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Contribution to the knowledge of the Turkish tail-wings (Neuroptera: Nemopteridae)

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Dobosz, R. & Ábrahám, L.: *Contribution to the knowledge of the Turkish tail-wings (Neuroptera: Nemopteridae).*
Abstract: In their study, the authors publish the data of nemopterid species collected in Turkey and the material preserved in both natural history museums in Poland (USMB, Bytom) and in Hungary (SCM, Kaposvár). New faunistical data are reported for 1 *Croce*, 3 *Dielocroce*, 2 *Nemoptera*, 6 *Lertha* species, earlier only 11 species in the Turkish nemopterid fauna were mentioned. *Dielocroce modesta* Hölzel, 1975, *Croce schmidti* (Navás, 1927) are new species in the fauna of Turkey. The checklist of the fauna is also given. The occurrence of the species is presented in chart by provinces and distribution maps are given for all species.

Keywords: faunistics, tail-wings, Nemopteridae, Turkey

Introduction

Due to their elongated rear wings, tail-wings (Nemopteridae) are impressive-looking insects. The number of their species in the global fauna is around 150 (Aspöck et al. 2001), thus they belong to the smaller families within the order of neuropterid insects (Neuroptera). They are found mostly in tropical, subtropical areas and in the Mediterranean region of the temperate zone.

Located in the meeting zone of Europe, Asia and the nearby Africa, Turkey is situated at the northern boundaries of the distribution area of nemopterid species. The borders of the country of Turkey are mostly natural, physical boundaries, i.e. the frontiers are marked by seas and high-altitude mountains, these terrain morphological features also delimiting distribution areas for many living organisms. Due to the extremely high diversity of natural features in these areas, the Neuroptera fauna found here is very rich (Canbulat 2007).

The first Turkish faunal data on Nemopteridae, an occurrence record of *Nemoptera sinuata* Olivier, 1811 was published in the paper by Schneider (1845). Nearly two decades later, Selys-Longchamps (1866) reported on the description of a new species, *Lertha ledereri*. Later on, around the turn of the 1900s yet another two tail-wing species (*Dielocroce ephemera* Gerstäcker, 1894, *Lertha sheppardi* Kirby, 1904) were revealed to exist in the Turkish fauna.

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In the first half of the 20th century – maybe because of the effects of the two World Wars – only scarce data (ALEXANDROVA-MARTYNOVA 1930, ESBEN-PETERSEN 1932) arose about the country's Nemopteridae fauna, for about 70 years.

From the 1970s on, however, the exploration of the local fauna started to increase dynamically. Austrian neuropterologists, in particular, have contributed immensely to the exploration and description of Turkey's Neuroptera fauna. This is the period when the monographs describing the majority of the species in the region were produced. The taxonomic papers by HÖLZEL (1968, 1975) ASPÖCK et al. (1980, 1984) have outstanding importance in the research into the Nemopteroidae fauna. At the same time, an increasing amount of faunistic data were brought to light (POPOV 1970, GEPP 1974). The fundamentals of neuropterological research in Turkey were laid down by the comprehensive faunistical publications by SENGONCA (1974, 1981).

Later on, it was researchers from Central-European countries (Poland, Czech Republic, Hungary) who visited Turkey frequently with the aim of better exploring its fauna (eg. KACIREK 1998).

After the turn of the centuries, Turkish neuropterologists published their papers one after the other about the rich Neuroptera fauna inhabiting vast areas, reporting about the first appearance of newer and newer Nemopteridae species and about faunal surveys (ARI, KIYAK 2000, 2004, ARI et al. 2008, CANBULAT 2002, 2007, CANBULAT, KIYAK 2005, KOÇAK, KEMAL 2002, 2008; ÖZBAY et al. 2005, SATAR 2005, SATAR, ÖZBAY 2004, SATAR et al. 2004, 2007).

The main purpose of the current study is to publish faunal data from Turkey, based on specimens preserved in two Central-European museums, thus contributing to Turkey's basic fauna survey and fauna mapping.

Material and methods

On the basis of sampling possibilities, the Nemopteridae family can be grouped into two categories whose external morphological differences are quite striking. One of the groups is made up by *Nemoptera* species with coloured wings, flying in the daytime hours. The other group contains the nocturnal species with transparent wings including *Croce, Dielocroce* and *Lertha*. The species of *Croce* and *Dielocroce* fly exclusively at night, and there are only occasional specimens found during daytime hours in places where they are found in masses at nighttime. *Lertha* species, too, have nocturnal activity, but they are often found sitting on flowers, feeding on nectar at daytime, especially in the morning hours.

In accordance with all these, two different sampling methods were used for collecting Nemopteridae species, differing on the activity patterns of the different species. *Nemoptera* species were captured individually using butterfly net during the morning period before the hot noon hours and in the late afternoon after the heat has receded. For collecting nocturnal species we used transportable light-traps which were operated with light tubes of UV-rich spectra and black light type of tubes.

The collected material was deposited in two museum collections in Poland (USMB, Bytom) and Hungary (SCM, Kaposvár) respectively.

