

**Preliminary list of Auchenorrhyncha with notes on distribution
and importance of species in Turkey. XVI Family
Cicadellidae : Typhlocybinae : Erythroneurini (Part II)**

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Summary

Turkish fauna of genera *Zyginidia* and *Zygina* is represented by 14 species. Five species namely: *Zyginidia (Zyginidia) eremita* Zach, *Zygina (Zygina) nivea* (M.R.), *Z. (Z.) rorida* (M.R.), *Z. (Z.) suavis* Rey, and *Z. (Z.) tithide* Ferr. are added to the fauna as new records for Turkey. However some more species will be added to the list after the descriptions of new *Zyginidia* species from eastern Blacksea Coast Region and Central Anatolia. Distribution, abundance and plants which the specimens were collected on for each species are given.

Introduction

The species, *Zyginidia (Anatolidia) obesa* Zach., *Z. (A.) rostrata* Zach. and *Zygina (Zygina) karatasa* (Dlab.) (= *Erythroneura karatasa* Dlab.) were described by Zachvatkin (1937) and Dlabola (1957) respectively. The first two species are endemic, and further records have not been made up to now, even by the authors themselves. The other previous records of *Zyginidia (Zyginidia) pullula* (Boh.), *Z. (Z.) sohrab* Zach., *Zygina (Zygina) discolor* Horv., *Z. (Z.) ordinaria* (Rib.), *Z. (Z.) rhamni* Ferr. and *Z. (Hypericiella) nebulosa* (Rib.) were made by Dlabola (1957, 1971, 1981), Linnavuori (1965), Metcalf (1968) and Dworakowska (1970 a). *Z. (Z.) rhamni* Ferr. had been listed from Turkey by Metcalf (1968) according to Horvarth (1918). Also Dworakowska (1970 a) reported it from Turkey. Both authors indicated no specific locality. However the presence of this species in Turkey is confirmed by the authors during this study. *Zygina (Hypericiella)*

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nebulosa (Rib.) had also been listed from Turkey by Linnavuori (1962) and Dworakowska (1970 a), but the authors had no chance of collecting specimens of this species. The other previously recorded species *Zyginidia* (*Zyginidia*) *pullula* (Boh.), *Z. (Z.) sohrab* Zach., *Zygina* (*Zygina*) *discolor* Horv. and *Z. (Z.) ordinaria* (Rib.) were also collected by the authors.

A few new species will be added in near future to the fauna of *Zyginidia*, from the eastern Blacksea Coast and Central Anatolia. Their descriptions will publish by the junior author.

Zyginidia (*Zyginidia*) *eremita* Zach., *Z. (Z.) pullula*, *Z. (Z.) sohrab* and *Zygina* (*Zygina*) *rhamni* appear to be economically important species. The first three species can make important damage on maize, rice, cotton and vine by feeding. Bogavac (1968) found *Z. (Z.) pullula* on maize in Yugoslavia and informations are given as it is very commonly and abundantly found during spring and summer on maize.

Although *Z. (Z.) sohrab* was accused to be a vector of Maize Rough Dwarf Virus. However, investigations on the transmission of virus, failed to transmit the virus in Israel (Harpaz, 1961). Lodos (1981) reported this species to be a potential pest of maize in southeastern part of Turkey. Uzunali (1982) detected *Z. (Z.) sohrab* on cotton in eastern Anatolia, but its population is not high enough to cause any damage on cotton. Also some investigations on maize pests were made in southeastern part of Turkey in recent years, and its population is found to be an alarming situation (Şimşek, Z.; by personal communication).

Zygina (*Zygina*) *rhamni* was found destructive on vine especially in France and Italy. It is also common in Western Anatolia on vine.

Synonymy, distribution of the species in Palaearctic region are taken from Nast (1972) catalogue. Additional countries are given with literature citations.

Zyginidia (*Zyginidia*) *eremita* Zachvatkin, 1953

Synonymy: *Erythroneura coacta caucasica* Zach., 1953, *Zyginidia mocsaryi* aucet. (Dworakowska, 1970b).

General Distribution: USSR. (Georgia, s.Russia, Uzbekistan).

Distribution in Turkey: This species constitutes a new record for Turkey. Its distribution in Turkey is restricted rather to the Eastern Black sea coast.

Material examined: Samsun (Alaçam, Central province, Gelemen), Sinop (Ahmetyeri, Boyabat, Durağan)-Totally 61 specimens.

Occurrence: Common and sometimes found somewhat large population.

Biological note: Specimens were collected in August, mostly on corn, some on rice and also from light traps. Dworakowska (1970b) reported it on *Colamogrostis epigeios* L., *Elymus giganteus* Vahl., *Zea mays* L. and *Sorghum halapense* L.

