T 0291054 UTM 4567718	O. Sert
<i>Erebia</i> sp.	Göller region, Sahara, 27.06.2004	38 T 0286799 UTM 4567718	O. Sert
<i>Hyponephele lupina</i> (Costa, 1836)	Göller region, Okurlar district, Karagözü, 26.06.2004	38 T 0288857 UTM 4574601	O. Sert
<i>Lasiommata maera</i> (Linnaeus, 1758)	Çakırlı district Karagözü, 26.06.2004	38 T 0291054 UTM 4567718	O. Sert
Family: Saturniidae			
<i>Macroglossum stellatarum</i> (Linnaeus, 1758)	Karagözü surroundings, Karagözü, 26.06.2004	38 T 289538 UTM 4576070	O. Sert
Family: Zygaenidae			
<i>Zygaena</i> sp.	Laşet'in üstü, Sahara 24.07.2004	38 T 0285129 UTM 4567886	O. Sert

REFERENCES

1. H. Alkan, Türkiye orman Cerambycidae (Insecta, Coleoptera)'lerinin tanıtımı ve Doğu Karadeniz Bölgesindeki türlerin araştırılması. Yüksek Lisans Tezi, Karadeniz Teknik Üniversitesi Fen Bilimleri Enstitüsü, Trabzon, (2000) 227.
2. B. Yüksel, Doğu Ladin Ağaçlarında Zararlı Böcekler ve Predatörleri ve Parazit Türler-1 (Zararlı Böcekler). Yüksek Lisans Tezi, Karadeniz Teknik Üniversitesi Fen Bilimleri Enstitüsü, Trabzon, (1996) 222.
3. N. Lodos, Türkiye Entomolojisi (Genel, Uygulamalı ve Faunistik) Cilt II (Gözden Geçirilmiş II. Basım). Ege Üniversitesi Ziraat Fakültesi Yayınları No: 429, Ege Üniversitesi Basımevi Bornova- İzmir, (1986) 580 .
4. N. Lodos, Türkiye Entomolojisi (Genel, Uygulamalı ve Faunistik) Cilt IV (Kısım I). Ege Üniversitesi Ziraat Fakültesi Yayınları No: 493, Ege Üniversitesi Ofset Basımevi Bornova- İzmir, (1989) 250.
5. N. Lodos, Türkiye Entomolojisi (Genel, Uygulamalı ve Faunistik) Cilt III. Ege Üniversitesi Ziraat Fakültesi Yayınları No: 282 E.Ü. Zir. Fak. Ofset Basımevi Bornova- İzmir, (1993) 364.
6. E. Pehlivan, Türkiye Stenocephalidae, Rhopalidae ve Alydidae (Heteroptera: Coreoidea) Faunası Üzerinde Sistemik Araştırmalar. E.Ü. Ziraat Fakültesi Ofset Ünitesi, Bornova İzmir, (1981) 189.
7. T.R.E. Southwood, D. Leston, Land and Water Bugs of The British Isles. Frederick Warne and Co. Ltd. London and Newyork, (1959) 436.
8. P. Whalley, R. Lewington, The Mitchell Beazley Pocket Guide to butterflies of Britain and Europa, (1999) 168.