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ON THE ORTHOPTERA (INSECTA) FAUNA OF THE KARACADAĞ MOUNTAINS AND THE TIGRIS BASIN (DIYARBAKIR, TURKEY)

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Abstract: During this study, samples were collected in the Karacadağ mountains and the Tigris basin (Diyarbakır, Turkey) during the last two years. The samples were identified and listed. The results obtained were evaluated zoogeographically and some observations and recommendations were made on the species which can be harmful for crops.

Key words: Orthoptera, faunistics, zoogeography, Karacadağ mountains, Tigris river basin.

Sobre la fauna de Orthoptera (Insecta) de los montes Karacadağ y la cuenca del Tigris (Diyarbakır, Turquía)

Resumen: Para este estudio se recogieron muestras en los montes Karacadağ y la cuenca del Tigris (Diyarbakır, Turquía) durante los dos últimos años. Se han identificado y anotado las muestras, se han evaluado los resultados obtenidos desde un punto de vista zoogeográfico y se han realizado algunas observaciones y recomendaciones sobre las especies que pueden ser nocivas para los cultivos.

Palabras clave: Orthoptera, faunística, zoogeografía, montes Karacadağ, cuenca del Tigris.

Introduction

Various subpopulations of insects were produced in Anatolia for all insect groups due to the fact that Anatolia (Asia Minor) is a mountainous land and for the presence of various climate types (21). It has a special importance in the Palearctic region. The reason for this special importance is that it has a direct link between Asia and Europe and linkage to Africa via Saudi Arabia (1). Anatolia is divided by diagonal belt which is a massive structure formed by continuous mountains from the North-East towards the South-West as well as from the East to the West. This line perfectly isolated many East and West Anatolia species of organisms just from beginning of geological origination since miocene-pliocene (21). The faunal structure of Anatolia was determined by the ice-age. This age is started 120.000 years ago and it was ended in a 10.000 years ago. Although boreal climatic condition was prevailed in the mid and northern Europe, before the glacial period, there was arid-steppe condition in Angara (the Siberia and further South). The element of both faunas moved to South when glacial period was started. When the glacial phases started, the faunal elements existed at the North migrated towards the South two different ways (1).

The first was trough Caucasia towards the Irano-Caspien Refigium, and the others were through Europe towards the Mecadonia-Thrace Refigium, thus they spread all over the Anatolia. The migration from this Refigium was started by the time. After the glacial period, some moved again to the North while some moved up to the higher places of Anatolia, and was started to differentiate (21).

From the last glacial period to now Anatolia's climatic condition has been changing from the boreal structure to steppe and desert form. As a result of these evolutions, the dispersal of the Eremial and Ethiopian elements was started. On the other hand, the elements of Mediterranean have been joined to the fauna in recent times (1, 6, 21).

Due to richness of flora and fauna of Anatolia, it facilitates a living space for various species, the development of new species and an increase in the variety of subspecies (1, 2, 3). A clear determination of the fauna of this regions will contribute to a large extend the faunal structure of the Palearctic region and the determination of natural living sources and their conservation.

Orthoptera fauna containing many harmful species for some cultivated plants is the most studied insect group (26, 27, 37, 40).

Turkey's Orthoptera fauna have been determined by assorted workers in various periods.

According to Karabağ (4), Demirsoy (5, 6) and Salman (7); Turkey's Orthoptera fauna have been determined by various Turkish. Karabağ (4, 14, 15, 16, 17, 25), Çıplak (2, 3, 20-24), Demirsoy (5, 6, 42), Salman (7, 8), Gümüşsuyu (19), and foreign scientists Uvarov (8-11), Ramme (12, 13).

According to Karabağ's (4) studies, there are also many reports (3, 4, 5, 6, 7, 10, 12, 19, 26, 27, 34) on the South-East of Anatolia's Orthoptera fauna. However, these studies do not cover as a whole of this region.

The resea rch areas are the Karacadağ Mountain and the sun-based Tigris river-basin in northern part of the South-East of Anatolia.

As an eremial region (1, 5, 6), this region shows a biological diversity because of the different climatic conditions on the different parts. These climatic differences and the geographic location cause a Mediterranean type climate in the South and South-East of Turkey, and a Siberian climatic condition in the north and northeast part of the region. This region is a moving point for the distribu-

tion of the flora and fauna of the South-East of Anatolia. In addition, the South-East of Anatolia project (G.A.P), which is one of the biggest irritation scheme in the earth, creates an irrigated land opportunity may not only cause special climatic conditions but also for the biological diversity. Therefore, there is an urgent need for the determination of whole insect fauna of this region.

The present study was carried out to determine the Orthoptera fauna of Karacadağ Mountain and the sun-based Tigris river-basin.