Results

The current study reveals the faunal data of Nemopteridae material collected in Turkey and deposited in a Polish (USMB Bytom) and a Hungarian (SCM Kaposvár) museum.

Turkey's Nemopteridae fauna is very rich: altogether 13 species have been found so far. The two collections preserve proof specimens of 12 species. Two species – *Croce schmidti* (Navás, 1927) and *Dielocroce modesta* Hölzel, 1975 – were described from the Turkish fauna for the fist time. We have no data about the occurrence of *Nemoptera aegyptica* Rambur, 1842 in Turkey, although it has been successfully collected in Syria, directly beside the Turkish border. The recorded species belong to two subfamilies – 4 species to Crocinae and 9 species to Nemopterinae –, and the species checklist includes all the faunistical data of the species in both collections (numbers, sex, province, settlement, date and time of collecting, collector).

Based on earlier publications about the Turkish fauna, the distribution areas of the various species by province is provided and is shown in maps (Figs 1-5).

The compilation of faunistical data is finished with the checklist of the Turkish Nemopteridae fauna.

When collecting the distribution data of the species we paid particular attention to species that were described from the area of Turkey (*Dielocroce ephemera, Lertha ledereri, Lertha vartianiae, Lertha schmidti, Lertha sheppardi*). For these species, the Turkish type localities, based on data from the original description of the species, are also specified.

List of collected species

Abbreviations:
USMB – Upper Silesian Museum, Bytom, Poland
SCM – Somogy County Museum, Kaposvár, Hungary

Croce schmidti (Navás, 1927)

MATERIAL EXAMINED:

in Coll: Upper Silesian Museum, Bytom, Poland

22♂♂, 42♀♀ - 24-25 VII 2006, Adiyaman, S of Karadut vill. 37°55'N 38°49'E, 840 m, ad lucem, leg. Roland Dobosz.

DISTRIBUTION IN TURKEY: New for Turkey.

DISTRIBUTION: It spreads from East Turkey to Pakistan in the West Palearctic region, an Irano-Eremial faunal element (ASPÖCK et al. 2001).

REMARKS: It flies in the middle of the summer, and is active at night.

Dielocroce baudii (Griffini, 1895)

MATERIAL EXAMINED:

in Coll: Upper Silesian Museum, Bytom, Poland

1♂, 2♀♀ 27-28 VII 2004 Adiyaman, Cesme Pension Nemrut Dağı N.P. 37º56'N/38º46'E, 1390 m, ad lucem leg. Roland Dobosz; 1♂, 6♀♀ 24-26 VII 2006 Adiyaman S of Karadut vill. 37º55'N/38º49'E, 840 m, ad lucem leg. Roland Dobosz.

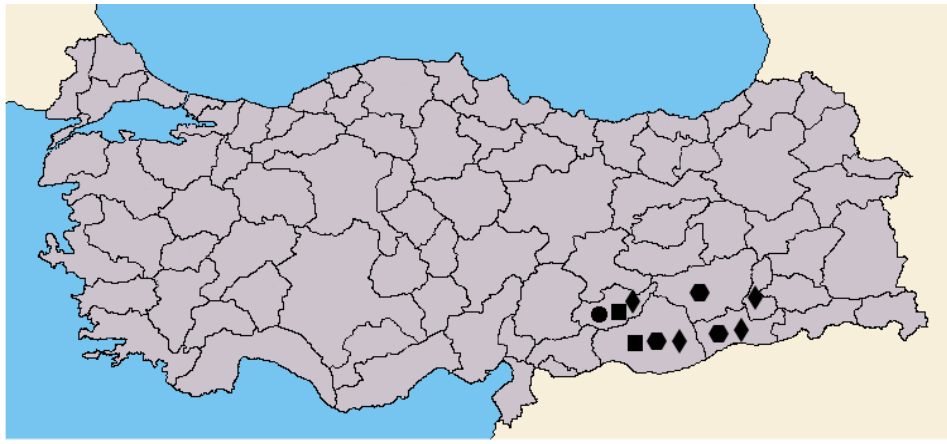

Fig. 1: Distribution of *Croce schmidti* (circle), *Dielocroce baudii* (square), *Dielocroce ephemera* (hexagonal) and *Dielocroce modesta* (deltoid) in Turkey by provinces

in Coll: Somogy County Museum, Kaposvár, Hungary
4♂♂, 10♀♀ - Şanliurfa, Halfeti, Euphrat river, 02-03 VII 1999, leg. L. Ábrahám.

DISTRIBUTION IN TURKEY: Diyarbakır, Mardin (SATAR 2005)
It is the first time for the species to occur in Adiyaman and Şanliurfa province.

DISTRIBUTION: It occurs from Turkey to Afghanistan and in Saudi-Arabia toward southern direction, unpublished data known in coll: SCM from Iran, a Syro-Eremial faunal element (ASPÖCK et al. 2001).

REMARKS: All *Dielocroce* species have nocturnal activity, and thus can be collected by light.

