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The Limoniidae of Israel (Diptera)

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ABSTRACT

The Limoniidae of Israel are reviewed, based mainly on material deposited at the entomological collection, Tel Aviv University. The known limoniid fauna of Israel previously comprised 16 species, and it is here increased to 51 species. Country records other than Israel are also included. Two extralimital species are treated, *Idiocera (Idiocera) sziladyi* from Egypt and *Dicranomyia (Dicranomyia) luteipennis* from Lebanon and Syria. Nine species are described as new: *Paradelphomyia (Oxyrhiza) cycnea*, *Crypteria (Franckomyia) israelica*, *Gonomyia (Gonomyia) faria*, *Molophilus (Molophilus) banias*, *Phyllolabis golanensis*, *Dicranomyia (Dicranomyia) flavigenu*, *D. (D.) furthi*, *D. (D.) longiunguis* and *Limonia nussbaumi*. A new synonym is established: *Trentepohlia (Trentepohlia) zambesiae* (Alexander, 1912) = *T. (T.) efflatouni* Pierre, 1923. A new name is proposed: *Dicranomyia (Dicranomyia) signatella* nom. n. for *D. (D.) signata* Lackschewitz in Lackschewitz and Pagast, 1941, a junior primary homonym of *Dicranomyia signata* Meijere, 1919. Lectotypes of *Trentepohlia efflatouni* and *Dicranomyia signata* are designated to stabilize the concept of the names. The biogeography of the Israeli Limoniidae is outlined. A key to the genera and keys to the species are given.

KEY WORDS: Diptera, Limoniidae, Israel, new species, new synonymy, lectotype designations, new replacement name, biogeography, key.

INTRODUCTION

The Limoniidae, with about 11,000 described species, are among the largest families of flies (Diptera). Some experts (e.g., Alexander and Byers, 1981) included the Limoniidae as a subfamily within the Tipulidae, but an independent family status has been accepted by most dipterists to date. The majority of Limoniidae are associated with moist, temperate environments, such as wooded areas, both in temperate and tropical regions, but some species are found in open habitats, such as meadows, and even in deserts, although in the latter case they are mostly associated with oases.

The adults are generally small to medium-sized delicate craneflies, with elongate wings and very long and slender legs that break readily between the trochanter and femur. The wing length varies between 2−20 mm in European Limoniidae, and between 3 mm (in *Cheilotrichia (Empeda) baluchistanica*) and 12 mm (in *Conosia irrorata*) in the Israeli fauna.

The Limoniidae share with the other families of Tipulomorpha (Trichoceridae, Pediciidae, Tipulidae, Cylindrotomidae) a distinct V-shaped transverse suture on the mesonotum and vein A_2 extending to the wing margin, characters by which all five families also differ from other lower Diptera ("Nematocera"). The Limoniidae differ from the other Tipulomorpha primarily by characters of the wing venation, structure of the thoracic sclerites and the male and female terminalia.

The larvae of Limoniidae are elongate, and their morphology is rather heterogeneous. Larval head capsules range from nearly complete to varying degrees of reduction. The respiratory system is predominantly metapneustic, rarely apneustic. Four or five lobes usually surround the posterior spiracles, but occasionally these lobes are absent. The pupa is obtect.

The larvae are found in a large variety of habitats, including wet soil, various aquatic and semi-aquatic biotopes, decaying wood and fungi. Some species live in hygropetric situations and feed on algae. A considerable proportion of the larvae are phytosaprophagous (including saproxylic species), but some may exceptionally affect living plant tissue. Some are mycetophagous, or predatory. Larvae of a few species that feed on the subterranean parts of plants can sometimes become pests of economic importance.

Like the larvae, the adults are predominantly associated with moist environments and are usually found in low vegetation alongside streams, lakes and other water bodies, in swamps and marshes of various types, in damp forests, and similar habitats.

To date the Limoniidae fauna of the Near East, including Israel, has been poorly investigated. The first report of the family from Israel was in a paper by Edwards (1913), in which *Geranomyia annandalei* was described, and another species, *Conosia irrorata*, reported from the vicinity of Yam Kinneret (Lake Tiberias). A list of Israeli Limoniidae was published in the Prodromus Faunae Palestinae (Bodenheimer, 1937). It contained thirteen names, mostly species known to be widely distributed in Europe, including the two mentioned above, as well as "*Empeda flaveola* Wimm.", a name unknown in Limoniidae [possibly confused with *Gonempeda flava* (Schummel, 1829), formerly classified in *Empeda*; omitted here]. Subsequently, *Dicranomyia signata* was described by Lackschewitz (in Lackschewitz and Pagast, 1941) from "Palästina" (and Corsica). Alexander (1970) presented a description of *Orimarga (Orimarga) frommeri* from 'En Gedi and mentioned *Geranomyia annandalei* from this locality. Finally, Starý (1994) described *Dicranoptycha freidbergi* from a number of localities in Israel.

With the exception of the latter species, all the species mentioned above were indicated for Israel in the 'Catalogue of Palaearctic Diptera' (Savchenko et al., 1992), including the following 15 species: *Conosia irrorata*, *Euphylidorea lineola*, *Erioptera (Erioptera) lutea lutea*, *Symplecta (Psiloconopa) stictica*, *Symplecta (Symplecta)*

hybrida, Symplecta (Trimicra) pilipes pilipes, *Ilisia maculata*, *Molophilus (Molophilus) griseus*, *Idiocera (Idiocera) pulchripennis*, *Helius longirostris longirostris*, *Orimarga (Orimarga) frommeri*, *Atypophthalmus (Atypophthalmus) umbratus*, *Dicranomyia (Dicranomyia) signata*, *Geranomyia annandalei* and *Limonia phragmitidis*. All the names were adjusted by Savchenko et al. (1992) according to contemporary classification and synonymy, but no revision was made of voucher specimens from Israel.

Thus, sixteen species of Limoniidae were previously recorded from Israel. These are accepted in the present account, with a single correction: the record of *Ilisia maculata* by Bodenheimer (1937) proved to belong to *I. inermis*, based on specimens identified by Bodenheimer. The records are listed in the Literature sections under the respective species.

About 1000 specimens of Limoniidae from the Tel Aviv University collection were examined, mostly from Israel, with a few specimens from Turkey, Lebanon, Syria and Egypt. Forty-eight species were identified in this material, including 45 from Israel. This material provides confirmation for the occurrence in Israel of nine species previously recorded. Thirty-six species are reported from Israel for the first time, and of these, nine species are newly described. Some faunal additions to other countries are also given.

Altogether, 53 species of Limoniidae are treated in this paper, of which 51 are currently known from Israel. Six species are only known in Israel from older literature records and require confirmation, viz. *Euphylidorea lineola, Erioptera (Erioptera) lutea lutea, Molophilus (Molophilus) griseus, Symplecta (Psiloconopa) stictica stictica, Helius longirostris longirostris* and *Limonia phragmitidis*. Generally, however, their occurrence in Israel coincides with their known distribution.

Types and other specimens from various collections were also studied to confirm the identity of some little-known species, to justify the newly-described species, to contribute to the knowledge of distribution of species described or redescribed here, or to help make other nomenclatural changes. Examination of the type material and other specimens of *Trentepohlia (Trentepohlia) zambesiae* (Alexander, 1912) and *T. (T.) efflatouni* Pierre, 1923 revealed that the latter is a new junior synonym of the former. A lectotype of *T. (T.) efflatouni* is designated here. *Dicranomyia (Dicranomyia) signatella* nom. n. is proposed as a new replacement name for *D. (D.) signata* Lackschewitz in Lackschewitz and Pagast, 1941, a junior primary homonym of *D. signata* Meijere, 1919, described from Sumatra. A lectotype of *D. (D.) signata* Lackschewitz is also designated here.

The morphological terminology adopted here essentially follows McAlpine (1981), except for notation of the wing veins, which is in accordance with Hennig (1954). The suprageneric classification and nomenclature follow those proposed by Starý (1992). The subfamilies of Limoniidae are arranged systematically in the following sequence: Limnophilinae, Chioneinae, Limoniinae. Genera and species are treated in alphabetical order within the respective subfamily/genus. Apart from references to the original description, at least one subsequent reference is given under each species entry, mostly to a publication containing illustrations of the male terminalia or other important characters, in order to characterize a species better, in cases in which the original description is not

sufficiently detailed. Complete synonymy and further information can be found in the Limoniidae part of the Catalogue of Palaearctic Diptera (Savchenko et al., 1992) and on the web in the Catalogue of the Craneflies of the World (Oosterbroek, 2006). Additional illustrations referrable to about half of the species treated in this paper can be found in Podenas *et al* (2006). Unless otherwise stated in the sections on Material examined, the studied material is dry-mounted. Type localities of the new species are quoted verbatim from the labels, with annotations given in brackets. Localities are generally arranged from north to south and from west to east. Locality names in Israel conform to the spelling in the 1:250,000 Survey of Israel map.

The following acronyms of museums and collections are used in the text.

AUBL – Lebanese University, Museum of Natural History, Beyrouth, Lebanon
BMNH – The Natural History Museum [formerly British Museum (Natural History)], London, England, UK
JSO – Collection of J. Starý, Olomouc, Czech Republic
MNHN – Muséum National d'Histoire Naturelle, Paris, France
MUTR – Muğla University, Department of Biology, Muğla, Turkey
MZPW – Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland
NMWC – National Museum of Wales, Cardiff, Wales, UK
TAUI –Tel Aviv University, Department of Zoology, Tel Aviv, Israel
USNM – National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA
ZMAN – Zoological Museum, Amsterdam, The Netherlands

ZOOGEOGRAPHIC GROUPING OF THE LIMONIIDAE OF ISRAEL

The zoogeography of the Limoniidae of Israel (as a subfamily of Tipulidae) was briefly discussed by Freidberg (1988) who mentioned a cosmopolitan species, *Trimicra pilipes*, and speculated about the possible representation of Afrotropical elements. Based on the present study most Limoniidae species of Israel are **Palaearctic**, with only eight (including 3 **Holarctic**) species (about 15%) not being strictly Palaearctic. *Cheilotrichia (Empeda) baluchistanica* has **Oriental** affinities (described from Pakistan), and *Trentepohlia (Trentepohlia) zambesiae* is clearly **Afrotropical**, with Israel representing its northernmost country of distribution. *Conosia irrorata* is an Old World tropical and subtropical species, penetrating into various parts of the Palaearctic Region, and *Atypophthalmus (Atypophthalmus) umbratus* is probably **palaeotropical**, likewise with Israel representing its northernmost country of distribution. One **cosmopolitan** species and subspecies, *Symplecta (Trimicra) pilipes pilipes*, and three Holarctic species (see below) are present in Israel.

A considerable number of the species are of a northern origin, and these may be generally characterized as West Palaearctic (9 spp), Palaearctic (9 spp), and Holarctic (3 spp).

West Palaearctic species: *Euphylidorea lineola, Hexatoma (Hexatoma) fuscipennis, Cheilotrichia (Empeda) cinerascens, Erioptera (Erioptera) fusculenta, Molophilus*

(Molophilus) griseus, M. (M.) obscurus, Antocha (Antocha) vitripennis, Dicranoptycha fuscescens, Helius longirostris longirostris.

Palaearctic species: *Phylidorea (Phylidorea) ferruginea, Erioptera (Erioptera) lutea lutea, Erioptera (Mesocyphona) bivittata, Molophilus (Molophilus) pleuralis, Symplecta (Psiloconopa) stictica stictica, Dicranomyia (Dicranomyia) mitis, D. (D.) ventralis, Helius pallirostris, Limonia phragmitidis.*

Holarctic species: *Symplecta (Symplecta) hybrida, Dicranomyia (Dicranomyia) chorea, Limonia nubeculosa.*

Most of the species, however, have a more southern distribution. Sixteen species are Mediterranean in a broad sense, including those widely distributed in the southern part of Europe, but absent from the northern part of this continent. Nine species are only known from Israel, but may be Mediteranean elements that will eventually be found at least in some of the neighboring countries.

Mediterranean species: *Austrolimnophila (Austrolimnophila) brevicellula, Hexatoma (Hexatoma) gaedii, Neolimnomyia (Brachylimnophila) adjuncta, Ellipteroides (Ellipteroides) lateralis, Idiocera (Euptilostena) arabiensis, I. (Idiocera) ampullifera, I. (I.) pulchripennis, Ilisia inermis, Dicranomyia (Dicranomyia) flavigenu* sp. n., *D. (D.) goritiensis, D. (D.) signatella* nom. n., *D. (Glochina) mediterranea, D. (G.) pauli, Geranomyia annandalei, G. caloptera, Limonia nussbaumi* sp. n.

Species only known from Israel: *Paradelphomyia (Oxyrhiza) cycnea* sp. n., *Crypteria (Franckomyia) israelica* sp. n., *Gonomyia (Gonomyia) faria* sp. n., *Molophilus (Molophilus) banias* sp. n., *Phyllolabis golanensis* sp. n., *Dicranomyia (Dicranomyia) furthi* sp. n., *D. (D.) longiunguis* sp. n., *Dicranoptycha freidbergi*, *Orimarga (Orimarga) frommeri.*

The above grouping matches well the zoogeographic spectrum of the Diptera of Israel outlined by Freidberg (1988). In that treatment, the main zoogeographic elements, i.e. Palaearctic, Afrotropical, Oriental, Holarctic and cosmopolitan, are represented in the fauna of Israel in similar proportions as in the Limoniidae and, as can also be expected, the southern and western Palaearctic elements predominate over other Palaearctic elements. The predominance in Israel and adjacent regions of the southern Palaearctic elements is also known for the family Tipulidae (Theowald and Oosterbroek, 1987).

The distributional pattern of the Limoniidae in Israel is similar to that of several other Dipteran families, such as the Sciomyzidae, Lauxaniidae and Heleomyzidae, which show a steep decrease in the number of species toward the southern part of the country (Freidberg, 1988). However, these families have no Afrotropical elements in Israel. Moreover, almost no species of these families are known from the desert regions of Israel. In the case of these families, the great Saharo-Arabian desert currently constitutes a practically impenetrable barrier, although they reappear in the Afrotropical region proper. The somewhat different distributional pattern of the Limoniidae at least from the latter two families may be due to the aquatic or semi-aquatic nature of some of the species that can exist in oases across the desert.

TAXONOMY

Key to genera, subgenera, and some species of Limoniidae in Israel

All the species treated in this paper are keyed, including *Idiocera (Idiocera) sziladyi* and *Dicranomyia (Dicranomyia) luteipennis*, currently not known from Israel. However, species belonging to genera represented by multiple species in the study area are keyed under the appropriate genera. This key is based mainly on the keys by Dienske (1987) and Reusch and Oosterbroek (1997), which should be consulted for relevant illustrations.

