

**RESULTS OF THE ZOOLOGICAL EXPEDITION  
OF THE NATIONAL MUSEUM IN PRAGUE TO TURKEY**

20.

**HOMOPTERA AUCHENORRHYNCHA**

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In the present paper I publish all the material of Auchenorrhyncha (leafhoppers) collected by the Zoological Expedition of the National Museum in Prague to Turkey during the months May—September 1947.

It is my pleasant duty to express here my deep gratitude to the authorities of the National Museum for giving me the opportunity to join the Expedition and to see the localities of the Anatolian leafhopper species personally. I am particularly grateful to Professor Obenberger, Dr Táborský and Dr Hoberlandt for letting me have all the leafhopper material, about 10,000 specimens, for determination and publication.

As it is possible to tell already from the material, it was not by any means easy to obtain a large material, rich in species, as the Expedition did not begin its field work at the most favorable time of year; collecting in spring or still more in summer would certainly have resulted in the acquisition of more species, both old and new ones. Many deserts and steppe-lands were already completely dry and without any living insects imagoes. Therefore it was necessary to confine oneself to places near the water, where some rests of fresh vegetation and fauna could be found. Naturally it was not possible to work with the sweeping method on the great flats in various localities. Using many other methods it proved possible to obtain many species of other insect orders, but only very few species of leafhoppers. The larger part of Homoptera Auchenorrhyncha has been collected by sweeping in the following localities: Svilengrad, Edirne, Moğan gölü, Ankara Baraj, Beynam and Bü-rücek. Other material, and perhaps the main part of our material, has been obtained in the evening before sunset by special net attached to the driving car. The localities where the material was collected by this method are situated near Adana, Kozan, Alata and other villages. A smaller amount of leafhoppers were captured by the light trap in the normal way used in lepidopterology.

The complete itinerary of the Expedition has been published by H o b e r-landt and T á b o r s k ý in this periodical, vol. XXVI, 346, 1948, but nevertheless it might be advisable to give here a brief recapitulation of various

biotopes together with dates and notes on the vegetation and photos, figs 101—114.

Ağapınari: 13. VIII., forests with *Pinus*, in the light trap.

Abaçılar: 7. VIII., cotton fields, maquis and oleanders near river, by net on car.

Adana: 1—24. VIII., cultivated land, collected by net on car. Fig. 111.

Alahan: 29. VIII., 900 m, in forests with *Juniperus* and *Pinus*.

Alata: 26. VIII., orchards, banana plantations, maquis, by net on car. Fig. 113.

Ankara Baraj: 3—4. VII., sweeping in valleys, vineyards and orchards. Fig. 102—104.

Ayaş: 17. VII., dry valley with some *Populus* and *Salix*, by sweeping only few spp.

Bâlâ: 21. VII., steppe, swept only few specimens of leafhoppers.

Beynam: 28. VI., about 1200 m, sweeping at the border of *Pinus* forest and steppe. Fig. 101.

Beyşehir gölü: 3. IX., 1160 m, some specimens from the shore vegetation. Fig. 114.

Bürücek: 29. VII.—31. VII., 900—1000 m, sweeping in dry forest growth. Fig. 106.

Çamlidere, Işık dağı: 23. VI., few species from various kinds of vegetation.

Edirne: 8. VI.—13. VI., steppe near the frontier, collected by sweeping.

Erciyas dağı: 24. VII., 2400—3200 m, sporadic vegetation, stony terrain, low and rare vegetation near snow fields, especially with *Hardya* sp. Fig. 109.

Erdemli: 26—27. VIII., swampy vegetation, very few spp. of leafhoppers.

Gaziantep: 18. VIII., only 600 m above sea level, vineyards, steppe and some woods, few spp.

Feke: 12. VIII., 1300 m, predominantly on tamarisks in the valley of the river. Fig. 107—108.

Hasanoğlu: 13. VII., 900 m, after rain storm in net on car.

Karapınar: 1. VIII., about 800 m, dry river bed with *Juniperus*, *Pinus* etc.

Karataş: 25. VIII., sandy coast with steppe, by net on car.

Kizilviran: 2. IX., only very few Homoptera specimens from vegetation near water.

Kozan: 8—9. VIII., sweeping in the valleys of the Taurus, *Pinus* and *Juniperus* forests and oleander growths.

Kurudere, Emir dağları: 6. IX., stony country with *Juniperus*. Fig. 112.

Misis: 22. VIII., cultivated land, by net on car.

Mollafeneri: 21. VI., oaks and pines, sweeping.

Moğan gölü: 5—12. VI., in the steppe and halophile vegetation near salt lake, especially by sweeping on *Artemisia* and marsh vegetation. Fig. 105.

Pozanti: 28. VII., about 800 m, forests with *Pinus*, *Abies*, by net on car.

Sivrihisar: 7. IX., swampy biotope, only few spp. of leafhoppers.

Sultan dağları: 4. IX., mountain forest growths.

Suluhan, Toros: 9—12., 14. VIII., pine forests with platanes, fig trees and oleanders. Fig. 110.

Tapan, Gyaour dađlari: 16. VIII., about 900 m, and Gyaour dađlari: 17. VIII., maquis, forests, cultivated land, sweeping in the valley.

Ulukiřla: 28. VII., about 1400 m, collected in ruderal biotope, only some specimens.

One journey across the Balkans yielded also some localities in which material was collected. A small amount of leafhoppers taken from:

Irig, Fruřka gora in Yugoslavia: forest and slopes with fresh vegetation.

Mladenovac in Yugoslavia: slopes with xerothermophile vegetation, sweeping.

Harmanli in Bulgaria: sweeping on exothermophile vegetation.

Svilengrad in Bulgaria: sweeping on marsh vegetation.

For general information it may be useful to give the geographical distribution of the species recorded: these data are cited after Metcalf, Lindberg, Ribaut, Oshanin, Melichar, Haupt and many other homopterologists.

The population density of a number of Anatolian species is completely unknown. The expedition did not employ such methods of collecting as would give a sufficiently objective and exact knowledge for seasonal and statistical studies of the communities in the various biotopes and the abundance of species.

Most of the species swept were taken on steppe formations, or from vegetation at the border of lake, dried-out swamps, or from other places near water where it was possible to find abundant communities of insects.

The exploration of some biotopes was not quite satisfactory, and many types of vegetation were barely investigated, or no collection made in the different localities. Arboreal forms do not occur to any abundant extent in our Anatolian material, nor species living in swamps and on mesophile vegetation. The main reason for the existence of some genera and species and the complete absence of others must be sought in rarity and poor development of these communities in the localities visited in Anatolia. A comparison with the fauna of Central Europe and especially with that of Czechoslovakia show as the main difference the occurrence of the following genera in Anatolia: *Phantia*, *Palaeogergus*, *Caliscelis*, *Peltonotellus*, *Lyristes*, *Irinula*, *Cicadulina*, *Anoterostemma*, *Exitianus*, *Stenomotopiellus*, *Orosius*, *Xestocephalus* and others not living in our country. Some genera e. g. *Hysteropterum*, *Aconurella* and *Selenocephalus* are also very common in Anatolia and are represented by many more species than in Central Europe. The material shows that especially *Aconurella prolixa*, *Erythroneura himyarita*, *Hysteropterum grylloides* and *Psammotettix striatus* are the most common species in the Anatolian fauna. These species are exclusively herbaceous. The whole of the Anatolian fauna exhibits palaearctic features; many species are Euro-siberian elements, but the greater number of the leafhoppers belongs to the Mediterranean fauna. Studying the material from Czechoslovakia, Hungary, Bulgaria and finally from Anatolia the change in specific composition can be seen as following from a change in plant communities, it is the food which forms the important basis for these phytophagous insects.

In the material I found some species which are described as new in the present paper among other faunistic notes. In the homopt. literature there

is a very great need for the re-description of many old species, as the original descriptions are in many cases insufficient from the point of view of the modern taxonomist. A comparison of types is also not quite open to everybody working in homopterology, as many types are deposited in places so distant from each other as to make faunistical studies in other faunas is extremely difficult if not even impossible. Only few authors have undertaken studies of type-specimens (particularly from collections Kirschbaum, Zettersted, Dahlbom, Edwards aso.) but the literature gives no clear view of the large number of old species from other zones (in our case esp. some species described by Kuznecov, Distant, Signoret aso.) need urgently modern re-description and figures of genitalia.

### Family CIXIIDAE Spinola

#### *Cixius desertorum* Fieber 1876

Distribution: South-east Europe, Asia minor, South Russia, Cyprus, Caucasus.

Expedition material examined: Turcia — Edirne, Anatolia — Moğan gölü, Beynam. Some specimens captured by sweeping on steppe, rather scarce species.

#### *Oliarus quinquecostatus* Dufour 1833

Distribution: South Europe, Caucasus, West China, Czechoslovakia.

Expedition material examined: Yugoslavia — Mladenovac near Beograd, Bulgaria — Svilengrad, Turcia — Edirne, Anatolia — Moğan gölü. Common species, especially from the Balkans in steppe vegetation, from Anatolia only one specimen.

#### *Oliarus panzeri* Löw 1883

Distribution: Europe, Caucasus, North Africa.

Expedition material examined: Anatolia — Ankara Baraj. Of this very common European species only single specimens on the steppe vegetation were taken.

#### *Oliarus torossicus* n. sp.

Rather large species. Total length male: 7.7—8.3 mm, female 8.9 mm. Vertex elongated, narrowed near the middle and bluntly ending, fig. 1. Maxim. width of the vertex posteriorly: 0.54—0.67 mm, length of the vertex: 0.54—0.69 mm, from tip of head to sharp ending of scutellum: 2.1—2.4 mm.

Pronotum narrow, testaceous with semicircular keel behind the eyes bordered deep dark of the same colour as the scutum, where the longitudinal keels are of some lighter brown colour.

Elytra clear hyaline, with yellow venation and sparse granulation of brown colour and with pale pilosity. Indistinct band oblique across the elytra in the middle: the anterior margin of this band is situated at the bifurcation



of clavus and radius, pilosity pale, venation too. In male specimen the band more indistinct as in female. Cross veins brown, stigma deep brown too.

Male genitalia figs 2—5. Aedeagus with fairly long recurved spines pointing towards and 2 of them reaching the base, other spines in opposite direction on the lateral side. Anal tube male with long and laminated appendage on the tip, bent at a right angle to the longitudinal axis of the tube. Style longitudinally strongly keeled, curved with subapical widening, overlapping part irregularly triangular and broad. Pygophor male laterally elongated triangular, narrowed but apically only rounded.

Expedition material examined: Anatolia — Bürücek, Toros (paratype female), Suluhan, Toros (allotype female), Ağapinari (holotype male).

*Oliarus lindbergi* n. sp.

(Published by Lindberg 1948 as *Oliarus* sp. I.)

Small, dark brown or paler coloured species, with hyaline, somewhat yellowish elytra. Total length 4.2—4.7 mm, maximal, length of vertex 0.36—0.47 mm, width of vertex 0.39—0.6 mm, from tip of head to tip of scutellum 1.23—1.49 mm. Fig. 6.



*Oliarus torossicus* n. sp. Fig. 1: anterior part of the body, fig. 2, 3: anal tube, fig. 4: stylus, fig. 5: aedeagus. *Oliarus lindbergi* n. sp. Fig. 6: anterior part of the body, fig. 7: anal tube, fig. 8: stylus, fig. 9: aedeagus.

Vertex broad and short, lateral oblique keels joined subapically and rounded or angular, delimiting brown tape between vertex and transversal keel on upper margin of front. Keels of head testaceous. Face dark brown, medial keel from clypeus continues in front and is bifurcated at the tip.

Pronotum pale, scutum brown, laterally darker, with testaceous longitudinal keels. Elytra hyaline, with pale nervature and indistinct granulation, sometimes with light pilosity. Stigma and cross veins in the distal third pale. Feet yellowish, hind tibiae with 3 spines.

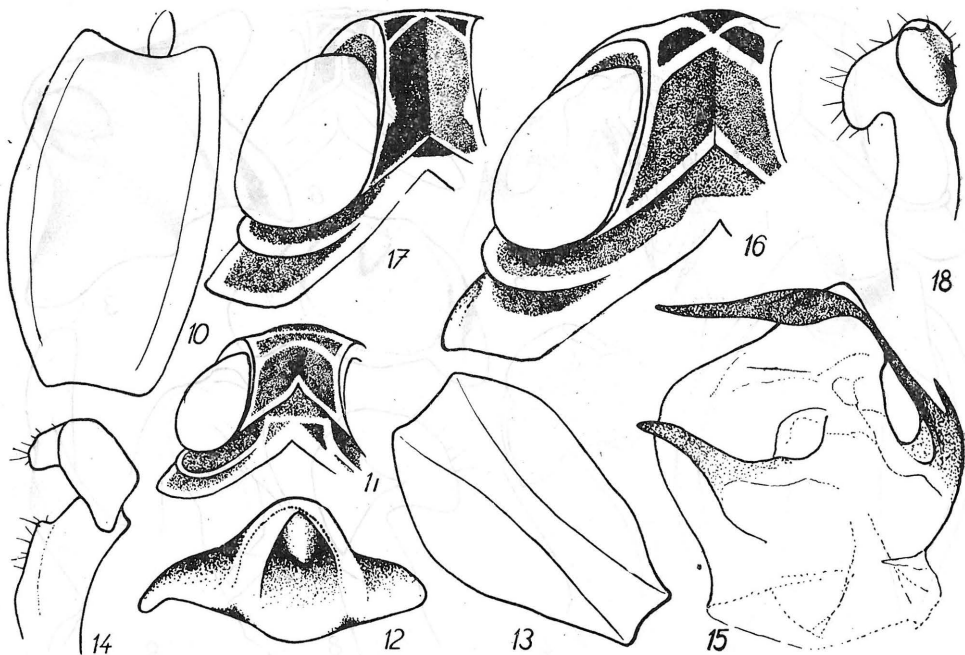
Male genitalia figs 7—10. Aedeagus lateral appendix strong and with rounded tip; the main part with long recurved spines. Anal tube rather flat, without any appendages on apex. Stylus with rounded tip, dorsal overlapping prolongation, acute and pointing over the curved part.

Distribution: Cyprus, Iraq.

Expedition material examined: Anatolia — Kozan, Toros, 6 males (holotype and paratypes).

### *Oliarus barajus* n. sp.

Male generally dark brown, female ochre or paler brown. Species strikingly differing from many others by its very short and bright vertex,



*Oliarus lindbergi* n. sp. Fig. 10: anal tube. *Oliarus barajus* n. sp. Fig. 11: anterior part of the body, fig. 12, 13: anal tube, fig. 14: stylus, fig. 15: aedeagus. *Oliarus major* Kbm., fig. 16: anterior part of the body. *Oliarus roridus* Fieber, fig. 17: anterior part of the body. *Oliarus gyaurus* n. sp. Fig. 18: stylus.

limited by oblique keels, semicircularly joined before the tip of the head. The margin vertex-facial is rounded with indistinct transversal keel. The frontal median keel is usually visible only in the basal part, in some specimens at the bifurcation or sooner obsolete and concolourous with the front and vertex, ochre or dark brown. Clypeus keeled, longer than pronotum. Scutum ochre or dark brown. Elytra hyaline, with pale venation and fine granulation not darker coloured, with light pilosity.

Max. length of the vertex male 0.47 mm, female 0.6 mm, width of the vertex male 0.53 mm, female 0.73 mm. Length of the vertex, pronotum and the scutellum male 1.4 mm, female 1.8 mm, total length of male 4.66 mm, female 6.3 mm. Fig. 11.

Male genitalia figs 12—15. Aedeagus with lateral bifurcated spine, where one spine is many times longer than the other and bent over the main part of the aedeagus. Other spinulation of the main body of aedeagus very sparse. Anal tube rather flat, without appendages on the tip. Stylus arched, with dorsal dentiform broadening and great overlapping appendix in subapical part.

Expedition material examined: Anatolia — Moğan gölü, Ankara Baraj (holotype, allotype and paratypes). Rather common species, many specimens were taken by sweeping on the steppe vegetation.

#### ***Oliarus melanochaetus* Fieber 1876**

Distribution: South Europe, Caucasus, Czechoslovakia.