Dielocroce ephemera (Gerstäcker, 1894)
MATERIAL EXAMINED:
in Coll: Upper Silesian Museum, Bytom, Poland
25♂♂, 15♀♀ - Adiyaman, 18 VI 2005, N of Bosini 37°44'N 37°54'E, 748 m, 25 km E of Gabli, ad lucem, leg. Roland Dobosz.
in Coll: Somogy County Museum, Kaposvár, Hungary
1♂, 9♀♀ - Şanliurfa, 2 km N of Halfeti, 37º15'N, 37º52'E, 13 VI 1994, leg. M. Hreblay & Gy. Kovács.

DISTRIBUTION IN TURKEY: Mardin (GERSTÄCKER 1894; ŞENGONCA 1981b); Batman (SATAR & ÖZBAY 2004, SATAR CANBULAT & ÖZBAY 2004).
It is the first time for this species to occur in Adiyaman and Şanliurfa province.

DISTRIBUTION: Type locality can be found in Mardin province (SE Turkey), its occurrence in Turkey was later mentioned by (MEINANDER 1980); it is an Irano-Eremial faunal element (ASPÖCK et al. 2001).

REMARKS: This species was described from Turkey, type locality: Mardin. It is the most abundant species among the species of *Dielocroce*, active at night and collected by light.

Dielocroce modesta Hölzel, 1975

MATERIAL EXAMINED:

in Coll: Upper Silesian Museum, Bytom, Poland

5♂♂, 18♀♀ - 24-25 VII 2006, Adiyaman, S of Karadut vill. 37°55'N 38°49'E, 840 m, ad lucem, leg. Roland Dobosz.

in Coll: Somogy County Museum, Kaposvár, Hungary

3♂♂, 5♀♀ - Şanliurfa, Halfeti, Euphrat river, 02-03 VII 1994, leg. L. Ábrahám.

DISTRIBUTION IN TURKEY: It is a new species for the fauna of Turkey.

DISTRIBUTION: Known only from Oman and Iran, an Irano-Eremial faunal element (ASPÖCK et al. 2001).

REMARKS: It flies in July, collected by light.

Nemoptera coa (Linnaeus, 1758)

MATERIAL EXAMINED:

in Coll: Somogy County Museum, Kaposvár, Hungary

1♂ - Mugla, Karabögürtlen 37°03'N, 28°31'E, 17 V 2001, leg. Gy. Rozner.

DISTRIBUTION IN TURKEY: Mus (ALEXANDROVA-MARTYNOVA 1930), Bursa, İstanbul, İzmir (POPOV 1970), Adana, Bursa, Izmir, Mus (ŞENGONCA 1981).

It is the first time for this species to occur in Mugla province.

DISTRIBUTION: It is known from the Balkan Penninsula via Anatolia to the South-Caucasus; it is a policentric Ponto-Mediterranean faunal element (ASPÖCK et al. 2001).

REMARKS: It is active during the daytime.

Nemoptera aegyptiaca Rambur, 1842

MATERIAL EXAMINED: No specimen from Turkey can be found in either of the collections.

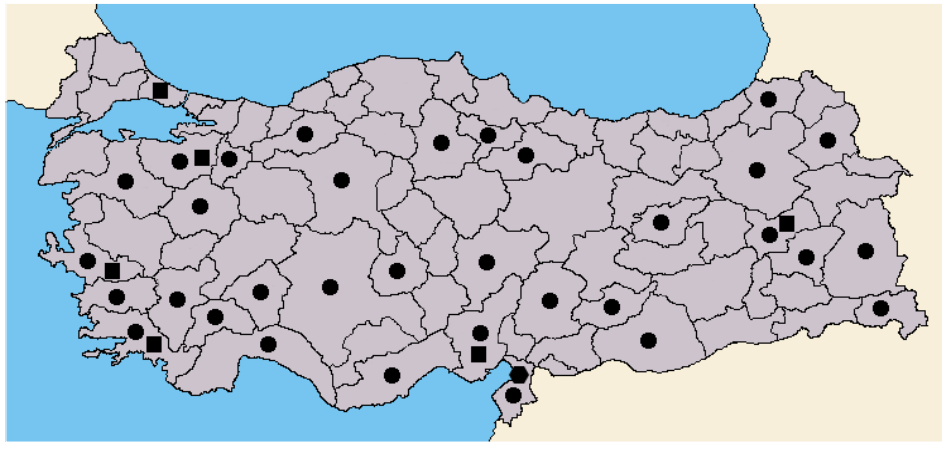

Fig. 2: Distribution of *Nemoptera coa* (square), *Nemoptera aegyptiaca* (hexagonal) and *Nemoptera sinuata* (circle) in Turkey by provinces

DISTRIBUTION IN TURKEY: Hatay (POPOV 1970, ŞENGONCA 1981)

DISTRIBUTION: It was recorded only in the eastern continental edge of the Mediterranean Sea from Egypt to Turkey; a Syrian faunal element (ASPÖCK et al. 2001).

REMARKS: In the collection of SCM there are several specimens preserved from Syria. The collecting site is adjacent to Hatay province, Turkey.

