Preliminary list of Auchenorrhyncha with notes on distribution and importance of species in Turkey. XXVI. Family: Cicadellidae: Deltocephalinae: Paralimnini Distant (Part II)

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Summary

Second section of Paralimnini comprises 18 species, belonging to the genera Mogangella, Ebarrius, Adarrus, Jassargus, Diplocolenus, Rhoananus and Mocuellus. In this paper only two species, Adarrus niphanticus Logv. and Jassargus kurdicus Remane and Schulz, are new records for Turkey. So tribu Paralimnini was completed by this paper, and it was concluded 40 species of 13 genera, altogether. Distribution, abundance and plants which the specimens were collected on of each species are given.

Introduction

Previously 16 species were recorded from Turkey by different workers; Fahringer (1922), Dlabola (1957, 1980 a, 1980 b, 1981) and Kalkandelen (1972, 1974). However, none of these species are observed to be economically important pests on cultivated plants up to now in Turkey. The synonyms, distribution of species in the Palearctic Region are taken from Nast (1972). Additional countries were given with literature citation.

As we indicated in the beginning of this work, the preliminary list of Auchenorrhyncha of Turkey were going to be published in parts starting the first one in 1980. However, up to date we published XXVI th parts of it and

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it seems to be completed with last paper. In fact the true check of Auchenorrhyncha of Turkey with its every respects, will never to be completed, perhaps 50 years to come. Because of its diversity, richness of the fauna, the sufficient numbers of competent taxonomist and also, still many parts of Turkey are not even visited for this purpose.

We are preparing addenda and corrigenda for the next issue and then we are believing that our list will contain at least about the basic knowledge of this group and hoping that it could be useful to some extend for the people who are interesting on the Turkish Auchenorrhyncha fauna.

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Mogangella secundaria Dlabola, 1958

General Distribution: USSR (Georgia, s. Russia, Ukraine), Iran, Turkey (Dlabola, 1981).

Distribution in Turkey: Dlabola (l. c.) reported this species from Erzurum (Kandilli) and Van (Başkale). It seems to be restricted in eastern Anatolia.

The authors have no representative specimens of this species.

Mogangella straminea Dlabola, 1957

General Distribution: Turkey, USSR (Kazakhstan, Moldavia, Ukraine).

Distribution in Turkey: Dlabola, (1957) described this species from the specimens collected in Ankara (Mogan gölü). Kalkandelen (1974), reported it from Ankara (Eymir) very near to Mogan gölü.

Material examined: Van (Baskale) - Only one specimen.

Occurrence: Very occasionally.

Biological note: The specimen was collected in mid-June, on grass.

Ebarrius cognatus (Fieber, 1869)

General Distribution: Albania, Austria, Bulgaria, Czechoslovakia, Finland, France, Great Britain (also in England, Scotland), Hungary, Italy,

Norway, Poland, Romania, Sweden, Turkey, USSR (Armenia, Georgia), Yugoslovia, Greece (Dlabola, 1980 a).

Distribution in Turkey: Dlabola (1957, 1981) listed it from Kayseri (Erciyes Dağı, 3200 m.), Erzurum (Tahir Geçidi, 2475 m.), Kalkandelen (1974), reported it from Ankara (Çubuk Baraj I, Karagöl).

Material examined: Ankara (Beynam, Çamlıdere, Kızılcahamam), Bolu (Kıbrıscık), Çankırı (İnandık), Erzincan (Kemaliye), Kars (Sarıkamış), Niğde (Ulukışla), Van (Başkale) - Totally 11 specimens. It seems to be restricted in middle and eastern Anatolia.

Occurrence: Occasionally.

Biological note: The specimens were collected from late April up to late September, on rice and grass.

Adarrus multinotatus (Boheman, 1847)

Synonymy: Jassus (Deltocephalus) micantulus Kbm., 1868; D. thoracicus Fieber, 1869; D. mayri Fieber, 1869.

General Distribution: Algeria, Austria, Belgium, Czechoslovakia, France, German D. R., German F. R., Great Britain, Hungary, Italy, Korean Peninsula, Netherlands, Poland, Romania, Sweden, Switzerland, Tunisia, Turkey, USSR (Altai Mts., Kazakhstan, m. Siberia, Ukraine), Yugoslavia.

Distribution in Turkey: Fahringer (1922) reported it from Bursa (Uludağ, 1700 m.) on Verbascum glomeratum.

The authors have no representative material of this species.

Adarrus niphanticus Logvinenko, 1966

General Distribution: USSR (n. w. Caucasia).

Distribution in Turkey: This species constitutes a new record for Turkey.

Material examined: Kars (Sarıkamış) - Only one male specimen.

Occurrence: Very occasionally.

Biological note: The specimen was collected in mid-July, in pine forest, on grass.

Jassargus kurdicus Remane and Schulz, 1976

General Distribution: Iraq (Mossul) (Schulz, 1976).

Distribution in Turkey: This species constitutes a new record for Turkey.

Material examined: Ankara (Kırıkkale) - Only one specimen.

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Occurrence: Very occasionally.

Biological note: The specimen was collected in early May, on weeds.