Expedition material examined: Bulgaria — Svilengrad, Anatolia — Ayas. Many specimens of this rather common xerothermophile species were taken on steppe vegetation.

#### ***Oliarus major* Kirschbaum 1868**

Distribution: South-east Europe, Asia minor, Syria, Caucasus, Iraq.

This species variety is published in Fauna CSR I. under the name *O. major* var. *roridus* Fieber sec. Oshanin and Haupt. This is an error and an examination of the male inner genitalia shows great differentiation. Fieber as author describing these two species was right as may also be seen from figs 16, 17. *O. major* Kbm. is common on steppe vegetation, in Central Europe occurs *O. roridus* Fieb.

##### ***O. major* Kirschbaum**

Vertex broad and shorter.

Only one of the lateral back-pointing spines long.

Elytra hyaline without brown spotting.

Stylus of the left side of the abdomen running out into short blunt appendix.

##### ***O. roridus* Fieber**

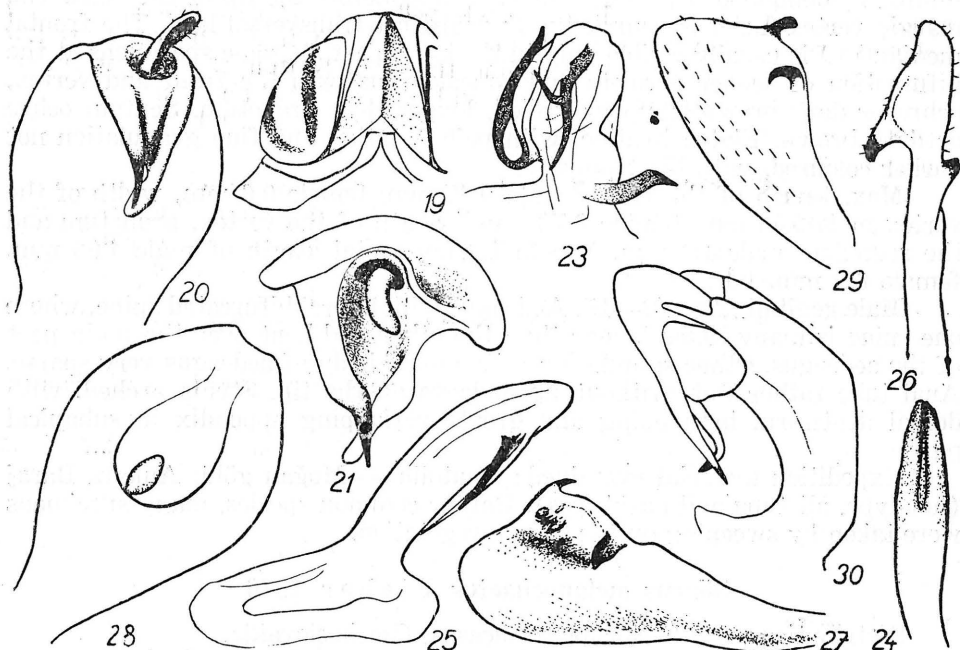
Vertex much longer and narrower.

Three lateral back curved spines long.

Elytra with brown spotting.

Stylus without any prolongation in the direction of the longitudinal axis.

Expedition material examined: Anatolia — Ankara Baraj, many specimens taken.



*Oliarus gyaurus* n. sp. Fig. 19: anterior part of the body, fig. 20, 21: anal tube, fig. 22: stylus, fig. 23: aedeagus. *Palæorgerius punctiger* Horváth, fig. 24: aedeagus dors., fig. 25: aedeagus lat., fig. 26, 27: stylus, fig. 28: anal tube. *Palæorgerius edirneus* n. sp. Fig. 26: aedeagus lat., fig. 27: stylus.

### *Cixius intermedius* Scott 1870

Distribution: Mediterranean Subregion.

Anatolian material examined: Ankara, 6. VII. 1940, one male specimen taken (Bodenheimer lgt.).

### *Oliarus gyaurus* n. sp.

Rather slender species of medium size, dark brown or black colour and hyaline elytra with nervature granulated and brown cross veins in the apical third of the elytra. The granulation has black pubescence.

Length of the vertex female 0.34—0.36 mm, male 0.4 mm, max. width of the vertex female 0.65—0.67 mm, from apex the head to the tip of scutellum 1.7—1.8 mm, total length female 5.4 mm, male 5.2—5.8 mm. Fig. 19.

Vertex is elongated, wide angled posteriorly, in the anterior margin with two keels joining on the apex. The eyes greyish with 2 brown semicircular

spots. Keels of vertex and face dark yellowish, frons brown, scutellum yellowish with darker band in oblique direction. Pronotum brownish yellow, with lateral semicircular keels behind the eyes. Scutum has 5 longitudinal keels, partly brown coloured. Tegmen with moderate but abundant granulated spots, brown, on the yellow venation. Stigma, cross veins, and end of the veins on apex brown.

Male genitalia figs 18,20—23. The anal tube of male afford the best characteristics with two long tips, one of which is pointed the other blunt. Both are bent and pointing at a right angle as on fig. 21. Aedeagus has one strongly recurved dorsal spine, lateral long spine in the direction towards the base and one other much shorter, having lateral appendage. Stylus on the tip broadened irregularly heart-shaped and in the ventral side with semicircular plate as in fig. 22.

Venation in the distal third of elytra brown bordered, particularly at the junction of the margin and on cross veins.

Expedition material examined: Anatolia — Tapan, Gyaur dağ (holotype, allotype).

#### ***Myndus musivus* Germar 1842**

Distribution: South and Central Europe, Caucasus.

Expedition material examined: Bulgaria — Svilengrad, many specimens on Salix, Turcia — Edirne, one specimen.

#### ***Hyalesthes luteipes* Fieber 1876**

Distribution: South Europe, Transcaucasia.

Expedition material examined: Bulgaria — Svilengrad, Anatolia — Ankara Baraj. Common species, but only 7 specimens were taken.

#### ***Hyalesthes mlokosiewiczii* Signoret 1879**

Distribution: Turcia, Persia, Cyprus.

Expedition material examined: Anatolia — Alata, one female taken in net on car, very rare species.

#### ***Hyalesthes obsoletus* Signoret 1847**

Distribution: Central and South Europe.

Expedition material examined: Turcia — Edirne, Anatolia — Moğan gölü, Kozan Toros, Beynam, Ankara Baraj, Adana, Misis. On steppe, common species.



Family **MEENOPLIDAE** Muir**Meenoplus albosignatus** Fieber 1866

Distribution: Italy, Greece, Asia minor, Caucasus, Turkestan, Iraq.

Expedition material examined: Anatolia — Ankara Baraj, Ayaş, Gaziantep. Some specimens taken by sweeping on xerotherme vegetation.

Family **FLATIDAE** Spinola**Phantia subquadrata** Herrich Schäffer 1837

Distribution: Sicily, Italy, Balkan, Asia minor, Iraq.

Expedition material examined: Anatolia — Ankara Baraj, Bürücek Toros, Gaziantep. By sweeping only 8 specimens taken.

Family **DICTYOPHARIDAE** Stål**Palaeorgerius punctiger** Horváth 1905

(from *Orgerius*; new combination)

Distribution: Anatolia.

The main characteristics are added here on figs 24—28.

Expedition material examined: Anatolia — Ankara Baraj. By sweeping on steppe vegetation; rare species.

**Palaeorgerius edirneus** n. sp.

Testaceous species from the neighbourhood of *P. punctiger* Horváth and *leptopus* Fieber, differing from these and other known species especially by having no black spots on pronotum and the well defined costal margin is also like the other parts of elytra pale yellowish.

Ground colour is in male paler yellow, with very few darker pigmentation but without any black spotting, especially on elytra. In male the venation of elytra is weakly marked, but in the female it is more strongly delimited on the surface and the elytra have a coriaceous appearance.

Total length male 5.3—5.6 mm, female 6.3—7.6 mm.

Vertex convex, shorter than broad behind the eyes. The anterior margin rounded, with blunt keel, the middle keel partly split (in some males) or completely so (esp. in female). On the area nearer the posterior margin lateral colourless spots. Apex of head blunt, front with 3 keels joined near the tip. The lateral keels parallel. The medium keel on clypeus the sharpest. Lateral margin of front and clypeus sharp. Sternit on the junction line of eyes and

genae blackish, other parts pale. Pronotum without any spots, only behind the eyes darker, with 3 keels and 2 points near the median keel. Scutum pale yellow with 3 keels. Tergites of abdomen in male indistinctly, in female distinctly spotted: median pale, brown bordered line and laterally situated rows with 1, 2 and 3 brown spots and lateral darkening; i. e. each segment with 12 spots forming on the tergites of abdomen regular rows. The body is testaceous, feet with brown stripes particularly on anterior femora; hind tibiae pale, with 5 spines having brown apices. Feet not foliaceous.

Male genitalia figs 29—32. Aedeagus male stout, straight, with 2 pairs of spines on back pointing towards the base. The spines differ in length, the shorter pair points with its black coloured apex to the middle of the aedeagus; the longer pair ends in  $\frac{1}{4}$  of the total length of the aedeagus. The genital plates and the anal tube of male as on figs 30, 32.

Expedition material examined: Turcia — Edirne (holotype, allotype and paratypes), Bulgaria Maced. — Kresnensko def. 1938, lgt. Hoberlandt (4 paratypes). Rather common species.

**Dictyophora asiatica** (Melichar 1912)

(from *Fulgora* auctt., new combination)

Distribution: Cyprus, Asia minor.

Expedition material examined: Anatolia — Ankara Baraj, Bürücek Toros, some specimens taken by sweeping on xerotherme.

**Dictyophora acuminata** (Lindberg 1948)

(from *Fulgora* auctt., new combination)

Distribution: Cyprus.

Expedition material examined: Anatolia — Gyaur dağ or., only 3 specimens taken.

**Chanithus pannonicus** Germar 1838

Distribution: South Europe, Transcaucasia, Hungary, Czechoslovakia, Dschungaria.

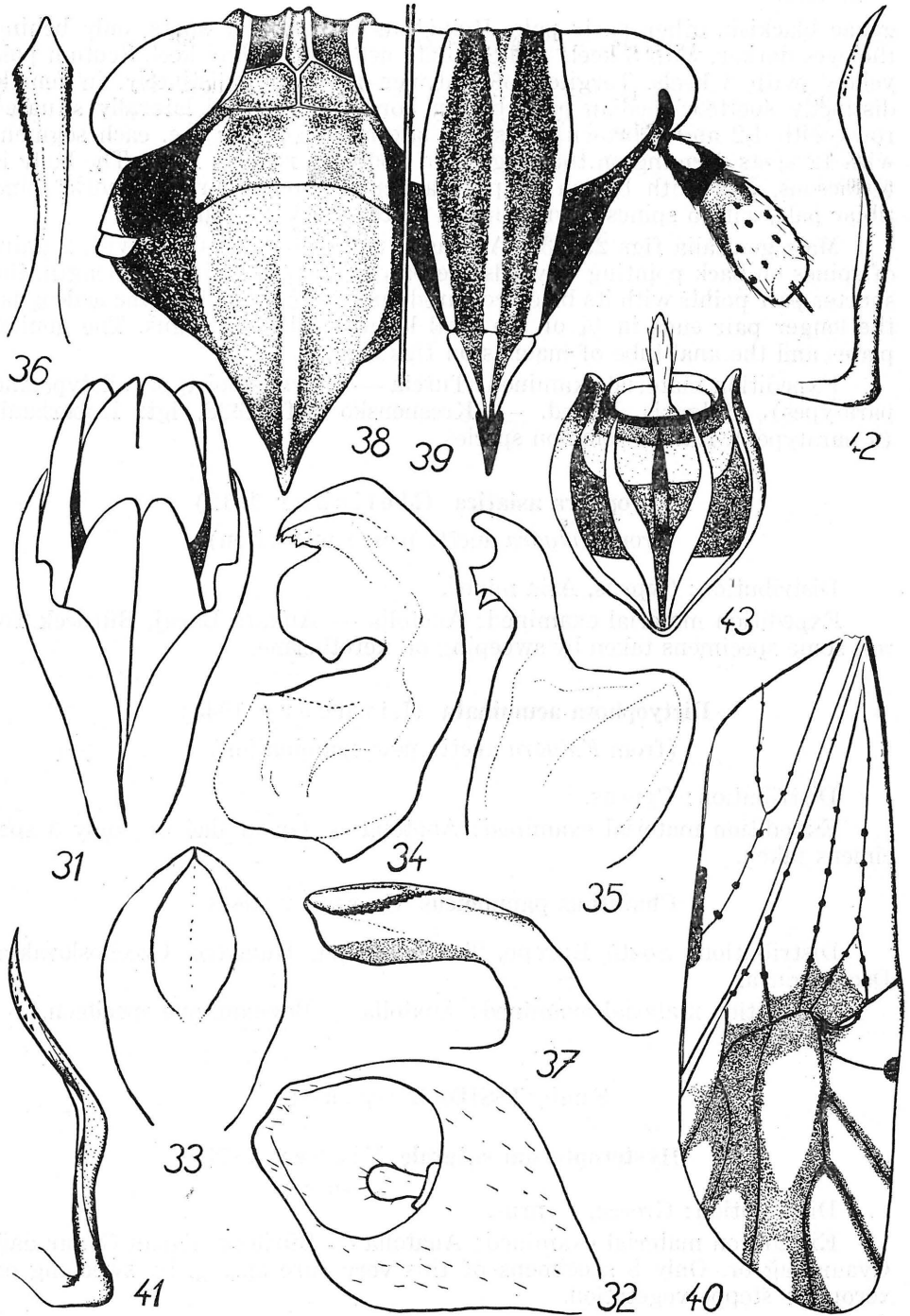
Expedition material examined: Anatolia — Beynam, one specimen.

Family **ISSIDAE** Spinola

**Hysteropterum suturale** Fieber 1877

Distribution: Greece, Cyprus.

Expedition material examined: Anatolia — Bürücek, Tapan Gyaur dağ, Gyaur dağ or. Only 5 specimens of this very rare species by sweeping on xerophile steppe vegetation.



***Hysteropterum grylloides* Fabricius 1894**

Distribution: South Europe, North Africa, Asia minor, Syria, Cyprus.

Expedition material examined: Bulgaria — Svilengrad, one female; Turcia — Edirne, Anatolia — Ankara Baraj, taken by sweeping on steppe, masses of specimens.

***Hysteropterum discolor* Germar 1821**

Distribution: Crimea.

Expedition material examined: Anatolia — Beynam, a fair number of specimens by sweeping on steppe.

***Hysteropterum montanum* (Becker) Fieber 1877**

Distribution: South Europe, Caucasus, Transcaucasia.

Expedition material examined: Anatolia — Beynam, Ankara Baraj, many specimens taken on steppe.

***Hysteropterum parvissimum* n. sp.**

Very small, short form, smaller than other known species from the Mediterranean. Testaceous, almost the whole of body and elytra darker pigmented.

Vertex slightly concave, broader than long, anterior margin rounded, divided by the medial keel. Frons longer than broad (in male 0.9:0.8 mm, in female 0.9—1.0:0.83—0.86 mm) irregularly dark brown reticulated, the upper margin widely concave, medial keel well marked, two pale areas between eyes and two paler spots near the clypeus. Clypeus keeled. Pronotum widely rounded on anterior margin, posterior margin rather regular, scutum with lateral keels and two keels obliquely pointed and joined about in the middle. Elytra rather coarse with strongly developed venation and pale reticulation. Epipleura on the anterior margin not developed.

Male genitalia figs 33—35, 44. Aedeagus short and strongly curved, subapically broadened, forming the appendix pointing to the base, overlapped by the apex, acute, formed from 3 spines. Genital plates extending on the tip into dorsal appendix with outer subapical excrescence as on fig. 35. Anal tube posteriorly with triangular distal part broadest and from behind arched margin, fig. 44.