Nemoptera sinuata Olivier, 1811

MATERIAL EXAMINED:

in Coll: Upper Silesian Museum, Bytom, Poland

1♀ - 29 VII 1994, Bolu, Evikli, leg. Marek Bąkowski; 2♀♀ - 09-12 VI 2000, Mersin, Aydinlar env. 36°48'N 34°10'E, 25 km NW of Erdemli, cedar forest, leg. Roland Dobosz; Mersin, 13 VI 2000, Meşelik 37°04'N 34°46'E, leg. Roland Dobosz; 6♂♂, 2♀♀ - Adana, 14-16 VI 2000, Hasanbeyli, pass 37º09'N 36º34'E, leg. Roland Dobosz; 1♂, 2♀♀ - 20-25 V 2001, Adana, Hasanbeyli env. pass 37°07'N 36°34'E, leg. Roland Dobosz; 2♂♂ - Adana, 04 VI 2001, env. of Hasanbeyli, leg. Mark Volkovitsh; 1♂, 11♀♀ - Artvin, 15 VI 2002, 4 km NE of Aşbasan 40º46'N 41º41'E, 47 km S of Artvin, leg. Roland Dobosz; 1♂ - Tunceli, 16 VI 2002, 8 km N of Pülümür 39º30'N 39º53'E, leg. Roland Dobosz; 7♂♂, 10♀♀ - Tunceli, 17-19 VI 2002, road from Pülümür to Tunceli 39°30'N 39°55'E-39°07'N 39°32'E, leg. Roland Dobosz; 1♂, 2♀♀ - Tunceli, 18 VI 2002, 10 km NW of Tunceli 39°11'N 39°29'E, leg. Roland Dobosz; 1♂ - Erzurum, 14 VI 2004, env. of Kinaliça, 120 km N of Erzurum, leg. Roland Dobosz; 1♂, 1♀ - 16 VI 2004, Tunceli, 3 km N of Pülümür 39°32'N 39°54'E, 1700 m, leg. Roland Dobosz; 2♂♂, 6♀♀ - Mersin, 21-22 VI 2004, S of Avgadi vill., 36°41'N 34°10'E, 1000 m, 16 km N of Erdemli, oak forest, leg. Roland Dobosz; 7♀♀ - Bilecik, 16 VII 2004, N of Bozüyük 39º58'N 29º59'E, leg. Roland Dobosz; 11♂♂ - Balikeşir, 19-20 V 2005, 20 km E of Balikeşir 39º40'N 28º06'E, 100 m, leg. Roland Dobosz; 6♂♂, 3♀♀ - Adana, 5-6 VI 2005, Hasanbeyli 37º07'N 36º35'E, 985 m, leg. Roland Dobosz; 4♂♂, 6♀♀ - Adana, 07-09 VI 2005, 15 km S of Hasanbeyli 37º03'N 36º31'E, 915 m, leg. Roland Dobosz; 9♂♂ - Aksaray, 21-22 VI 2005, env. of Ihlara vill. 38º15'N 34º17'E, 1300 m, leg. Roland Dobosz; 1♂, 1♀ - Aksaray, 27 VI 2005, env. of Ihlara vill. 38º15'N 34º17'E, 1300 m, leg. Roland Dobosz.

in Coll: Somogy County Museum, Kaposvár, Hungary

3♂♂, 2♀♀ - Antalaya, 10 km E of Kas 36°13'N, 29°41'E, 21 V 2001, leg. Gy. Rozner; Antalaya, Termessos 37°01'N, 30°29'E 29 III 2007. leg: A. Márkus 1♂, 4♀♀ - Bitlis-Van, Kuskunkiran Gecidi 2350-2550m 42°46'E 38°17'N, 18-19 VII 1990, leg. Gy. László & G. Ronkay; 1♂ - Bitlis-Van, Van 38°27'N, 45°25'E, 28 VI 1993, leg. Kadlec; 1♀ - Kastanomu, Tosya 660m 41°6'N, 34°3'E, 09 VII 1996, leg. Cs. Szabóky; 2♂♂, 2♀♀ - İzmir, Pergamon 39°11'N, 27°8'E, 23 V 1989, leg. I. Rozner; 1♀ - Bitlis-Van, Kuskunkiran Gecidi 2400-2500m, 42°46'E, 38°17'N, 02 VIII 1988, leg. P. Gyulai, M. Hreblay, G. Ronkay & L. Ronkay; 8♂♂, 9♀♀ - Antalaya, Yeniköy 36°13'N, 29°36'E, 12 VI 1994, leg. K. Gaskó; 1♂, 3♀♀ - Mardin, vill. cel. Orta Toroslar, Hop Gecidi 300m, 11 VI 2004, leg. I. Nádai; 11♂♂, 2♀♀ - Hakkari, 35 km E of Hakkári 1600m 37°36'N, 43°45'E, 14 VI 2004, leg. B. Benedek & T. Csővári; 1♀ - Adiyaman, Nemrad Dagi 37°54'N, 38°36'E, ? VII 2000, leg. V. Gurko; 1♂ - Adiyaman, Nemrad Dagi 37°54'N, 38°36'E, VII 2000, leg. Werner & Lizler; 1♀ - Kayseri, 10 km E of Kas 38°27'N, 43°25'E 21 V 2001, leg. Gy. Rozner; 1♂ - Turkey, ?, 22 VI 1994, leg. Šlactha.