Materials and Methods

This study was carried out in two stages:

1. Collection of the material from the field of work.

The study was carried out in the two biotopes of the South-East of Turkey:

A. Karacadağ Mountain which is an altitude of between 1000-1981 m has a steppe form (29, 41). The coordinates of this area is 37° 59' N / 40° 12 'E.

B. The sun-based Tigris river –basin, which is an altitude of between 500-1000 m has an Iran-Turan steppe form (28, 30, 31). The coordinates of this region is 37° 55' N / 40° 12 'E.

The samples were collected by net trap between April and October during 1995 and 1996 years.

2. Preparation of the samples for determination

The samples were left to dry. Copulation organs were removed especially in Tettigonia for identification. In order to clean copulation organs from chitin parts and tissues, sample were kept in 70 % alcohol for 1-2 hours followed by 1 % KHO at room temperature for one day.

This prefixed samples were then exposed by arise with distilled water. The samples were then put in a small glass vessel. Later, they were put in the collection cupboards.

The samples collected through this study have been kept at zoological museum of the Biology Department of the Science-Literature Faculty of Dicle University.

Results

A total of 28 genus and 40 taxa were determined. The species and their localities are as follows:

Suborder: ENSIFERA

TETTIGONIIDAE

Phaneropterinae Kirby, 1906

ACROMETAPA Fieber, 1853

***Acrometapa syriaca* Brunner von Wattenwyl, 1878**

DISTRIBUTION: Kabaklı göleti, 700 m, 22.VI.1995, 3&&, 6.VII.1995, 1%, 9.VII.1995, 2&&; Yeni köy, 600 m, 17.VII. 1996, 1&; Hevsel bahçesi, 590 m, 1&; Dicle vadisi-Eğil, 730 m, 9.VIII. 1996, 3&.

Decticinae Kirby, 1906

MEDECTICUS Uvarov, 1912

***Medecticus assimilis* Fieber, 1853**

DISTRIBUTION: Sadi köprüsü, 580 m, 2.VII.1995, 4&& , 9.VII. 1995, 2%% ; Kabi köyü, 570 m, 7.VI.1996, 2&&; Karpuzlu köyü, 550 m, 30.VI.1996, 2&&; Kırmasırt köyü, 555 m, 17. VII.1996, 1&, 17.VII.1996, 1%; Yeni köprü, 550 m, 17.VII. 1996, 2&&; Dicle vadisi-Eğil, 730 m., 12.VIII.1996, 8&&.

DECTICUS Serville, 1831

***Decticus albifrons* (Fabricius) 1793**

DISTRIBUTION: Kabaklı göleti, 700 m, 22.VI.1995, 2&&, 22.VI.1995, 1%, 2.VII.1995, 2&&, 2.VII.1995, 2%%; Yeniköy, 600 m, 5.VII.1995, 2&&, 7.VII.1995, 1&; Çıkıntaş köyü, 570 m, 10.VI.1996, 1&, 12,VII.1996, 3%%; Hevsel bahçeleri-Diyarbakır, 550 m., 12.VII.1996, 1 &; Yuvacık köyü, 560 m, 8.VIII.1996, 2%%.

PLATYCLEIS Fieber, 1852

***Platycleis (Platycleis) intermedia* (Serville), 1839**

DISTRIBUTION: Yeni köprü, 550 m, 2.VII.1995, 2&& 9.VII. 1995, 1&, Mervani köprüsü, 560 m, 9.VII.1995, 1&, 9.VII. 1995, 1%; Hevsel bahçesi, 590 m, 12.VII.1996, 1%, 8.VIII. 1995, 1&; Yeni köy, 600 m, 17.VII.1996, 1&, Karabahçe-Karacadağ, 1150 m, 31.VIII.1996, 1&; Yiğityolu köyü-Karacadağ, 900 m, 7.IX. 1996, 3&&.

***Platycleis (P.) escalerai escalerai* Bolivar, 1899**

DISTRIBUTION: Kabaklı göleti, 700 m, 2.VII.1995, 2&&, 9.VII. 1995, 1&; Yeni köy, 700 m, 30.VI.1996, 1&; Karabahçe-Karacadağ, 1260 m., 1&, 31.VIII.1996, 1%; Mervani köprüsü, 560 m., 8.IX.1996, 1&; Domuz çeºmesi-Dicle, 900 m, 10.IX. 1996, 1&, 10.IX.1996, 2%%.

***Platycleis (P.) escalerai iranica* Ramme, 1929**

DISTRIBUTION: Karabahçe-Karacadağ, 1150 m, 31.VIII.1996, 2&&; Ergani, 920 m, 2.IX.1996, 2&&; Dicle, 940m, 2.IX. 1996, 3&&.

Incer *TANA* Zeuner, 1941

***Platycleis (Incertana) persica* Uvarov, 1917**

DISTRIBUTION: Kabi köyü, 570 m, 7.VII.1996, 1&; Karabahçe-Karacadağ, 1260 m, 22.VIII.1996, 1&; Yiğityolu köyü-Karacadağ, 900 m, 22.VIII.1996, 2 &&.