Total length male 2.8—3 mm, female 3.4—3.7 mm, length of the vertex male 0.3—0.4 mm, female 0.3—0.5 mm, width of the vertex between eyes

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*Palaeogergus edirneus* n. sp. Fig. 28: aedeagus dors., fig. 29: anal tube. *Hysteropterum parvissimum* n. sp. Fig. 33: aedeagus dors., fig. 34: aedeagus lat., fig. 35: genital plate. *Calligypona fumata* Lindberg, fig. 36: aedeagus dors., fig. 37: aedeagus lat. *Alatades* n. g. *trilineus* n. sp. Fig. 38: anterior part of the body, fig. 39: face, fig. 40: forewing, fig. 41: aedeagus dors., fig. 42: aedeagus lat., fig. 43: genital block male.

male 0.6—0.7 mm, female, 0.7 mm, length of the pronotum 0.3 mm, length of the vertex, pronotum and scutum with scutellum male 1 mm, female 1.2 mm.

Expedition material examined: Anatolia — Beynam (holotype, allotype and some paratypes). By sweeping on steppe.

***Bruchoscelis peculiaris* Horváth 1904**

Distribution: Anatolia, known from one female originated from Illany Dagħ near Kaiseri.

Expedition material examined: Anatolia — Moğān gölü, Ankara Baraj, Beynam, 4 specimens taken by sweeping on steppe.

***Peltonotellus melichari* Horváth 1897**

Distribution: South Austria.

Expedition material examined: Anatolia — Ankara Baraj, Beynam, 5 specimens taken on steppe vegetation.

***Mycterodus orthocephalus* Ferrari 1885**

Distribution: Italy, South Austria, South Russia, Roumania.

Expedition material examined: Yugoslavia — Irig, Fruška gora, 3 specimens on fresh growths.

**Family DELPHACIDAE Leach (*Araeopidae*)**

***Calligypona minuscula* Horváth 1897**

Distribution: South Europe, Caucasus, Czechoslovakia, Balkan, Roumania, Armenia, Transcaucasia.

Expedition material examined: Anatolia — Moğān gölü, Kozan Toros, Bürücek Toros, 1 macropt. specimen from Adana. Common species on xerophile steppe vegetation. Material from Moğān gölü abundant, partly stylopised.

***Calligypona marginata* Fabricius 1794**

Distribution: Palaearctic region, North Africa, Madeira Islands.

Expedition material examined: Anatolia — Moğān gölü, Hasanoğlan, Kozan Toros. Common species but taken only few specimens.



***Calligypona pellucida* Fabricius 1794**

Distribution: Nearctic and Palaearctic region, North Africa, Asia.

Expedition material examined: Anatolia — Moğan gölü, Hasanoglan  
Taken in great quantity, common species.

***Calligypona propinqua* Fieber 1866**

Distribution: South and Central Europe, North Africa, Caucasus, Turkey, Cyprus, Czechoslovakia, Balkan, Palaearctic and Nearctic region.

Expedition: material examined: Kozan Toros, Hasanoglan, Beynam, Alata, Karatas, Misis, Adana, Moğan gölü, Gyaur dağ or., Alahan, Toros. Widely distributed, common. From Moğan gölü and Kozan also stylipised.

***Calligypona latespinosa* Dlabola in litt.**

Distribution: Afghanistan (type).

Expedition material examined: Anatolia — Beynam, 1 male specimen taken by sweeping on steppe.

***Calligypona aubei* Perris 1857**

Distribution: Europe, Tunisia.

Expedition material examined: Anatolia — Beynam, one male.

***Calligypona fumata* Lindberg 1948**

Distribution: Cyprus.

Species adequately described by Lindberg, the characters of aedeagus are added here on fig. 36, 37. Aedeagus male simple, angularly curved near the middle somewhat flattened laterally, particularly on the apex and in dorsal view with feeble denticulation on the left side and ending of ejaculatorial duct situated on the right side near the tip. These specimens have the elytra a little longer than the abdomen, but in other details as the specimens described from Cyprus.

Expedition material examined: Bulgaria — Svilengrad, by sweeping on moist meadow vegetation, a fair number of specimens.

***Calligypona obscurella* Boheman 1847**

Distribution: North and Central Europe, North Siberia, Nearctic region.

Expedition material examined: Bulgaria — Svilengrad, Anatolia — Kizilviran, Moğan gölü. Brachypterous and macropterous specimens taken by sweeping on moist meadow vegetation, a number of specimens.

***Calligypona albofimbriata* (Signoret) Fieber 1866**

Distribution: Central and South Europe.

Expedition material examined: Anatolia — Moğan gölü, taken 7 specimens.

***Calligypona salina* Haupt 1924**

Distribution: Central Europe.

Male genitalia published on figs 3, 4 in Dlabola, 1955.

Expedition material examined: Anatolia — Abaçılar (Çakit) one brachypterous female, Moğan gölü, taken number of brachypterous and macropterous specimens ♂ and ♀.

***Chloriona canariensis* Lindberg 1952**

Distribution: Canary Islands.

Expedition material examined: Anatolia — Moğan gölü, 3 male specimens.

***Chloriona flaveola* Lindberg 1948**

Distribution: Cyprus.

Expedition material examined: Anatolia — Adana, one male specimen taken by net on car.

***Kelisia ribauti* Wagner 1939**

Distribution: Germany, Czechoslovakia.

Expedition material examined: Anatolia — Moğan gölü, Beyşehir, by sweeping on moist vegetation, a fair number of specimens.

***Kelisia melanops* Fieber 1878**

Distribution: France, Italy, Hungary, Yugoslavia, Germany.

Expedition material examined: Anatolia — Beynam, 6 specimens.

***Kelisia* sp.**

2 females: tibiae without black bands, genae spotted between keels.

Expedition material examined: Anatolia — Beynam.

**Dicranotropis flavipes Fieber 1866**

Distribution: South and Central Europe, Siberia.

Expedition material examined: Anatolia — Beynam, one brachypterous female.

**Delphacodes mulsanti Fieber 1866**

Genus *Delphacodes* Fieber is separated here from the genus *Calligypona* Fieber. Previously I accepted Haupt's opinion that *D. mulsanti* Fieber is a member of *Megamelus* Fieber, taking into consideration the lateral keels of pronotum. But this classification is not correct, *D. mulsanti* does not belong to the genus *Megamelus* but should be considered a valid genus of the circle of *Megamelus* and is not congeneric with *Calligypona*.

The main difference in *Delphacodes* (t. g. *Delphax mulsanti* Fieber) is found on the pronotum, where the lateral keels are less divergent and reach the posterior margin of the pronotum. In *Calligypona* Sahlberg 1871 the lateral keels of pronotum do not reach the posterior margin of the pronotum. Frontal lateral keels in *Delphacodes* are parallel, in *Calligypona* widely arched. Genus *Megamelus* Fieber differs by the head-apex prolongation.

Distribution: South France, Roumania, Czechoslovakia, Balkan, Sardinia.

Expedition material examined: Bulgaria — Svilengrad, Anatolia — Moğan gölü. Few macropterous specimens taken by sweeping.

**Conomelus limbatus Fabricius 1794**

Distribution: Europe, Algeria.

Expedition material examined: Anatolia — Moğan gölü, one macropterous specimen.

**Alatades n. gen. (*Delphacidae*, genotype: *A. trilineus* n. sp.)**

The main difference from other genera is the direction of lateral keels on pronotum and scutum. They form with median keel 3 nearly parallel lines on the anterior part of the body, on scutum they converge slightly distally, but in no case diverging. Fig. 38.

Somewhat resembling macropterous *Conomelus* or *Euconomelus*, elytra with the same nervature including the corniculation and partly the dark picturation too. Fig. 40.

Antennae of normal size, short, the second articule longer than the first, both not foliaceous. Vertex shorter than broad, median keel dividing in front subapically. The junction margin of vertex with frons is angularly rounded, in profil a little smaller than a right angle. Keels of the anterior part of the body strong, well delimited by darker pigmentation between them. Anal tube of male specimen without spines, styles and aedeagus unusually long, acute at tip. Figs 39, 41—43.

**A. trilineus n. sp.**

Length of macropterous male specimen 3.5 mm.

General colour pale brown with dark brown maculation. Vertex shorter than broad, median keel on front divided subapically and joined with transversal keel delimiting two fossulae in the posterior part of vertex. Vertex here between lateral margins and medial keel dark brown. Keels on the face parallel with medial keel, converging at apex of clypeus. The inner margin of elytra pale coloured as the keels of the anterior part of the body, except the brown band on the subapical part of the clavus. Elytra hyaline. with well developed brown corniculated venation and dark pigmentation in the distal third, where a large semilunal band and brown bordering of the venation at apex form junctions with the margin of elytra. Feet pale, femora with darker pigmentation, hind tibia dark on the proximal part.

Genital organ of male: Aedeagus long, distorted two times and acute at apex. Stylus S-curved with sharp tip. Anal tube broad but short, without spines. Pygophor declivous sternally, on the base without spines or prolongations.

Expedition material examined: Anatolia — Alata (holotype male and paratype male) taken by net on car.

**Aracopides pictus Ribaut 1948**

Distribution: Cyprus, Iraq.

Expedition material examined: Anatolia — Adana, one specimen taken.

**Tropidocephala elegans (Costa 1834)**

Distribution: North Africa, South Europe, Yugoslavia, Albania, Sardinia.

Expedition material examined: Anatolia — Misis, one specimen taken in the net on car.

**Asiraca clavicornis Fabricius 1794**

Distribution: Central and South Europe, Tunisia, Caucasus, Turkestan, Cyprus, Mandschukuo.

Expedition material examined: Yugoslavia — Mladenovac, taken one specimen.

**Family TETTIGOMETRIDAE Germar****Tettigometra hexaspina Kolenati 1857**

Distribution: South-east Europe, Crimea, Caucasus.

Expedition material examined: Bulgaria — Svilengrad, Turcia — Edirne, Anatolia — Ankara Baraj. On steppe vegetation, common.

***Tettigometra obliqua* Panzer 1799**

Distribution: Europe, North Africa, Syria, Caucasus, Siberia.

Expedition material examined: Turcia — Edirne, Anatolia — Moğan gölü, Bürücek, Toros, Ankara Baraj, Tapan Gyaur dağ, Mollafeneri, Beynam. Widely distributed and very common species.

***Tettigometra sulphurea* Mulsant Rey 1855**

Distribution: South Europe, South Russia, Caucasus, Czechoslovakia.

Expedition material examined: Anatolia — Moğan gölü, Mollafeneri, Beynam, Karataş, Tapan Gyaur dağ. Not too common, some specimens taken by sweeping on stepe vegetation.

***Tettigometra beckeri* Horváth 1909**

Distribution: Canary Islands.

Expedition material examined: Turcia — Edirne, 3 specimens taken on steppe vegetation.

***Tettigometra longicornis* Signoret 1866**

Distribution: Central Europe, Caucasus.

Expedition material examined: Turcia — Edirne, Anatolia — Ankara. Baraj, Beynam. Very rare species, by sweeping on steppe only 4 specimens taken.

**Family *CICADIDAE* Leach.*****Tibicen haematodes* Scopoli 1763**

Distribution: Central and South Europe, Asia minor, Caucasus.

Expedition material examined: Yugoslavia — Irig Fruška gora, one specimen.

***Lyristes plebejus* Scopoli 1763**

Distribution: Mediterran, Crimea, Caucasus, Czechoslovakia, Balkan.

Expedition material examined: Anatolia — Ankara Baraj, Bürücek Toros. Taken only few specimens.

***Cicadatra hyalina* (Fabricius 1798)**

Distribution: Asia minor.

Expedition material examined: Anatolia — Ankara Baraj, 3. VII. 1947, one male specimen.



***Cicadetta montana* Scopoli 1772**

Distribution. Europe, Asia minor, Caucasus, Siberia.

Expedition material examined: Anatolia — Bürücek Toros, one specimen.

**Family MEMBRACIDAE Germar*****Centrotus cornutus* Linné 1758**

Distribution: Europe, Asia minor, Caucasus, Siberia.

Expedition material examined: Bulgaria — Svilengrad, one specimen.

***Gargara genistae* Fabricius 1794**

Distribution: North and Central Europe, Caucasus, Siberia, Turkestan, Persia, Algiers.

Expedition material examined: Anatolia — Moğan gölü. On steppe common species.

**Family CERCOPIDAE Leach*****Cercopis sanguinolenta* Scopoli 1763**

Distribution: South and Central Europe, Asia minor.

Expedition material examined: Yugoslavia — Irig, Fruška gora, Mladenovac. Common species.

***Lepyronia coleoptrata* Linné 1758**

Distribution: Europe, Caucasus, Turkestan, Nearctic region, Siberia.

Expedition material examined: Yugoslavia — Mladenovac, Bulgaria — Svilengrad, Turcia — Edirne, Anatolia — Moğan gölü, Bürücek, Ankara Baraj, Karatas, Beynam. Common species.

***Aphrophora salicis* De Geer 1773**

Distribution: Europe, Turkestan, Asia minor.

Expedition material examined: Bulgaria — Svilengrad, 3 specimens taken.

***Philaenus spumarius* Linné 1758**

Distribution: Palaearctic and Nearctic region.

Expedition material examined: Yugoslavia — Mladenovac, Anatolia — Beynam, Mollafeneri, Kayali Dağ. Very common species, taken in various aberrations and in great quantity, but none on extremely xerophile steppe vegetation.

***Philaenus signatus* Melichar 1896**

Distribution: South Europe, Cyprus, Iraq.

Expedition material examined: Anatolia — Gyaur dağ. 6 specimens.

***Neophilaenus minor* Kirschbaum 1868**

Distribution: Central Europe, Asia minor.

Expedition material examined: Anatolia — Kizilviran, Beynam. On steppe vegetation common species, taken in many specimens.

***Neophilaenus lineatus* Linné 1758**

Distribution: Europe, North Africa, Caucasus, Turkestan, Siberia, Nearctic region.

Expedition material examined: Anatolia — Beynam, Moğan gölü. Rather common species; living on moist meadow vegetation and on steppe.

**Family IASSIDAE Amyot Serville**

Genera arranged from the main part after Ribaut, Faune de France 57, 1952.

***Macrosteles sexnotatus* (Fallen 1806)**

Distribution: Palaearctic region.

Expedition material examined: Anatolia — Moğan gölü, Abaçılar (Çağır), Alata, Alahan in Toros, Kizilviran. Common species on moist places.

***Macrosteles laevis* (Ribaut 1927)**

Distribution: Europe.

Expedition material examined: Anatolia — Kizilviran. Moğan gölü, Sultan dağ. The most common *Macrosteles* living in the same localities as the preceding species.

***Macrosteles fieberi* (Edwards 1891)**

Distribution: Europe.

Expedition material examined: Anatolia — Moğan gölü, Karataş. Common species.

***Macrosteles quadripunctulatus* (Kirschbaum 1868)**

Distribution: France, Germany, Czechoslovakia, Polen, Finland, Sweden.

Expedition material examined: Anatolia — Hasanoğlu, Kozan Toros. Some specimens among other *Macrosteles*.

**Macrosteles forficula** (Ribaut 1927)

Distribution: Pyrenees, Afghanistan.

Expedition material examined: Anatolia — Kizilviran, Bürücek Toros, 2 males taken among other *Macrosteles* species.

**Irinula erythrocephala** (Ferrari 1882)

*Balclutha wagneri* Lindberg 1953 (from descriptions)

Distribution: France, Italy, Hungary, Caucasus, Iran.

Expedition material examined: Anatolia — Kozan Toros, Rather rare species.

**Cicadulina zae** China 1928

Distribution: Africa, Canary Islands.

Expedition material examined: Anatolia — Kozan Toros, Abaçılar (Çakit), Adana, Karataş, Alata. Some specimens were taken by sweeping and other in the net on car.

**Balclutha hortensis** Lindberg 1948

Distribution: Mediterranean, Cyprus, Canary Islands, Iraq.

Expedition material examined: Anatolia — Kozan Toros, Beynam, Ağapinari, Adana, Karataş. Rather common species, many specimens taken in the net on car.

**Balclutha pulchella** Lindberg 1948

Distribution: Mediterranean.

Expedition material examined: Anatolia — Karataş, Gyaur dağ, Kozan Toros, Adana, Alata. As the species cited before.

**Balclutha punctata** Thunberg 1782

Distribution: Palaearctic, Nearctic, Oriental and Australian region.

Species of great variability in colour and picturation, but very simple genitalia. It is possible that the different material known from the literature belongs to higher systematic units hitherto undescribed. The Anatolian specimens are light greenish coloured and can scarcely be distinguished in some important characters from the European material.

Expedition material examined: Anatolia — Moğan gölü, two females, Beynam 2 specimens.