1. Wing reduced, about half length of abdomen (females only)..... .....(Chioneinae, in part).....***Phyllolabis***
One species in Israel: *P. golanensis* sp. n. (in part)
-. Wing well developed, distinctly longer than half of abdomen..... **2**
2. Cell cu closed far from wing margin by vertical distal section of vein Cu (Fig. 24)..... .....(Limoniinae, in part)..... ***Trentepohlia (Trentepohlia)***
One species in Israel: *T. (T.) zambesiae*
-. Cell cu normal, widely open at wing margin..... **3**
3. Wing with four radial veins extending to wing margin..... **4**
-. Wing with three radial veins extending to wing margin.....(Limoniinae, in part)..... **24**
4. Prescutum conspicuously produced conically at anterior margin; wing comparatively short, distinctly shorter than abdomen; costal cell with series of weak oblique crossveins..... (Limnophilinae, in part).....***Conosia***
One species in Israel: *C. irrorata*
-. Prescutum normal in shape; wing normal in length, subequal to entire body; costal cell without cross-veins..... **5**
5. Tibial spurs present, although sometimes barely visible (*Paradelphomyia*); wing length mostly 8 mm or more (except in *Paradelphomyia*)..... **6**
-. Tibial spurs absent; wing length less than 8 mm.....(Chioneinae, in part)..... **12**
6. Veins R_1 and R_3 not connected by vein R_2; segment 9 of male terminalia very large, inflated (Fig. 12) (female with wing reduced).....(Chioneinae, in part).....***Phyllolabis***
One species in Israel: *P. golanensis* sp. n. (in part)
-. Vein R_2, connecting veins R_1 and R_3, present; segment 9 of male terminalia of normal size and shape.....(Limnophilinae, in part)..... **7**
7. Antenna mostly with 14 flagellomeres, flagellomeres not especially elongate and not cylindrical; four medial veins extending to wing margin..... **8**
-. Antenna with five elongate, cylindrical flagellomeres; two medial veins extending to wing margin..... ***Hexatoma (Hexatoma)***
8. Small species, with wing length less than 8 mm; wing with macrotrichia in distal cells..... ..... ***Paradelphomyia (Oxyrhiza)***
One species in Israel: *P. (O.) cycnea* sp. n.
-. Larger species, with wing length more than 8 mm; no macrotrichia in wing cells..... **9**
9. Wing without arculus connecting bases of veins R and M..... ..... ***Austrolimnophila (Austrolimnophila)***
One species in Israel**:** *A. (A.) brevicellula*
-. Wing with arculus present. **10**
10. Wing with terminal section of vein R_1 short, subequal in length to (vertical) vein R_2,

bent anteriorly, not continuing direction of rest of vein R_1; vein Rs distinctly shorter than vein R_3 ..... **11**

-. Wing with terminal section of vein R_1 longer than (vertical) vein R_2, continuing direction of rest of vein R_1; vein Rs subequal in length to vein R_3 ..... ***Neolimnomyia (Brachylimnophila)***

11. Aedeagus simple. ..... ***Phylidorea (Phylidorea)***
One species in Israel: *P. (P.) ferruginea*

-. Aedeagus deeply trifid. ..... ***Euphylidorea***
One species in Israel: *E. lineola*

12. Antenna with 5 proximal flagellomeres fused into elongate element (Fig. 6); wing with four medial veins extending to wing margin (M_{1+2} forked into M_1 and M_2) ..... ***Crypteria (Franckomyia)***
One species in Israel: *C. (F.) israelica* sp. n.

-. Antenna normal in structure, with 14 separate flagellomeres; wing with three medial veins extending to wing margin (M_{1+2} unforked) **13**

13. Wing with vein Rs forked into veins R_{2+3} and R_{4+5} (posterior branch of vein Rs forked); crossvein M-Cu near mid-length of wing or proximal to it..... ***Molophilus (Molophilus)***

-. Wing with vein Rs forked into veins R_{2+3+4} and R_5 (anterior branch of vein Rs forked); crossvein M-Cu considerably distal to mid-length of wing..... **14**

14. Mid and hind coxae separated by large meron, broader than coxae..... **15**

-. Mid and hind coxae separated by small meron, narrower than coxae..... **21**

15. Wing with cell r_3 about as long as or shorter than its petiole ..... ***Cheilotrichia (Empeda)***

-. Wing with cell r_3 at least twice as long as its petiole (mostly much longer) **16**

16. Wing membrane with numerous macrotrichia. ..... ***Erioptera (Mesocyphona)***
One species in Israel: *E. (M.) bivittata*

-. Wing membrane without macrotrichia **17**

17. Antenna with terminal 3−4 flagellomeres conspicuously smaller than others ..... ***Symplecta (Trimicra)***
One species and subspecies in Israel: *S. (T.) pilipes pilipes*

-. Flagellomeres gradually decreasing in size towards apex of antenna **18**

18. Wing with supernumerary crossvein in cell r_3 and with vein A_2 strongly sinuous distally ..... ***Symplecta (Symplecta)***
One species in Israel: *S. (S.) hybrida*

-. Characters not as above **19**

19. Wing with vein A_2 long and slightly sinuous, extending as far as mid-length of wing or farther; wing pattern lacking or at most consisting of small solid spots and narrow seams on some veins..... **20**

-. Wing with vein A_2 straight or slightly curved, ending proximal to mid-length of wing; wing pattern extensive, consisting of large circular spots with paler centers. ..... ***Ilisia***
One species in Israel: *I. inermis*

20. Wing with small spots and narrow seams on some veins..... ***Symplecta (Psiloconopa)***
One species and subspecies in Israel: *S. (P.) stictica stictica*

-. Wing without any pattern ..... ***Erioptera (Erioptera)***

21. Wing without arculus; discal cell closed. ..... ***Gonomyia (Gonomyia)***
One species in Israel: *G. (G.) faria* sp. n.

-. Wing with arculus; discal cell open..... **22**

22. Wing with crossvein M-Cu near fork of vein M ..... ***Ellipteroides (Ellipteroides)***
One species in Israel: *E. (E.) lateralis*

-. Wing with crossvein M-Cu proximal to fork of vein M at distance of at least its own length **23**
23. Supernumerary crossvein in cell r_4 ..... ***Idiocera (Euptilostena)***
One species in Israel: *I. (E.) arabiensis*
-. No supernumerary crossvein in cell r_4 ..... ***Idiocera (Idiocera)***
24. Antenna with 14 flagellomeres **25**
-. Antenna with 12 flagellomeres **28**
25. Rostrum as least twice as long as remainder of head. ..... ***Helius***
-. Rostrum of normal length, shorter than remainder of head **26**
26. Wing with vein Rs arising from vein R at very acute angle; anal lobe of wing prominent..... ..... ***Antocha (Antocha)***
One species in Israel: A. (A.) *vitripennis*
-. Characters not as above **27**
27. Wing with discal cell closed; crossvein M-Cu beyond fork of vein M, at about two-thirds of length of wing. ..... ***Dicranoptycha***
-. Wing with discal cell open; crossvein M-Cu far proximal to fork of vein M, at about 0.6 of length of wing ..... ***Orimarga (Orimarga)***
One species in Israel: *O. (O.) frommeri*
28. Proboscis, and especially labella, elongate, at least as long as head and thorax together ..... ***Geranomyia***
-. Proboscis not elongate, shorter than remainder of head **29**
29. Wing with terminal section of vein R_1 aligned with rest of vein R_1; male terminalia with one simple gonostylus ..... ***Limonia***
-. Wing with terminal section of vein R_1 turned anteriorly, not aligned with rest of vein R_1; male terminalia with two gonostyli, or with complex structure appearing as one gonostylus..... **30**
30. Male terminalia with dorsal gonostylus spine-like, curved, and ventral gonostylus fleshy, generally ovoid, with rostral prolongation mesally **31**
-. Male terminalia not as above, rather complex in structure ..... ***Atypophthalmus (Atypophthalmus)***
One species in Israel: *A. (A.) umbratus*
31. Gonocoxite of male terminalia with one or two prominent tubercles mesally, with tuft of hairs at apex. ..... ***Dicranomyia (Glochina)***
-. Gonocoxite of male terminalia without such tubercles ..... ***Dicranomyia (Dicranomyia)***

FAMILY LIMONIIDAE

Subfamily Limnophilinae

Austrolimnophila Alexander, 1920

Subgenus *Austrolimnophila* s. str.

***Austrolimnophila (Austrolimnophila) brevicellula* Starý, 1977**

Austrolimnophila (Austrolimnophila) brevicellula Starý, 1977: 66, Figs. 4−6 (male terminalia).

Material examined

ISRAEL: Tel Dan, 13.iv.1983, A. Freidberg (1♂); Nahal Senir [Hazbani], 24.v.1988, Y. Zvik (1♂, 1♀) (all TAUI).

Distribution

Romania, Greece, Turkey, Israel. First record for Israel.

Conosia Van der Wulp, 1880

Altogether nine species and subspecies are known from the Afrotropical, Oriental and Australasian regions. They all are difficult to define (Alexander, 1972) and warrant a revision. *Conosia* was assigned to Eriopterini (= Chioneinae) by Alexander (e.g. 1972 and previous papers), but more recently it was assigned to the subfamily Limnophilinae (Oosterbroek, 1989; Oosterbroek and Theowald, 1991; Starý, 1992).

Conosia irrorata (Wiedemann, 1828)

Limnobia irrorata Wiedemann, 1828: 574.
Conosia irrorata. Alexander, 1927: 305, Pl. 2, Fig. 16 (wing).

Literature

Edwards, 1913: 48 (Wad-es-Semakh, Lake Tiberias); Bodenheimer, 1937: 183 (without localities); Savchenko et al., 1992: 217 (without localities).

Material examined

ISRAEL: Hula Reserve, 9.vi.1964 (1 specimen), 8.vii.1964 (1 specimen), 4.x.1965 (2♂, 1♀, 1 specimen), all Margalit; Hula, ix.1965, light trap (1♀), xii.1965 (1 specimen), all Margalit, 5.ii.1965 (3♀), 5.x.1965 (1♀), all J. Kugler; Hula [Malacha], 26.viii.1963, Margalit (2♂); Park HaYarden, 25.vii.1983, I. Nussbaum (1♂); Park HaYarden, 19.viii.1990, A. Freidberg (1♂); Haspin [Khispin], 28.x.1983, I. Nussbaum (1♀, 1 specimen); Mahanayim, 6.x.1974, F. Kaplan (1♂); ‘Enot Zuqim, 27.ix.1999, A. Freidberg (1♂) (all TAUI).
EGYPT: Ismailia, Jebel Meriam, 26.iii.1942, O. Theodor (1♂) (TAUI).

Distribution

Old World tropics and subtropics; Australia; northwards to Egypt, Israel, Afghanistan, North Korea, Japan.

Euphylidorea Alexander, 1972

Euphylidorea lineola (Meigen, 1804)

Limonia lineola Meigen, 1804: 56.
Limnophila lineola. Meijere, 1921: 82, Text-fig. 19 (wing), Pl. 8, Fig. 120 (male terminalia).

Literature

Bodenheimer, 1937: 183 (as *Limnophila*; without localities); Savchenko et al., 1992: 220 (without localities).

Material examined

None.

Distribution

Europe, Morocco, Turkey, Israel.

Hexatoma Latreille, 1809

Subgenus *Hexatoma* s. str.

Key to species of *Hexatoma (Hexatoma)* in Israel

1. Vein R_3 distinctly shorter (mostly several times) than vein R_{3+4}; male antenna not extending to base of wing ..... ***H. (H.) fuscipennis***
-. Vein R_3 subequal in length to vein R_{3+4}; male antenna extending considerably beyond base of wing ..... ***H. (H.) gaedii***

Hexatoma (Hexatoma) fuscipennis (Curtis, 1836)

Peronecera fuscipennis Curtis, 1836: 589, color plate (general view of male, with details of antennae, mouthparts and apex of female abdomen).
Hexatoma burmeisteri. Lackschewitz, 1940b: 101−102 (key).

Material examined

ISRAEL: Nahal Tirza [Wadi Faria], 1.iii.1942, collector unknown (2♂) (TAUI).

Distribution

Europe, Turkey, Transcaucasia, Israel. First record for Israel.

Hexatoma (Hexatoma) gaedii (Meigen, 1830)

Anisomera gaedii Meigen, 1830: 292.
Hexatoma gaedii. Lackschewitz, 1940b: 101−102 (key).

Material examined

ISRAEL: Jordan Valley, Jiftlik Post [Djiftlik], 14.ii.1942, collector unknown (2♂) (TAUI).

Distribution

Southern Europe, Morocco, Transcaucasia, Israel, ?Afghanistan. First record for Israel.

Neolimnomyia Séguy, 1937

Subgenus *Brachylimnophila* Alexander, 1966

***Neolimnomyia (Brachylimnophila) adjuncta* (Walker, 1848)**

Limnobia adjuncta Walker, 1848: 40.
Limnophila (Pilaria?) adjuncta. Edwards, 1938: 90, Pl. III, Fig. 16 (wing).

Material examined

ISRAEL: Tel Dan, 13.iv.1983, A. Freidberg (1♂) (TAUI).

Distribution

Southern part of Europe, Georgia, Lebanon, Israel. First record for Israel.

Paradelphomyia Alexander, 1936

Subgenus *Oxyrhiza* Meijere, 1946

***Paradelphomyia (Oxyrhiza) cycnea* Starý and Freidberg, sp. n.**

(Figs. 1–2)

Description

Medium-sized species: Body length 3.5–4.0 mm, wing length 5 mm. General body coloration brown, somewhat shiny, patterned with yellow on pleuron.

Male. **Head**. Brown, with gray microtrichia on vertex. Antenna brown, of usual structure, moderate in length, extending to about base of wing. Flagellomeres short- to long-ovoid, with verticils about twice as long as their respective segments.

Thorax. Generally brown, somewhat shiny, patterned with yellow, especially on pleuron. Pronotum brown. Prescutum brown, shiny, yellowish laterally and with narrow yellowish- brown lines demarcating three broad brown stripes, median stripe divided posteriorly. Scutum brown, yellowish in middle. Scutellum yellowish-brown. Postscutellum yellowish brown, darker posteriorly. Pleuron with yellow and brown stripes; yellowish dorsally along paratergite and dorsal to coxae, brown in-between; ventral portion of katepisternum darkened. Wing narrow, slightly infuscated, with numerous macrotrichia in cells of distal third of wing. Venation usual for genus, fork M_1-M_2 about half length of petiole, crossvein M-Cu proximal to mid-length of discal cell. Halter yellow at base, infuscated distally. Fore coxa yellowish brown, mid coxa and hind coxa yellow. All trochanters yellow. Remaining leg parts yellow to yellowish-brown, including tips of femora.

Abdomen. Brown. Male terminalia (Figs. 1–2) of general structure for genus. Ventral gonostylus slightly shorter than dorsal gonostylus, former with two unequal terminal teeth, medial tooth stouter and more curved, and with somewhat more isolated, rather long and slender, subterminal spine at medial margin. Dorsal gonostylus generally conical, with setiferous small lobe laterally at base. Aedeagal complex as in Fig. 2. Parameres elongate, slightly sinuous in dorsal view. Aedeagus long, strongly and conspicuously curved, narrowed and abruptly bent dorsally at base (at connection to vesica), almost as if broken, then broadened in lateral view and evenly arched in opposite direction,

straight proximal to tip. Ventral fork of aedeagus consisting of darkly pigmented band ventral to vesica, with two quite pale and extremely thin spikes.

Female. Unknown.

Material examined

Holotype ♂, ISRAEL: [Upper Galilee:] Tel Dan [33°15‘N 35°39‘E], 13.iv.1983, A. Freidberg (TAUI). Paratype: Tel Dan, 5.v.1977, A. Freidberg (1♂) (TAUI).

Material examined of *Paradelphomyia (Oxyrhiza) dissita* Alexander, 1960.

Holotype ♂ (original designation), PAKISTAN: Northwest Frontier Province, Kakhan, 6688’, 27.vi.1953, F. Schmid. The specimen is glued onto a triangular cardboard point. One wing, a leg and the terminalia are mounted on a slide. Allotype ♀: same data; pinned with holotype. Paratypes: PAKISTAN: Northwest Frontier Province, Murree Hills, 7242’, 10.vi.1953, F. Schmid (5♂). On points, on two pins. One male was dissected by Alexander, with antenna, wing, leg and terminalia on a slide. Another male (the lowest of the three pinned together) was dissected by the senior author, and the terminalia (see Figs. 3–4) were placed in a sealed plastic tube with glycerine, pinned with the specimen. All types in USNM.