Zyginidia (*Zyginidia*) *pullula* (Boheman, 1845)

General Distribution: Albania, Bulgaria, Czechoslovakia, Finland, Germany, Hungary, Italy (also Sardinia), Mongolia, Romania, Spain, Sweden, Turkey, USSR (Kazakistan, Ukraine, Moldavia, n.Caucasia), Yugoslavia, Austria, Greece, Poland, (Dworakowska, 1970b); Iran (Dlabola, 1981).

Distribution in Turkey: Linnavuori (1965) and Dlabola (1981) reported it both in different parts in İzmit.

Material examined: Amasya (Central province), Ankara (Çubuk, Elmadağ, Hasanoğlan, Kayaş), Bolu (Düzce, Kıbrısık, Seben), Çankırı (İlgaz, İnandık, Konak), Çorum (Osmancık), Kayseri (Yeşilhisar), Nevşehir (Avanos, Çat, Nar, Ürgüp), Sinop (Boyabat, Durağan) -Totally 269 specimens.

Occurrence: Common and found sometimes in large population.

Biological note: Specimens were collected from June through the beginning of October, mostly on rice, some on corn and graminaceous grasse. Bogavac (1968) reported it being found common and abundantly on corn during spring and summer in Serbia (Yugoslavia). Olmi (1972) also reported it as an occasional pest of rice and some times caused local damages.

Zyginidia (*Zyginidia*) *sohrab* Zachvatkin, 1947

Synonymy: *Erythroneura coacta* Ribaut, 1948; *Zyginidia moesaryi*: *auct.* (Dworakowska, 1970b).

General Distribution: Afghanistan, Cyprus, Iran, Israel, Jordan, Lebanon, Syria, Turkey, USSR (Georgia, s.Russia, Uzbekistan). Crete, e. Africa (Dlabola, 1977).

Distribution in Turkey: Dlabola (1957, 1971) reported it from Adana (Central province, Karataş), Bitlis (Reşadiye, Tatvan), Van and İzmit (Düzce), İstanbul (Üsküdar).

Material examined: Adıyaman (Besni, Gerger), Bingöl (Genç).

Bitlis (Kermete), Diyarbakır (Central province, Çermik, Çüngüş, Ergani, Silvan), Elâzığ (Sivrice), Gaziantep (Nurgana), Hakkâri, Kars (İğdir, Kağızman), Malatya (Akçadağ, Central province, Hasırcılar, Pötürge), Siirt (Şirvan), Urfa (Birecik, ceylanpınar), Van (Elmalı). Many specimens.

Occurrence: Common and sometimes found in very large population.

Biological note: Specimens were collected starting from June through September, mostly on corn, some on millet, tobacco, cotton and some gramineae grasses. Dlabola (1957, 1961, 1971) and Dworakowska (1970b) reported it as living on grasses in steppe vegetation. Linnavuori (1962) reported it to be very common on corn, *Andropogon* and *Sorghum* in Israel. Emelyanov (1964) listed it on *Dactylis glomerata* and corn in Ciscaucasia and Caucasia and reported it as being a pest of corn. Avidov and Harpaz (1969) found this species on *Arachis hypogaea*, *Beta vulgaris*, *Brassica oleracea*, *Citrillus vulgaris*, *Gossypium herbaceum*, *Lactuca sativa*, *Prunus persica*, *Raphanus sativus*, *Sorghum vulgare*, *Vitis vinifera* and *Zea mays* in Israel.

Although this species has been claimed to be the vector of Maize Bough Dwarf Virus disease, Harpaz (1961) concluded that it is not a vector, after two years research. This species is also found as a pest on corn and millet in southeastern part of Turkey in the recent. The large populations have been observed in the fields in that areas.

Zyginidia (Anatolidia) obesa Zachvatkin, 1937

General Distribution: Turkey.

Distribution in Turkey: Zachvatkin (l.c.) described this species from the specimens collected in Ankara in December, 1934.

The authors have no representative material of this species in their collection.

Zyginidia (Anatolidia) rostrata Zachvatkin, 1937

General Distribution: Turkey.

Distribution in Turkey: Zachvatkin (l.c.) described it from the specimens collected in Ankara in December, 1934 as the previous species.

The authors have no representative material of this species in their collection.

Zygina (Zygina) discolar Horvarth, 1897

General Distribution: Bulgaria, Czechoslovakia (Slovakia), France, Israel, Italy (also Sardinia), Morocco, Switzerland, USSR. (Georgia, Kazakhstan, Moldavia, Uzbekistan). Yugoslavia, s.Hungary (Dworakowska, 1970a); Iran, Turkey (Dlabola, 1971, 1981).