Conocephalinae Kirby, 1906

CONOCEPHALUS Thunberg, 1815

***Conocephalus discolor* Thunberg, 1815**

DISTRIBUTION: Kabaklı göleti, 700 m, 30.VII.1996, 2&&, 10.VIII.1996, 1%; Dicle, 920 m, 3.VIII.1996, 3&&; Leylek istasyonu-Ergani, 960 m, 3.VIII.1996, 2&&.

***Conocephalus fuscus* (Fabricius, 1793)**

DISTRIBUTION: Karabahçe-Karacadağ, 1150 m., 22.VII. 1996, 2%%; Karayolları onarım tesisleri-Karacadağ, 1200 m, 31. VIII.1996, 1&.

Tettigoniinae Uvarov, 1924

TETTIGONIA Linnaeus, 1758

***Tettigonia viridissima* Linnaeus, 1758**

DISTRIBUTION: Kabaklı göleti, 700 m, 22.VI.1995, 8&&, 17.VI.1995, 1&; Karpuzlu köyü, 550 m, 7.VII.1996, 1&; Ovaba ğ-Karacadağ, 1000 m, 12.VII.1996, 2%%.

***Tettigonia caudata* Charpentier, 1845**

DISTRIBUTION: Kabaklı göleti, 700 m, 18.IV.1996, 1&; Sadi köprüsü, 570 m, 20.V.1996, 1&; Ergani, 910 m, 22.VI.1996, 3&&, 22.VI.1996, 1%.

Saginae Stal, 1874
SAGA Charpentier, 1825

***Saga ephippigera* Fischer-Waldheim, 1846**

DISTRIBUTION: Kabaklı göleti, 700 m, 22.VI.1995, 6&, 22.VI. 1995, 2%; Yeni Silvan köprüsü, 570 m, 25.VI.1995, 2%%; Üniversite köprüsü, 550 m, 9.VII.1995, 1&, 9.VII. 1995, 1%; Yeniköy, 600 m, 30.VI.1996, 2&; Kabi köyü, 570 m, 12.VII. 1996, 1%; Çınar, 560 m, 12.VII.1996, 2& ; Ovabağ-Karacadağ, 1000 m, 12.VII.1996, 2&&.

GRYLLIDAE Bolivar, 1878
Gryllinae Saussure, 1893
MELANOGRYLLUS Choppard, 1961

***Melanogryllus desertus* (Pallas, 1961)**

DISTRIBUTION : Hevsel bahçesi, 550 m, 7.VI.1996, 1%, 7. VI.1996, 1&; Karaköprü-Çınar, 560 m, 11.VI.1996, 2&&.

GRYLLUS Linnaeus, 1758

***Gryllus campestris* Linnaeus, 1758**

DISTRIBUTION: Kabi köyü, 560 m., 12.VII.1996, 1&; Kabaklı göleti, 700 m, 1.VIII.1996, 1&, 9.VIII.1996, 1&; Mervani köprüsü, 560 m, 12.VIII.1996, 1&.

ACHETA Fabricus, 1775

***Acheta domesticus* (Linnaeus, 1758)**

DISTRIBUTION: Kabaklı göleti, 700 m, 4.VII.1995, 3&&, 4.VII.1995, 1%; Sadi köprüsü, 570 m, 7.VII.1996, 2&&, 7.VII.1996, 1%.

GRYLLOTALPIDAE Brunner, 1882
GRYLLOTALPA Latreille, 1802

***Gryllotalpa gryllotalpa* (Linnaeus, 1758)**

DISTRIBUTION: Dicle Üniv. Sosyal tesisleri, 730 m, 16.V. 1995, 1&, 5.VI.1995, 1&; Yeni köy, 600 m, 4.V.1996, 1&, 4.V.1996, 1%; Hevsel bahçeleri, 550 m, 7.VI.1996, 1%; Çınar, 560 m, 12.VII.1996, 2&&; Ovabağ-Karacadağ, 1000 m,12.VII. 1996, 2&&; Dicle, 920 m, 3.VIII.1996, 3&&; Leylek istasyonu-Ergani, 960 m, 3.VIII.1996, 2&&.

Suborder: CAELIFERA

PYRGOMORPHIDAE Brunner von Wattenwyl, 1882
PYRGOMORPHA Serville, 1839

***Pyrgomorpha conica conica* (Olivier), 1791**

DISTRIBUTION: Mervani köprüsü, 560 m, 30.VII.1996, 1&, 30.VII.1996, 1%; Sadi köprüsü, 570 m, 14.VIII.1996, 2&.