Distribution

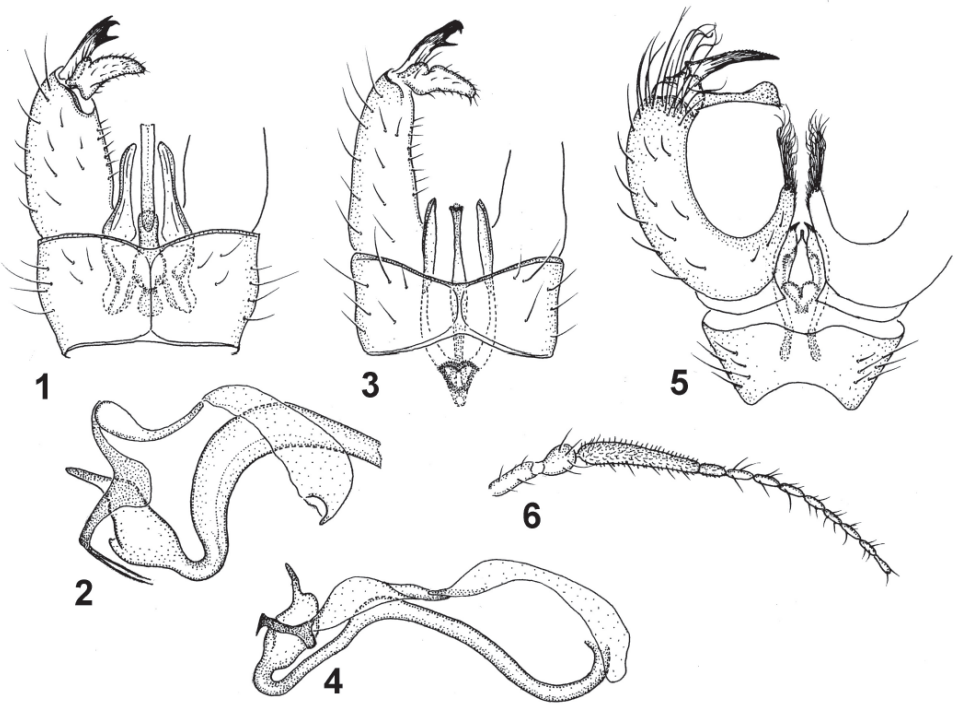
Israel.

Etymology

The name of this species, *cycnea*, refers to the curvature of its aedeagus, suggesting a swan’s neck. It is an adjective in nominative singular.

Remarks

In external characters, *P. (O.) cycnea* sp. n. generally fits other Palaearctic representatives of the genus. The male terminalia of the new species, however, are highly species-specific. The curvature of the aedeagus, resembling a swan’s neck (Fig. 2), represents the most significant character. The description of *P. (O.) dissita* Alexander, 1960, of Pakistan, unfortunately without any figures, deals with a species with the aedeagus “…elongate, conspicuous, … sinuous, curved at apex.” (Alexander, 1960a: 171). Examination of the type specimens of *P. (O.) dissita* (see above) revealed that this species is very different from *P. (O.) cycnea* sp. n. in many details, including the curvature of the aedeagus (see Figs. 2 and 4). The two males from Tadjikistan, interpreted as *P. (O.) dissita* and illustrated by Savchenko and Plyushch (1984, Figs. 1–4) have the aedeagus similar in its curvature to that of *P. (O.) dissita*, but the other genital characters are somewhat different, and the status of these specimens cannot be decided without examining them.



Figs. 1−2. *Paradelphomyia (Oxyrhiza) cycnea* sp. n. (holotype), male terminalia: 1. General view, dorsal. 2. Aedeagal complex, lateral. Figs. 3−4. *Paradelphomyia (Oxyrhiza) dissita* Alexander (paratype), male terminalia: 3. General view, dorsal. 4. Aedeagal complex, lateral. Figs. 5−6. *Crypteria (Franckomyia) israelica* sp. n. (holotype): 5. Male terminalia, general view, dorsal. 6. Male antenna.

***Phylidorea* Bigot, 1854**

Subgenus *Phylidorea* s. str.

***Phylidorea (Phylidorea) ferruginea* (Meigen, 1818)**

Limnobia ferruginea Meigen, 1818: 128.
Limnophila ferruginea. Meijere, 1921: 80, Pl. 7, Figs. 118a-b (male terminalia).

Material examined

ISRAEL: Hula, xii.1965, Margalit (1♀) (TAUI).

Distribution

Europe, Transcaucasia, Israel, Middle Asia, West Siberia, Mongolia. First record for Israel.

Subfamily Chioneinae

Cheilotrichia Rossi, 1848

Subgenus *Empeda* Osten Sacken, 1869

Key to species of *Cheilotrichia (Empeda)* in Israel

1. Male antenna with pedicel small, about twice as long and broad as first flagellomere; wing with discal cell closed..... ***C. (E.) baluchistanica***
-. Male antenna with pedicel greatly enlarged, about five times as long and three times as broad as first flagellomere; wing with discal cell open..... ***C. (E.) cinerascens***

Cheilotrichia (Empeda) baluchistanica (Alexander, 1944)

Erioptera (Empeda) baluchistanica Alexander, 1944: 80, Fig. 10 (male terminalia).

Type material examined

Holotype ♂ (original designation and monotypy), PAKISTAN: northern Baluchistan, Quetta, April 1931, Haroonkhan (USNM), labelled "Baluchistan / 1931 / Haroonkhan coll" (printed; with hand-written inscriptions "Quetta" and "April") and "Holotype ♂ / Erioptera / (Empeda) / baluchistanica / C. P. Alexander" (red, printed, with hand-written species name). The specimen is micro-pinned on a stage, with only left wing and left hind leg attached; the abdomen is cut off. The terminalia are dissected and preserved (without left gonocoxite and gonostyli) in Canada balsam between celluloid slides, pinned with the specimen. The left gonocoxite with the gonostyli together with one wing and a leg are mounted on a separate slide.

Other material examined

ISRAEL: 'En [Ein] Gedi, 19.iii.1975, A. Freidberg (2♂) (TAUI).

Distribution

Israel; Pakistan. First record for Israel.

Remarks

The Israeli specimens are clearly conspecific with the type.

Cheilotrichia (Empeda) cinerascens (Meigen, 1804)

Erioptera cinerascens Meigen, 1804: 52.

Cheilotrichia (Empeda) cinerascens. Starý, 1987: 262, Figs. 8 (male terminalia), 13 (male antenna), 17, 25 (male terminalia).

Material examined

ISRAEL: Panyas [Banias], 26.xi.1978, A. Freidberg (1♀); Har Hermon, 1600 m, 14.x.2003, A. Freidberg (1♂); Bar'am, 11.−14.xi.1976, A. Freidberg (1♀); Bar'am Forest, 670 m, 22.xi.2006, A. Freidberg (1♀); Har [Mt.] Meron, 10.xi.1976, A. Freidberg (1♂); Har Karmel, 11.xii.1976, A. Freidberg (1♀); Nahal Oren, 22.xii.2002, A. Freidberg (2♂); Herzliyya, 27.ix.1981 (1♀),

23.xi.1981 (1♀), 24.xi.1981 (2♂), 25.xi.1981 (2♀), 30.xi.1981 (1♀), 1.xii.1981 (2♀), 5.xii.1981 (3♀), 6.xii.1981 (1♀), 7.xii.1981 (1♂, 1♀), 8.xii.1981 (1♀), 9.xii.1981 (1♂), 12.xii.1981 (2♀), 13.xii.1981 (1♂, 3♀), 14.xii.1981 (2♀), 22.xii.1981 (1♀), 28.xii.1981 (1♂), 24.i.1982 (1♀), all Malaise trap, A. Freidberg; Tel Aviv, 29.xii.1972, A. Freidberg (1♀); Hulda, 6.ii.1875, A. Freidberg (1♀); Ben Shemen, 1926, F. S. Bodenheimer (1♂) (all TAUI).

Distribution

Europe, Canary Islands, Transcaucasia, Israel, Iran. First record for Israel.

Crypteria Bergroth, 1913

Subgenus *Franckomyia* Alexander, 1936

Franckomyia was described as a genus (Alexander, 1936). Subsequently, it was treated as a subgenus of *Crypteria* (Alexander, 1962; Joseph, 1977), but as a separate genus again in all relevant catalogs (Alexander and Alexander, 1973, Savchenko et al., 1992, Oosterbroek, 2006). Both *Crypteria* and *Franckomyia* are poor in species, comprising worldwide 6 and 3 species, respectively. Since the features characterizing the two groups occur in a somewhat recombined manner in the species described below, *Crypteria* and *Franckomyia* are considered here subgenera, based mainly on the structure of the male terminalia.

Crypteria (Franckomyia) israelica Starý and Freidberg, sp. n.

(Figs. 5–6)

Description

Medium-sized species. General body coloration dark grayish-brown, dull. Body length 3.0–5.5 mm, wing length 4.5–7.5 mm.

Male. **Head**. Dark grayish-brown. Antenna dark brown, moderate in length, extending to about base of wing. Flagellum consisting of elongate fusion element and 9 long-ovoid additional flagellomeres (Fig. 6). Fusion element with dense, short, suberect pubescence and few verticils, succeeding segments with pubescence looser and longer, with sparse verticils subequal in length to their respective flagellomeres.

Thorax. Dark brown, with gray microtrichia. Pronotum dark grayish-brown. Prescutum dark grayish-brown, without any stripes, with only obscure yellow spot on paratergite. Other dorsal parts of thorax concolorous with prescutum. Pleuron slightly paler. Wing clear, slightly iridescent, comparatively narrow. Wing venation generally of *Crypteria*-type; vein R_2 (crossvein R) lacking; no supernumerary crossvein in cell R_3 as usual for *Franckomyia*; vein A_2 ending opposite one-third of length of vein Rs. Halter pale yellow. Legs yellowish-brown, including coxae and trochanters, with proximal halves of femora paler, and tarsi darker.

Abdomen. Dark brown, with grayish microtrichia less distinct than on thorax. Male terminalia (Fig. 5) very conspicuous, large and unusually broad as compared to entire insect. Segment 9 generally funnel-shaped, becoming broader distally, with shallow emargination at posterodorsal margin. Gonocoxite long and slender, parallel-sided,

strongly arched, with conspicuous, erect lobe arising medioventrally from base, tip with compact brush of long yellow hairs, undulated distally. Apex of gonocoxite provided with very long setae, undulated distally. Gonostyli terminal. Ventral gonostylus simple, spine-like, slightly curved, pointed at tip. Dorsal gonostylus dilated laterodistally, tip rounded with few short setae. Aedeagal complex as in Fig. 5. Paramere short, curved, pointed. Aedeagus short, simple.

Female. Resembling male in general appearance. Abdomen paler than in male, brownish, without gray microtrichia. Female terminalia with cercus strongly upturned.

Material examined

Holotype ♂, ISRAEL: [Upper Galilee:] Bar'am [33°03'N 35°26'E], 27.xi.1997, A. Freidberg (TAUI). Paratypes: Elqosh, 3 km NE, 27.xi.1997, A. Freidberg (1♂, 1♀); Bar'am Forest, 27.xi.1997, A. Freidberg (1♂, 1♀); Bar'am Forest, 670 m, 22.xi.2006, A. Freidberg (11♂, 1♀); Har Meron, 1100 m, 22.xi.2006, A. Freidberg (4♂, 1♀) (TAUI, JSO).

Distribution

Israel.

Etymology

The name of this species is derived from the name of the country of its occurrence. It is an adjective in nominative singular.

Remarks

C. (F.) israelica sp. n. has the wing venation of *Crypteria*-type, but without any supernumerary crossvein in cell r_3, whereas its male terminalia are as in *Franckomyia*, large and unusually broad, with the gonocoxite long and slender, considerably arched, provided with a massive, erect lobe arising from the base of the gonocoxite medioventrally. The hypopygium generally resembles that of *C. (F.) stylophora* Alexander (1962, Fig. 55) from India, Sikkim, but differs from it in nearly every detail, most conspicuously so in the shape of the gonocoxite and gonostyli and the structure of the aedeagal complex.

Ellipteroides Becker, 1907

Subgenus *Ellipteroides* s. str.

Ellipteroides (Ellipteroides) lateralis (Macquart, 1835)

Erioptera lateralis Macquart, 1835: 653.
Gonomyia lateralis. Meijere, 1920: 81, Pl. 9, Figs. 29a (wing), 29b (male terminalia).

Material examined

ISRAEL: Tel Dan, 16.vi.1971, J. Kugler (2♀), 26.vi.1974, A. Freidberg (1♂); Golan, Ani'am, 18.v.1983, F. Kaplan (4♂), A. Freidberg(1♂), I. Yarom (1♀); Golan Qusbīye, 4.v.1979, D. Furth

(1♂); Qusbīye, 28.iv.1974 (1♂, 1♀), 4.v.1979, (1♂, 3♀) all D. Furth, 20.iv.1976, A. Freidberg (1♀), 15.iv.1982, I. Nussbaum (1♀, 1 specimen), Biq'at Bet Zayda [Bteicha], 14.iii.1975, A. Freidberg (13♂, 8♀); Nahal Tut, 29.iv.1993, A. Freidberg (1♀); Mehola, 21.iv.1973, D. Furth (2♂, 1♀) (all TAUI).

Distribution

Southern part of Europe, Morocco, Lebanon, Israel. First record for Israel.

Remarks

The Israeli specimens differ strikingly from those from Europe in the body coloration, being generally variably brown, with the yellow pleural pattern more extensive and rather obscure, whereas the European specimens are black, less patterned by sulphur-yellow on the pleuron. The male terminalia of the two forms, however, do not provide any differences. We prefer to consider the Israeli specimens to be *E. (E.) lateralis,* rather than to establish a new subspecies that may later prove to be based on characters subject to clinal or ecological variation.

Erioptera Meigen, 1803

Subgenus *Erioptera* s. str.

Key to species of *Erioptera (Erioptera)* in Israel

1. General coloration yellow; knob of halter black ..... ***E. (E.) lutea lutea***
-. General coloration brown; knob of halter slightly infuscated ..... ***E. (E.) fusculenta***

Erioptera (Erioptera) fusculenta Edwards, 1938

Erioptera (Erioptera) fusculenta Edwards, 1938: 124, Text-fig. 24f (male terminalia).

Material examined

TURKEY: Abant, 31.vii.1957, collector unknown (1♂) (TAUI). ISRAEL: Dan, 8.viii.1983, I. Nussbaum (1 specimen); Park HaYarden, 7.v.1987, A. Freidberg (1♀); Bet [Beit] Shemesh, 13.xii.1976, A. Freidberg (2♂) (all TAUI).

Distribution

Europe, Turkey, Transcaucasia, Israel, Turkmenistan. First record for Turkey and Israel.

Erioptera (Erioptera) lutea lutea Meigen, 1804

Erioptera lutea Meigen, 1804: 52.
Erioptera (Erioptera) lutea. Edwards, 1938: 123, Text-fig. 24h (male terminalia).

Literature

Bodenheimer, 1937: 183 (without localities); Savchenko et al., 1992: 254 (without localities).

Material examined

None.

Distribution

Europe, Turkey, Transcaucasia, Israel, ?Iran, Middle Asia, West Siberia.

Subgenus *Mesocyphona* Osten Sacken, 1869

***Erioptera (Mesocyphona) bivittata* (Loew, 1873)**

Rhypholophus bivittatus Loew, 1873: 41.
Rhypholophus bivittatus. Meijere, 1920: 50, Pl. 2, Figs. 40a-c (male terminalia).