DISTRIBUTION IN TURKEY: Antalya (SCHNEIDER 1845), Turkey (KIRBY 1900), Artvin, Kars, Mus, (ALEXANDROVA-MARTYNOVA 1930), Konya (ESBEN-PETERSEN 1932); Hakkari (GEPP 1974); Amasya, Antalya, Isparta, Mersin, Kahramanmaraş Konya (HÖLZEL 1968); Hakkari, İzmir, Kütahya (ŞENGONCA 1979), Adana, Ankara, Antalya, Bitlis, Bursa, Çorum, Isparta, Izmir, Hatay, Kahramanmaraş, Mersin, Mugla, Mus, Konya, Kars, Şanlıurfa, Tokat (ŞENGONCA 1981), Adana, Mersin (KACIREK 1998); Adana (ARI & KIYAK 2000); Kayseri (CANBULAT 2002); Şanlıurfa (SATAR & ÖZBAY 2004); Antalya, Aydın, Burdur, Denizli, Isparta, Muğla (CANBULAT & KIYAK 2005).

It is the first time for this species to occur in the provinces of Adiyaman, Aksaray, Balikeşir, Bilecik, Bolu, Erzurum, Kastanomu, Tunceli.

DISTRIBUTION: It spreads from the Balkan Peninsula via Anatolia and South Caucasus (KOZLOV 1985) to Alborz Mountains, it is a policentric Ponto-Mediterranean faunal element (ASPÖCK et al. 2001).

REMARKS: It flies in late spring and in early summer, and has abundant populations locally.

Lertha ledereri (Selys-Longchamps, 1866)

MATERIAL EXAMINED:

in Coll: Upper Silesian Museum, Bytom, Poland

2♂♂ - Nevşehir, 24 VI 2004, 2 km NW of Avanos 38º44'N 34º48'E, 940 m, leg. Roland Dobosz; 33♂♂, 16♀♀ - Aksaray, 21-22 VI 2005, env. of Ihlara vill. 38º15'N 34º17'E, 1300 m, leg. Roland Dobosz; 4♀♀ - Nevşehir, 24 VI 2005, 2 km NW of Avanos 38°44'N 34°48'E, 940 m, leg. Roland Dobosz; 1♂, 1♀ - Nevşehir, 25 VI 2005, env. of Ortahisar 38°38'N 34°52'E, 1210 m, leg. Roland Dobosz; 2♀♀ - Nevşehir, 25-26 VI 2005, 5 km S of Ügrüp 38°36'N 34°54'E, 1080 m, leg. Roland Dobosz; 1♀ - Nevşehir, 26-27 VI 2005, Nargölu 38°201'N 34°27'E, 1400 m, 26 km W of Derinkuyu, leg. Roland Dobosz; 8♂♂, 3♀♀ - Aksaray, 27 VI 2005, env. of Ihlara vill. 38º15'N 34º17'E, 1300 m, leg. Roland Dobosz.

in Coll: Somogy County Museum, Kaposvár, Hungary

1♂,1♀ - Ankara, Tuz Gölü 39º01'N, 33º29'E, near Sereflikochisar, 20-21 VI 1992, leg. P. Gyulai; 3♀♀ - Ankara, Tuz Gölü 39º01'N, 33º29'E, 20 km NW of Sereflikochisar, 01 VII 1994, leg. L. Ábrahám; 1♀ - Şanliurfa, 2 km N of Halfeti 37º15'N, 37º52'E, 400 m, 13 VI 1994, leg. M. Hreblay & Gy. Kovács.

DISTRIBUTION IN TURKEY: Konya, Kayseri, (HÖLZEL 1968); İzmir, Kayseri (POPOV 1970); Konya (ESBEN-PETERSEN 1933); Denizli (ASPÖCK et al. 1980); Izmir, Kayseri, Konya (SENGONCA 1981); Konya (ASPÖCK et al. 1984); Niğde (KACIREK 1998); Kayseri (CANBULAT 2002); Antalya, Burdur, Isparta, Denizli (CANBULAT & KIYAK 2005b).

It is the time for this species to occur in Aksaray, Ankara, Nevşehir and Şanliurfa provinces.

DISTRIBUTION: Type material from Turkey, Konya: Ova village (in coll.: Selys, ESBEN-PETERSEN 1933), later it was mentioned from Turkey by KIRBY (1900).

Known from Greece (Kos), Turkey, South Caucasus (KOZLOV 1985) and unpublished data from Iran in coll. SCM, an Eremial faunal element (ASPÖCK et al. 2001).