**Aconurella prolixa** (Lethierry 1885)

Distribution: France, Corse, Canary Islands, Spain, Italy, Yugoslavia, Caucasus, Iraq, South Russia.

Expedition material examined: Anatolia — Beynam, Moğan gölü, Kozan Toros. Taken in mass by sweeping and by net on car; very common species.

**Laburris handlirshi** Matsumura 1908

Distribution: Hungary.

Expedition materials examined: Anatolia — Moğan gölü, Ankara Baraj.  
Rather rare species, taken few specimens.

**Euscelis obsoletus** Kirschbaum 1868

Distribution: Europe, Algeria, Nearctic region.

Expedition material examined: Bulgaria — Svilengrad, Anatolia — Beynam, Moğan gölü, Bürücek Toros. Common species living on moist localities.

**Euscelis distinguendus** Kirschbaum 1868

Distribution: Europe, Caucasus, Tunisia.

Expedition material examined: Turcia — Edirne, some specimens ♂♀.

**Euscelis plebejus** Fallen 1806

Distribution: Europe, North Africa, Caucasus, Siberia.

Expedition material examined: Turcia — Edirne, Anatolia — Moğan gölü, Ankara Baraj, Beynam, Kozan Toros, Misis. Common species.

**Euscelidius obenbergeri** n. sp.

Robust and elongated species, length male 6.5 mm, female 5.4 mm. Ochre or brownish coloured with darker pattern by a pair of triangular spots on the tip, cross band broadened in central direction, but interrupted there and divided by longitudinal middle-line, with other spots near the posterior margin. Face brownish yellow, with two brown rows of horizontal bands on anteclypeus. Pronotum with irregular and indistinctly delimited darker places; the same on elytra, especially on the venation, which is darker or partly brown. Many irregular bands imitate cross nervation. The anterior margin of the elytra intensively brown spotted, particularly on the cross veins and at their junction with the margin, same colour on the distal part of clavus veins. Body and feet brownish yellow.

Male genitalia figs 49—51. Aedeagus simple, slightly curved, regularly emarginated and sharpened at the apex. Stylus with robust base, short and acute on the flattened distal part, here curved a little.

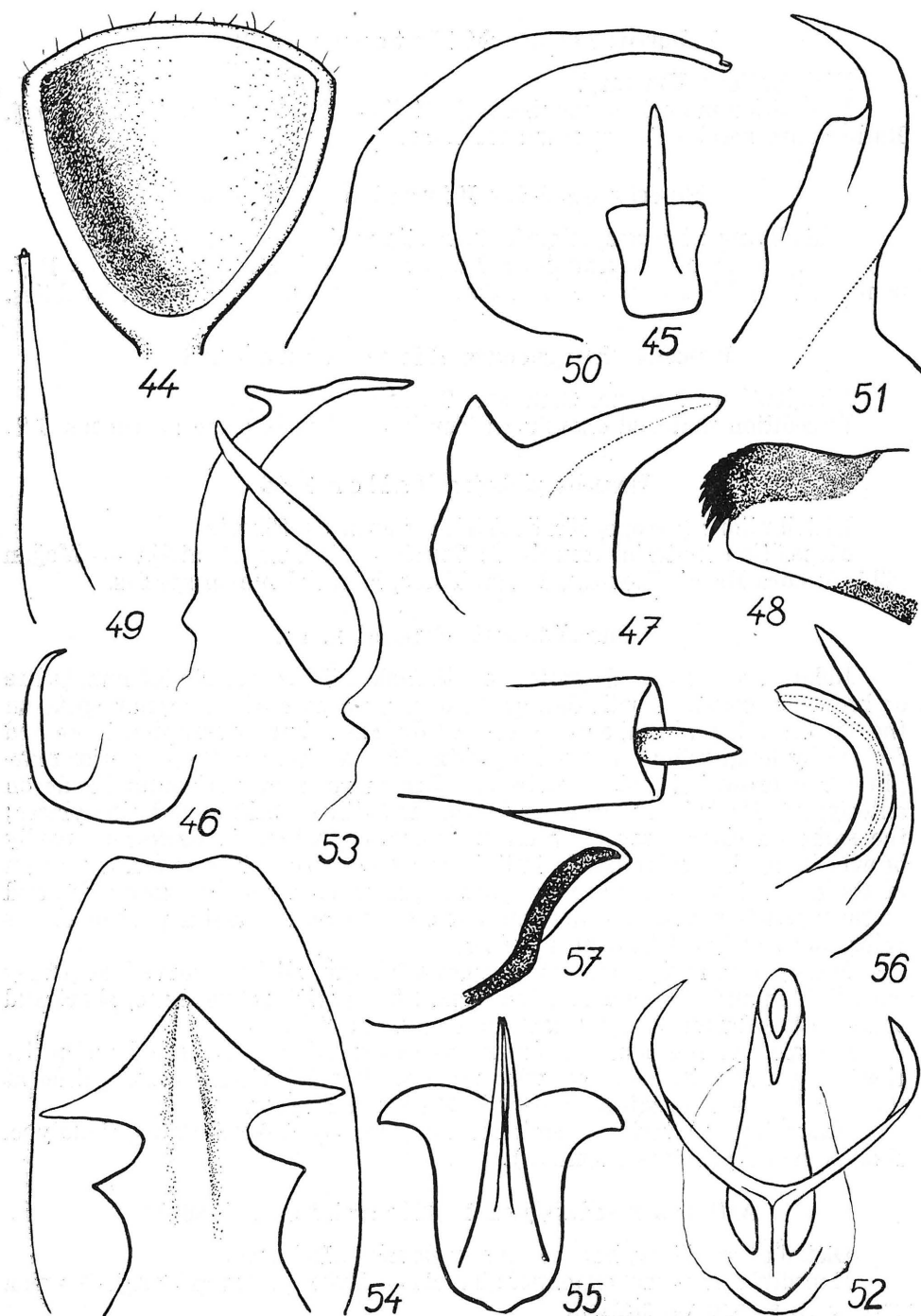
Female VII. segment with lateral angles rounded, in the middle of posterior margin slightly concave, with median almost invisible prolongation at the base of the ovipositor, there with 2 semilunul spots.

Expedition material examined: Anatolia — Ankara Baraj (holotype, allotype nad 4 paratypes females).

**Artianus manderstjernai** (Kirschbaum 1868)

Distribution: Italy, France, Czechoslovakia, Bulgaria.

Expedition material examined: Turcia — Edirne, Ankara Baraj. Common species on steppe vegetation.





**Handianus ignoscus** (Melichar 1896)

Distribution: Austria, Hungary, South Russia, North Turkestan, Asia minor, West China, Czechoslovakia.

Expedition materials examined: Anatolia — Ankara Baraj, 6 dark pigmented specimens.

**Handianus procerus** (Herrich Schäffer 1834)

Distribution: Austria, Hungary, Russia, Caucasus, Turkestan, Czechoslovakia.

Expedition material examined: Anatolia — Moğan gölü, Ankara Baraj, Beynam, Turcia — Edirne. Seems to be rather common species. By sweeping on the steppe vegetation.

**Anoterostemma ivanoffi** (Lethierry 1876)

Distribution: South Austria, Hungary, South Russia.

Expedition material examined: Anatolia — Beynam. Very rare species, taken only 4 specimens. On steppe vegetation.

**Elymana sulphurella** (Zetterstedt 1828)

Distribution: Europe, Algiers, Asia minor, Siberia, Japan.

Expedition material examined: Bulgaria — Svilengrad, two specimens on moist meadow vegetation.

**Rhopalopyx** sp.

2 females (? *parvispinus* Wagner 1942) taken on the steppe near Beynam in Anatolia.

**Exitianus taeniaceps** (Kirschbaum 1868)

Distribution: Mediterran, Madeira, Canary Islands.

Expedition material examined: Anatolia — Kozan Toros, Ağapinari, Gyaur dağ, Karataş. Very common species, by sweeping, in the net on car and on light.

**Exitianus vulnerans** (de Bergevin 1925)

Distribution: South Mediterran, Madeira, Canary Islands.

Expedition material examined: Anatolia — Kozan Toros. With the species cited before, but rather rare.

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*Hysteropterum parvissimum* n. sp. Fig. 44: anal tube ventr. *Hardya anatolica* Zachvatkin, fig. 45: ædeagus dors., fig. 46: ædeagus lat., fig. 47: stylus, fig. 48: pygophor male. *Euscelidius obenbergeri* n. sp. Fig. 49: ædeagus dors., fig. 50: ædeagus lat., fig. 51: stylus. *Goniognathus hoberlandti* n. sp. Fig. 52: ædeagus dors., fig. 53: ædeagus lat., fig. 54: stylus. *Platymetopius cruentatus* Haupt. Fig. 55: ædeagus dors., fig. 56: ædeagus lat., fig. 57: anal tube and pygophor male.

***Cicadula divaricata* v. *pallidifrons* Ribaut 1952**

Distribution: France, Sardinia, Algiers, Morocco.

Expedition material examined: Anatolia — Gyaour dağı or., Kozan Toros, Bulgaria — Svilengrad. By sweeping some specimens on fresh vegetation.

***Limotettix striola* (Fallen 1806)**

Distribution: Europe, Caucasus, North Africa.

Expedition material examined: Anatolia — Moğan gölü, Kizilviran, Beynam. Common species on moist localities.

***Hardya anatolica* Zachvatkin 1946**

Distribution: Anatolia.

Anatolian male material differs from the *H. turanica* Zachvatkin 1946 especially by the form and size of the stylus, and having another spinulation of pygophore male. Stylus has very large base and pair of dents, one of them is shorter, the other points directly towards the anterior part of genital plate, fig. 47. The pygophore male has marginal spinulation developed in nearly 8—10 spines, decreasing dorsally regularly. The lowest spine is large, and thus a rather deep incisure is formed with the margin of the pygophor, fig. 48. The aedeagus has the curvature nearly as in other forms described by Zachvatkin, the most closely related species is *H. turanica* Zachv., figs. 45, 46.

I describe the Anatolian male material, hitherto unknown, and as Zachvatkin studied female after only one specimen from the neighbourhood of Ankara, named it allotype (not holotype!) therefore the other specimens, in this case male material, must be taken to be holotype male and paratypes (♂♂).

Expedition material examined: Anatolia — Erciyas dağı, 3200 m. Not rare species on sporadic vegetation near snow fields, stony terrain.

***Hardya* sp.**

1 female taken near Edirne, Turcia.

***Stenometopiellus angorensis* Zachvatkin 1946**

These are the first representatives of this genus I know of from Anatolia and Afghanistan; the Anatolian material was collected in the environs of Ankara, and I designate these specimens *S. angorensis* Zachvatkin, as I assume that the undescribed shape of male pygophor in type specimen is of the same shape as in figures given by Linnavuori. In the genus *Stenometopiellus* they have been designated as genotype *S. sigillatus* Haupt and 4 spp. by Zachvatkin. In the neighbourhood of *S. sigillatus* belong also *Diplocolenoidea turkestanica* and *perexigua* Linnavuori, which seem to me to be generically identical with *Stenometopiellus*. Unfortunately Zach-

v atkin in the description of his species does not refer to the features of the male pygophor, and I cannot decide for certain whether they are nearer to *S. sigillatus*, where the pygophore is simple, or to species of *Diplocolenoidea* Linn av. Judging from the Anatolian record which may be held for the true Zachvatkin's species and which is identical with the genus *Diplocolenoidea* Linn avuori having the subapical appendix on the pygophore male, I deem it better to see in *Diplocolenoidea* only a subgenus characterised by the male side lobes of pygophor with oval appendage near to the apex. Whether one of the species described by Linn avuori is identical with Zachvatkin's material cannot be decided until Zachvatkin's types re-described and more material from different countries are available. Zachvatkin's species are characterised only by their total length and aedeagus curvature—both differences are very subtle and probably only of subspecific rank.

The genus *Stenometopiellus* is well based on the shape of the genital plates and the simple aedeagus. This genus is divided into the subgenus *Stenometopiellus* Haupt (probably belongs here only one species known: *S. sigillatus* Haupt.), which has the male pygophor without subapical appendix and the subgenus *Diplocolenoidea* Linn avuori, which includes 2 species of Linn avuori and probably all 4 species of Zachvatkin, differing by having the male pygophore with subapical ventral appendix.

Darker coloration of the anterior half of the body and of elytra are very incomplete and indistinct. Aedeagus shows no difference from that figured by Zachvatkin's but the total length of the body is greater: in male 3.1 mm, in female 3.1—3.2 mm. Apex of pygophore is not simply narrowed and sharpened as in *S. turkestanicus* and *peregrinus*, but more rounded, subapically with long appendage, which is attached at a right angle to the longitudinal axis. VII. sternit of female in shape is broadly excavated, the margin of excavation slightly produced at middle.

Expedition material examined: Anatolia — Beynam. Not rare on steppe vegetation, taken in some specimens.

### **Circulifer fenestratus (Herrich Schaffer 1834)**

Distribution: Central and South Europe, Canary Islands, North Africa, Caucasus, Turkestan.

Expedition material examined: Yugoslavia — Mladenovac, Turcia — Edirne, Anatolia, Çamlidere, Isik dağ, Bürücek, Moğan gölü, Karataş, Kozan Toros, Adana, Ankara Baraj. Common species.

### **Circulifer guttulatus (Kirschbaum 1868)**

Distribution: as the species cited before.

Expedition material examined: Anatolia — Karataş, Moğan gölü, Kozan Toros, Misis, Gyaur dağ, Bürücek Toros, Adana, Ankara Baraj, Beynam. Many species taken by sweeping, in the net on car.

***Circulifer guttulatus* var. *laeta* Ribaut 1952**

Distribution: with the typical form.

Expedition material examined: Anatolia — Ankara Baraj, Moğan gölü, Abaçılar (Çakit), Misis. By sweeping and by net on car. Five males of ochre brown colour taken in Adana and Karataş seem to be rather different: the spine of the pygophor long, strongly curved subapically. Perhaps an ecological form, but the study of further material is necessary.

***Circulifer transversalis* (Puton 1881)**

= *Thamnotettix fenestratus* var. *fasciatus* Ferrari 1885, new synonymy from the description, *Th. fenestratus* var. *transversalis* Puton 1881 new combination.

Distribution: South Italy, Syria.

Discussion: The main difference from other species of the genus is the glossy whole transversal line in the third basal of elytra in female very distinct but less so in male sex. The female specimens appear to belong to *C. fenestratus* H. S. having a different pattern, deep shiny black and the first pair of legs yellow. But the males have genital characters especially the spine in the pygophor like *C. guttulatus* Kirschbaum. There can hardly be any closeness to or identity with one of the said species.

Expedition material examined: Females: Anatolia — Ankara Baraj, Moğan gölü, Kozan Toros, Turcia — Edirne. Males: Anatolia — Adana, Ankara Baraj, Beynam, Kozan Toros. Not common species, some specimens taken by sweeping on steppe.

***Circulifer opacipennis* (Lethierry 1876) nec Edwards et auctt.;  
sec. Young, Frazier 1954**

Distribution: France, Spain, Italy, Czechoslovakia, Morocco.

Expedition material examined: Turcia — Erdemli, Anatolia — Kozan Toros, Hasanoğlu, Gyaur dağ, Bürücek, Karataş, Adana, Moğan gölü. Rather common species, number of specimens taken by sweeping and in the net on the car.

***Orosius filigranus* (Haupt 1927)**

Distribution: Palestine, Iraq.

Expedition material examined: Anatolia — Karataş, Kozan Toros, Ağapinari, Alata, Adana, Misis, Abaçılar (Çakit). Seems to be rather common species, many specimens in material taken by sweeping and in the net on car.

***Opsius lethierryi* Wagner 1941**

Distribution: East Morocco, Tunisia, Italy, Sardinia.

Expedition material examined: Bulgaria — Svilengrad, Anatolia — Feke Toros, Ankara Baraj. On Tamarix rather common species.

**Stictocoris lineatus** (Fabricius 1787)

Distribution: Europe, Siberia, Turkestan.

Expedition material examined: Yugoslavia — Mladenovac, Anatolia — Ankara Baraj. On xerotherme vegetation by sweeping taken only 2 specimens.

**Grypotes staurus** Ivanoff 1885

Distribution: South Europe, North Africa, France.