Jassargus obtusivalvis (Kirschbaum, 1868)

Synonymy: Deltocephalus picturatus Fieber, 1869.

General Distribution: Albania, Algeria, Austria, Bulgaria, Czechoslovakia, Denmark, France, German D. R., German F. R., Greece, Hungary, Italy, Netherlands, Poland, Romania, Switzerland, Turkey, USSR, Yugoslavia.

Distribution in Turkey: Dlabola (1957) reported it from Kocaeli (Mollafeneri).

Material examined : Kars (Sarıkamış), Kırklarel $_{\rm i}$ (Vize), Samsun (Bafra) - Totally 6 specimens.

Occurrence: Occasionally.

Biological note: The specimens were collected from early June to late August, on grass.

Diplocolenus bekiri Kalkandelen, 1972

General Distribution: Endemic.

Distribution in Turkey: Kalkandelen (l.c.) described this species only on one specimen that collected in Ankara (Çubuk). However, author (1980) later described the allotype and 2 paratypes (males) that found in Sivas (Suşehri).

Material examined: Ankara (Gölbaşı, Hasanoğlan) in addition to the above material - Only four specimens.

Occurrence: Occasionally.

Biological note: The specimens were collected in mid-June, on steppe vegetation.

Diplocolenus frauenfeldi (Fieber, 1869)

Synonymy: D. frauenfeldi altaicus Vilbaste, 1965.

General Distribution: Austria, Bulgaria, Czechoslovakia, France, German F. R., Hungary, Italy, Mongolia, Romania, Spain, Turkey, USSR.

Distribution in Turkey: Dlabola (1957, 1981) l'sted it from Ankara (Beynam and Lalahan) and Erzurum (Tahir geçidi, 2475 m). However, Kalkandelen (1974) also reported it from Ankara (Beynam and Lalahan).

Material examined: Kars (Sarıkamış) - Totally 12 specimens.

Occurrence: Occasionally.

Biological note: The specimens were collected in mid-July in forest on *Pinus* sp.

Diplocolenus gazelicornis Dlabola, 1980

General Distribution: Endemic

Distribution in Turkey: Diabola described this species based on the material collected in Trabzon (Zigana geçidi) and Artvin (Esembel geçidi).

Material examined: Kars (Sarıkamış), Van (Başkale-Güzelsu)-Only 10 specimens. It seems to be restricted in eastern Anatolia.

Occurrence: Somewhat occasionally.

Biological note: The specimens were collected in July, on grass.

Diplocolenus melichari Dlabola, 1951

Genral Distribution : USSR (Azerbaijan, Georgia). Turkey (Dlabola, 1981).

Distribution in Turkey: Dlabola (l. c.) reported it from Malatya (Tahir).

Material examined: Erzurum (İspir-Serçeme deresi), Kars (Sarıkamış) - Totally 35 specimens. It seems to be restricted in eastern Anatolia.

Occurrence: Somewhat occasionally but found sometimes in small numbers.

Biological note: The specimens were collected in mid-July in Pinus forest.

Diplocolenus pazoukii Dlabola, 1980

General Distribution: Iran, Turkey (Dlabola, 1980 b).

Distribution in Turkey: Dlabola described this species based on the specimens that collected in Iran and Hakkari (Yüksekova), Turkey.

Material examined: Artvin (Central province), Erzurum (İspir - Serçeme deresi), Hakkari (Yüksekova), Van (Başkale) - Totally 10 specimens. It seems to be restricted in eastern Anatolia.

Occurrence: Occasionally.

Biological note: The specimens were collected in mid-June and mid-July, on grass.

Rhoananus hypochlorus (Fieber, 1869)

General Distribution: Albania, Austria, Czechoslovakia, n. Italy, USSR, Yugoslavia, Turkey (Kalkandelen, 1974), France (Giustina, 1983).

Distribution in Turkey: Kalkandelen (l. c.) listed it from Ankara (Çubuk, Karagöl, Lalahan, Elmadağ, Hasanoğlan, Eymir gölü). Dlabola (1981) reported it from Bolu (Gerede) and Van (Başkale). It seems to be restricted in middle and eastern Anatolia.

Material examined: Ankara (Beynam), Bitlis (Central province), Erzurum (Tufanç köyü), Eskişehir (Alpu), Kars (Iğdır, Sarıkamış), Van (Başkale, Beyüzümü, Güzelsu, Kırkgeçit) - Totally 43 specimens.

Occurrence: Somewhat common, but found in small numbers.

Biological note: Specimens were collected in July and August, on *Stipa* sp. and grass.

Mocuellus deminutus Dlabola, 1981

General Distribution: Endemic

Distribution in Turkey: Dlabola (l. c.) described this species based on the specimens collected in Van (Başkale, 2150 m); on steppe vegetation.

The authors have no representative material of the species.

Mocuellus dlabolai Kalkandelen, 1972

General Distribution: Endemic

Distribution in Turkey: Kalkandelen (l. c.) described this species based on the specimens that collected in Ankara (Çubuk Baraj I, II).