Distribution in Turkey: Dlabola (l.c.) reported this species from Hakkari (Esendere-Yüksekova), Malatya (Balaban).

Material examined: Ankara (Çubuk), İzmir (Kemalpaşa), Mene-men) - Totally 16 specimens.

Occurrence: Not common and found in small numbers.

Biological note: Specimens were collected in late May, mid-June and beginning of September on vine and apple. Ribaut (1936) reported it on *Salix*, *Quercus*, *Ulmus*, *Prunus* and stated that it overwinters on *Robus fruticosus*. Linnavuori (1962) has given *Prunus amygdalus* and *Quercus calliprinos* as the host plants of the species. Avidov and Harpaz (1969) added *Prunus armeniaca* and *P. cerasus* to the previous host list. Dlabola (1971, 1981) reported it on *Quercus* in Turkey.

Zygina (Zygina) karatasa (Dlabola, 1957)

General Distribution: Afghanistan, Jordan, Turkey.

Distribution in Turkey: Dlabola (l.c.) described this species from the specimens collected in Adana (Karataş). Later on Linnavuori (1965) collected one specimen in Adana (Pozantı).

Unfortunately, the authors have no representative material of this species in their collection. It seems to be rarely found in Turkey.

Zygina (Zygina) nivea (Mulsant et Rey, 1855)

Synonymy: *Typhlocyba punctulum* M.R., 1855; *Zygina punctulum cruoris* Rey, 1891; *Erythroneura nivea dorsuaria* Rib., 1936; *E. nivea mythemera* Rib., 1936.

General Distribution: Algeria, Belgium, Czechoslovakia, France, Germany, Greece, Hungary, Israel, Italy (also Sardinia), Morocco, Portugal, Spain, Tunisia, USSR (Moldavia, Ukraine), Yugoslavia. Austria (Dworakowska, 1970a); Iran (Dlabola, 1981).

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

Material examined: İzmir (Menemen)-Totally 11 specimens.

Occurrence: Found occasionally.

Biological note: The specimens were collected in mid-June on vine. It was reported on *Populus nigra*, *P. alba*, *Salix incana*, *S. alba*, *Vitex agnuscastus* by different authors (Ribaut, 1936; Linnavuori, 1962, 1965; Emelyanov, 1964; Dworakowska, 1970 a).

Zygina (Zygina) ordinaria (Ribaut, 1936)

Synonymy: *Erythroneura ordinaria pandellei* Rib. 1936; *E. ordinaria variegata* Rib., 1936.

General Distribution: Austria, Cyprus, Czechoslovakia, Denmark, England, Finland, France, Germany, Mongolia, Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland, USSR (Altai Mts., Kazakhstan), Yugoslavia, Turkey (Dlabola, 1971).

Distribution in Turkey: Dlabola (1971) reported it being in between Sungurlu-Merzifon in Turkey.

Material examined: Adana (Pozantı), Adapazarı (Yağbasan)-Only two specimens.

Occurrence: Very occasionally.

Biological note: The specimens were collected in late August and late September on apple and from light traps. Ribaut (1936), China (1943) and Dlabola (1971) reported it on *Salix*; Lindberg (1948) on *Amygdalus communis* in Cyprus; Günthart (1974) on *Rose* in Switzerland. Dworakowska (1970a) reported this species on *Malus*, *Fragaria*, *Rubus*, *Ribes*, *Prunus* besides *Salix*. Trolle (1974) stated that it lives on the previously given host plants and overwinters on *Picea* and *Clematis* in Denmark.

Zygina (Zygina) rhamni Ferrari, 1882

Synonymy: *Z. blandula simplex* Ferr., 1882; *Z. blandula detrita* Rey, 1894; *Erythroneura simplex difficilis* Rib., 1936; *E. simplex manca* Rib., 1936.

General Distribution: Austria, Bulgaria, Cyprus, Czechoslovakia, France, Germany, Hungary, Israel, Italy (also Sardinia), Switzerland, Turkey, USSR (Uzbekistan), England, Netherlands (Dworakowska, 1970a).

Distribution in Turkey: Metcalf (1968) listed this species from

Turkey according to Horvarth Dworakowska (1970a) has also listed Turkey among the distributed countries. Both authors, giving without specific locality. The authors of this article are now able to confirm its presence in the Turkish fauna.

Material examined: İzmir (Bayındır, Kozak)-Only five specimens.

Occurrence: Very occasionally.