Expedition material examined: Anatolia — Ağapınari, Kozan Toros, Suluhan Toros. Rather rare species, only 6 specimens taken.

**Goniagnathus hoberlandti** n. sp.

Brown, slender but rather short. The surface above with more dense and deeply dark brown spotting. Vertex longitudinally rugose, wide angled on anterior margin, and with light brown coloration on the arched part of the vertex to the face.

Pronotum in the proximal part with rather sparse spotting, especially on sides, and distal half transversally rugose. Scutum with marked cross line and two indistinct light places near the anterior margin, only sparsely on the surface.

Elytra deep brown, with only very few small spots situated partly on the nervation, two of them to be found on distal apex of claval veins, and largest light place on the anterior margin near the apical third of elytra.

The under side of the body has a similar brown spotted colour, also the face and feet. Total length 4—5 mm.

Male genitalia figs 52—54. The main part of the aedeagus is simple and broadly curved, on the tip obliquely truncated with broadened marginal area around the ejaculatorial duct in the drop-form with extended and acute apex. Near the base is one short appendage bifurcated into 2 very long and curved spines in incomplete circle shape, angled at the bifurcated base. Styli joined in their total length with inner margins, apically acute at right angle together and laterally with concave incisure. The genital plates are formed by only one small shovel-form plate as in other species of the genus, nearly  $1\frac{2}{3}$  of the length of the stylus, rounded regularly at the tip. Pygophor with regular margin, without appendages and incisures, spinulated.

Expedition material examined: Turcia — Edirne, Anatolia — Gyaur dağ, 7 specimens taken by sweeping on steppe (holotype, allotype and paratypes).

**Goniagnathus brevis** (Herrich Schäffer 1836)

Distribution: Central and South Europe, North Africa, Syria, Caucasus, Turkestan.

Expedition material examined: Turcia — Edirne, Anatolia — Beynam. Only 7 specimens taken by sweeping on steppe vegetation rather rare species.

**Xestocephalus guttatus** (Motschoulsky 1859)

Distribution: Ceylon, Japan, East Africa.

Expedition material examined: Anatolia — Karataş, 2 females taken by net on car.

**Phlepsius** sp. ?*intricatus* (Herrich Schäffer 1838)

One female taken in environs of Edirne, Turcia.

**Graphocraerus ventralis** (Fallen 1805)

Distribution: Europe, North Africa, Siberia.

Expedition material examined: Yugoslavia — Mladenovac. On meadow vegetation very common species.

**Paramesus nervosus** (Fallen 1826)

Distribution: Europe, Asia Minor, Caucasus, Turkestan.

Expedition material examined: Turcia — Edirne, Anatolia — Moğan gölü, Beyşehir gölü. On moist localities rather common species, some specimen taken by sweeping.

**Allygidius atomarius** (Fabricius 1794)

Distribution: South and Central Europe, Caucasus, Tunisia.

Expedition material examined: Bulgaria — Svilengrad, Yugoslavia — Irig, Fruška gora; 2 specimens and one larval stage.

**Proceps acicularis** Mulsant Rey 1855

Distribution: France, Sicily, Syria, Yugoslavia.

Expedition material examined: Anatolia — Ankara Baraj, 3. VII. 47, one specimen taken by sweeping on steppe-vegetation.

**Platymetopius undatus** (Degeer 1773)

Distribution: Europe, Siberia, Tunisia.

Anatolian material examined: Ankara, 18. VIII. 1940, one male specimen (Bodenheimer lgt.).

**Platymetopius filigranus** (Scott 1876)

Distribution: France, Italy, Austria, Hungary, Czechoslovakia.

Discussion: VII. sternit of the females taken somewhat differing from my material from Central Europe, the incisure in the middle being very short. Some female specimens were taken, but the study of further male material is necessary.

Expedition material examined: Turcia — Edirne, Anatolia — Ankara Baraj, Suluhan Toros.

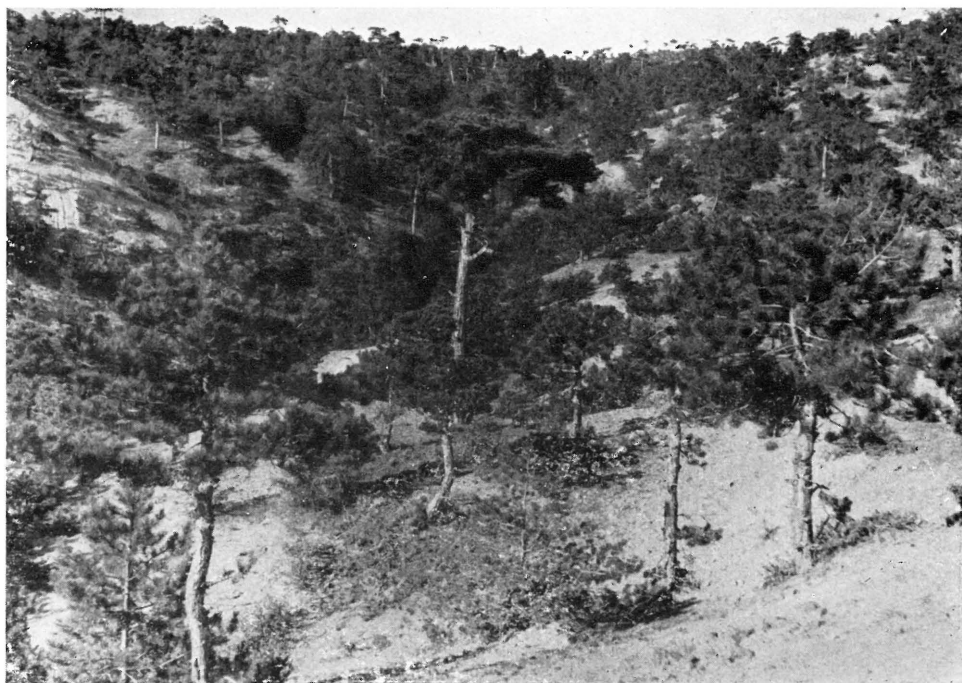


Fig. 101: Bynam, forest growth.



Fig. 102: Ankara-Baraj, tamarisks and other vegetation near the river.



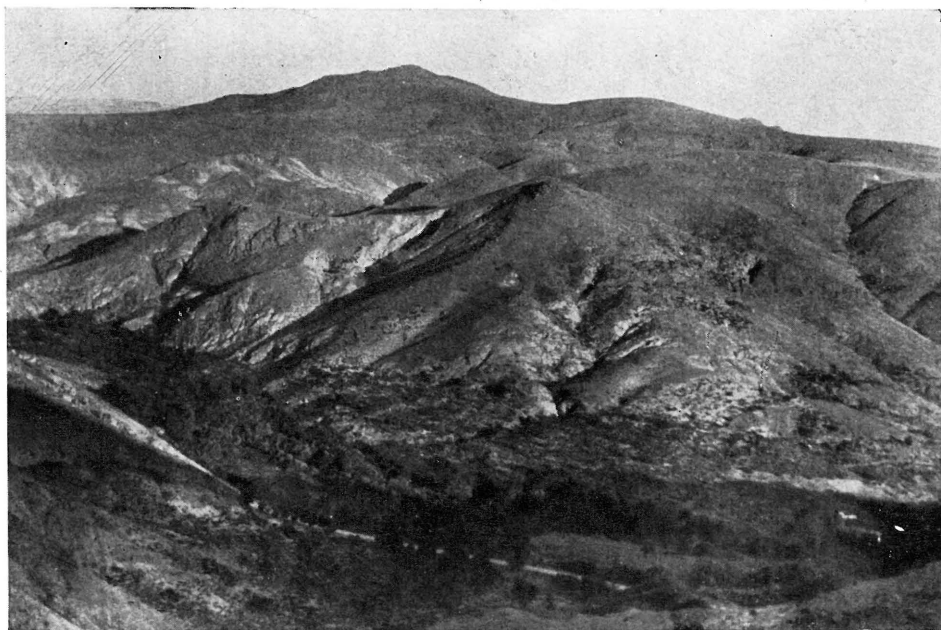


Fig. 103: Ankara-Baraj, region near the area of the barrage.



Fig. 104: Steppe vegetation near Ankara-Baraj.



Fig. 105: Mogan gölü, salt lake near Ankara.

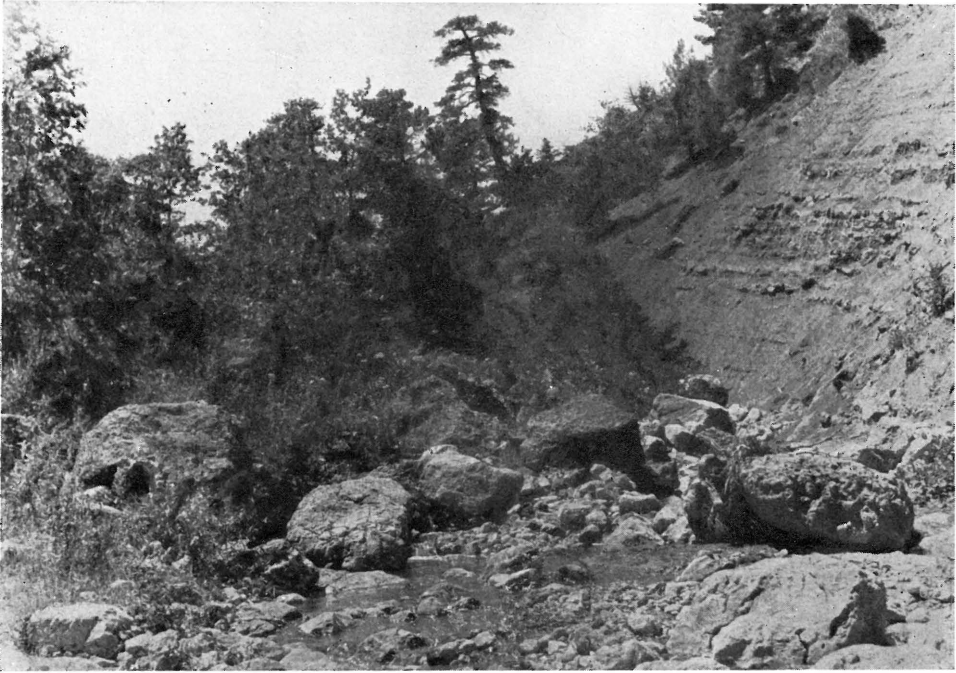


Fig. 106: Bürücek, deep valley with platanes, fig-trees and other vegetation.



Fig. 107: Taurus, on the road to Feke.

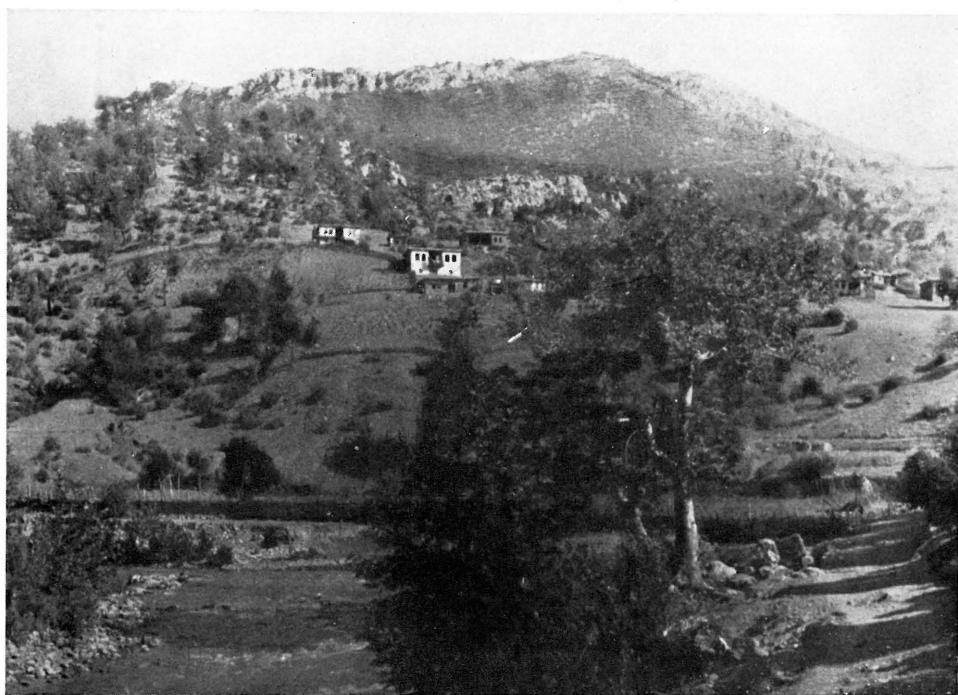


Fig. 108: Region near Feke, small mountain village in Taurus.



Fig. 109: Erciyes dağı, highest Inner Anatolian mountains.

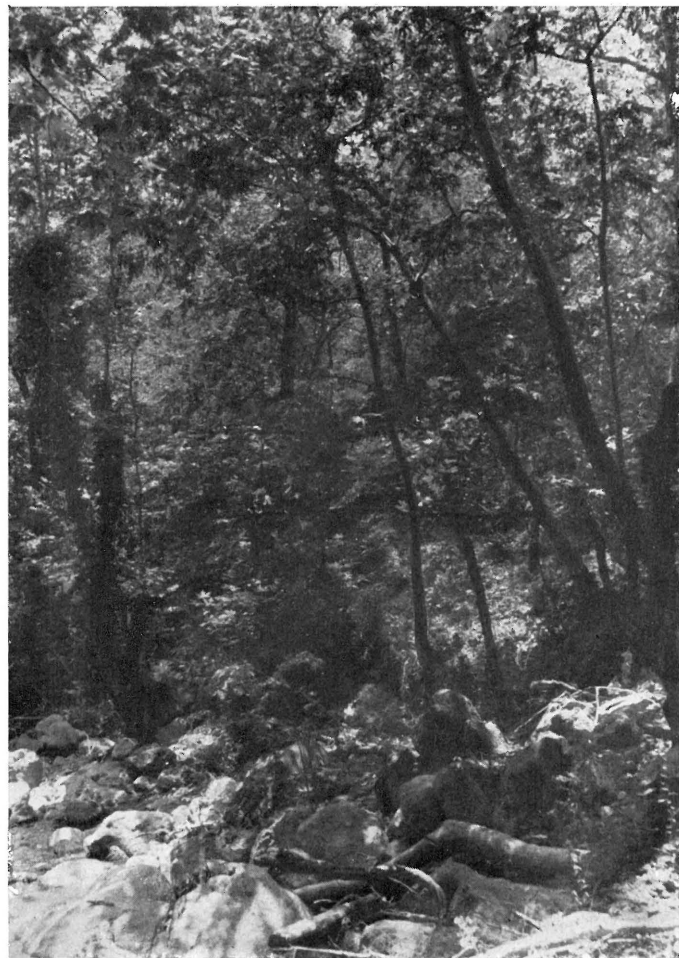


Fig. 110: Suluhan, valley with platanes, fig-trees and other growth.



Fig. 111: Adana, forest growth.

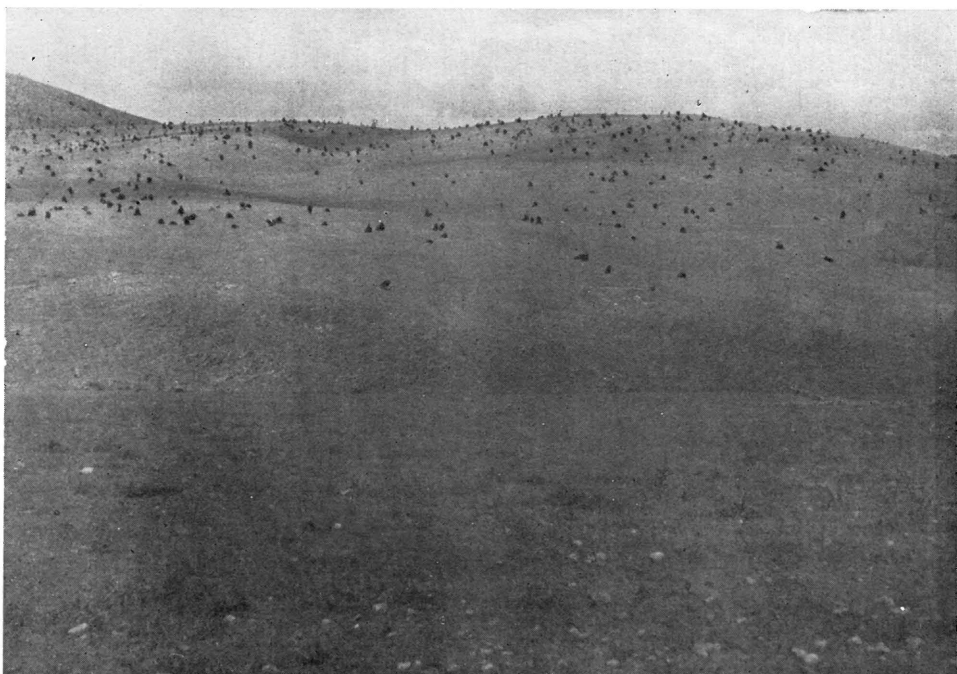


Fig. 112: Kurudere, Emir dağları, steppe region, stony terrain.