PAMPHAGIDAE Stal, 1873
Pamphaginae Brunner von Wattenwyl, 1900
NOCARACRIS Uvarov, 1948

***Nocaracris cyanipes* (Fischer - Waldheim, 1846)**

DISTRIBUTION: Sadi köprüsü, 570 m, 15.VI.1995, 1&, 25.VII. 1995, 2&&; Erk ek öğrenci yurdu Kampüs, 630 m, 22.VII. 1995, 1&, 22.VII.1995, 1%; Yeni köy, 600 m, 30.VI.1996, 1&; Süt fabrikası, 580 m, 15.VII.1996, 2&&; Dicle nehri kenarı-Eğil, 730 m, 22.VII.1996, 3&&, 22.VII.1996, 1% ; Eğil Kalesi, 22.VII.1996, 1%; Dicle, 940 m., 22.VII.1996, 2&.

ACRIDIDAE Walker, 1870
Tropidopolinae Dirsh, 1961
TROPIDOPOLA Stal, 1873

***Tropidopola longicornis graeca* Uvarov, 1926**

DISTRIBUTION: Sadi köprüsü, 570 m, 22.VII.1995, 1&, 22.VII. 1995, 2%%, 26.VIII.1995, 5&&, 26.VIII.1995, 2%%; Yeni köy, 600 m, 20.VIII.1996, 2&&, 20.VIII.1996,1%; Kabaklı göleti, 700 m, 2.IX.1996, 1&, 2.IX.1996, 2%; Ergani, 930 m, 6.IX. 1996, 1%.

Cyrtacanthacaridinae Kirby, 1910
ANACRIDIUM Uvarov, 1923

***Anacridium aegypitium aegypitium* (Linnaeus, 1764)**

DISTRIBUTION: Mervani köprüsü, 560 m, 14.IX.1995, 4&, 14.IX.1995, 2%; Kabaklı göleti, 700 m, 6.VIII. 1996, 1&, 6.VIII.1996,1%; Karpuzlu köyü, 550 m, 8.VIII.1996, 2&&; Yeni Köprü, 550 m, 8.IX.1996, 1&, Yuvacık-Çınar, 560 m, 3&&.

Calliptaminae Dirsh, 1961
CALLIPTAMUS Serville, 1831

***Caliptamus barbarus cephalotes* Fisher-Waldheim,1846**

DISTRIBUTION: Kabaklı göleti, 700 m, 22.VI.1995, 1&, Leylek istasyonu, 960 m, 1% ; Yiğit yolu köyü, 900 m, 22.VII.1996, 2&&; Karayolları bakım onarım tesisleri-Karacadağ, 1200 m, 22.VII.1996, 2&&, 22.VII.1996, 1%.

***Caliptamus barbarus barbarus* (Costa, 1836)**

DISTRIBUTION: Yiğit yolu köyü, 900 m, 22.VII.1996, 2&; Karayolları bakım onarım tesisleri-Karacadağ, 1200 m, 22.VII. 1996, 2&&, 22.VII.1996, 1%; TRT verici istasyonu-Karacadağ, 1800 m, 22.VII.1996, 2%%.

***Caliptamus tenuicercis tenuicercis* Tarbinski, 1930**

DISTRIBUTION: Eski Diyarbakır-Si lvan karayolu, 700 m, 12.VII. 1995, 2&&, 12.VII.1995, 3%%; Mervani köprüsü, 560 m, 16.IX.1995, 1&, 14.X.1995, 1&, 14.X.1995, 3%% ; Karayolları bakım onarım istasyonu-Karacadağ, 1100 m, 16.VII. 1996, 5&&, 16.VII.1996, 3%%, 22.VII.1996, 11&&, 22.VII. 1996, 3%% ; Yiğityolu köyü, 900 m, 31.VII.1996, 2&&; Kabi köyü, 570 m, 8.IX.1996, 3&&, 8.IX.1996, 2%%.

Euprepocnemidinae Dirsh, 1951
EUPREPOCNEMIS Fieber, 1853

***Euprepocnemis plorans plorans* (Charpentier), 1825**

DISTRIBUTION: Kabaklı göleti, 700 m, 18.VIII.1995, 1&, 18.VIII. 1995, 1%; 11.VIII.1996, 2%% ; Karabahçe-Karacadağ, 1150 m, 31.VIII.1996, 2&&, 31.VIII.1996, 3%%.

THISOICETRINUS Uvarov, 1921

***Thisoicertrinus pterostichus* (Fischer-Waldheim, 1833)**

DISTRIBUTION: Kabaklı göle ti, 700 m, 18.VIII.1995, 2&&, 18.VIII.1995, 1%; Yeni Üniversite köprüsü, 560 m, 20.VIII. 1996, 3&&, 20.VIII.1996, 2%%; Mervani köprüsü, 560 m, 8.IX.1995, 1&, 8.X.1995, 2%%.