Material examined

ISRAEL: Hula [Mellacha (Hule)], 28.viii.1940, collector unknown (1♀); Hula [Hulah], 10.v.1965, Margalit (1♀); Hula Reserve, 8.vii.1964, Margalit (1♂, 2♀); Hefa Bay nr. Zur Shalom [Kurdani], 14.vii.1964, Margalit (2♂, 1♀); Ne`ot HaKikkar, vii.1965, light trap, Margalit (5♂, 3♀) (all TAUI).

Distribution

Europe, Transcaucausia, Israel, Iran, Middle Asia, Siberia, Mongolia, Russian Far East. First record for Israel.

***Gonomyia* Meigen, 1818**

Subgenus *Gonomyia* s. str.

***Gonomyia (Gonomyia) faria* Starý and Freidberg, sp. n.**

(Figs. 7–8)

Description

Small species: Body length 4.5–5.0 mm, wing length 5.5–6.0 mm. Body coloration dark brown dorsally, otherwise yellow, with pleuron sulphur-yellow, slightly patterned by brown.

Male. **Head**. Grayish-brown on vertex. Antenna dark brown, of usual structure, moderate in length, not extending to base of wing. Flagellomeres short- to long-ovoid, with verticils slightly exceeding length of their respective segments.

Thorax. Dark brown dorsally, somewhat shiny, otherwise mostly yellow. Pronotum yellow. Prescutum dark brown, broadly yellowish laterally. Scutum dark brown, yellowish in middle and laterally near base of wing. Scutellum mostly yellow, darkened anteromedially. Postscutellum dark brown, yellowish laterally. Pleuron sulphur-yellow, slightly brown-patterned on anepisternum anteriorly and katepisternum ventrally. Wing very slightly infuscated, with venation usual for subgenus. Halter yellow, with knob infuscated. Coxae and trochanters yellowish-brown, rest of legs yellow, including tips of femora (legs present only in paratype females).

Abdomen. Dark brown dorsally, yellow to yellowish-brown ventrally. Male terminalia

(Figs. 7–8) of general structure of subgenus. Ventral gonostylus simple, rather long, pale, slightly dilated mediodistally to form feebly darker flange. Dorsal gonostylus with single darkened spine laterally and small lobe laterobasally, tip with seta. Parameres asymmetrical, as usual for subgenus; right paramere darkened, curved ventrally, left paramere pale, straight distally, or rather curved dorsally, parameres subequal in length, or left paramere slightly longer. Aedeagus bent ventrally at about three-fourths of its length, then dilated and rounded at apex in lateral view (Fig. 8).

Female. Resembling male in general appearance. Female terminalia with cercus slightly curved dorsally beyond mid-length, somewhat longer than tergite 10.

Material examined

Holotype ♂, ISRAEL: [Samaria:] Central Nahal Tirza [Central Wadi Faria; 32°12'N 35°27'E], 20.ii.1974, A. Freidberg (TAUI). Paratypes: Nahal Tirza [Wadi Faria], 1.iii.1973, A. Freidberg (1♀); Upper Nahal Tirza [Upper Wadi Faria], 20.ii.1974, A. Freidberg (1♂, 1♀); Herzliyya, 20.x.1994, A. Freidberg (1♂) (TAUI, JSO).

Other material examined (excluded from the type series).

ISRAEL: Panyas [Banias], 19.vii.1977, A. Freidberg (1♀); Kefar Szold [K. Sold], 12.iv.1967, J. Kugler (1♀); Monfort, 9.iii.1982, A. Freidberg (1♀); Park HaYarden, 16.xi.1982, A. Freidberg (1♀) (all TAUI).

Material examined of *Gonomyia (Gonomyia) basilobata* Alexander, 1975.

Holotype ♂ (original designation), IRAN: Mishgin, 21.viii.1956, F. Schmid. Specimen glued onto a triangular cardboard point. One antenna, wing, leg and the terminalia mounted on a slide. Paratypes: IRAN: Bar, 30.vi.1956 (1♂); Durbadan, 3.vii.1956 (1♂), both F. Schmid. Only slides available, each with a wing and terminalia. All types in USNM.

Distribution

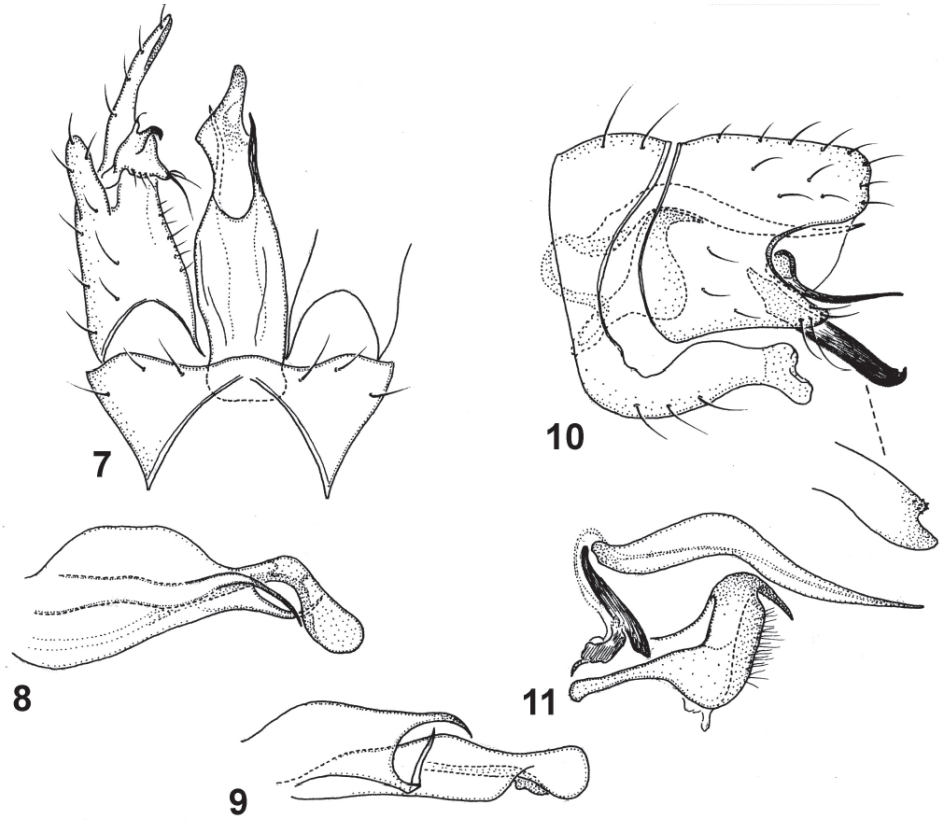
Israel.

Etymology

This species is named after the type locality. The specific epithet is a noun in nominative singular standing in apposition to the generic epithet.

Remarks

In general structure of the male terminalia, *G. (G.) faria* sp. n. resembles *G. (G.) tenella* (Meigen, 1818), a widespread European species, but it differs from the latter by many details, especially the shape of the aedeagus. It is extremely similar and closely related to *G. (G.) basilobata* Alexander, 1975, from Iran and Armenia. Examination of the holotype of the latter species (see above) revealed differences in the shape of the ventral



Figs. 7–8. *Gonomyia (Gonomyia) faria* sp. n. (holotype), male terminalia: 7. General view, dorsal. 8. Aedeagus, lateral. Fig. 9. *Gonomyia (Gonomyia) basilobata* Alexander (holotype), male terminalia, aedeagus, lateral [drawn from slide]. Figs. 10–11. *Molophilus (Molophilus) banias* sp. n. (holotype), male terminalia: 10. General view, lateral. 11. Aedeagal complex, lateral.

gonostylus (distinctly longer in *faria*) and especially in the structure of the aedeagal complex. Parameres are longer in *G. (G) faria* sp. n., and the aedeagus is bent proximal to the apex (Fig. 8), whereas it is generally straight in *G. (G.) basilobata* (Fig. 9; see also Alexander, 1975, Fig. 6), and more bulbous at the apex. Such differences validate many European *Gonomyia* s. str. species. It should be emphasized that the new species is compared here only with the holotype of *G. (G.) basilobata*, since what is seen on the slide-mounted hypopygia of the two paratypes (from localities different from that of the holotype) suggests these might belong to *G. (G.) faria* sp. n.

Idiocera Dale, 1842
Subgenus *Euptilostena* Alexander, 1938

Idiocera (Euptilostena) arabiensis Hancock, 1997

Idiocera (Euptilostena) arabiensis Hancock, 1997: 350, Figs. 11 (male terminalia), 12 (wing).

Material examined

ISRAEL: ‘En [Ein] Gedi, 17.vii.1971, J. Kugler (1♂) (TAUI).

Distribution

Israel, Saudi Arabia. First record for Israel.

Idiocera Dale, 1842
Subgenus *Idiocera* s. str.

Key to species of *Idiocera (Idiocera)* in Israel

1 Wing with extensive pattern, including small spots in costal cell ..... ***I. (I.) pulchripennis***
-. Wing clear except for light brown stigma **2**
2 Aedeagus simple, narrow..... ***(I.) sziladyi***
-. Aedeagus conspicuously enlarged at middle, ampulla-shaped..... ***I. (I.) ampullifera***

Idiocera (Idiocera) ampullifera (Starý, 1979)

Gonomyia (Idiocera) ampullifera Starý, 1979: 91, Figs. 1 (male terminalia), 2 (wing).

Material examined

ISRAEL: Har [Mt.] Hermon (1450 m), 22.iii.1973, A. Freidberg (1♀); Qalya [Kalia], 29.iii.1976, A. Freidberg (1♂); ‘Enot Zukim, 7.xii.1992 (1♂, 2♀), 19.iii.1995 (4♂, 1♀), 13.iv.1995 (2♂), 7.vi.1996 (1♂), 28.iv.1999 (1♀), all A. Freidberg, 11.x.1994, F. Kaplan and A. Freidberg (1♀); ‘Enot Samar, 21.vi.1998, A. Freidberg (1♂); ‘En Gedi [Ein Gedi], 9.iii.1967, J. Kugler (1♀); ‘En Boqeq [Ein Boqeq], 20.ix.1971, J. Kugler (3♀, 1 specimen); Sedom, 20.ix.1971, J. Kugler (1♂); Ne`ot HaKikkar, 10.iii.1967, J. Kugler, light trap (1 specimen), viii.1965 (1♀), ix.1965 (1♀), all Margalit; ’En ‘Iddan, 20.vi.1995, I. Yarom(1♂), A. Freidberg (1♀); Sappir, pond, 9.vii.1996, A. Freidberg (1♀) (all TAUI). EGYPT: Sinai, Wadi Watir, 6.iv.1973, A. Freidberg (1♂, 1 specimen), 11.iv.1974, D. Furth (1♂) (all TAUI).

Distribution

Egypt, Israel. First record for Israel.

Idiocera (Idiocera) pulchripennis (Loew, 1856)

Limnobia pulchripennis Loew, 1856: 23.
Gonomyia (Idiocera) pulchripennis. Starý, 1974: 139, Figs. 8–12 (male terminalia), 13–14 (female terminalia).

Literature

Bodenheimer, 1937: 183 (as *Gonomyia sexguttata*; without localities); Savchenko et al., 1992: 311 (without localities).

Material examined

ISRAEL: Majdel Shams, 14.x.1982, A. Freidberg (1♂); Nahal Nimrod (1000 m), 3.viii.1995 (2♂, 2♀), 4.x.2001 (1♂, 1♀), A. Freidberg; Dan, 21.vii.1983, I. Nussbaum (1♂); Golan, H. Nappah, 10.xii.1973, A. Freidberg (4♂, 3♀, 1 specimen); H. Nappah [K. Nafech], 1.xii.1973, A. Freidberg (3♂, 5♀); Hula [Mellacha (Hule)], 28.viii.1940, collector unknown (1 specimen); Hula [Hulah], 10.v.1964, Margalit (2♂, 1♀); Golan, Qusbīye, 15.iv.1982, A. Freidberg (1♀); Haspin [Khispin], 24.ii.1984, I. Nussbaum (1♂); Biq'at Bet Zayda [Bteicha], 16.xi.1982, A. Freidberg (1♀); Kokhav HaYarden, 29.xi.1993, A. Freidberg (1♂); Kadoori [Kadorie School], 30.ix.1982, F. Kaplan (1♀); Hadera, 9.x.1976, A. Freidberg (1♀); Central Nahal Tirza [C. W. Faria], 20.ii.1974, A. Freidberg (3♀); Zafririm, 18.xi.1983, I. Nussbaum (2♂); Ne`ot HaKikkar, 19.iv.1966, light trap, Margalit (1♀) (all TAUI).

Distribution

Southern part of Europe, Canary Islands, North Africa, Transcaucasia, Israel, Middle Asia.

Idiocera (Idiocera) sziladyi (Lackschewitz, 1940)

Gonomyia (Ptilostena) Sziládyi Lackschewitz, 1940a: 54, Taf. III, Figs. 27a-b (male terminalia).

Material examined

EGYPT: Sinai, Wadi Watir, 5.viii.1975, A. Freidberg (1♂) (TAUI).

Distribution

Southern part of Europe, Canary Islands, North Africa.

Ilisia Rondani, 1856

Ilisia inermis Mendl, 1979

Ilisia (s. str.) *inermis* Mendl, 1979: 176, Figs. 21−24 (male terminalia).

Literature

Bodenheimer, 1937: 183 (as *Ilisia maculata*; without localities); Savchenko et al., 1992: 273 (as *Ilisia maculata*; "? Israel", without localities).

Material examined

ISRAEL: Majdal Shams, 14.x.1982, A. Freidberg (1♀); HaTanur, 24.v.1988, I. Yarom (1♂); Tel Dan, 5.v.1977, J. Kugler (1♀); Panyas [Bannias], 27.vi.1967, J. Kugler (1♀), 4.ix.1981 (1♂,

1♀), 24.iv.1982 (1♀), all A. Freidberg; Nahal Dishon, nr. Bar'am, 11.v.1982, A. Freidberg (1♂); Monfort, 9.iii.1982, A. Freidberg (1♀); Hula Reserve, 4.v.1965 (1♂), ix.1965 (1♀), all light trap, Margalit; Hula, ix.1965 (1♀), xii.1965, light trap (1♀), Margalit; Ben Shemen, 22.iii.1926 (1♀, 1 specimen), 5.vi.1926 (2♀), 192? (5♀, 3 specimens + 1 wing), all F. S. Bodenheimer; Mishor Adummim, Tal'at ed Damm [Palestine, Cistern Talaat id Dum], 12.xii.1923, O. Theodor (2♀); illegible: ? Bodenheimer (1♀) (all TAUI).

Distribution

Slovakia, Greece, Syria, Israel. First record for Israel.

Molophilus Curtis, 1833

Subgenus *Molophilus* s. str.

Key to species of *Molophilus (Molophilus)* in Israel

1. Body coloration blackish ..... ***M. (M.) obscurus***
-. Body coloration yellow to brown **2**
2. Body coloration yellow, pleuron with distinct dark stripe; male terminalia with gonostyli very short, not extending beyond dorsal portion of gonocoxite ..... ***M. (M.) pleuralis***
-. Body coloration brown or grayish brown, pleuron not striated; ventral gonostylus of male terminalia long, massive, extending beyond dorsal portion of gonocoxite. **3**
3. Gonocoxite of male terminalia with thumb-like dorsal lobe; ventral gonostylus curved, flattened and serrate in middle, tapered at apex..... ***M. (M.) griseus***
-. Gonocoxite of male terminalia without distinct dorsal lobe; ventral gonostylus straight, smooth, parallel-sided (Fig. 10)..... ***M. (M.) banias* sp. n.**

Molophilus (Molophilus) banias Starý and Freidberg, sp. n.