Fig. 113: Region near Mersin, Mediterranean maquis, stony terrain.

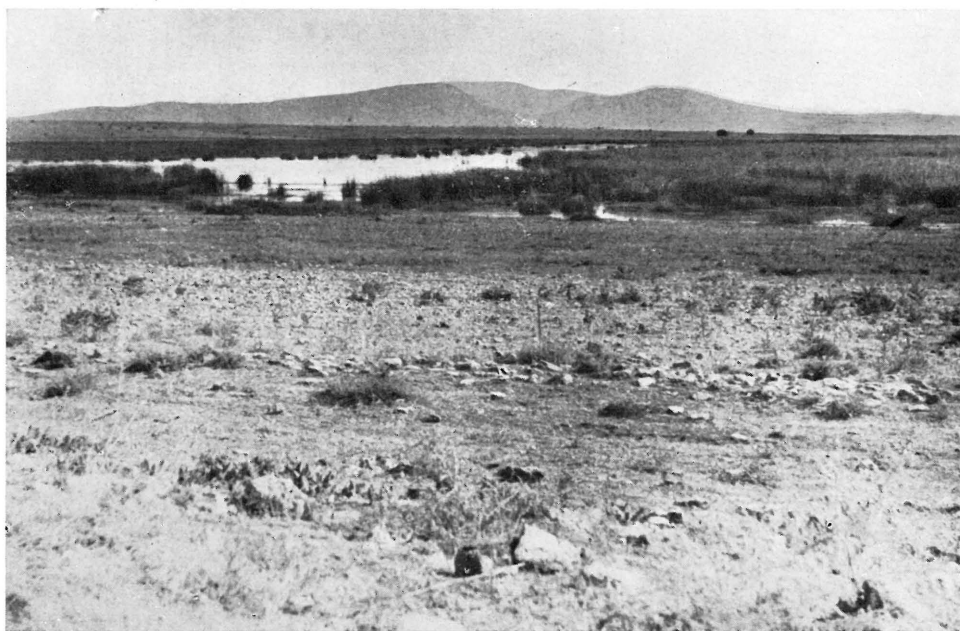


Fig. 114: Beyşehir gölü, fresh water lake, sandy shores with vegetation.

**Platymetopius guttatus** Fieber 1869

Distribution: Norway, Sweden, France, Germany, Austria, Hungary, Swiss, Italy, Portugal, Turkestan, Czechoslovakia.

Expedition material examined: Mollafeneri, Kayali dağ, only 2 males taken.

**Platymetopius cruentatus** Haupt 1927

Distribution: Palestina, Iraq.

Discussion: This species differs from *Pl. obsoletus* Signoret having the spines of the pygophor slightly S-shaped and reaching the margin of the pygophor subapically, as in fig. 57, but aedeagus in lateral view of the same form and dorsally as in figs 55, 56, with not diverging but joined lateral spines.

Expedition material examined: Bürücek Toros, Adana, Abacılar, taken 4 specimens, rare species.

**Psammotettix confinis** (Dahlbom 1950)

Distribution: Norway, Sweden, Finland, Polen, Sardinia, France, Italy, Germany, Czechoslovakia, Holland.

Expedition material examined: Yugoslavia — Mladenovac, Anatolia — Moğan gölü, Gyaur dağ, Beyşehir, Beynam, Turcia — Edirne.

**Psammotettix pictipennis** (Kirschbaum 1868)

Distribution: Hungary, Austria, France, Persia, Iraq, Czechoslovakia.

Expedition material examined: Anatolia — Moğan gölü, Karataş. On steppe vegetation near marshes round water. Rather common species, especially near Moğan gölü.

**Psammotettix cephalotes** (Herrich Schäffer 1834)

Distribution: Europe.

Discussion: Inner male genitalia of Anatolian specimens of the same form as in *P. cephalotes* H. S. and *P. helvolus* Kbm., but somewhat differing, the ground coloration being light ochre yellow, not green yellow.

Expedition material examined: Anatolia — Moğan gölü, Beynam, some specimens on steppe vegetation.

**Psammotettix striatus** (Linné 1758)

Distribution: France, Norway, Sweden, Finland, Germany, Italy, Sardinia, Czechoslovakia, Balkan, Iraq.

Expedition material examined: Bulgaria — Svilengrad, Anatolia — Moğan gölü, Erciyes, Kozan, Ankara Baraj, Gyaur dağ, Çamlidere Isik, Beynam, Adana, Karataş, Beyşehir. Taken in mass on steppe vegetation.



***Psammotettix provincialis* (Ribaut 1925)**

Distribution: France, Italy, Czechoslovakia, Bulgaria, Caucasus.

Discussion: Total length and coloration of the surface not as typical Mediterranean specimens, but male genitalia not differing and the colour of body and elytra ochre yellow.

Expedition material examined: Turcia — Edirne, Anatolia — Karataş, Moğan gölü, Kozan Toros, Abacılar Çakıt. Some specimens on steppe.

***Deltocephalus schmidtgeni* Wagner 1939**

Distribution: Central and South Europe, Morocco.

Expedition material examined: Anatolia — Moğan gölü, Karataş, Kozan Toros, Misis. Rather common species on xerotherme vegetation.

***Deltocephalus pulicaris* (Fallen 1806)**

Distribution: Europe, Siberia, Turkestan, Algiers.

Expedition material examined: Bulgaria — Svilengrad, one specimen taken on meadow. In Europe very common species.

***Psammotettix cerinus* (Lindberg 1948)**

(From *Deltocephalus*, new comb.)

Distribution: Cyprus.

Transferred from the genus *Deltocephalus*, male genitalia show very close affinity to other species of *Psammotettix* but none to *Deltocephalus* sensu Rib., genotype *D. pulicaris* Fallen.

Expedition material examined: Anatolia — Kozan Toros, two males taken on xerothermophile vegetation, rare species.

***Jassargus obtusivalvis* (Kirschbaum 1868)**

Distribution: Central Europe, Siberia, Algiers, France.

Expedition material examined: Yugoslavia — Irig Fruška gora, Mladenovac. Anatolia — Mollafeneri. In Central Europe very common species, but in Anatolian material only 4 specimens.

***Ebarrius cognatus* (Fieber 1869)**

Distribution: France, Norway, Sweden, Finland, Czechoslovakia, Austria, Italy.

Expedition material examined: Erciyes dağ, 3200 m above sea level, taken on the same vegetation as *Hardya anatolica* Zachvatkin.

**Diplocolenus frauenfeldi** (Fieber 1869)

Distribution: Central and South Europe.

Expedition material examined: Anatolia — Beynam, only 3 specimens taken.

**Diplocolenus abdominalis** (Fabricius 1803)

Distribution: Europe, Siberia, Turkestan, Tunisia, Caucasus.

Expedition material examined: Yugoslavia — Mladenovac, only 2 specimens of this very common species of grass biotopes in Central Europe.

**Mocuellus quadrispinus** Dlabola 1949

Distribution: Czechoslovakia, Austria, Hungary.

Expedition material examined: Anatolia — Bâlâ, one male, Beynam, some specimens taken on steppe vegetation.

**Mocuellus** sp.

In a number of females taken in Mladenovac, Yugoslavia and Ankara Baraj, Erciyas dağ 3200 m, Anatolia. This material may partly belong also to *M. collinus* Boheman, or to the proceeding species. But former species of *Mocuellus* seems rather to have a European distribution, living on more mesophile vegetation as *M. quadrispinus* Dlabola.

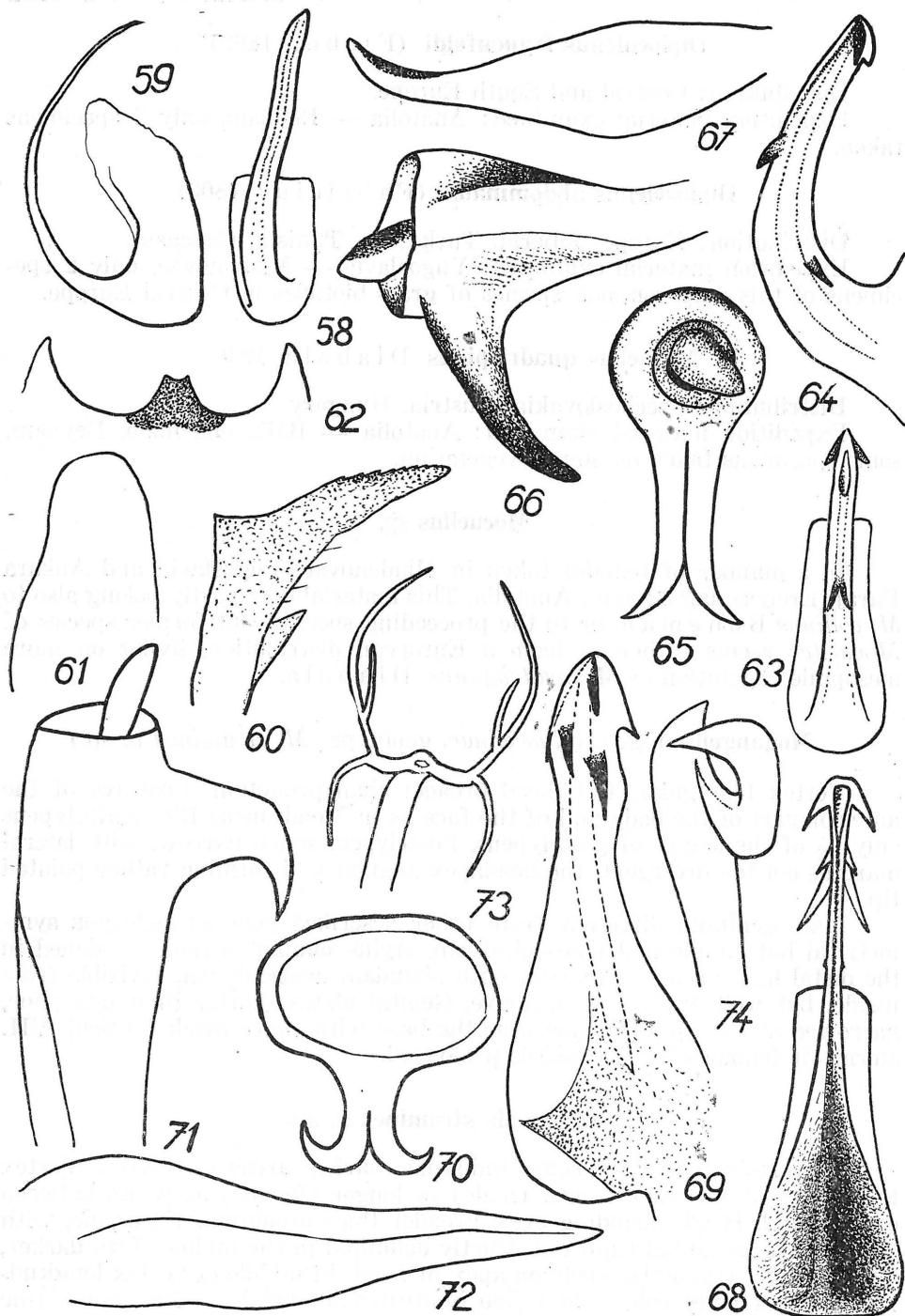
**Mogangella** n. gen. (*Euscelinae*, genotype *M. straminea* n. sp.)

Vertex triangular, flat, head broader than pronotum. Features of the anterior part of the body and of the face as in *Mendrausus* Rib. Anteclypeus only  $\frac{1}{2}$  of the length of postclypeus. Postclypeus much narrow, with lateral margins not too divergent, the headapex angular and forming rather pointed tip.

Male genitalia different from other described genera: aedeagus symmetrical but simple and long-spiniform, stylus laminated and broadened in the distal half, on apical margin with abundant denticulation, invisible from inside, but well distinct from above. Genital plates shorter than pygophor, narrowed at the tip, pygophor near the base with sharp black denticul. VII. sternit of female with the middle prolonged.

**Mogangella straminea** n. sp.

Uniformly pale with some indistinct darker areas on elytra. Vertex triangular, of the same length (male) or longer (female) as width between eyes behind. Head, including eyes, broader than pronotum. Face pale, with one paler longitudinal band indistinctly delimited in the middle. Two darker, but indistinct triangular spots on apex of head. In middle of vertex longitudinal band of paler colour and fine impressed middle-line. Pronotum fine



rugose across, scutum microsculptured and with short transversal line. Elytra have 4 pairs of indistinct spots situated on the nervation junctions and other indistinct spotting particularly on the distal part of claval cells. Elytra longer than abdomen. Body and feet pale yellow.

Male genitalia figs 58—61. Aedeagus simple, curved and long, spiniform. Stylus laminated, broadened, with 2 dents and some microscopic denticulation on upper margin visible only in oblique or upper view. Pygophore on the apex rounded, near the basal margin with short but sharp denticulation, black, visible through the pale rounded distal part of genital plates.

Female VII. sternit fig. 62: bisinuate, in the middle with truncated, black elongation.

Total length male 3.3 mm, female 3.4—3.7 mm, length of vertex male 0.4 mm, female 0.5, width between eyes behind male 0.36 mm, female 0.43 mm, length of the pronotum male and female 0.4 mm..

Expedition material examined: Anatolia — Moğan gölü, number of specimens taken on steppe vegetation near the lake (holotype, allotype and paratypes).

#### **Doratura homophyla** (Flor 1861)

Distribution: Europe, Siberia, Turkestan.

Expedition material examined: Yugoslavia — Mladenovac, Anatolia — Kozan Toros, Beynam. Common and widely distributed species. On steppe vegetation.

#### **Doratura heterophyla** Horváth 1903

Distribution: South Hungary, Yugoslavia.

Expedition material examined: Yugoslavia — Mladenovac, Anatolia — Adana, Turcia — Edirne. Very rare species, take only 4 specimens.

#### **Chiasmus conspurcatus** (Perris 1857)

Distribution: Canary Islands, Spain, Italy, Austria, Bulgaria, Yugoslavia, Egypt.

Expedition material examined: Anatolia — Moğan gölü, Kozan Toros. Many macropterous and brachypterous specimens taken on steppe vegetation.

#### **Selenocephalus griseus** (Fabricius 1794)

Distribution: South Europe, North Africa, Caucasus, Asia minor.

Expedition material examined: Turcia — Edirne, Anatolia — Bürücek, Ankara Baraj, Beynam, Karataş. On steppe vegetation taken in a fair number of specimens. Common species.

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*Mogangella* n. gen. *straminea* n. sp. Fig. 58: aedeagus dors., fig. 59: aedeagus lat., fig. 60: stylus, fig. 61: genital plate, fig. 62: VII. sternit female. *Selenocephalus anatolicus* n. sp. Fig. 63: aedeagus dors., fig. 64: aedeagus lat., fig. 65, 66: anal tube, fig. 67: pygophor. *Selenocephalus ankaræ* n. sp. Fig. 68: aedeagus dors., fig. 69: aedeagus lat., fig. 70, 71: anal tube, fig. 72: pygophor. *Dryodurgades anatolicus* n. sp. Fig. 73: aedeagus, fig. 74: stylus.

***Selenocephalus pallidus* Kirschbaum 1868**

Distribution: South Europe, Iraq.

Expedition material examined: Anatolia — Ankara Baraj, Karataş, Gyaur dağ Tapan, Beynam. Rare species, on steppe vegetation.