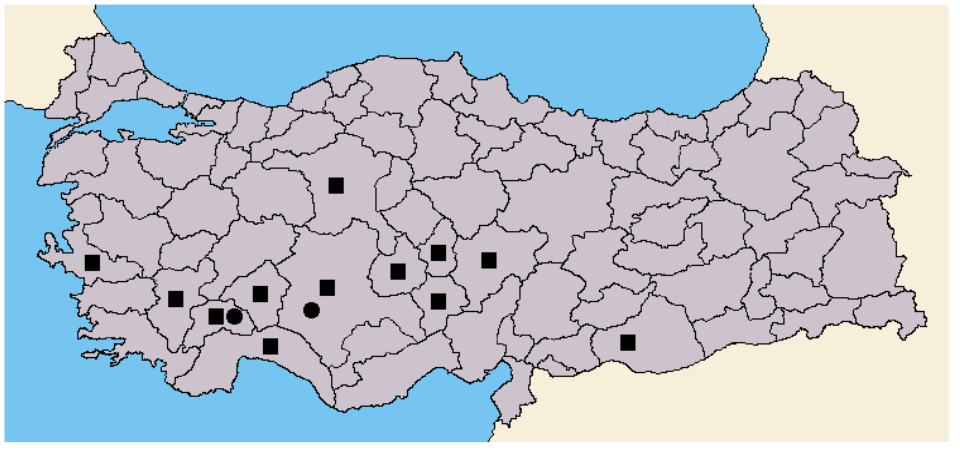

Fig. 3: Distribution of *Lertha ledereri* (square) and *Lertha vartianae* (circle) in Turkey by provinces

REMARKS: It flies in June and July, and is active at night and daytime as well.

Lertha vartianae Aspöck H., Aspöck U. & H. Hölzel, 1984

MATERIAL EXAMINED:

in Coll: Somogy County Museum, Kaposvár, Hungary

2♂♂ - Burdur, Dagi Ermenek 36º 37'N, 32º 55'E, 06 VII 1998, leg. A. Möberg.

DISTRIBUTION IN TURKEY: Konya (ASPÖCK et al. 1984).

It is the first time for this species to occur in Burdur.

DISTRIBUTION: Hitherto, it has been collected only in Turkey; an Eremial faunal element (ASPÖCK et al. 2001).

REMARKS: The type localities are Ereğli and Ereköy in Konya province. After its description it was not recorded from any other place in Turkey. It seems to be a real endemic species surrounding the Taurus Mountains.

Lertha extensa (Olivier, 1811)

MATERIAL EXAMINED:

in Coll: Upper Silesian Museum, Bytom, Poland

18♂♂, 25♀♀ - Şanliurfa, 04 VI 2002, 24 km W of Viranşehir 37º17'N 39º30'E, leg. Roland Dobosz & Jerzy Szypuła; 4♂♂, 1♀ - Mardin, 04-05 VI 2002, Hop Geçidi 37°21'N 40°51'E, 1115 m, 8 km N of Mardin, leg. Roland Dobosz; 1♂ - Adiyaman, 28 VII 2004, road to the top of Nemrut Dağı 37º58'N/38º44'E, 1897 m, Nemrut Dağı N.P., Roland Dobosz; 2♂♂, 2♀♀ - Diyarbakir, 02 VI 2005, S of Diyarbakir 37°39'N 40°28'E, 705 m, leg. Roland Dobosz; 4♂♂, 2♀♀ - Mardin, 03 VI 2002, E of Hop Geçidi 37°22'N 40°52'E, 905 m, 10 km E of Mardin, leg. Roland Dobosz; 3♂♂, 5♀♀ - Gaziantep, 04 VI 2005, 10 km W of Birecik 37°00'N 37°50'E, 477 m, leg. Roland Dobosz.

DISTRIBUTION IN TURKEY: Agri (Ararat) ALEXANDROV-MARTYNOV 1930; Malatya (HÖLZEL 1968); Hatay (TJEDER 1970); Şanlıurfa, Hakkari (ŞENGONCA 1979); Hakkari, Hatay, Kahramanmaraş, Malatya, Urfa (ŞENGONCA 1981); Kahramanmaraş, Şanlıurfa (KACIREK 1998); Van (KOÇAK & KEMAL 2002); Diyarbakır, Mardin, Siirt (SATAR & ÖZBAY 2004); Iğdır, Kars (ARI 2004); Elaziğ (ÖZBAY et al. 2005); Batman, Bitlis Şirnak (KOÇAK & KEMAL 2008).

It is the first time for this species to occur in Adiyaman and Gaziantep provinces.

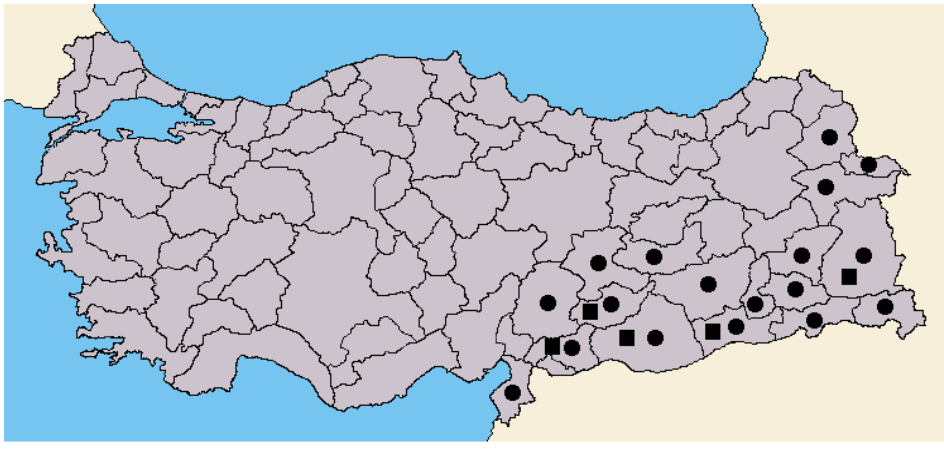

Fig. 4: Distribution of *Lertha extensa* (circle) and *Lertha palmonii* (square) in Turkey by provinces

DISTRIBUTION: Turkey, Iran, Iraq, Jordan; an Irano-Eremial faunal element (ASPÖCK et al. 2001).