Acridinae Swains, 1840
ACRIDA Linnaeus, 1758

***Acrida bicolor anatolica* (Dirsh, 1949)**

DISTRIBUTION: Sadi köprüsü, 570 m, 14.VI.1995, 1&, 22.VI. 1995, 2&&; Yeni köy, 600 m, 16.IX.1996, 2&&; Yiğityolu köyü, 900 m, 16.VII.1996, 1&; Kabaklı göleti, 700 m, 18.VIII.1996, 3&&; Karabahçe-Karacadağ, 1150 m, 31.VIII 1996, 4 &&.

Truxalinae Brunner-Wattenwyl, 1900
TRUXALIS Fabricius, 1775

***Truxalis robusta robusta* (Uvarov, 1916)**

DISTRIBUTION: Sadi köprüsü, 570 m, 14.VI.1995, 1&, 22.VI. 1995, 2&&; Yeni köy, 600 m, 16.IX.1995, 1&, 16.IX.1995, 1%; Kabi köyü, 570 m, 10.VI.1996, 1&; Karpuzlu köyü, 550 m, 10.VI.1996, 1%.

Oedipodinae Brunner-Wattenwyl, 1900

AIOLOPUS Fieber, 1853

***Aiolopus strepens* (Latreille, 1804)**

DISTRIBUTION: Mervani köprüsü, 560 m, 22.VI.1995, 1&; Kabaklı göleti, 700 m, 22.IX.1995, 4&&, 22.IX.1995,1%; Yeniköy, 600 m, 30.VI.1996, 3&&, 30.VI.1996, 2%%; Hevsel bahçesi, 590 m, 12.VII.1996, 1&, 12.VII.1996, 1%.

PYRGODERA Fischer - Waldheim, 1846

***Pyrgodera armata* Fischer-Waldheim, 1846**

DISTRIBUTION: Kabaklı göleti, 700 m, 14.VI.1995, 2&&, 14.VI.1996, 1%; Kabi köyü, 570 m, 10.VI.1996, 1&; Karpuzlu köyü, 550 m, 10.VI.1996, 1%.

OEDIPODA Latreille, 1829

***Oedipoda coerulescens coerulescens* (Linnaeus, 1758)**

DISTRIBUTION: Yeni Üniversite köprüsü, 560 m, 22.VI.1995, 1&; Kabaklı göleti, 700 m,16.IX.1995, 2&&, 16.IX.1995, 1%; Karpuzlu köyü, 550 m, 14.X.1996, 1&.

***Oedipoda schochi schochi* Saussure, 1884**

DISTRIBUTION : Domuz çeºmesi-Dicle, 900 m, 12.VII.1995, 3 &&; Eğil kalesi, 830 m, 12.VII.1995, 2&&, 12.VII.1995, 1%; Kabaklı göleti, 700 m, 8.VIII.1995, 2&& ; Karabahçe-Karacadağ, 1260 m., 1&.

***Oedipoda aurea* Uvarov, 1923**

DISTRIBUTION: Mervani köprüsü, 560 m, 18.VI.1995, 1&; Karayolları bakım onarım tesisleri-Karacadağ, 1200 m, 16.VII.1996, 2&&, 16.VII.1996, 3%%, 22.VII.1996, 5&&; Karabahçe-Karacadağ, 1150 m, 31.VII1996, 4 &&; Yiğityolu köyü, 900 m, 31.VII.1996, 5&&; Leylek istasyonu, 960 m, 18.VIII.1996, 3&&.

***Oedipoda miniata miniata* (Pallas, 1771)**

DISTRIBUTION: Eski Diyarbakır-Silvan karayolu, 700 m, 14.VI.1995, 10&&; Mervani köprüsü, 560 m, 6.VII.1995, 3&&; Kabaklı göleti, 700 m, 14.VII.1995, 3 &&, 14.VII. 1995, 3%%; Kabi köyü, 570 m, 20.VI.1996, 2&&, 20.VI. 1996, 2%%, Yiğityolu köyü, 900 m, 22.VII.1996, 2 &&, 22.VII. 1996, 1%; Yeni Üniversite köprüsü, 560 m, 20.VIII. 1996, 3&&, 20.VIII. 1996, 1%; Yeni köy, 600 m, 30.VIII. 1995, 2&&; Dicle vadisi-Eğil, 730 m, 2.IX.1996, 4 &&.

ACROTYLUS Fieber, 1853

***Acrotylus insbricus insbricus* (Scopoli, 1786)**

DISTRIBUTION**:** Mervani köprüsü , 700 m, 9.VII.1995, 4&&, 9.VII.1995, 5%%, 14.IX.1995, 3&&; Yeni köy, 600 m, 30.VI.1996, 3&&, 30.VI.1996, 3%%; Yiğityolu köyü, 900 m, 16.VII.1996, 2 &&, 16.VII.1996, 1%; TRT verici istasyonu-Karacadağ, 1800 m, 22.VII.1996, 2 %.