(Figs. 10–11)

Description

Medium-sized species: body length 3.5–4.0 mm, wing length 5.0–5.5 mm. General body coloration brown, with slight grayish microtrichia, slightly patterned by yellow on thorax.

Male. **Head**. Densely gray microtrichose. Antenna light to dark brown, moderate in length, extending to about base of wing. Flagellomeres generally ovoid, with verticils about twice as long as their respective segments.

Thorax. Brown, with slight grayish microtrichia, slightly patterned by yellow. Pronotum darkened medially, yellowish laterally. Prescutum brown, with slight grayish microtrichia, and with yellow area laterally just anterior to prescutal pit. Scutum brown, yellowish anteromedially and posterolaterally, with distinct pale grayish microtrichia posteromedially. Scutellum yellowish-brown. Postscutellum brown, yellowish laterally. Pleuron brown, with grayish microtrichia, slightly patterned by yellow anteriorly. Wing narrow, generally as for genus, including venation. Halter yellow, with darker pubescence. Coxae and trochanters yellow, femora darkened distally, tibiae and tarsi darkened throughout.

Abdomen. Pale to dark brown. Male terminalia (Figs. 10−11) with gonocoxite of generally simple structure, as in many West Palaearctic species. Dorsal portion of gonocoxite (dorsal to lateral excision) quadrangular in lateral view, truncate at apex, with blackened tooth at posteroventral margin directed mesally. Ventral lobe of gonocoxite short and stout, conical. Both gonostyli dark. Dorsal gonostylus very slender, slightly undulated, pointed at tip, somewhat shorter than ventral gonostylus. The latter very stout, parallel-sided, almost straight, emarginate at tip, with terminal spine directed dorsally and with subapical tooth provided with microscopic spinules. Aedeagus of moderate length, generally slender, bent ventrally at about one third of its length, then gradually tapered to pointed tip and very slightly and evenly curved dorsally. Aedeagal plate with dark, comparatively stout but short median spine.

Female. Resembling male in general appearance. Female terminalia with cercus long, slender and evenly curved dorsally, distinctly longer than tergite 10.

Material examined

Holotype ♂, ISRAEL: [Golan Heights:] Panyas [Baniass; 33°15‘N 35°41‘E], 24.iv.1982, A. Freidberg (TAUI). Paratypes: Panyas [Banias, Banyas], 26.vi.1978 (1♂), 1.vii.1986 (1♂), 6.viii.1986 (1♀), 14.vi.1996 (1♂), 18.vii.1995 (2♂), A. Freidberg, I. Yarom (3♂) (TAUI, JSO).

Distribution

Israel.

Etymology

This species is named after its type locality. The species epithet is a noun in nominative singular standing in apposition to the generic epithet.

Remarks

In the structure of the male terminalia, the new species resembles many other West Palaearctic species centred around *M. (M.) undulatus* Tonnoir in Goetghebuer and Tonnoir, 1920. It differs from these species in many features, such as the shape of the gonocoxite and gonostyli and the structure of the aedeagus and aedeagal plate (Figs. 10−11). In *M. (M.) savtshenkoi* Starý, 1972 and *M. (M.) franzi* Caspers, 1980, the aedeagal plate is also provided with a median spine. These two species, however, differ from *M. banias* in many other details, including the median spine itself, which is much longer than that of the new species. *M. (M.) banias* sp. n. appears to be most similar to *M. (M.) claessoni* Mendl, 1986, from Crete, and some other, undescribed species from the eastern Mediterranean, especially in the shape of the aedeagal plate (for *claessoni*, see Mendl, 1986, Figs. 1−6).

Molophilus (Molophilus) griseus (Meigen, 1804)

Erioptera grisea Meigen, 1804: 51.
Molophilus bifilatus. Meijere, 1920: 63, Pl. 5, Figs. 56a-d (male terminalia).

Literature

Bodenheimer, 1937: 183 (as *Molophilus* cf. *griseus*; without localities); Savchenko et al., 1992: 277 ("? Israel", without localities).

Material examined

TURKEY: Abant, 31.vii.1951, collector unknown (1♂) (TAUI). None from Israel.

Distribution

Europe, Canary Islands, Turkey, Transcaucasia, ?Israel. First record for Turkey.

Remarks

Occurrence of the species in Israel remains in question, but the new record from Turkey makes it more probable.

Molophilus (Molophilus) obscurus (Meigen, 1818)

Erioptera obscura Meigen, 1818: 113.
Molophilus obscurus. Meijere, 1920: 65, Pl. 5, Figs. 58a-b (male terminalia).

Material examined

ISRAEL: Majdel Shams, 1.x.1977 (1♂, 1♀), 14.x.1982 (1♂, 1♀), all A. Freidberg; Golan, spring nr. Nahal Nimrod, 30.x.1985, I. Susman (1♀); Nahal Nimrod (33°15'N 35°45'E), 4.x.2001, A. Freidberg (2♂); Tel Dan, 20.iv.1974, A. Freidberg (1♂); Panyas [Banias], 20.iv.1974 (1♂, 1♀), 26.ix.1978 (6♂), 10.vii.1975 (1♂), all A. Freidberg; Mahanayim, 5.v.1975, F. Kaplan (1♂); Bar'am, 22.xi.1977, A. Freidberg (4♂); Nahal Dishon, nr. Bar'am, 11.v.1982, A. Freidberg (1♂); Qusbīye, 17.xi.1973 (1♂, 2♀), 17.iv.1973 (1♂), 28.iv.1974 (1♀), 6.iv.1978? (on the label only 8) (1♀), all D. Furth, 20.iv.1976, A. Freidberg (9♂), 15.iv.1982, F. Kaplan (1♂, 1♀), 24.iii.1973 (1♂), 19.iv.1976 (1♂), all M. Kaplan, [Kuzbiye], 5.iv.1983 (6♂), [Qasabiye], 15.iv.1982, I. Nussbaum (3♂, 1♀) (TAUI).

Distribution

Europe, Transcaucasia, Lebanon, Israel. First record for Israel.

Molophilus (Molophilus) pleuralis Meijere, 1920

Molophilus pleuralis Meijere, 1920: 60, Pl. 4, Figs. 53a-b (male terminalia).

Material examined

ISRAEL: Hula [Hulah], 10.v.1964, Margalit (1♀); Hula Reserve, ix.1965, light trap, Margalit

(1♀); Qusbīye, 24.iii.1973, M. Kaplan (1♀); Park HaYarden, 18.vi.1982, Malaise trap, A. Freidberg (1♂); Nahal Shemesh S Kinneret [«W. Ruloin»], 7.xii.1965, Margalit (1♀); Rosh ha'Ayin, 10.iv.1976, A. Freidberg (1♀), 22.xii.1993, A. Freidberg and F. Kaplan (7♂); Hulda, 6.ii.1975, A. Freidberg (1♂); Zafririm, 18.xi.1983, I. Nussbaum (1♂); Palmahim, 8.iii.1975, M. Kaplan (1♂); Ne`ot HaKikkar, viii.1965, light trap, Margalit (1♀) (TAUI).

Distribution

Europe, Transcaucasia, Israel, Iran, Middle Asia, East Siberia, Russian Far East. First record for Israel.

Phyllolabis Osten Sacken, 1877

Phyllolabis golanensis Starý and Freidberg, sp. n.

(Figs. 12–13)

Description

Medium-sized species: Body length: male 6–7 mm, female 5.5–6.0 mm; wing length: male 7.5–8.0 mm, female 3.5–4.0 mm. General body coloration brown, with dense gray microtrichia throughout. Male segment 9 dark brown, somewhat shiny. Female with reduced wing, about half length of abdomen.

Male. **Head**. Grayish-brown. Antenna brown, extending beyond base of wing. Flagellomeres rather large, ovoid, decreasing in size towards apex of antenna. Verticils about half length of their respective flagellomeres, arranged in whirls at their bases. Dense, short, suberect, whitish pubescence apparent on all flagellomeres.

Thorax. Mostly dull grayish-brown, slightly paler on paratergite, and with poorly discernible darker median stripe on prescutum; scutellum more yellowish. Wing without macrotrichia in cells, slightly infuscated, with darkenings on some forks and crossveins, especially at origin of vein Rs, at fork R_{2+3+4} - R_5, around tip of vein R_1 (the latter connected to cloud at fork R_3-R_4), on crossvein M-M (forming distal margin of discal cell) and on crossvein M-Cu. Venation with following significant details: vein Rs angulated and spurred at base; vein R_{3+4} aligned with vein R_3; discal cell comparatively long, pentagonal, with crossvein M-Cu situated at about two-thirds of its length. Halter yellowish-brown. Legs stout, generally yellowish-brown, including coxae, trochanters and tips of femora; tarsi somewhat darker.

Abdomen. Dark brown, with grayish microtrichia somewhat sparser and less apparent than on thorax; segment 9 dark brown, somewhat shiny. Male terminalia (Figs. 12–13) very large (even within *Phyllolabis*), due to exceedingly inflated segment 9. Posterior margin of tergite 9 broadly and shallowly emarginate, without any projection in middle. Sternite 9 modified and fused to aedeagal complex, with long, fine, suberect, pale yellow hairs, and short, darkly pigmented, generally hook-like appendage anteriorly on each side of median interruption, and also with roughly cleaver-shaped structure posteriorly in middle (Fig. 12). Gonocoxite with curved process projecting from dorsal aspect of base; this process provided with dense seam of long, golden setae at lateral margin distally, and with additional setae, mostly shorter, elsewhere. Gonostyli extremely

complex (Fig. 13), comparatively small, inserted medially on gonocoxite and concealed within hypopygium, not projecting outwardly. Ventral gonostylus variously twisted and with numerous projections. Dorsal gonostylus, as interpreted here, represented by fleshy, slightly undulated, pubescent rod directed caudally (Fig. 13).

Female. Smaller than male, with similar body coloration. Antenna shorter, with flagellomeres short-ovoid; verticils slightly exceeding length of their respective flagellomeres; pubescence not apparent. Wing reduced, about half length of abdomen, and female definitely not capable of flight, but wing venation and pattern distinct, much as in male. External structure of terminalia usual for genus, with cercus broad, straight, abrupty tapered into pointed apex, longer than tergite 10.

Material examined

Holotype ♂, ISRAEL: Golan [Heights], Merom Golan [33°08'N 35°47'E], 15.iii.1975, A. Freidberg (TAUI). Paratypes: Golan, Merom Golan, 17.iii.1981, A. Freidberg (2♂, 3♀) (TAUI, JSO).

Distribution

Israel.

Etymology

This species is named after its type locality. The specific epithet is an adjective in nominative singular.

Remarks

Phyllolabis golanensis sp. n. is sexually dimorphic, with females distinctly smaller than males, having shorter wings, incapable of flight. In the wing venation, especially the spurred veins Rs and R_4, the configuration of the fork R_3-R_4 (veins R_{3+4} and R_3 aligned), and in the shape of the discal cell, the new species much resembles *P. theowaldi* Mannheims, 1959, from Greece. Apart from the sexual dimorphism in *P. golanensis* sp. n., the two species differ in other external characters, such as body size (larger in *theowaldi*) and body coloration (dark gray on thorax and light brown on abdomen in *theowaldi*). The male terminalia of the two species are similar in general structure, but differ in nearly every detail (for *theowaldi*, see Mannheims, 1959, Fig. 6). For example, in *P. theowaldi*, the anterior part of sternite 9 bears a pair of stout, polished brown, hook-like appendages, conspicuously inflated proximally. These hooks are considerably less developed in *P. golanensis* sp. n.

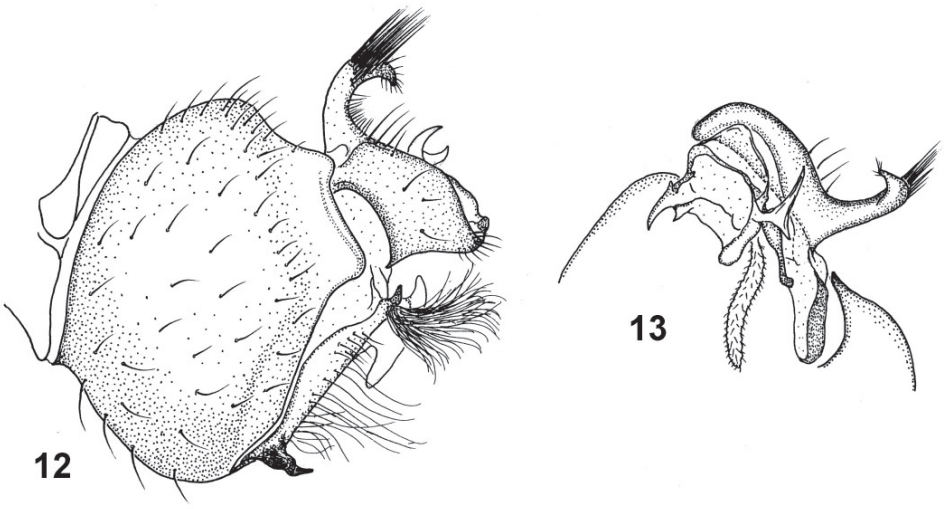
Symplecta **Meigen, 1830**

Subgenus *Psiloconopa* Zetterstedt, 1838

Symplecta (Psiloconopa) stictica stictica **(Meigen, 1818)**

Limnobia stictica Meigen, 1818: 148.

Symplectomorpha stictica. Meijere, 1920: 78, Pl. 8, Figs. 76a-c (male terminalia).



Figs. 12−13. *Phyllolabis golanensis* sp. n. (holotype), male terminalia: 12. General view, lateral. 13. Right gonocoxite with gonostyli, from medial side.

Literature

Bodenheimer, 1937: 183 (as *Symplecta similis*; without localities); Savchenko et al., 1992: 263 (without localities).

Material examined

None.

Distribution

Europe, Turkey, Transcaucasia, Israel, Iran, Middle Asia.

Subgenus *Symplecta* s. str.

***Symplecta (Symplecta) hybrida* (Meigen, 1804)**

Limonia hybrida Meigen, 1804: 57.
Symplecta punctipennis. Meijere, 1920: 77, Pl. 8, Figs. 75a-b (male terminalia).

Literature

Bodenheimer, 1937: 183 (as *Symplecta punctipennis*; without localities); Savchenko et al., 1992: 264 (without localities).