REMARKS: The type locality (Mardin) of the species can be found in Turkey. It flies in June and July, and is active at night, collected by lamp.

Lertha palmonii (Tjeder, 1970)

MATERIAL EXAMINED:

in Coll: Upper Silesian Museum, Bytom, Poland

3♂♂, 1♀ - Şanliurfa, 04 VI 2002, 24 km W of Viranşehir 37º17'N 39º30'E, leg. Roland Dobosz; 1♂, 1♀ - Mardin, 04-05 VI 2002, Hop Geçidi 37°21'N 40°51'E, 1115 m, 8 km N of Mardin, leg. Roland Dobosz; 1♂ - Adiyaman, 28 VII 2004, road to the top of Nemrut Dağı 37º58'N/38º44'E, 1897 m, Nemrut Dağı N.P., Roland Dobosz; 1♂, 1♀ - Mardin, 10 km E of Mardin, 37º20'N 40º46'E, 905 m, leg. Roland Dobosz; 5♂♂, 3♀♀ - Gaziantep, 04 VI 2005, 10 km W of Birecik 37°00'N 37°50'E, 477 m, leg. Roland Dobosz.

in Coll: Somogy County Museum, Kaposvár, Hungary

1♂, 3♀♀ - Şanliurfa, Halfeti valley of Euphrat 37°55'E, 37°15'N, 500m, 24 V 1990, leg. Cs. Szabóky.

DISTRIBUTION IN TURKEY: Van (KOÇAK & KEMAL 2002); Mardin (KOÇAK & KEMAL 2008)

DISTRIBUTION: Israel (TJEDER 1970, ASPÖCK et al. 2001), new to Iran and Armenia (coll. SCM)

REMARKS: This species is most probably more widespread in the eastern parts of Turkey, as is revealed by our new data. This species was described only 40 years ago, and is not treated by all of the authors as a separate taxon (ASPÖCK et al. 1984, 2001). KOÇAK & KEMAL (2002, 2008) and ARI et al. (2008) mention this species as *L. extensa* although the species in the published photographs is clearly *L. palmonii*. It flies from the end of May to August.

Lertha schmidti (H. Aspöck & U. Aspöck Hölzel, 1984)

MATERIAL EXAMINED:

in Coll: Upper Silesian Museum, Bytom, Poland

1♂ - Ankara, 20 VI 2004, 15 km N of Karahamzalı 39º20'N 32º55'E, 1075 m, leg. Roland Dobosz; 1♂, 6♀♀ - Nevşehir, 25 VI 2004, Kirşehir 39º20'N 34º02'E, 1180 m, leg. Roland Dobosz.

DISTRIBUTION IN TURKEY: Konya (ASPÖCK et al. 1984); Şanlıurfa, Diyarbakır (SATAR & ÖZBAY 2004), Antalya (CANBULAT & KIYAK 2005).

It is the first time to occur in Ankara and Nevşehir provinces.

DISTRIBUTION: Known only in Turkey, an Eremial faunal element (ASPÖCK et al. 2001).

REMARKS: Type localities Ekisehir and Konya can be located in Central Anatolia. It is also an endemic species for Inner Anatolia. It flies in June.

Lertha sheppardi (Kirby, 1904)

MATERIAL EXAMINED:

in Coll: Upper Silesian Museum, Bytom, Poland

1♂,1♀ - Şanliurfa, 4 VI 2002, 24 km W of Viranşehir 37º17'N 39º30'E, leg. Roland Dobosz; 1♂ - Diyarbakir, 02 VI 2005, S of Diyarbakir 37°39'N 40°28'E, 705 m, leg. Roland Dobosz.