Material examined: Elazığ (Central province), K. Maraş (Göksun) - Only 3 specimens.

Occurrence: Occasionally.

Biological note: The specimens were collected in first half of June on grass.

Mocuellus foxi Kalkandelen, 1972

General Distribution: Endemic

Distribution in Turkey: Kalkandelen (l. c.) described this species based on the specimens that collected in Ankara (Çubuk, Lalahan).

Material examined: Yozgat (Yerköy) - Only one specimen.

Occurrence: Very occasionally.

Biological note: The specimen was collected in mid-August, on grass.

Mocuellus quadricornis Dlabola, 1949

General Distribution: Austria, Czechoslovakia, Hungary, Poland, Romania, Turkey, USSR (Moldavia, Ukraine).

Distribution in Turkey: Dlabola (1957, 1981) reported it from Ankara (Bâlâ), Erzurum (Kandilli 1720 m; Tahir geçidi 2475 m) and Nevşehir (Gülşehir). Kalkandelen (1974) reported it also from Ankara (Çubuk, Elmadağ and Lalahan).

There is no additional material to Kalkandelen's material.

Mocuellus zelihae Kalkandelen, 1972

General Distribution: Endemic

Distribution in Turkey: Kalkandelen (l. c.) described this species based on he specimens collected in Ankara (Çubuk Baraj II, Elmadağ, Lalahan).

There is also no additional material of this species to Kalkandelen's material.

Özet

Türkiye Auchenorrhyncha türlerinin yayılışı ve önemlerine alt ön listesi. XXVI. Familya : Cicadellidae : Deltocephalinae : Paralimnini Distant (Kısım II)

Tribu Paralimnini Distant'ın ikinci bölümünde Mogangella, Ebarrius, Adarrus, Jassargus, Diplocolenus, Rhoananus ve Mocuellus cinslerine ait 18 tür listelenmiştir. Bu türlerden sadece ikisi, Adarrus niphanticus Logv. ve Jassargus kurdicus

Remane and Schulz, Türkiye için yeni kayıtlardır. Bu makale ile tamamlanan Paralimnini tribusundan Türkiye'de şimdilik 13 cinse bağlı 40 tür tesbit edilmiş bulunmaktadır. Her bir türün yayılışı ve üzerinde bulunduğu bitkiler verilmeye çalışılmıştır.

Literature cited

- Dlabola, J., 1957. Results of the Zoological Expedition of the National Museum in Pragae to Turkey. 20. Homoptera, Auchenorrhyncha. Acta ent. Mus. Nat. Pragae, 31 (469): 19-68.
- ————, 1980 a. Neue griechische Zikadenarten der Fam. : Cixiidae, Issidae und Cicadellidae (Hom. Auchenorrhyncha). Acta faun. ent. Mus. Nat. Pragae, 16 (179) : 5-13.
- , b. Drei neue **Diplocolenus** Arten und taxonomisch zoogeog raphische Übersicht der Gattung in der Paläarktis. **Ibid.**, 16 (185) : 73 82.
- , 1981. Ergebnisse der Tschechoslowakisch-Iranischen Entomologischen Expeditionen nach dem Iran (1970 und 1973) (Mit Augaben über einige Sammelresultate in Anatolien) Homoptera : Auchenorrhyncha (II. Teil). Acta ent Mus. Nat. Pragae, 40 : 127-311.
- Fahringer, J., 1922. Eine Rhynchoten Ausbeute aus der Türkei, Kleinasien und den benachbarten Gebieten. Konowia, 1: 296-307.
- Giustina, W. Della, 1983. New Species of leafhoppers in France from 1952-1982.

 In 1 st International Workshop on Leafhoppers and Planthoppers of Economic Importance. Commonwealth Institute of Entomology, p. 257-262.
- Kalkandelen, A., 1972. Orta Anadolu'nun Cicadellidae : Euscelinae faunasından dört yeni tür veb ir alttür. İst. Üniv. Fen Falk. Mec. B, 37 (3-4) : 153-163.
- ————, 1974. Orta Anadolu'da Homoptera : Cicadellidae Familyası Türlerinin Taksonomileri Üzerinde Araştırmalar. Zirai Mücadele ve Karantina Genel Md. Araştırma Eserleri Serisi, 221 pp.
- , 1980. Contributions to the families Delphacidae and Cicadellidae (Homoptera) from Turkey. Türk. Bit. Kor. Derg., 4 (3): 147-154.
- Nast, J., 1972. Palaearctic Auchenorrhyncha (Homoptera). An Annotated Check List Polish Academy of Sciences Institute of Zoology. Polish Scientific Publishers, Warszawa, 551 pp.
- Schulz, K., 1976. Zur Kenntnis der Gattung Jassargus Zachvatkin (Homoptera, Auchenorrhyncha) Versuch einer phylogenetischen Analyse anhand morphologischer und funktioneller Befunde der ektodermalen Genitalarmaturen beider Geschlechter, zoogeographischer und ökologischer Daten. Inagural Dissertation zur Erlangung der Doktorwürde der Naturwissenschaflichen Fakültät der Philipps Universität Marburg/Lahn, 214+42 pp.