Biological note: The specimens were collected in early June and late August, on vine. Ribaut (1936) has given **Rhamnus, Alnus, Acer, Tilia, Quercus** as host plants and stated that it overwinters on **Salix** and **Rubus fruticosus**. Lindberg (1948) reported it on **Alnus orientalis** in Cyprus. Linnavuori (1962) and Dworakowska (1970a) has given vine as host plant of this species.

Zygina (Zygina) rorida (Mulsant et Rey, 1855)

Synonymy: **Z. rorida costalis** Ferr., 1882; **Erythroneura rorida deleta** Ribaut, 1936.

General Distribution: Austria, Bulgaria, France, Italy (also Sardinia), Portugal, Romania, USSR (Georgia, Ukraine), Yugoslavia, Germany, Hungary (Dworakowska, 1970a).

Distribution in Turkey: This is the first record of this species in Turkey.

Material examined: Çankırı (Ilgaz)-Only two specimens.

Occurrence: Very occasionally.

Biological note: The specimens were collected in November of 1968. on **Quercus**. Ribaut (1936), Emelyanov (1964) and Dworakowska (1970a) have also given **Quercus** as host plant of this species.

Zygina (Zygina) suavis Rey, 1891

Synonymy: **Z. rhamnicola** Horv., 1903; **Typhlocyba (Zygina) fulguralis** Mats., 1908; **Z. concinna** Edw., 1924; **Erythroneura inconstans** Rib., 1936.

General Distribution: Austria, Bulgaria, Czechoslovakia, Denmark, England, Finland, France, Germany, Hungary, Italy, Netherlands, Poland, Romania, Sweden, Switzerland, USSR (Georgia, Maritime Territory, Ukraine), Yugoslavia.

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

Material examined: İzmir (Menemen)-Only one specimen.

Occurrence: Very occasionally.

Biological note: This single specimen was collected in mid-June, on vine. China (1943), Ribaut (1936), Dworakowska (1970a) and Günthart (1974) has given *Rhamnus cantharticus* and *R. frangula* as host plants. Sohi (1977) recorded it on apricot, maize and *Arthemisia scorparia* in India, under the name of *Erythroneura rhamnicola* (Horv.)

Zygina (Zygina) tithide Ferrari, 1882

Synonymy: *Erythroneura tithide nudate* Rib., 1936 (Primary homonym); *E. tithide nudior* Cer., 1937, *E. tithide decolorata* Cerr., 1939; *E. tithide unipunctata* Cer., 1939; *Erythroneura* (sic.) *tithide nudista* Knull, 1944.

General Distribution: Bulgaria, Hungary, Italy, Lebanon, Poland, Switzerland, USSR (Ukraine), Yugoslavia, France (Ribaut, 1936, 1952; Dlabola, 1965; Metcalf, 1968; Dworakowska, 1970a).

Distribution in Turkey: This is the first record of this species in Turkey.

Material examined: Burdur (Karakent köyü)-Only four specimens.

Occurrence: Very occasionally.

Biological note: The specimens were collected in late April of 1968, on *Populus tremulae*. Ribaut (1936) reported it being found in April on *Salix incana*.

Zygina (Hypericiella) nebulosa (Ribaut, 1948)

General Distribution: Cyprus, Israel. Turkey (Dworakowska, 1970a)

Distribution in Turkey: Linnavuori (1962) stated that this species is apparently Syrio-Anatolian element and Dworakowska (1970a) has listed it as Anatolia but, without giving any specific locality. The authors have no other literature reporting this species from Turkey.

The authors have no representative material of this species in their collection.

Özet

Türkiye Auchenorrhyncha türlerinin yayılışı ve önemlerine ait ön listesi. XVI. Familya Cicadellidae: Typhlocybae: Arythroneurini (II. Kısım)

Türkiye faunasında *Zyginidia* ve *Zygina* cinslerinin 14 türle temsil edildiği tesbit edilmiştir. Bunlardan *Zyginidia* (*Zyginidia*) *eremita* Zach., *Zygina* (*Zygina*) *nivea* (M.P.), *Z. (Z.) rorida* (M.P.), *Z. (Z.) suavis* Rey ve *Z. (Z.) tithide* Ferr. Türkiye için yeni kayıt olarak faunaya ilave edilmiştir. Doğu Karadeniz Bölgesi ve Orta Anadolu'dan tesbit edilen yeni *Zyginidia* türlerinin tanımı ile de ilerde faunaya ayrıca yeni türler eklenmiş olacaktır. Her bir türün yayılışları, ekonomik önemi ve üzerinde toplandıkları bitkiler verilmeye çalışılmıştır.

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