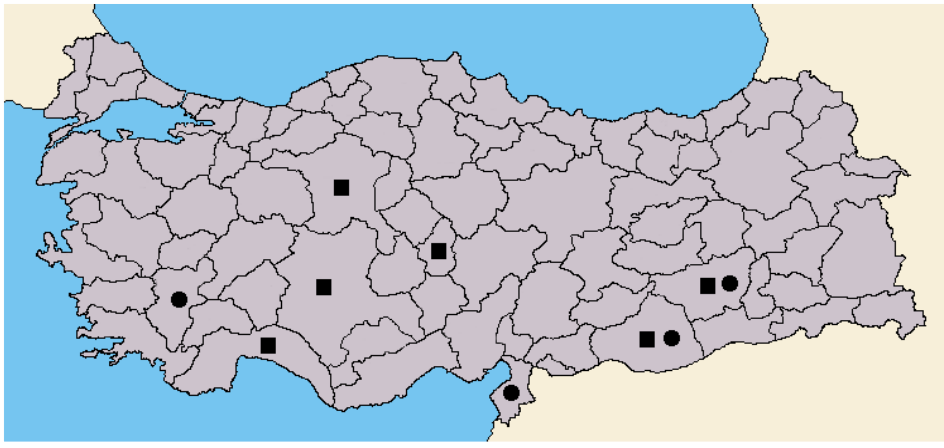

Fig. 5: Distribution of *Lertha schmidti* (square) and *Lertha sheppardi* (circle) in Turkey by provinces

DISTRIBUTION IN TURKEY: Hatay (NAVÁS 1912; HÖLZEL 1968); Denizli (ŞENGONCA 1979); Denizli, İçel (ŞENGONCA 1981); Diyarbakır, Şanlıurfa (SATAR & ÖZBAY 2004).

DISTRIBUTION: Only in Turkey, an Eremial faunal element (ASPÖCK et al. 2001).

REMARKS: Type locality in Amanus Mountains (Hatay province SE Turkey), it flies in June.

Checklist of the Turkish tail-wing species

Nemopteridae Burmeister, 1839
Crocinae Navás, 1910
1. Croce schmidti (Navás, 1927)
2. Dielocroce baudii (Griffini, 1895)
3. Dielocroce ephemera (Gerstäcker, 1894)
4. Dielocroce modesta Hölzel, 1975

Nemopterinae Burmeister, 1839
5. Nemoptera coa (Linnaeus, 1758)
6. Nemoptera aegyptiaca Rambur, 1842
7. Nemoptera sinuata Olivier, 1811
8. Lertha ledereri (Selys-Longchamps, 1866)
9. Lertha vartianae Aspöck H., Aspöck U. & H. Hölzel, 1984
10. Lertha extensa (Olivier, 1811)
11. Lertha palmonii (Tjeder, 1970)
12. Lertha schmidti (H. Aspöck & U. Aspöck Hölzel, 1984)
13. Lertha sheppardi (Kirby, 1904)

Table 1: Distribution of the Turkish tail-wing species in provinces (+ - new data, # - bibliogaphy data)

	1	2	3	4	5	6	7	8	9	10	11	12	13
Adana					#		+#						
Adıyaman	+	+	+	+			+			+	+		
Ağrı										#			
Aksaray							+	+					
Amasya							#						
Ankara							#	+				+	
Antalya							+#	#				#	
Artvin							+#						
Aydın							#						
Balıkesir							+						
Batman			#							#			
Bilecik							+						
Bitlis							+#			#	#		
Bolu													
Burdur							#	#	+				
Bursa					#		#						
Çorum							#						
Denizli							#	#				#	+#
Diyarbakır										#			#
Elazığ										#			
Erzurum							+						
Gaziantep										+	+		
Hakkari							+#			#			
Hatay						#	#			#			#
İçel							+#						
Iğdır										#			
Isparta							#	#					
İstanbul					#								
İzmir					#		+#	#					
Kahramanmaraş							#			#			
Kars							#			#			
Kastamonu							+						
Kayseri							+#	#					
Konya							#	#	#			#	
Kütahya							#						
Malatya										#			
Manisa													
Mardin		#	#							+#	+#		
Muğla					+		#						
Muş					#		#						
Nevşehir								+				+	
Niğde								#					
Şanlıurfa		+	+	+			#	+		+#	+	#	+#
Siirt										#			
Şırnak										#			
Tokat							#						
Tunceli							+						

Remarks: Number in columns refers to the number of species in the checklist.

Discussion

Turkey's Nemopteridae fauna, in comparison with that of Europe (ASPÖCK et al. 2001), is extremely rich. The Nemopteridae fauna of Asia Minor includes several endemic species belonging to *Lertha* genus (*L. vartianiae, L. schmidti, L. sheppardi*).

For several of the species (eg. *L. ledereri, N. aegyptica*) it is here that they reach the northernmost or westernmost limits of their distribution range. Among the Nemopteridae species listed hereby there were 2 species that were found in the fauna of the country for the first time, which allows the conclusion that other species might also be found (*Lertha, Dielocroce*) in the future, because the eastern parts of Turkey is open towards the Asian areas, despite the presence of high mountains.

Most likely it is the Turkish Neuroptera fauna researchers, having achieved significant results since the turn of the centuries, who will clarify the distribution of species in this country which is huge even when compared with European states, and has an extremely diverse complex of natural features.

The views of researchers in respect of the separateness of *Lertha extensa* and *L. palmonii* are not uniform (TJEDER 1970, ASPÖCK et al 1984, 2001), therefore more exact faunistic data need to be produced, and the distribution maps should be revised.

From a nature conservation aspect, special attention should be paid to those endemic members of the Nemopteridae fauna (*Lertha vartianiae, L. schmidti, L. sheppardi*) which populate the Anatolian plateau and the southern areas near the Mediterranean Sea.

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