Material examined

ISRAEL: Merom Golan, 28.iv.1974, D. Furth (1♀); Golan H. Nappah [Nafech], 10.xii.1973, A. Freidberg (1♂); H. Nappah, 14.iii.1975, M. Kaplan (1♂); H. Hushniyya [Khoshniye], 17.iv.1973, D. Furth (1♀); Qusbīye, 20.iv.1976, A. Freidberg (1♂); Haspin [Khispin], 3.i.1984 (1♂), 9.ii.1984 (1♂), all I. Nussbaum; 'Akko, 29.iii.1975, A. Freidberg (1♀); Park HaYarden, 4.iv.1983 (1♀), 7.v.1987 (1♂), all A. Freidberg; Biq'at Bet Zayda [Bteicha], 16.ix.1982, A. Freidberg (1♂); Karé Déshe, 16.x.1963, J. Kugler (1♂); Teverya [Tiberias], Jordan Valley, 15.v.1949, O. Theodor (2♀); Deganya [Dagania], Jordan Valley, 27.iii.1950, O. Theodor (1♂); Netanya [Nutania], 6.ii.1939, A. Shulov (1♀); Ga'ash, 10.iii.1975 (1♂, 1♀), 8.iii.1976, (1♂, 1♀), all M. Kaplan, 10.iii.1975 (3♂, 2♀), 10.iii.1976 (4♂, 2♀), all A. Freidberg; Herzliyya, 14.iv.1994, A. Freidberg (1♀); Tel Aviv Swamp, 9.iv.1981, A. Freidberg (3♂, 1♀); Tel Aviv, 3.ii.1978, A. Freidberg (1♂); Ben Shemen, 1926, 1♂, 2 specimens, 192?, F. S. Bodenheimer (1♀); Shafir, 10.xi.1983, I. Nussbaum (1♂); Hof Mineral, 24.xi.1998, A. Freidberg (1♀), 24.iv.1974, D. Furth (1♂); 'En [Ein] Gedi, 13.ii.1975, A. Freidberg (1 specimen); 'Avedat, 19.iv.1975 (1♂), 16.iii.1988 (1♂), all A. Freidberg (all TAUI). EGYPT: Sinai, Nahal Yam, 3.ii.1973, A. Freidberg (2♂); Wadi Naseb, 7.iv.1973 (1♀); Wadi Tula, 7.iv.1974 (1♀), both D. Furth (all TAUI).

Distribution

Canada, USA (Alaska); Europe, Azores, North Africa, Transcaucasia, Lebanon, Israel, Iran, Middle Asia, Siberia, Russian Far East, North Korea, Japan, China; Pakistan, Nepal, India.

Subgenus *Trimicra* Osten Sacken, 1861

***Symplecta (Trimicra) pilipes pilipes* (Fabricius, 1787)**

Tipula pilipes Fabricius, 1787: 324.
Trimicra pilipes. Meijere, 1920: 76, Pl. 8, Fig. 73 (male terminalia).

Literature

Bodenheimer, 1937: 183 (as *Trimicra*; without localities); Savchenko et al., 1992: 265 (without localities).

Material examined

ISRAEL: Hula [Hulah], 10.v.1964, Margalit (1♂, 2♀); Hula Reserve, 9.vi.1964, Margalit (1♀); Nahshon [Nachshon], 15.iv.1962, Margalit (1♀); Ben Shemen, 192?, F. S. Bodenheimer (5♂, 2♀); Sede Eliyahu, 6.iv.1961 (or 69?), D. Gerling (1♀); Ga'ash, 10.iii.1975 (1♂), 10.iii.1976 (4♂), 30.v.1974 (1♀), all A. Freidberg; Qusbīye, 20.iv.1976, A. Freidberg (1♀); 'Akko, 29.iii.1975 (1♂, 2♀), 27.xi.1997 (1♂), all A. Freidberg; Rosh ha'Ayin, 13.v.1993, A. Freidberg (2♀); Merom Golan, Bental Reservoir (33°09'N 35°47'E), 25.v.2005, A. Freidberg (1♀); Herzliyya, vi.1994, A. Freidberg, ex lemon (1♀); Park Rosh ha'Ayin, 16.iv.1993, A. Freidberg and F. Kaplan (1♂, 2♀); Berekhat Ya'ar [Berekhat Ata] nr. Hadera, 10.vi.1993, A. Freidberg (1♀); Tel Aviv, 27.iv.1971, J. Kugler (4♂, 2♀), 4.vi.1974, A. Freidberg (1♂); Tel Aviv Swamp, 9.iv.1981, A. Freidberg (5♂); Bet She`an Valley [Betshean], 20.ii.1974, D. Furth (1♀); Sharsheret, 28.iv.1973, D. Furth (1♀); Har Tavor [Mt. Tabor], 24.iv.1974, D. Furth (1♀); Kefar Shammay [H. Shamai], 14.ix.1971, J. Kugler (1♂); Netanya, Hofit, 10.iii.1962, Y. Ovadia [in Hebrew] (1♂); Palmahim [W. Rubin], 7.xii.1965,

Margalit (1♂); Nizzanim, 6.ix.1984, I. Susman (1♂), 23.iii.1995, A. Freidberg (1♂); Ziqqim, 7.ii.1996, I. Yarom and A. Freidberg (1♂); Park Nahal Besor, 7.v.2003, A. Freidberg (1♂); ‘Arad, 6.v.1971, J. Kugler (1♂); Mezada [Metsada], 5.v.1961, J. Wahrman (1♂); 5 km north of Be`er Sheva’ [Baen. Sheba], 9.viii.1963, F. S. Bodenheimer (1♂); Sedé Boqér [Sede Bogee], 29.iv.1973, D. Furth (1♂); 2 km W ‘En Mor, 22.iv.1986, A. Freidberg (1♂); ‘En Mor, 29.iv.1987, A. Freidberg (1♀); Ne`ot HaKikkar, 28.v.1964 (1♂), viii.1965 (1♂, 3♀), all Margalit; vii.1965, Margalit, light trap (1♀); ‘En ‘Aqrabbim [Ein Akrabim], 1.iv.1983, A. Freidberg (1♂, 1♀); Zin Wilderness, Nahal Zin at ‘En Aqrabbim (-61 m) (30°53.38’N 35°09.39’E [GPS]), 12.iii.1995 (1♂), 1.iv.1995, Sharkey Malaise trap (1♀), all M. E. Irwin; ’Arava Valley, ‘En ‘Iddan, 19.iii.1995, A. Freidberg (1♂, 2♀); ‘En ‘Iddan springs (-116 m) (30°49.04’N 35°16.95’E [GPS]), 13.iii.1995 (1♂, 1♀), 14.iii.1995 (2♂, 1♀), all M. E. Irwin; Hazeva, 1.iv.1983, Malaise trap, A. Freidberg (1♂); ‘Arava Valley, ‘En Dohar, spring 2 km W of hwy 90 at km 147 (-60 m) (30°43.03’N 35°11.62’E [GPS]), 21.iii.1995, hand-netted, M. E. Irwin (3♀); Elot [Eilot], 29.iv.1974, A. Freidberg (1♀) (TAUI). EGYPT: “Egypt”, collector unknown (1♂); Sinai, Ofira sewage, 22.iii.1981, A. Freidberg (1♂) (TAUI).

Distribution

Cosmopolitan.

Subfamily Limoniinae

Antocha Osten Sacken, 1860

Subgenus Antocha s. str.

Antocha (Antocha) vitripennis (Meigen, 1830)

Limnobia vitripennis Meigen, 1830: 278.
Antocha vitripennis. Meijere, 1919: 97, Pl. 10, Figs. 38a-c (male terminalia).

Material examined

ISRAEL: Tel Dan, 18.vi.1971, J. Kugler (1♂), night 20.–21.vii.1983, I. Nussbaum (1♀); Dan, 14.iii.196?, J. Kugler (1♂); Panyas [Baniass], 24.iv.1982, F. Kaplan (1♀); Nahal Senir [Hazbani], 2.vii.1974, M. Kaplan (1♂), 9.v.1972, J. Kugler (2♂, 1♀); Kefar Szold [K. Sold], 12.iv.1967, J. Kugler (4♀) (all TAUI).

Distribution

Europe, ?Transcaucasia, Israel, Afghanistan. First record for Israel.

Atypophthalmus Brunetti, 1911

Subgenus *Atypophthalmus* s. str.

Atypophthalmus (Atypophthalmus) umbratus (Meijere, 1911)

Dicranomyia umbrata Meijere, 1911: 25, Pl. 1, Fig. 7 (wing).
Limonia (Atypophthalmus) umbrata. Byers, 1966: 710, Figs. A-D (male terminalia).

Literature

Savchenko et al., 1992: 331 (without localities).

Material examined

ISRAEL: Tel Aviv, 22.vii.1986, A. Shlagman (1♀) (TAUI). EGYPT: collector unknown (1♂, 1♀) (TAUI).

Distribution

World tropics and subtropics; northwards to Mexico and Israel. First record for Egypt.

Dicranomyia Stephens, 1829

Subgenus *Dicranomyia* s. str.

Key to species of *Dicranomyia (Dicranomyia)* in Israel

1. Palpus 3-segmented ..... ***D. (D.) ventralis***
-. Palpus 5-segmented **2**
2. Wing with vein Cu conspicuously spotted. ..... ***D. (D.) goritiensis***
-. Wing with vein Cu not conspicuously spotted **3**
3. Wing without any pattern, or with stigma only slightly indicated. ..... ***(D.) flavigenu* sp. n.**
-. Wing with at least darkened stigma and other poorly distinct clouds and seams..... **4**
4. Wing with darkened stigma and additional poorly distinct clouds and seams **5**
-. Wing with four more or less distinct clouds at anterior margin: at wing base (sometimes indistinct), at vein Sc_2, at origin of vein Rs and around tip of vein R_1 (stigma), added with seams along some veins..... **7**
5. Tergite 9 of male terminalia deeply emarginate at posterior margin (Fig. 16) .... ***D. (D.) furthi* sp. n.**
-. Tergite 9 of male terminalia shallowly emarginate at posterior margin **6**
6. Ventral gonostylus of male terminalia long-ovoid, about twice as long as broad, with rostral spines longer than rostral prolongation ..... ***D. (D.) mitis***
-. Ventral gonostylus of male terminalia short-ovoid, about 1.5 times as long as broad, with rostral spines shorter than rostral prolongation ..... ***D. (D.) chorea***
7. General coloration of thorax dark grayish-brown ..... ***D. (D.) signatella* nom. n.**
-. General coloration of thorax yellowish-brown..... **8**
8. Male terminalia with ventral gonostylus roughly spherical, distinctly shorter than gonocoxite; rostral spines curved, slightly divergent (Fig. 18) ..... ***D. (D.) longiunguis* sp. n.**
-. Male terminalia with ventral gonostylus short-ovoid, longer than gonocoxite; rostral spines straight, more or less parallel to each other ..... ***D. (D.) luteipennis***

Dicranomyia (Dicranomyia) chorea (Meigen, 1818)

Limnobia chorea Meigen, 1818: 134.

Dicranomyia chorea. Lackschewitz and Pagast, 1941: 27, Pl. 6, Figs. 45–46 (male terminalia).

Material examined

ISRAEL: Tel Dan, 25.vii.1985, A. Freidberg (1♀), 20.vii.1983 (1♂), 21.vii.1983 (1♀), all I. Nussbaum; Horeshat Tal, 13.v.1973, D. Furth (1♂); Nahal Senir [Hatzbani], 24.v.1978, J. Kugler (1♂); Panyas [Banias, Banyas], 20.iv.1974 (1♀), 4.v.1977 (1♂), 19.vii.1977 (2♀), 11.ix.1981 (1♂), 6.viii.1986 (1♀), 14.vi.1996 (2♂, 1♀), 25.ix.1999 (2♂), all A. Freidberg, 8.iii.1984, I. Nussbaum (1♂); Senir, 3.v.1994, A. Freidberg (1♂); Nahal Bezet, 23.x.1986, I. Yarom (1♂); Upper Nahal Tirza [Up. W. Faria], 28.iv.1976, A. Freidberg (7♂, 3♀), M. Kaplan (5♂, 1♀), 27.v.1976, A. Freidberg (3♂); Nahal Tirza [W. Faria, Ein Bazan], 31.v.1981, A. Freidberg (1♀); Shekhem [Shechem], 1.iii.1973, M. Kaplan (2♂); Bet Hillel, 5.v.1985, I. Nussbaum (1♂); Ein Hūsān, 7.v.1972, collector unknown (1♂, 1♀). (all TAUI).

Distribution

Canada, Europe, Canary Islands, Morocco, Transcaucasia, Israel, Iran. First record for Israel.

Remarks

Of the nine *Dicranomyia (Dicranomyia)* species treated here, seven species (*D. (D.) chorea*, *D. (D.) flavigenu* sp. n., *D. (D.) furthi* sp. n., *D. (D.) longiunguis* sp. n., *D. (D.) luteipennis*, *D. (D.) mitis* and *D. (D.) signatella* nom. n.), belong to the *D. (D.) chorea* group, as defined recently (Starý, 1993). This group is rich in species, including many still not validated, even in the West Palaearctic. Some species are sufficiently well differentiated by the male terminalia. Others, however, are rather uniform in this respect and warrant a thorough study, such as the common *D. (D.) mitis*, which seems to represent a complex of closely-related species.

In the descriptions presented here, some non-traditional taxonomic characters are adopted, which may be used as auxiliary specific criteria independent of genital characters in cases in which the latter fail (see also Starý, 1993). The structure of the male tarsi represents the most significant of such traits (see Starý, 1993). In the species of the *D. (D.) chorea* group, the male tarsal claws vary in length and serration, and the two last tarsomeres vary in shape, provided with variously modified setae (Figs. 15, 17, 19, 21). For the illustrations presented here, the hind tarsi were selected, but, generally, all tarsi are alike. In females, the tarsi do not provide useful criteria. The male claws may be capable of being folded against tarsomere 5, or/and tarsomere 5 folds against tarsomere 4. This capability probably serves the male to grasp the legs of the female before copulation, and the modified setae are likely to be a part of an interlocking apparatus. Such modifications are widely distributed in the family Limoniidae, and perhaps elsewhere, and are not confined to the Tanyderidae, Ptychopteridae, or Blephariceridae, as previously assumed (Hennig, 1968: 11−12, Wood and Borkent, 1989: 1359).

***Dicranomyia (Dicranomyia) flavigenu* Starý and Freidberg, sp. n.**
(Figs. 14–15)

Description

Small, slender species within *D. (D.) chorea* group: body length 4.5–6.5 mm, wing length 5.0–7.5 mm. General body coloration pale, yellow to yellowish-brown, dorsal part of thorax sometimes darker.

Male. **Head**. Dark, with dense gray microtrichia on frons and vertex. Rostrum yellowish-brown. Antenna yellow to yellowish-brown, sometimes darkened towards apex, short, not extending to anterior margin of prescutum. Flagellomeres short-ovoid to nearly spherical, with longest verticils subequal in length to their respective segments.

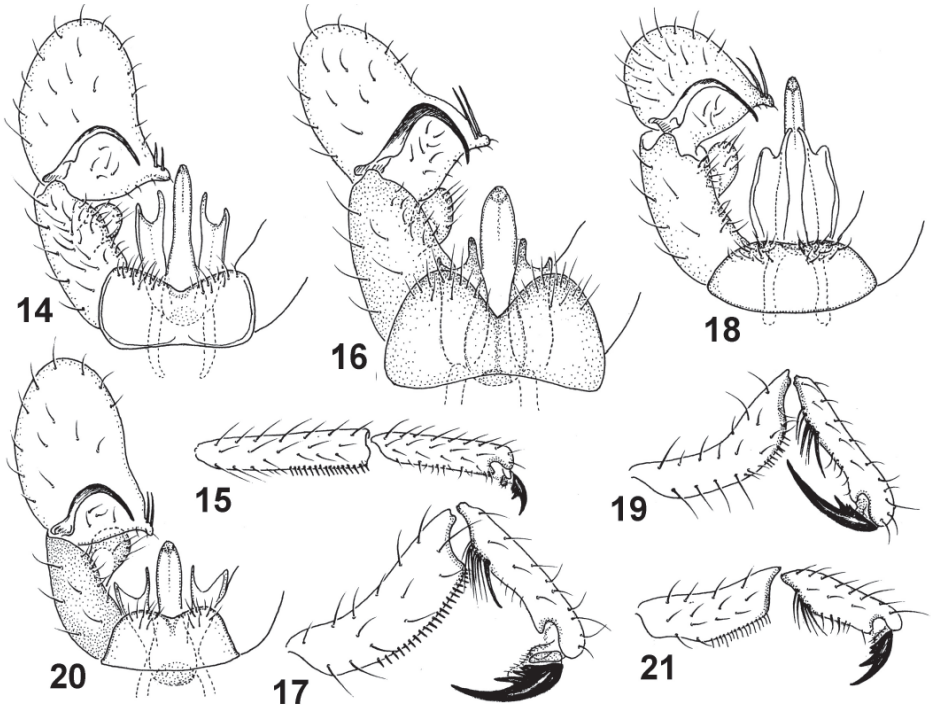
Thorax. Generally yellow to yellowish-brown, with fine whitish-gray microtrichia, more or less darkened dorsally. Pronotum brown, yellowish laterally. Prescutum variably dark brown from only medially to nearly throughout, but without distinct stripes, pale yellow along paratergite. Scutum yellowish-brown on lobes, pale yellow in middle. Scutellum and anterior part of mediotergite pale yellow. Pleuron yellow to yellowish-brown, sometimes darker, especially on katepisternum. Wing hyaline, strongly iridescent, slightly tinged with yellowish, without any pattern, or stigma barely apparent. Vein Sc_1 with sparse macrotrichia distally. Venation usual for *D. (D.) chorea* group. Vein Sc_2 mostly distinct. Discal cell slightly shorter than veins connecting it with wing margin. Halter yellow, knob sometimes (in darker specimens) infuscated. Legs yellow, including coxae, trochanters and tips of femora; tarsi somewhat darkened distally. Tarsal claws (Fig. 15) extremely short, about one fourth of length of tarsomere 5, with one well-developed tooth at mid-length and two minute teeth at base. Both tarsomeres 5 and 4 rod-like, straight, parallel-sided, latter with distinct longitudinal row of short, erect setae along distal half ventrally, former with such setae less developed.