***Selenocephalus anatolicus* n. sp.**

Rather short species, uniformly testaceous, with very few dark spots especially on elytra in the cells. Apex of the forewings somewhat dark, junction of veins with the margin markedly brown. Vertex wide, arched, anterior margin sharp and groove-shaped. Medial line developed and some spotting on the area too. Indistinct spots on sides of vertex near ocelli. Face but not anterior margin brown, pale transversally banded, near the base of anteclypeus 2 pale triangular spots as in other species of the genus. Postclypeus with one irregular spot.

Pronotum narrow, short, only  $1\frac{1}{3}$  of the vertex, pointed on the disc and brown pigmented near the anterior margin, transversally rugose except anterior third of length. Scutum irregularly spotted in the middle.

Elytra opaque, longer than abdomen, irregularly sparsely spotted brown, rather darker on tip. Anterior margin with pattern particularly in half its length with 3 light colourless spots in contrast to the brown ones. Body and feet pale with brown spotting on base of spines.

Male genitalia figs 63—67. Aedeagus male simple, widely curved, apically with a pair of small dents, two other spines dorsally in the middle and third pair of spines near the base. Stylus stout, blunt on tip. Pygophor elongated, sharpened towards the apex and slightly curved. Anal tube has basal spiniform appendix very long, longitudinal axis is much longer and appendix bifurcated into two parallel spines joined, with sharp diverging apices.

Total length male and female 5.6—6.7 mm, length of vertex 0.5—0.7 mm of pronotum 0.8—1.0 mm, width of vertex 1.5—1.8 mm.

Female VII. sternit with rounded almost not visible lateral angles, in the middle broadly concave, with submarginal black band, interrupted in the middle, not reaching laterally to the angles.

Expedition material examined: Anatolia — Beynam, Ankara Baraj, Moğan gölü. Holotype and allotype from Ankara Baraj. Not common, taken in some specimens by sweeping on steppe vegetation.

***Selenocephalus ankaræ* n. sp.**

Large and robust species, similar to darker specimens of *S. griseus* F. Male specimens smaller than female. Basic coloration dark brown, only near anterior margin on elytra pale or yellowish, without any brown spotting. Face brown spotted and marble structured, with dark brown line on anterior margin below the deep suture on vertex with medial line, some irregular bands and spots as on pronotum and scutum. Elytra with spotted nervation and filled cells with dark colour.

Male genitalia figs 68—72. Aedeagus male stout laterally flattened, with 3 pairs of spines: two pairs of these situated below the ejaculatory duct (in lateral view) and third pair above it. Near to these spines on the dorsal margin with little denticulation, on opposite side one unpaired, laminated spine pointing towards base of aedeagus.

Female VII. sternit has rounded and slightly prolonged lateral angles and is angularly excavated, black margined at apex.

Total length male 7.7 mm, female 8.9 mm, of vertex male 0.5 mm, female 0.6 mm, of pronotum male 1.0 mm, female 1.2 mm, width of vertex between eyes 1.7 mm female 2.2 mm.

Expedition material examined: Anatolia — Ankara Baraj, only 4 specimens (holotype, allotype and paratypes). Very rare species.

### *Fieberiella florii* (Stål 1868)

Distribution: Italy, Austria, Hungary, Roumania, Greece, Czechoslovakia, Caucasus, Germany, Iran.

Expedition material examined: Anatolia — Ankara Baraj, Mollafeneri, only 6 specimen taken.

### *Parabolocratus glaucescens* Fieber 1866

Distribution: North Africa, Iraq, Afghanistan.

Discussion: Green or yellowish coloured European species of the genus *Parabolocratus* are difficult to determine, as the curvature of the anterior margin of the vertex does not constitute a good distinguishing characteristic, also the inner genitalia show great similarity.

After a study of the descriptions given by Kirschbaum, Fieber, Haupt, Lindberg, Ribaut, Horváth, Signoret I have arrived at the conclusion that *Parabolocratus storai* Lindberg is good species (its synonymisation with *P. glaucescens* Fieber, given by Lindberg 1953 does not accord with Ribaut's description in Faune de France, 1952. *P. glaucescens* Fieber has a Mediterranean distribution, its synonymous species is *P. eximius* Kirschbaum, Signoret, but not *P. eximius* Haupt from Palestine, where a study of the type is urgently needed. Haupt's species has the vertex of the same length as the pronotum. *Parabolocratus arenarius* Horváth from Hungary is also found, though, rarely in Slovakia, and is a very similar but good differentiated species.

Expedition material examined: Anatolia — Kozan, Toros, Rather common on steppe vegetation

### European *Parabolocratus* — males:

- 1/2 Vertex shorter than pronotum. Main part of penis without ledges. Southern France, Canary Islands . . . . . *P. storai* Lindberg.
- 2/1 Vertex of same length or longer. . . . .
- 3/4 Outer border of genital plates roundedly curved and regularly emarginated. Hungary, South Slovakia . . . . . *P. arenarius* Horváth.

4/3 Outer border of genital plates curved nearer to the base and for that reason emarginated in the basal  $\frac{1}{3}$  of their length, extended and sharp at the tips . . . . . *P. glaucescens* Fieber.

***Eupelix cuspidata* (Fabricius 1775)**

Distribution: Europe, North Africa, Caucasus, Turkestan.

Expedition material examined: Anatolia — Moğan gölü, Beynam. Rather common species.

***Paradorydium lanceolatum* (Burmeister 1838)**

Distribution: France, Portugal, Sicily, Spain, Hungary, Czechoslovakia, Turestan, Caucasus, Algiers.

Expedition material examined: Anatolia — Ankara Baraj, only 3 specimens by sweeping on steppe vegetation. Very rare species.

***Aphrodes bicinctus* (Schrank 1776)**

Distribution: Europe, Siberia, Caucasus, Turkestan, North Africa, Nearctic region.

Expedition material examined: Yugoslavia — Mladenovac, Bulgaria — Svilengrad, Harmanli, Anatolia — Ankara Baraj, Bırücek Toros, Ulukişla, Beynam, Turcia — Edirne. Common species, many specimens taken.

***Aphrodes tricinctus* Curtis 1836**

Distribution: France, England, Holland, Sweden, Germany, Belgium, Czechoslovakia, Austria, Swiss, Italy, Portugal, Algiers.

Expedition material examined: Anatolia — Emir dağ, one female taken.

***Strongylocephalus agrestis* (Fallen 1806)**

Distribution: Central and North Europe, Siberia, Turkestan, Nearctic region.

Expedition material examined: Bulgaria — Svilengrad, one male. Common European species on moist vegetation, from Anatolia no material.

***Cicadella viridis* (Linné 1758)**

Distribution: Palearctic and Nearctic region.

Expedition material examined: Yugoslavia — Irig, Fruška gora, one specimen on grass. Widely distributed, very common species on Sphagnum, Juncus and similar biotopes.



**Evacanthus acuminatus (Fabricius 1794)**

Distribution: Europe, Siberia, Caucasus, Nearctic region.

Expedition material examined: Yugoslavia — Irig, Fruška gora. Common species in Europe, living on grass.

**Evacanthus interruptus (Linné 1758)**

Distribution: Palearctic region.

Expedition material examined: Yugoslavia — Irig, Fruška gora. Very common species, taken only one specimen.

**Penthimia nigra (Goeze 1778)**

Distribution: Central and South Europe, Tunisia, Syria, Japan, Caucasus.

Expedition material examined: Yugoslavia — Irig, Fruška gora, only one specimen taken.

**Idiocerus cupreus Kirschbaum 1868**

Distribution: England, Germany, Austria, Hungary, Italy, Spain.

Expedition material examined: Bulgaria — Svilengrad, one male and one female.

**Idiocerus lituratus (Fallen 1806)**

Distribution: Europe, Transkaukasus.

Expedition material examined: Anatolia — Beynam, only one female taken, in Central Europe on Salix very common species.

**Idiocerus stali Fieber 1868**

Distribution: Greece, Asia minor, Turkestan.

Expedition material examined: Anatolia — Abaçılar (Çakit), two specimens taken, very rare species.

**Idiocerus herrichi Kirschbaum 1868**

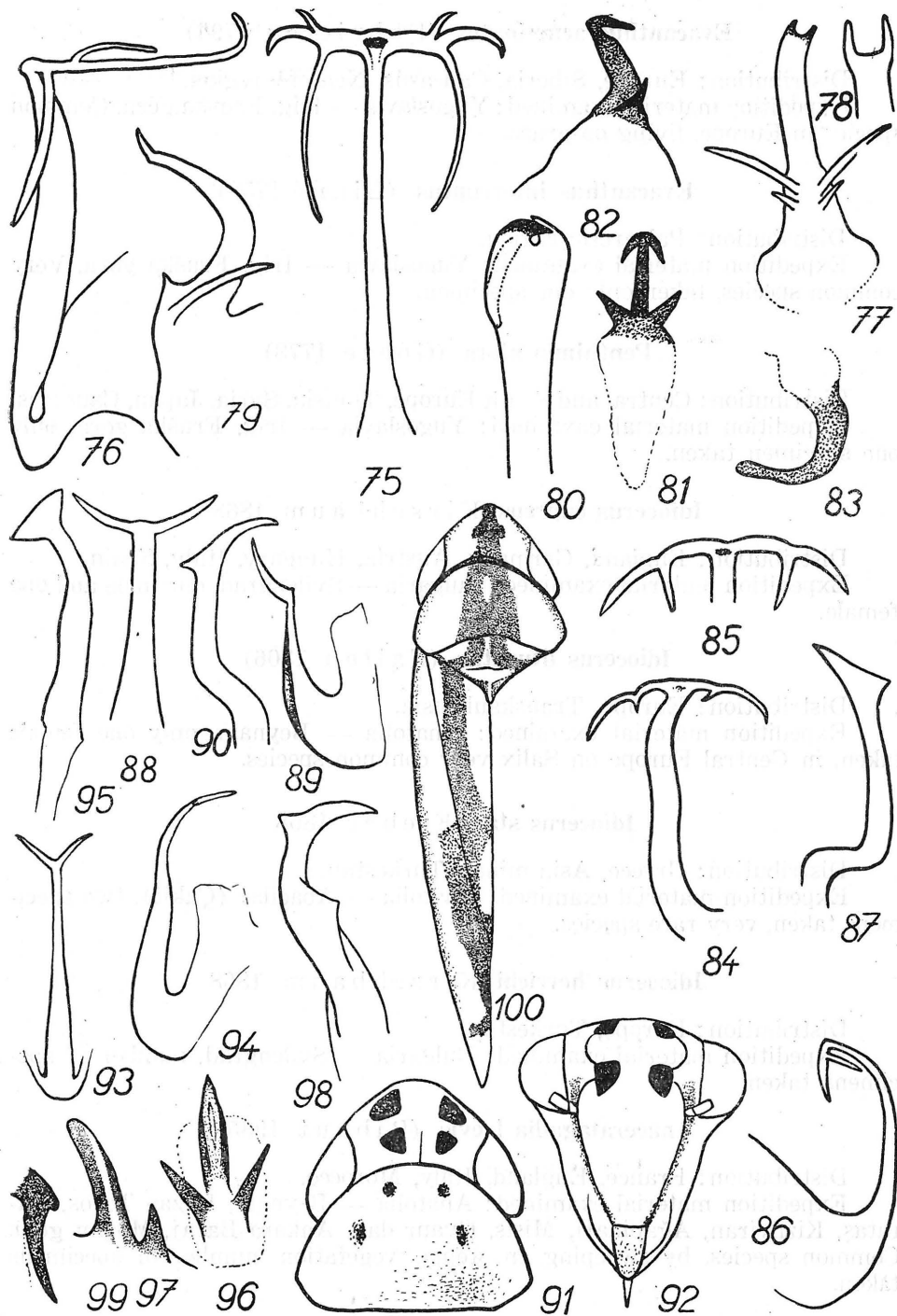
Distribution: Europe, Turkestan.

Expedition material examined: Bulgaria — Svilengrad, number of specimens taken.

**Anaceratagallia laevis (Ribaut 1935)**

Distribution: France, England, Italy, Morocco.

Expedition material examined: Anatolia — Beynam, Kozan Toros, Karataş, Kizilviran, Ağapınari, Misis, Gyaur dağ, Ankara Baraj, Moğan gölü. Common species, by sweeping on steppe vegetation number of specimens taken.



**Anaceratagallia ribauti** (Ossiannilsson 1938)

Distribution: Germany, Swiss, Italy, Greece, France, Czechoslovakia.

Expedition material examined: Yugoslavia — Mladenovac, Bulgaria — Svilengrad, Anatolia — Adana, Karataş. On similar biotopes as the species cited before, not so common.

**Anaceratagallia bispinata** n. sp.

Vertex with 2 large brown spots near the middle; two other spots near the eyes and one small spot in the middle. Only the lateral spots do not reach the posterior margin of the vertex. The curvature of posterior margin of vertex is not regular but near the lateral black spots strongly sinuate. Anteclypeus is delimited by brown lines, dorsally of the angular form. On the area there are two rows of brown horizontal bands perpendicularly arranged. Anteclypeus with lateral brown borders and central spotting. Pronotum with one pair of brown spots, median line, and lateral indistinct bands. Scutum and scutellum with 3 triangular markings, other brown colour in the middle, and short and well defined cross line. Elytra greyish, with brown nervation as in other species near *A. ribauti* Ossiannilsson. The best and main characteristic can be found on male genitalia.

Figs 77—80. Aedeagus simple, curved and shortly bifurcate on apex. Near the base with 2 pairs of different length, the base strongly developed. Stylus as in fig. 80. The male anal tube with blunt lateral appendages.

Total length male 3.3 mm, female 3.8 mm, of vertex male 0.13 mm, female 0.2 mm, of pronotum 0.5—0.6 mm, max. width of vertex 0.8 mm, of head incl. eyes male 1.1 mm, female 1.3 mm.

Female genitalia, VII. sternit has rounded angles, posterior margin is roundedly but bluntly produced in the median part, where there is a slight or invisible incision in the middle.

Expedition material examined: Anatolia — Beynam. 4 males and 12 females taken by sweeping on steppe vegetation (holotype, allotype and paratypes).

**Dryodurgades anatolicus** n. sp.

Much resembles *Dryodurgades reticulatus* (Herrich Schäffer 1834), distributed in Central and South Europe and in Canary Islands, but these Anatolian specimens have the appendages of aedeagus male of a some-

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*Dryodurgades anatolicus* n. sp. Fig. 75: aedeagus dors., fig. 76: aedeagus lat., *Anaceratagallia bispinata* n. sp. Fig. 77, 78: aedeagus dors., fig. 79: aedeagus lat., fig. 80: stylus. *Empoasca moganica* n. sp. Fig. 81: aedeagus dors., fig. 82: aedeagus lat., fig. 83: spine. *Eupteryx táboorskýi* n. sp. Fig. 84: aedeagus dors., fig. 85: aedeagus, fig. 86: aedeagus lat., fig. 87: stylus. *Eupteryx gyaurdagicus* n. sp. Fig. 88: aedeagus dors., fig. 89: aedeagus lat., fig. 90: stylus, fig. 91: anterior part of the body, fig. 92: face. *Erythroneura furcata* n. sp. Fig. 93: aedeagus dors., fig. 94: aedeagus lat., fig. 95: stylus. *Erythroneura adanæ* n. sp. Fig. 96: aedeagus dors., fig. 97: aedeagus lat., fig. 98: stylus, fig. 99: spine. *Erythroneura karatasa* n. sp. Fig. 100: male specimen.

what different shape. Two lateral process are bifurcated at a right angle and form long curved appendages, but only the horizontal pair of these appendages bifurcated near the base one time more but at a different length. In other details as in *D. reticulatus* H. S. Figs 73—76.

Total length 5.0 mm, of vertex 0.1 mm, of pronotum 0,7 mm, width of vertex including eyes 1.5 mm.

Expedition material examined: Anatolia — Bürücek Toros, 2 males, one female taken (holotype, allotype and paratype).

#### *Anaceratagallia* sp.

3 females near *laevis* Rib.: Bürücek Toros, Abaçılar Çakit in Anatolia and Edirne in Turcia.