SPHINGONOTUS Fieber, 1852

***Sphingonotus pilosus* Saussure, 1884**

DISTRIBUTION: Sütfabrikası, 580 m, 31.VII.1996, 2 &&, 31.VII.1996, 1%; Dicle nehri kenarı-Eğil, 730 m, 22.VII. 1996, 2 &&.

***Sphingonotus rubescens rubescens* (Walker, 1870)**

DISTRIBUTION: Sadi köprüsü, 570 m, 14.VIII.1996, 1&, 25.VII.1996, 2%%; Erkek ögrenci yurdu - Kampüs, 630 m, 14.VIII.1996, 1&, 14.VIII.1996, 2%%; Yeni köy, 600 m, 22.VIII.1996, 1&; Sütfabrikası, 580 m, 22.VIII.1996, 2 &&; Dicle nehri kenarı-Eğil, 730 m, 24.VIII.1996, 3&&, 24. VIII.1996, 1%.

LOCUSTA Linnaeus, 1758

***Locusta migratoria cinerascens* Linnaeus, 1758**

DISTRIBUTION: Kabaklı göleti, 700 m, 14.X.1995, 2&&, 14.X.1995, 1%, 7.XI.1995, 2&; Yeni Üniversite köprüsü, 550 m, 10.VI.1996, 2&&, 10.VI.1996, 1%; Kabi köyü, 570 m, 18.VI.1996, 4&&.

Gomphocerinae Uvarov, 1958

DOCIOSTAURUS Fieber, 1853

***Dociostaurus (Notostaurus) anatolicus* (Krauss, 1899)**

DISTRIBUTION: Sadi köprüsü, 570 m, 6.VII.1995, 5&&, 6.VII.1995, 3%%; Karpuzlu köyü, 550 m, 10.VIII.1996, 1&, 10.VIII.1996, 2%%. TRT verici istasyonu-Karacadağ, 1800 m, 22.VII.1996, 1 %.

***Dociostaurus (Kazakia) jogai* (Soltani, 1978)**

DISTRIBUTION: Karayolları bakım onarım tesisleri-Karacadağ, 1200 m, 2 2.VII.1996, 2&&, 22.VII.1996, 1%; Karabahçe-Karacadağ, 1150 m, 22.VII.1996, 2&&, 22.VII.1996, 1%; Yiğityolu köyü, 900 m, 31.VII.1996, 1&; Leylek istasyonu, 960 m, 18.VIII.1996, 3&&.

CHORTHIPPUS Fieber, 1852

***Chorthippus loratus* (Fischer-Waldheim, 1846)**

DISTRIBUTION: Mervani köprüsü, 700 m, 20.VI.1995, 1&, 20.VI.1995, 3%%; Kabaklı göleti, 700 m, 16.IX.1995, 4&&, 16.IX.1995, 2%%; Diyarbakır-Silvan karayolu civarı, 700 m, 14.XI.1995, 5&&, 14.XI.1995, 1%; Kabi köyü, 570 m, 30.VII.1996, 3&&, 30.VII.1996, 1%.

As a result, Tettigonidae 7 genus, 10 species, and 2 subspecies, Gryllidae 3 genus and 3 species, Gryllotalpidae 1 genus, and 1 species, Pyrgomorphidae 1 genus and 1 subspecies, Pamphagidae 1 genus and 1 species and Acrididae 15 genus, 8 species and 14 subspecies of were determined.

Discussion

In the light of the knowledge obtained from references and our studies, we can readily classify the determined samples according to zoogeographic origin as Table I (1, 9, 14, 18, 23, 32, 33, 35, 36).

Orthoptera fauna contains many harmful species for some cultivated plants 26, 27, 37, 40). We have also determined some harmful species in this study. *Oedipoda coerulescens coerulescens* and *Calliptamus barbarus barbarus* together with the other *Calliptamus* species cause an important loss of tobacco yield (38). Adult and ninphs of *Anacridium aegyptium aegyptium* may damage tobacco, cotton, vineyard, clover and citrus fruits (39). Adult and ninphs of *Melanogryllus desertus* demages the underground and ground surface parts of the most plants (19). Species of *Platycleis (Platycleis) intermedia* migrated to Turkey from Iraq between 1939-1942 years caused important damage on cultural plants (26). *Decticus albifrons,* especially in Mardin and Bafra caused an important loss of wheat yield in 1939 (27). *Locusta migratoria* damages the field of rice, sugar-cane, wheat, barley, rye and maize because they become frequently a crowd (39). *Euprepocnemis plorans plorans* is a major pest species for maize (27, 38). *Thisocetrinus pterostichus* is a major pest on vegetables (40). In adition to; *Platycleis (Platycleis) escaleria escaleria, Gryllus campestris, Gryllotalpa gryllotalpa, Calliptamus barbarus cephalotes, Calliptamus tenuicercis tenuicercis, Thisoicetrinus pterosticus, Aiolopus strepens* known as harmful damages most of the cultivated plants (3, 15, 16,