Abdomen. Either concolorous with thorax, or, sometimes darker than thorax, brown. Male terminalia (Fig. 14) pale throughout. Tergite 9 rather short, essentially oblong, its posterior margin shallowly emarginate medially, with short, broad lobe on each side, densely covered by blackened, moderately long and erect setae. Gonocoxite moderately long, subequal in length to ventral gonostylus, with unusually dense, blackened and rather long setae. Ventral gonostylus moderately large, roughly short-ovoid in outline, about 1.5 times as long as broad, with rostral prolongation provided with short, nearly straight spines, situated rather wide apart. Dorsal gonostylus as for subgenus. Aedeagal complex as in Fig. 14, with aedeagus rather slender.

Female. Resembling male in general appearance. Female terminalia with cercus slender, very gently curved dorsally, rather long, subequal in length to tergite 10.

Material examined

Holotype ♂, ISRAEL: [Upper Galilee:] Monfort [33°03‘N 35°13‘E], 2.iii.1987, A. Freiberg (TAUI). Paratypes: ISRAEL: Metulla, 19.iii.1987, I. Nussbaum (1♂); Dafna, 12.iv.1967, J. Kugler (4♂); Panyas [Banias, Banyas], 4.v.1977(1♀), 11.ix.1981 (1♂), 24.iv.1982 (1♀), 12.iv.1983



Figs. 14−15. *Dicranomyia (Dicranomyia) flavigenu* sp. n. (holotype), male terminalia: 14. General view, dorsal. 15. Distal part of male hind tarsus. Figs. 16−17. *Dicranomyia (Dicranomyia) furthi* sp. n. (holotype), male terminalia: 16. General view, dorsal. 17. Distal part of male hind tarsus. Figs. 18−19. *Dicranomyia (Dicranomyia) longiunguis* sp. n. (holotype), male terminalia: 18. General view, dorsal. 19. Distal part of male hind tarsus. Figs. 20−21. *Dicranomyia (Dicranomyia) signatella* nom. n. (Israel: Upper Wadi Faria), male terminalia: 20. General view, dorsal. 21. Distal part of male hind tarsus.

(2♂, 2♀), 16.iv.1992 (1♂), all A. Freidberg, 8.iii.1984, I. Nussbaum (1♂, 1♀); Nahal Dishon [Karkara], 6.iv.1967, Margalit (2♀); Monfort, 4.iii.1976 (1♂, 1♀, 1 specimen), 10.iii.1981 (1♀), 9.iii.1982 (1♂), 2.iii.1987 (10♂, 5♀), all A. Freidberg, 2.iii.1987, I. Yarom (1♂, 1♀), 4.iii.1976, M. Kaplan (1♀), 9.iii.1982, F. Kaplan (1♂); Har Meron [Mt. Meiron], 30.iv.1981, F. Kaplan (1♂); Nahal ,Ammud [N. Ammud], 31.i.1982 (2♂, 1♀), 21.iii.1982 (1♂), 31.iii.1982, (1♂), all I. Nussbaum; Rīhāniya, 16.iv.1992, A. Freidberg (1♂); Genosar, 28.ii.1977, F. Kaplan (1♀); Har [Mount] Carmel, 22.ii.1969, Ayal (1♂); Muhraqa [Muhtaga], 18.iii.1987, I. Nussbaum (1♀); Nahal Oren, 4.iii.1975, F. Kaplan (2♀); Zikhron Ya'aqov, 1.iv.1998, A. Freidberg (1♀); Nahal ,Iron [W. Ara], 19.iii.1974, D. Furth (1♂); Tel Aviv, 18.iii.1974, A. Freidberg (1♀); Migdal Afeq [Migdal-Zedek], 23.iii.1984, I. Nussbaum (1♂); Ben Shemen, 19.iii.2002, A. Freidberg (1♂) (TAUI, JSO). GREECE: Kos I., 4 km W Kos (1−200 m), 28.iv.1993 (1♂), Mt. Dikeos, S of Zia (2−300 m) 29.iv.1993 (1♂, 1♀), all P. Oosterbroek and C. Hartveld (ZMAN). CYPRUS: Dierona (34°50' N 33°07' E), 9.iv.2002, M. Vála (1♂) (JSO).

Distribution

Greece, Cyprus, Israel.

Etymology

The name *flavigenu* (= a yellow knee) refers to the fact that the new species has the femora pale throughout, not tipped with dark spots. The specific epithet is a noun in nominative singular standing in apposition to the generic epithet.

Remarks

D. (D.) flavigenu sp. n. is rather variable in body coloration, from yellow nearly throughout, with only prescutum slightly darkened medially, to light brown on most of the body surface. In general appearance, it resembles pale specimens of *D. (D.) chorea* and pale and small specimens of *D. (D.) mitis* of authors. In the structure of the male terminalia, the new species is similar to the former species. Externally, *D. (D.) flavigenu* sp. n. differs from *D. (D.) chorea* in that it has the femora quite yellow, not darker at the tips. The differences between the two species in the structure of the male terminalia are significant: in *D. (D.) flavigenu* sp. n., both the gonocoxite and ventral gonostylus are longer than in *D. (D.) chorea*, provided with conspicuous setosity, and the rostral spines and the aedeagus likewise are longer (the former quite minute in *chorea*). The male tarsal claws of the new species are distinctly shorter than those of *D. (D.) chorea* (see Starý, 1993, Fig. 6). The cerci of the female terminalia are also different in the two species (distinctly shorter in *chorea*). *D. (D.) flavigenu* sp. n. is rather common in Israel, occurring along with *D. (D.) chorea*, and it is distributed also in other East Mediterranean countries.

***Dicranomyia (Dicranomyia) furthi* Starý and Freidberg, sp. n.**

(Figs. 16–17)

Description

Comparatively large, robust species within *D. (D.) chorea* group: Body length 5.0–8.5 mm, wing length 7.0–9.5 mm. General body coloration light- to dark brown, thorax with dense gray microtrichia; abdomen brown, with microtrichia somewhat sparser.

Male. **Head**. Dark, with gray microtrichia on frons and vertex. Rostrum brown. Antenna dark brown, of moderate length, extending to about anterior margin of prescutum. Flagellomeres large, short-ovoid to nearly spherical, with longest verticils subequal in length to their respective flagellomeres.

Thorax. Generally light to dark brown, with dense gray microtrichia. Pronotum dark grayish-brown. Prescutum mostly dark brown, with gray microtrichia; microtrichia sparser in middle, leaving more or less distinct, broad, shiny, almost black median stripe; less distinct lateral stripe apparent on each side in certain view; lateral portions of prescutum more brownish. Other dorsal parts of thorax somewhat paler, slightly yellowish, with whitish-gray microtrichia. Pleuron dark grayish-brown, especially on katepisternum, more brownish, sometimes yellowish-brown, around base of wing. Wing

pattern as in *D. (D.) mitis*, with distinct stigma and another, smaller darkening at origin of vein Rs. Vein Sc_1 without macrotrichia. Venation usual for *D. (D.) chorea* group. Vein Sc_2 almost indistinct. Discal cell small, distinctly shorter than veins connecting it with wing margin. Halter yellowish-brown, knob infuscated. Coxae and trochanters yellowish-brown, with slight grayish microtrichia. Rest of legs yellowish-brown, including tips of femora, tarsi slightly darkened distally. Tarsal claws (Fig. 17) long, about three fifths of length of tarsomere 5, with one well-developed tooth proximal to mid-length and additional three poorly visible teeth at base. Tarsomere 5 with slightly sinuous ventral margin and with pair of long, unusually broad setae and group of similarly long but more slender setae anterobasally. Tarsomere 4 curved dorsally, abruptly tapered distally, provided with longitudinal row of short, erect setae along three distal quarters ventrally.

Abdomen. Grayish-brown to dark brown. Male terminalia (Fig. 16) with tergite 9 and gonocoxite distinctly darker than ventral gonostylus. Tergite 9 large, conspicuously bilobed, with deep, V-shaped emargination at its posterior margin; lobes broad, rounded, provided with fine setae. Gonocoxite rather long, subequal in length to ventral gonostylus, with setae usual in length and density. Ventral gonostylus of moderate size, its shape as in *D. (D.) didyma*, generally ovoid, slightly more than 1.5 times as long as broad, enlarged medially in proximal part; rostral prolongation provided with long, nearly straight spines, diverging from each other distally; their bases situated close one behind the other. Dorsal gonostylus strongly bent at mid-length. Aedeagal complex as in Fig. 16, with aedeagus stout and broad and parameres dark.

Female. Resembling male in general appearance. Female terminalia with cercus slender, gently curved dorsally, rather long, subequal in length to tergite 10.

Material examined

Holotype ♂, ISRAEL: [Golan Heights:] H. Hushniyya [Khoshniye; 33°00'N 35°49'E], 17.iv.1973, D. Furth (TAUI). Paratypes: ISRAEL: Merom Golan, 17.iv.1973 (3♀), 28.iv.1973, D. Furth (1♂); H. Hushniyya [Khoshniye], 17.iv.1973, D. Furth (1♂, 1♀); Qusbīye, 15.iv.1982, F. Kaplan (1♀) (TAUI, JSO).

Distribution

Israel.

Etymology

This species is named after David G. Furth (Smithsonian Institution), who collected most of the type material. The specific epithet is a noun in genitive singular.

Remarks

There are several species of the *D. (D.) chorea* group that have a deeply emarginate, bilobed tergite 9, e.g. *D. (D.) incisurata* Lackschewitz, 1928, *D. (D.) kamakensis* Starý,

1993, *D. (D.) micronychia* Lackschewitz in Lackschewitz and Pagast, 1941 and *D. (D.) strobli* Pagast in Lackschewitz and Pagast, 1941. Of these, *D. (D.) furthi* sp. n. is probably the most closely related to *D. (D.) kamakensis*. The two species are very similar to each other in the body coloration due to their dense gray microtrichia on the thorax. *D. (D.) furthi* sp. n. differs from *D. (D.) kamakensis* by details of the structure of the male tarsal claws (shorter in *kamakensis*) and the male terminalia (gonocoxite shorter in *kamakensis*, ventral gonostylus larger, with proximal medial enlargement smaller) (for *kamakensis*, see Starý, 1993, Figs. 7−11).

Dicranomyia (Dicranomyia) goritiensis (Mik, 1864)

Limnobia goritiensis Mik, 1864: 792, Pl. 21A, Fig. 2 (wing).
Dicranomyia goritiensis. Lackschewitz and Pagast, 1941: 24, Pl. 5, Fig. 42 (male terminalia).

Material examined

ISRAEL: Panyas [Banias], 21.vii.1983, I. Nussbaum (2♂) (TAUI).

Distribution

Ireland, Great Britain, southern part of Europe, North Africa, Turkey, Israel. First record for Israel.

Dicranomyia (Dicranomyia) longiunguis Starý and Freidberg, sp. n.

(Figs. 18−19)

Description

Slender, medium-sized species within the *D. (D.) chorea* group: body length 6.0−6.5 mm, wing length 7.0−7.5 mm. General body coloration light brown to yellowish brown, with sparse whitish-gray microtrichia, paler on pleuron, darker on abdomen.

Male. **Head**. Rather dark, with dense gray microtrichia on frons and vertex. Rostrum yellowish-brown. Antenna brown, of moderate length, extending to about anterior margin of prescutum. Flagellomeres short-ovoid to nearly spherical, with longest verticils subequal in length to their respective segments.

Thorax. Generally yellowish-brown to light brown, with fine whitish-gray microtrichia, paler on pleuron. Pronotum brown, yellowish laterally. Prescutum grayish-brown, darker medially, but without distinct stripes, yellowish anterolaterally and along paratergite. Other dorsal parts of thorax light grayish-brown, scutellum somewhat paler. Pleuron mostly yellowish-brown, with whitish-gray microtrichia. Wing iridescent, slightly tinged with yellow; pattern similar to that of *D. (D.) didyma* but not as pronounced, with distinct stigma and two other clouds near anterior margin: at vein Sc_2 and at origin of vein Rs; apex of wing extensively infuscated (cloud at wing base not apparent); additional seams present, especially along so-called cord and vein Cu. Vein Sc_1 without macrotrichia. Venation usual for *D. (D.) chorea* group. Vein Sc_2 indistinct. Discal cell rather long, longer than veins connecting it with wing margin. Halter yellow, with knob

slightly infuscated. Legs generally yellow, including coxae and trochanters, extreme tips of femora darkened, tarsi darkened. Tarsal claws (Fig. 19) very long, about two-thirds of length of tarsomere 5, only gently curved and with single well-developed and two quite indistinct teeth, all at base. Tarsomere 5 with sinuous margins, with pair of long, unusually stout setae at about two-fifths of its length and tuft of similarly long but fine setae at base. Tarsomere 4 conspicuously curved dorsally, tapered distally, provided with few short, erect setae ventrodistally.

Abdomen. Darker than thorax, brown, with posterior margins of both tergites and sternites narrowly paler. Male terminalia (Fig. 18) with gonocoxite slightly darker than other parts. Tergite 9 short, essentially lentil-shaped, longer than ventral gonostylus, with dorsomedial setae arranged in two groups. Ventral gonostylus short, roughly spherical, with rostral prolongation provided with long, curved spines. Dorsal gonostylus curved as usual for *D. (D.) chorea* group. Aedeagal complex as in Fig. 18; aedeagus rather slender and long.

Female. Resembling male in general appearance. Female terminalia with cercus very slightly curved dorsally, of moderate length, shorter than tergite 10.

Material examined

Holotype ♂, ISRAEL: [Upper Galilee:] Nahal Senir [Hatzbani; 33°13‘N 35°37‘E], 2.vii.1974, M. Kaplan (TAUI). Paratype: Nahal Senir [Hatzbani], 17.vii.1977, A. Freidberg (1♀) (JSO).

Distribution

Israel.

Etymology

The name of this species, *longiunguis* (= a long claw), refers to the unusually long tarsal claws in the males. The specific epithet is a noun in nominative singular standing in apposition to the generic epithet.