#### *Peragallia sinuata* (Mulsant Rey 1855)

Distribution: Hungary, Turkestan, Sardinia, Italy, Swiss, Mediterran, England, Czechoslovakia.

Expedition material examined: Anatolia — Adana, Karataş, Kozan, Ankara Baraj. Very common species, many specimens taken by sweeping on steppe vegetation.

#### *Megophthalmus scanicus* (Fallen 1806)

Distribution: Europe.

Expedition material examined: Bulgaria — Svilengrad, one female.

#### *Megophthalmus scabripennis* Edwards 1915

Distribution: England, Italy, France.

Expedition material examined: Anatolia — Çamlidere Isik dağ, only two specimens taken.

#### *Macropsis graminea* Fabricius 1798

(incl. var. *populi* Edwards 1919)

Distribution: Germany, France, Czechoslovakia.

Expedition material examined: Bulgaria — Svilengrad, Anatolia — Angara Baraj, Beynam, Ayaş, Yugoslavia — Mladenovac. Some specimens taken.

#### *Macropsidius dispar* (Fieber 1868)

Distribution: South Europe, North Africa.

Expedition material examined: Anatolia — Moğan gölü, number of specimens taken by sweeping on steppe vegetation.

**Heptathus freyi** (Fieber 1868)

Distribution: France, Spain, Italy, Hungary, Czechoslovakia.

Expedition material examined: Anatolia — Alata, Gyaur dağ, Kozan Toros. Number of specimens taken by sweeping on steppe vegetation.

**Heptathus nanus** (Herrich Schäffer 1836)

Distribution: Central and South Europe.

Expedition material examined: Yugoslavia — Mladenovac. Common species, but in Anatolia no specimen taken.

**Batrachomorphus irroratus** Lewis 1834

Distribution: Central and South Europe, Caucasus, Turkestan.

Discussion: Only females taken, differing from Ribaut's description in that total length is 6.1 mm. Ribaut gives only 5.5 mm. Agrees completely in other details.

Expedition material examined: Anatolia — Gyaur dağ, Ankara Baraj, Moğan gölü, Beynam. By sweeping on steppe vegetation taken only 10 females.

**Iassus scutellaris** (Fieber 1868)

Distribution: Central and South Europe.

Expedition material examined: Anatolia — Ankara Baraj, only one specimen taken.

**Ulopa trivia** Germar 1821

Distribution: Europe.

Expedition material examined: Turcia — Edirne, Anatolia — Moğan gölü, Çamlidere Isik dağ. Rather rare, taken by sweeping on steppe.

**Dikraneura juniperi** Lethierry 1876

Distribution: France, Algiers.

Expedition material examined: Karapinar Toros, 7 specimens from Juniperus excelsus by rapping down; rare species.

**Dikraneura stigmatipennis** (Mulsant Rey 1855)

Distribution: South Europe, Asia minor, Germany, Czechoslovakia.

Expedition material examined: Anatolia — Moğan gölü, number of specimens taken on steppe near the border of lake. On leaves of Verbascum sp.

**Alebra albostriella** (Fallen 1826)

Distribution: Europe.

Expedition material examined: Anatolia — Tapan Gyaur dağ, only one specimen of this common European species taken.

**Alebra wahlbergi** (Boheman 1845)

Distribution: Europe.

Expedition material examined: Anatolia — Karataş, Kozan Toros, common species, but taken only 2 specimens.

**Empoasca decedens** Paoli 1932

Distribution: Italy, Iraq.

Expedition material examined: Anatolia — Karataş, Adana, Alata, Beyşehir Gölü, Misis. Widely distributed Mediterranean species, common on steppe. Number of specimens in the net on car.

**Empoasca moganica** n. sp.

Small, greenish coloured species, resembling *E. dumosa* Rib. Vertex green-yellow with median line and on the pale vertex dividing band. Other whitish markings on vertex and pronotum, but without delimitation and only poorly impressed. Scutum with short cross line, yellowish. Elytra semihyaline, green, uniformly as in *E. subulata* Edw., with 4 anteapical and 4 longitudinal cells.

Male genitalia figs 81—83. Aedeagus short, but well chitinised, with a pair of arcuate spines on the tip, other 2 median long spines laterally situated near the base. The base of aedeagus broad and chitinised. The anal tube with long curved apices, with subacute apex.

Female VII. sternit broadly angular, in the middle slightly laterally concave, the lateral angles rounded.

Total length female 2.1—2.4 mm, male 2.1—2.3 mm.

Expedition material examined: Anatolia — Moğan gölü (holotype, allotype and paratype), by sweeping on steppe vegetation.

**Empoasca pteridis** (Dahlbom 1850)

Distribution: France, Sweden, Czechoslovakia, Italy.

Expedition material examined: Anatolia — Moğan gölü, Abaçılar Çakıt, Karataş, Bürücek, Toros. Taken in numerous specimens, very common species.

**Empoasca decipiens** Paoli 1930

Distribution: France, Morocco, Czechoslovakia, West Europe.

Expedition material examined: Anatolia — Adana, Alata. 2 specimens, seems not to be common in Anatolia, although in Europe it is locally very common.

**Empoasca tessellata** (Lethierry 1884)

Distribution: Central and south Europe, South Russia (orig. descr.), Afghanistan, Iraq.

Discussion: Ribaut evaluated the different forms as subspecies, but Zachvatkin has seen and described in them good species. The actual

distribution of these units will still remain unknown for a considerable time, and perhaps it is advisable to give them specific rank. The Anatolian material agrees with Ribaut's ssp. *genuina* Rib., which I suppose to be identical with Lethierry's species and not with the material from Czechoslovakia and Hungary, which I have mentioned previously as *E. hungarica* Ribaut.

Expedition material examined: Anatolia — Moğan gölü, common species on *Artemisia* and other steppe vegetation.

#### ***Empoasca virgator* Ribaut 1933**

Distribution: Belgium, Germany, France, Czechoslovakia.

Expedition material examined: Bulgaria — Svilengrad, 6 specimens on *Salix*. In Central Europe common species.

#### ***Eupteryx thoulessi* Edwards 1926**

Distribution: England, France, Czechoslovakia.

Expedition material examined: Anatolia — Beyşehir gölü. Number of specimens taken on the vegetation near the lake.

#### ***Eupteryx cypria* Ribaut 1948**

Distribution: Cyprus.

Expedition material examined: Anatolia — Gyaurlu dağı. Rare species, only some specimens taken.

#### ***Eupteryx táborskýi* n. sp.**

Pale, yellowish or whitish with dark brown spots on vertex and face and with same pattern on pronotum and elytra, not well marked.

Vertex of head with 4 brown spots and short line in the middle. Two little spots round on the face above, almost at the same level as lateral, ovoid markings near the eyes. The sides of clypeus dark brown. Pronotum pale, with some 4 indistinct spots, scutum clear yellow, with brown line delimiting scutellum.

Elytra nearly colourless and opaque, nervation yellow, bordered locally feebly brown, especially on clypeus and apex. Brown spot behind the waxfield in the middle of anterior margin of elytra, divided by yellow nervation. The apical cells are somewhat darker.

Male genitalia figs 84—87. Aedeagus slightly curved dorsobasally, with a pair of bifurcated appendages as in *E. stachydearum* Hardy, but in direction and curvature different as on figs. 84—86. Stylus in general Eupteryx-shape, fig. 87.

Female VII sternit slightly bisinuate and in the middle angularly elongated.

Total length male 3.1 mm, female 3.2 mm, length of vertex 0.21 mm, width of vertex between eyes 0.33 mm, length of pronotum 0.47 mm, width of head 0.70 mm.



Expedition material examined: Anatolia — Moğan gölü (holotype, allotype and some paratypes) by sweeping on steppe vegetation near the border of the lake.

***Eupteryx gyaurdagicus* n. sp.**

Species resembling *E. colina* Flor. Vertex yellow with 2 spots in the middle and one unpaired spot near the middle of the posterior margin. Face with 2 round spots above, one small spot between it and the eye, lateral darkening of the postclypeus, especially near the base and lateral brown margins and spots below the base of antenna. Clypeus yellow, darker on sides. Pronotum with darker centre, yellow, on the pale anterior margin there are 4 brownish spots and longitudinally oblique line behind the eyes. Scutum with two triangles, 2 small spots and cross line. Elytra pale yellow with pale nervation and brownish fenestrated cells. Wax-field yellow and the brown spot behind is divided by yellow nervation.

Male genitalia figs 88—90. Aedeagus curved near the base, laterally in the middle dorsal part keeled, with 2 lateral diverging spines. Stylus in general of *Eupteryx*-shape. Fore body and face on figs. 91, 92.

Female VII. sternit rounded, angulated narrowly in the middle and strongly prolonged.

Total length male and female 2.6—3.2 mm.

Expedition material examined: Anatolia — Gyaur dağ. (holotype, allotype and some paratypes) by sweeping on steppe.

***Typhlocyba sexpunctata* (Fallen 1826)**

Distribution: Europe.

Expedition material examined: Bulgaria — Svilengrad, one male specimen taken.

***Typhlocyba horvathiana* Dlabola 1954**

Distribution: Hungary, CSR — Moravia.

Anatolian material examined: Ankara, 27. VI. 1940, one male specimen (Bodenheimer lgt.).

***Erythroneura furcata* n. sp.**

Slender, gracile species, designated as the representative species of the *E. parvula* Boh. group.

Vertex, angularly rounded, with 2 round finely delimited brown spots near the anterior fore margin. Face pale without any brown spotting. Pronotum uniformly pale, only with shadowed transparent triangular spot from the anterior margin of the scutum being visible as 2 triangular spots, dark brown coloured and paler marginated, other part of scutellum yellow, slightly concave.

Elytra opaque, transparent, anterior and posterior margin yellow. Feet pale.

Male genitalia figs 93—95. Aedeagus simple, on apex bifurcated. Stylus broadened at the apex.

Female VII. sternit rounded on the margin, laterally and apically very slightly concave.

Total length male 2.7 mm, female 3.0 mm.

Expedition material examined: Anatolia — Moğan gölü, only 6 specimens (holotype, allotype and paratypes) taken by sweeping on steppe.

***Erythroneura coacta* Ribaut 1948**

Distribution: Cyprus.

Expedition material examined: Anatolia — Adana, Karataş; rare species, only 6 specimens taken on steppe vegetation.

***Erythroneura* (subgen. *Tamaricella* Zachvatkin) *tamaricis*  
(Puton 1872) — new combination**

Distribution: Mediterran, North Africa, Mediterranean part of Asia.

Expedition material examined: Anatolia — Feke Toros, Ankara Baraj, number of specimens on *Tamarix*.

***Erythroneura* (subgen. *Helionidia* Zachvatkin) *himonyrita*  
Zachvatkin 1945**

= *Helionidia himyarita* Zachvatkin 1945 New combination =  
*E. acutistyla* Dlabola 1952

Distribution: Yemen, Iraq.

Discussion: As has been stated many times the genus *Erythroneura* is very large and heterogeneous. For this reason some small groups, subgenera and even genera, were separated out, but this has not been accepted by all homopterologists. Ribaut in his excellent monograph has divided all the large European Typhlocybinae genera into groups of species, and these groups are differently evaluated by different authors: as some authors list them as subgenera or while others take them to be good genera. I cannot accept this extreme classification, especially when it is not made uniformly for all the species known in such a heterogeneous genus and at the same time for other similar genera of the family. As an acceptable compromise solution it might be possible to classify these groups of similar species as subgenera only. In my opinion it is better from practical reasons to retain these old large genera of *Typhlocybinae*, and therefore I give to Zachvatkin's genus only a subgenerical rank.

Expedition material examined: Anatolia — Misis, Adana, Karataş, Alata, Abaçılar, Kozan. The most common species especially in the cultivated country in the environs of Adana. Masses of specimes taken by sweeping and by net on car.

***Erythroneura sanguinosa* (Rey 1891)**

Distribution: Italy, France.

Expedition material examined: Anatolia — Adana, Abaçılar. Very rare species, on steppe.

***Erythroneura bisignata* (Mulsant Rey 1855)**

Distribution: South Europe.

Expedition material examined: Anatolia — Tapan, Abacılar, Adana, very rare species, on steppe.

***Erythroneura adanae* n. sp.**

Rather robust species of the group *E. parvula* Boh. Colour and pattern as in this group of species, pale with indistinct yellow in inner part of elytra. Body below, feet and face pale yellow.

Male genitalia figs 96—99. Aedeagus male is short, slightly curved with a pair of basally situated appendages, which diverge, not too long and originate from 3 different points of the base. Spine from the inner side of the pygophore with dorsal indistinct dent, rather prolonged basally. Stylus has regularly rounded, longer and acute apex, on the upper side with a dental subapical broadening.

Female VII. sternit rounded at the tip and with a black distal part of ovipositor.

Length of both sexes 3—3.4 mm.

Expedition material examined: Anatolia — Abacılar, Misis, Adana, Ankara Baraj. By sweeping and by net on car taken some specimens (holotype, allotype from Adana, paratypes).

***Erythroneura karatasa* n. sp.**

Length of both sexes 2.3—2.6 mm. Vertex roundedly angulated, as long as broad between the eyes, with broad longitudinal red band. Postclypeus yellowish with 2 pole spots on the tip of the head. Anteclypeus yellow. Pronotum as long as  $\frac{2}{3}$  of maximal width, with median red line, broadened distally. Scutum with lateral red spots, pale in the middle. Elytra with red zig-zag pattern, with pale inner margin of clavus. Red pattern of clavus joining with lateral spots of scutum. Feet yellowish, hind tibiae without any brown pigment on spine-bases, tarsus pale (female) or only at the last 2 articules brown as in other male species.

Male genitalia as in other species of the group *flammigera* in Ribaut's sense. Aedeagus simple, laminated. Style distally unsymmetrically broadened, rounded at apical margin. Genital plates yellowish.

From other described species of this group differing especially by the smaller size and by the pattern of the surface, fig. 100. *E. discolor* Horváth seems to be the species closest to his new *Erythroneura*.

Expedition material examined: Anatolia — Adana, Karataş (holotype, allotype and paratypes), number of specimens taken by net on car.

## New genn., spp. and other taxonomic or nomenclatorial changes.

*Oliarus torossicus* n. sp.

*Oliarus lindbergi* n. sp. (*Oliarus* sp. I in Lindberg 1948).

*Oliarus barajus* n. sp.

*Oliarus gyausus* n. sp.

*Oliarus roridus* Fieber 1876 from *Oliarus major* var. *roridus* Fieber.

*Palaeorgerius punctiger* Horváth 1905 from *Orgerius*.

*Palaeorgerius edirneus* n. sp.

*Dictyophora asiatica* Melichar 1912 from *Fulgora*.

*Dictyophora acuminata* Lindberg 1948 from *Fulgora*.

*Hysteropterum parvissimum* n. sp.

*Alatades* n. gen., *trilineus* s. sp.

*Irinula erythrocephala* Ferrari 1882 = *Balclutha wagneri* Lindberg 1953.

*Euscelidius obenbergeri* n. sp.

*Hardya anatolica* Zachvatkin, male specimen described.

*Stenometopiellus* Haupt, subgenus *Diplocolenoidea* Linnavuori (from the genus).

*Circulifer transversalis* Puton 1881 = *Thamnotettix fenestratus* var. *fasciatus* Ferrari 1885, *Thamnotettix fenestratus* var. *transversalis* Puton 1881.

*Goniognathus hoberlandti* n. sp.

*Psamnotettix cerinus* Lindberg 1948 from *Deltocephalus*.

*Mogangella* n. gen., *straminea* n. sp.

*Selenocephalus anaticus* n. sp.

*Selenocephalus ankarae* n. sp.

*Dryodurgades anaticus* n. sp.

*Empoasca mogannica* n. sp.

*Eupteryx tábořskýi* n. sp.

*Eupteryx gyaurdagicus* n. sp.

*Erythroneura furcata* n. sp.

*Erythroneura* (subgen. *Tamaricella* Zachvatkin) *tamaricis* Puton 1872 from *Helionidia tamaricis* Puton.

*Erythroneura* (subgen. *Helionidia* Zachvatkin) *himyarita* Zachvatkin 1946 = *Helionidia himyarita* Zachvatkin, *Erythroneura acutistyla* Dlabola 1952.

*Erythroneura adanae* n. sp.

*Erythroneura karataşa* n. sp.

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