Table I.
Zoogeographic origin of some fauna elements of Karacadağ Mountain and Tigris Basin

Region: / Element:	Mediterranian	Sibirian-Arboreal	Eremial	Irano-Caspien	Ethiopian
Acrida bicolor anatolica	●				
Tropidopola longicornis greaca	●				
Tettigonia caudata		●			
T. viridissima		●			
Nocaracris cyanipes		●			
Calliptamus barbarus barbarus			●		
C tenuicercis tenuicercis				●	
C. barbarus cephalotes			●		
P. (Platycleis) intermedia			●		
P. (Platycleis) escaleria escaleria			●		
P. (Platycleis) escaleria iranica				●	
P. (Incertana) persica				●	
Oedipoda aurea			●		
O. miniata miniata			●		
O. coerulescens coerulescens			●		
O. schochi schochi				●	
Aiolopus strepens			●		
Chorthippus loratus		●			
Pyrgodera armata				●	
Pyrgomorpha conica conica					●
Notostaurus anatolicus	●				

20, 37). In addition to, *Saga ephippigera* which is a predator insect is a useful species, because they are fed with pests such as crickets (15).

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References

1. Demirsoy, A., 1996. Genel ve Türkiye Zoocoğrafyası. 630 s., Meteksan Ankara.
2. Çıplak, B., 1992. Malatya Orthoptera Faunası. Doktora Tezi, 134 s. Malatya.
3. Çıplak, B., Demirsoy, A., ve Bozcuk, A.N., 1996. Malatya ve Civarı Caelifera (Orthoptera-Insecta) Faunası. Doğa Zool. Dergisi, 20: 17-31.
4. Karabağ, T., 1958. Türkiye Orthoptera Faunası, Ank. Üniv. Fen Fak. Yay. Um:81 Zool. 4: 198 s.
5. Demirsoy, A., 1975. Erzurum Bölgesi Orthoptera (Ins.) Faunasının Tespiti ve Taksonomik ncelenmesi. Atatürk Üniv. Yay., No: 347, 122 s.
6. Demirsoy, A., 1977. Türkiye Caelifera (Ins.) Faunasının Tespiti ve Taksonomik İncelenmesi. Atatürk Üniv. Yay., No: 488, 352. s.
7. Salman, S., 1978. Ağrı, Kars ve Artvin llerinin Orthoptera (Insecta) Faunası Üzerine taksonomik Araştırmalar. Atatürk Üniv. Fen Fak. Yay., N:82. 184 s.
8. Uvarov, B.P., 1921. Proc. Zool. Soc. Lond. XXI, 447-472.
9. Uvarov, B.P., 1929 Studies in the Iranian Orthoptera I. Some New and Less Known *Tettigoniidae*. Ann. du Mus. Zool. de P. Acad. des Seiences de PURSS. 623-639.
10. Uvarov, B.P., 1934. Studies in the Orthoptera of Turkey, Iraq and Syria. Eos: X : 21-119.
11. Uvarov, B.P., 1940. The New Orthoptera from Turkey, Ann. Mag. Nat. Hist. Ser. 11, VI : 522-527.
12. Ramme, W., 1930, Neue Orthoptera aus Westasien (*Acrid*. et *Tett*.) Mitt. Zool. Mus. Berlin. 16: 394-396.
13. Ramme, W., 1951 Zur Siystematik, Faunistik und Biologie der Orthopteren von Südost Europa und Vorderasien. Mitt. Zool. Mus. Berlin. 27: 429 pp.
14. Karabağ, T., 1961. Revision of *Drymedusa* stein and Related genera. Bulletin of the British Museum Vol. 11. No 1.
15. Karabağ, T., Gümüşsuyu, İ., Balamir, S. ve Tutkun, E., 1971. Türkiye Orthoptera Faunasının Tespiti Üzerine Araştırmalar. Bitki Koruma Bülteni, Cilt II. No 2. 73-100.
16. Karabağ, T., 1975. Studies In The Turkish Orthoptera (Ins.) I New Species and Less Known *Tettigoniidae*. Journal of Nat. His., Vol. 9: 337-350.
17. Karabağ, T., Gümüşsuyu, İ. ve Tutkun, E., 1971. Türkiye Orthoptera Faunasının Tespiti Üzerine Araştırmalar (III). Bitki Koruma Bülteni, Cilt 20, No 1-4, 1-25.
18. Salman, S., 1990. Türkiye *Pholidopterini* (ns.) Faunası X. Ulusal Biy. Kong. 18-20 Temmuz, Cilt 4. 101-109, Erzurum.
19. Gümüşsuyu, İ., 1981. Türkiye *Gryllidae* (Orthoptera) Faunası Üzerinde Sistematik Çalışmalar. Zir. Müc. Araº. Ens. Yay. No: 42. 94 s.
20. Çıplak, B., ve Demirsoy, A., 1991. Arguvan (Malatya) ve Çevresinde Orthoptera (Ins.) Faunasının İncelenmesi. Doğa Zool. Der. 15: 98-114.
21. Çıplak, B., Demirsoy, A., and Bozcuk, N.A., 1993. Distribution of Orthoptera in Relation the Anatolian Diagonal in Turkey. Articulata, 8 (1). 1-20.

22. Çıplak, B., 1994. A New Species and New Subspecies of *Stenobothrus* Fischer, 1853 (Orthoptera, *Acrididae*) From Türkey. Türk. Entomol. Der.18 (1) : 7-14.
23. Çıplak, B., ve Demirsoy, A., 1995.Türkiyede Ensifera (Orthoptera-Insecta) SUBORDERının Endemizm Açısından Değerlendirilmesi. Doğa Zool. Derg.19 : 213-220.
24. Çıplak, B., ve Demirsoy, A., 1990. A Description of the Male of *Dociostaurus (Dociostaurus) Salmani* Demirsoy, 1977. Doğa Zool. Derg. 14 : 144-149.
25. Karabağ, T., 1961. Some New and Little Known Pholidopterini (Orthoptera:Tettigoniidae) from Turkey. Bul. Res. Counc. of Israel, vol. 10 B.
26. Karaat, Ş., 1986. Doğu ve Güneydoğu Anadolu Bölgesi Tütün (*Nicotina tabacum* L.,)'de Zararlı Olan Böcek Türleri, Tanınmaları, Yayılış Alanları ve Zararları Üzerinde Araştırmalar. Zir. Müc. Araş. Ens. Yay. No: 4. 82 s.
27. ªimºek, Z., 1988. Doğu ve Güneydoğu Anadolu Bölgesi Mısır ve Darılarda Zararlı Olan Böcek Türleri, Tanınmaları, Yayılış Alanları ve Zararları Üzerinde Araştırmalar. Zir. Müc. Araº. Ens. Yay. No:6. 87 s.
28. Mısırdalı, H., Saya, Ö., 1980. On The *Ranunculaceae* species of The South-East and Anatolian Region st. Üniv. Fen Fak. Mec. Seri B, 45, 203-210.
29. Kaynak, G., 1988. Contribution to the Flora of Karacadağ. Doğa TU. J. Botany 13, 3, 375-397.
30. Kaynak, G. and Ketenoğlu, O, 1986. New Floristic Records from the Urfa and Diyarbakır Provinces, SE Turkey. Willdenowia 16, 79-86.
31. Ertekin, S.A., Saya, Ö, New Floristic Records for the Various Grid Squares from the *Fabaceae* Tr. J. of Botany. (Baskıda).
32. Harz, K., 1969. The Orthoptera of Europe I. 747 pp.
33. Harz, K., 1975. The Orthoptera of Europe II. 940 pp.
34. Erman, O., Salman, S., 1990. Elazığ İli Orthoptera (Insecta) Faunası X. Ulusal Biy. Kong. 18-20 Temmuz Cilt 4. 109-119.
35. Tutkun, E., 1974. Ankara li Dahilinde Mevcut *Caliptamus* Serv. Türlerinin Morfolojisi ve Biyo-Ekolojisi Üzerinde ncelemeler. Zir. Müc. Araş. Ens. Yay. No35. 136 s.
36. Soltani, A.A., 1978. Preliminary Synonymy and Description of New Species in the Genus *Dociostaurus* Fieber, 1853 (Orthoptera) With a Key to the Species in the Genus. Juornal of Ent. Soc. of ran suppl. II, 1-93.
37. Rıvnay, E., 1962. Field Crop Pests in the Near-East. Monographiae Biologicae Vol X. 450 pp.
38. Tirelli, M., 1953. Patalogia del Tobacco, Insetti a Altri Animali Nocivial Tobacco Vol.1, Part 1, Augusto Vallerinin Editore Piazza San Lorenzo, 8-Firenze, 175 pp.
39. Lodos, N., 1975. Türkiye Entomolojisi Genel, Uygulamalı, Faunistik, Cilt 1Ege Ü.,Z.,F.,Yay 282, Bornova- zmir, 182 s.
40. Balamir, S., 1962. Türkiye'de Son Yıllarda Zararı Görülen Bir Çekirge Türü *Thisocertrinus pterostichus* F.W. Bitki Koruma Bülteni 2(II) : 3-10.
41. Ertekin, A. S. Karacadağ'ın Bitki Çeşitliliği, Sürdürülebilir Kırsal ve Kentsel Kalkınma Derneği yayını, 2002.
42. Battal Çiplak, Klaus-Gerhard Heller, Ali Demirsoy. Review and key to species of Platycleis from Turkey (Orthoptera: Tettigoniidae) with descriptions of Yalvaciana subgen. n. and two new species. Journal of Natural History, January 15, 2002 (Vol. 36, No. 2), pp. 197-236.