Remarks

In the wing pattern, *D. (D.) longiunguis* sp. n. resembles several species, such as *D. (D.) didyma* (Meigen, 1804), *D. (D.) luteipennis* Goetghebuer in Goetghebuer and Tonnoir, 1920 and *D. (D.) strobli* Pagast in Lackschewitz and Pagast, 1941, although the pattern is distinctly less pronounced. This may either be a real difference, or may fall within species variability, or be caused by fading. The new species is distinctive in having an extensive darkening at the apex of the wing, which relates it to the Holarctic *D. (D.) terraenovae* Alexander, 1920. The structure of the male terminalia is highly species-specific in its long gonocoxite and a very short, roughly spherical, ventral gonostylus provided with long rostral spines. The shape of the male tarsal claws and the distalmost two tarsal segments (Fig. 19) represents another significant character. *D. (D.) longiunguis* sp. n.

has the longest tarsal claws of all species hitherto studied in this respect, thus actually representing the opposite situation of *D. (D.) flavigenu* sp. n. described above.

Dicranomyia (Dicranomyia) luteipennis Goetghebuer in Goetghebuer and Tonnoir, 1920

Dicranomyia luteipennis Goetghebuer in Goetghebuer and Tonnoir, 1920: 108, Figs. 1 (wing), 4 (male terminalia).

Limonia (Dicranomyia) luteipennis. Theowald, 1977: 177, Figs. 8 (male terminalia), 9 (wing).

Material examined

LEBANON: Kfar Houn, 6.vii.1941, collector unknown (1♂, 1♀) (TAUI). SYRIA: collector unknown (2♂) (TAUI).

Distribution

Belgium, Germany, Poland, Southern part of Europe, Turkey, Syria, Lebanon. First records for Syria and Lebanon.

Dicranomyia (Dicranomyia) mitis (Meigen, 1830)

Limnobia mitis Meigen, 1830: 278.

Dicranomyia mitis. Lackschewitz and Pagast, 1941: 30, Pl.. 6, Figs. 47–48 (male terminalia).

Material examined

ISRAEL: Nahal ‘Iyyon [N. Iyon], 10.iii.1982, I. Nussbaum (1♂); Nahal ‘Iyyon [HaTanur], 15.iii.1975, F. Kaplan (5♂, 2♀, 1 specimen), A. Freidberg (3♂, 1♀) (TAUI).

Distribution

Europe, North Africa, Transcaucasia, Israel, Turkmenistan. First record for Israel.

Dicranomyia (Dicranomyia) signatella Starý and Freidberg, nom. n.

(Figs. 20–21)

Dicranomyia signata Lackschewitz in Lackschewitz and Pagast, 1941: 31, Pl. 7, Fig. 55 (male terminalia) [a junior primary homonym of *Dicranomyia signata* Meijere, 1919: 13, Sumatra].

Redescription

Medium-sized species within the *D. (D.) chorea* group: body length 4.5–9.0 mm, wing length 6.0–9.5 mm.General body coloration dark brown with dense whitish-gray microtrichia, especially on pleuron; abdomen dark brown, with posterior margins of tergites paler.

Male. **Head**. Dark, with gray microtrichia on frons and vertex. Rostrum dark brown. Antenna dark brown, of moderate length, extending to about anterior margin of prescutum. Flagellomeres large, short-ovoid to nearly spherical, with longest verticils subequal in length to their respective flagellomeres.

Thorax. Generally dark brown, with dense whitish-gray microtrichia, especially on pleuron. Pronotum brown, paler posteriorly. Prescutum dark brown, with dense gray microtrichia, broad median stripe, and shorter, less distinct lateral stripe on each side. Other dorsal parts of thorax grayish-brown, yellowish around base of wing, on scutum and in posterior part of scutellum. Pleuron with dense whitish-gray microtrichia. Wing iridescent, slightly infuscated; wing pattern as in *D. (D.) didyma*, with distinct stigma and three other spots or clouds near anterior margin: at wing base (poorly distinct), at vein Sc_2 and at origin of vein Rs; additional seams present especially on so-called cord and along vein Cu and vein A_2. Vein Sc_1 without macrotrichia. Venation as usual for *D. (D.) chorea* group, with discal cell of moderate length, mostly shorter than vein M_{1+2}. Halter infuscated, pale yellow only at base. Legs generally pale, with femora yellow to yellowish-brown throughout, tips not darker. Tarsal claws (Fig. 21) of moderate length, about half as long as short tarsomere 5, with one well-developed tooth at mid-length and two less distinct teeth at base. Tarsomere 5 with slightly sinuous ventral margin, provided with group of strong setae, but not as stout as in *D. (D.) furthi* sp. n. and *D. (D.) longiunguis* sp. n. Tarsomere 4 slightly curved dorsally, abruptly tapered distally, with row of short, erect setae along distal half ventrally.

Abdomen. Dark brown dorsally, with posterior margins of tergites paler; ventrally generally paler. Male terminalia (Fig. 20) similar to those of *D. (D.) mitis*. Tergite 9 generally trapezoidal, with short lobes at its posterior margin, conspicuously pale compared to considerably dark gonocoxite (this in constrast to closest relatives, centered around *mitis*). Gonocoxite moderately long, slender, shorter than ventral gonostylus, latter long-ovoid, about twice as long as broad, with rostral prolongation provided with moderately long spines.

Literature

Lackschewitz and Pagast, 1941: 31 (without localities); Savchenko et al., 1992: 340 (without localities).

Type material examined

The species was described from unspecified number of specimens, at least two ["Bekannt von Korsika, Palästina" (Lackschewitz in Lackschewitz and Pagast 1941: 31)]. Lectotype ♂ (present designation), ISRAEL: Hefa [Haifa], 20.ii.1924, O. Theodor (BMNH), labelled "20.2.24. / Haifa / Palestine / O. TH." (partly printed), "Pres. by / Imp. Bur. Ent. / 1924. 117." (printed, last line hand-written), "SYN- / TYPE" (a blue-margined circular label), "Dicr. signata / nov. sp. / det. Laksch." (in capital letters, printed, orange label). Accordingly labelled as lectotype (LECTOTYPE / Dicranomyia / signata Lacksch.♂ / J. Starý 2005"; printed red label) and renamed as *D. (D.) signatella* nom. n. by the authors. The specimen is micro-pinned on a stage (white material); only two legs present, right fore leg intact, hind leg glued; distal part of abdomen cut off. Terminalia

dissected by Lackchewitz and placed in Canada balsam between celluloid slides, pinned with the specimen. The specimen fits the description and figures by Lackschewitz (in Lackschewitz and Pagast 1941); Lackschewitz's orange label clearly indicates it belogs to the syntype series. The syntype examined is designated here as the lectotype to maintain the current usage of the name in case other syntypes, if found, may prove to belong to a different species.

Other material examined

GREECE: Crete: Khania Region, Imbros Gorge, 12.v.2004, J. Starý (1♂, 9♀) (JSO). TURKEY: Aydin, Çine, Çulhalar Köyü, Çulhalar Deresi (37°41' N 28°08' E) (695 m), 21.iv.2005, H. Koç, A. Tonguç and O. Dursun (3♂, 1♀) (MUTR). ISRAEL: Har [Mt.] Hermon (2000 m), 23.iv.1982, A. Freidberg (2♂), (1700 m), 10.vi.1983, I. Nussbaum (1♀), (1600 m), 23.iv.1982, I. Yarom (1♂), (1600 m), 23.iv.1982, A. Freidberg (1♀); Nahal 'Iyyon [HaTanur], 17.iii.1973, D. Furth (1♀), 15.iii.1975, F. Kaplan (1♀); Monfort, 10.iii.1981, A. Freidberg (1♂), T. Furman (1♀); Teverya [Tiberias], Jordan Valley, 15.v.1949, O. Theodor (1♀); Yagur [Jadjur] nr. Hefa [Haifa], 4.iii.1924, O. Theodor (1♂, 1 specimen); Hefa [Haifa], 20.ii.1924 (1♀), 25.ii.1924 (1♂) 3.iii.1924 (1♀), all O. Theodor; Nahal 'Ammud [N. Ammud], 31.i.1982 (1♀), 21.iii.1982 (1♂), all I. Nussbaum; Upper Nahal Tirza [Up. W. Faria], 20.ii.1974, A. Freidberg (1♂, 1♀); Nahal Tirza [W. Faria], 6.iii.1974, D. Furth (1♀); Zomet HaEla, 3 km E, 11.iii.2000, A. Freidberg (2♂); Yerushalayim, Bet haKerem [Jerusalem, Beth Hakerem], 1.iv.1950 (2♂, 1♀), 25.iv.1950 (1♀), v.1953 (1♀), all O. Theodor; Yerushalayim, Har haZetim [Mt. Scopus], 24.ii.1942, collector unknown (1♂); Yerushalayim, HaMekasher, 25.ii.1950, collector unknown (1♂) [in Hebrew]; Kefar [Kfar] Adummim, 3.iii.1981, F. Kaplan (1♀), 3.iii.1981, A. Freidberg (1♀); 'En [Ein] Gedi, 19.iii.1975, A. Freidberg (1♂), 5.ii.2003, L. Friedman (1♂) (all TAUI).

Distribution

Southern Europe, Turkey, Israel. First record for Greece.

Etymology

The new replacement name is a diminutive of its senior synonym. It is an adjective in nominative singular.

Remarks

The above redescription provides some corrections and additions to the original description, such as those referring to coloration of the legs and structure of the male tarsi. *D. (D.) signatella* nom. n. is distinctive in that, whereas it greatly resembles *D. (D.) didyma* in the wing pattern, the structure of the male terminalia indicates its close relationship to *D. (D.) mitis*.

Dicranomyia (Dicranomyia) ventralis (Schummel, 1829)

Limnobia ventralis Schummel, 1829: 136, Pl. 1, Fig. 10 (wing).

Dicranomyia ventralis. Lackschewitz and Pagast, 1942: 34, Pl. 8, Fig. 65 (male terminalia).

Material examined

ISRAEL: Haspin [Khispin], 28.x.1983 (1♂), 3.i.1984 (1♂, 1♀), 19.i.1984 (1♂, 1♀), 7.iii.1984 (1♂), all I. Nussbaum (TAUI). EGYPT: Mit 'Uqbah [Mit Ogba], 14.iv.1943, collector unknown (2♀) (TAUI).

Distribution

Europe, Egypt, Transcaucasia, Israel, Middle Asia, Siberia, North Korea, India. First records for Egypt and Israel.

Subgenus *Glochina* Meigen, 1830

Key to species of *Dicranomyia (Glochina)* in Israel

1. Rostral spines of male terminalia strongly divergent from their bases ...***D. (G.) mediterranea***
-. Rostral spines of male terminalia slightly divergent only proximal to tips..... ***D. (G.) pauli***

Dicranomyia (Glochina) mediterranea Lackschewitz in Lackschewitz and Pagast, 1942

Dicranomyia mediterranea Lackschewitz in Lackschewitz and Pagast, 1942: 35, Pl. 8, Fig. 67 (1941) (male terminalia).

Dicranomyia (Glochina) mediterranea. Geiger, 1993: 9 (neotype designation), Figs. 1–4 (male terminalia).

Material examined

ISRAEL: Rantis Junction, nr. Nahshonim, 13.xii.1997, A. Freidberg (1♂) (TAUI).

Distribution

Spain, Italy (Sardinia), Algeria, Israel. First record for Israel.

Dicranomyia (Glochina) pauli Geiger, 1983

Dicranomyia (Salebriella) pauli Geiger, 1983: 639, Figs. 1–4 (male terminalia).

Material examined

ISRAEL: Bar'am, 11.–14.xi.1977 (1♂), 18.–20.xi.1977 (1♀), all A. Freidberg (all TAUI).

Distribution

Great Britain, Switzerland, Italy, Macedonia, Israel. First record for Israel.

Dicranoptycha Osten Sacken, 1860

Key to species of *Dicranoptycha* in Israel

1. Wing strongly infuscated, still more intensively so along distal anterior margin .... ***D. freidbergi***
-. Wing slightly and evenly infuscated, costal stripe not apparent .....***D. fuscescens***

Dicranoptycha freidbergi Starý, 1994

Dicranoptycha freidbergi Starý, 1994: 165, Figs. 1–2 (male terminalia), 3 (female terminalia).

Literature

Starý, 1994: 165 (Tel Dan (holotype), Panyas [Baniass], Monfort, Bet Hillél, Park HaYarden, Hefa [Haifa], Zomet Ha'Amaqim [Jalame], Me'ir Sheféya).

Type material examined

Holotype ♂ (original designation), ISRAEL: Tel Dan, 10.vi.1976, A. Freidberg (TAUI). Paratypes: ISRAEL: Tel Dan, 10.vi.1976, A. Freidberg (1♀); Panyas [Baniass], 13.vi.1982, A. Freidberg (1♀); Monfort, 2.vi.1981, A. Freidberg (1♂); Bet Hillél, 15.vi.1985, I. Nussbaum (1♂), Park HaYarden, 7.v.1987, A. Freidberg and I. Yarom (1♂, 2♀); Hefa [Haifa], 13.v.1978, A. Freidberg (1♀); Zomet Ha'Amaqim [Jalame], 18.–22.v.1993, A. Freidberg (1♀), 26.–30.v.1993, A. Freidberg (3♀); Me'ir Sheféya, 18.vi.1982, I. Nussbaum (1♀) (TAUI, JSO).

Other material examined

ISRAEL: Nahal 'Iyyon, HaTanur, 5.vi.2002, A. Freidberg (1♂); Mezudat Nimrod (800 m), 13.vi.1996, A. Freidberg (1♂); Panyas, 18.vii.1995, A. Freidberg (2♀); Nahal Oren, 30.v.1995 (2♂), 30.v.1998 (2♂, 2♀), 2.vii.2002 (1♀), 2.vi.2003 (2♂, 10♀), 4.v.2004 (1♀), riverbed, 14.v.2003 (1♂), all A. Freidberg; Zomet Ha'Amaqim [Jalame], 26.–30.v.1993, A. Freidberg (1♀); 'En Afeq, 17.v.1994, A. Freidberg (1♂, 1♀) (TAUI).

Distribution

Israel.

Dicranoptycha fuscescens (Schummel, 1829)

Limnobia fuscescens Schummel, 1829: 121, Pl. 1, Fig. 7 (wing).

Dicranoptycha (Dicranoptycha) fuscescens. Starý, 1972: 407, Figs. 3 (male terminalia), 8–9 (female terminalia).

Material examined

ISRAEL: Tel Dan, 5.v.1977 (1♂), 13.iv.1983 (1♂), all A. Freidberg; Nahal Dishon, nr. Bar'am, 11.v.1982, A. Freidberg (1♂); Peqi'in, 14.v.1974, A. Freidberg (1♂); Upper Nahal 'Ammud, 18.v.1983, A. Freidberg (1♀); Park HaYarden, 7.v.1987 (2♂, 3♀), 2.iv.1998 (4♂, 3♀), all A. Freidberg; Hefa [?Carmel], Ramot Remez, 2.v.2002, A. Freidberg (1♂); Nahal Oren, 14.v.2002 (1♂), riverbed, 14.v.2003 (1♀), all A. Freidberg; Zikhron Ya'aqov, 1.iv.1998 (2♂, 1♀), 1.v.1998 (1♀), all A. Freidberg; Bet Hillel, 15.v.1985, I. Nussbaum (1♀) (TAUI).

Distribution

Europe, North Africa, Turkey, Cyprus, Transcaucasia, Lebanon, Israel, Iran, ?Kazakhstan. First record for Israel.

Geranomyia Haliday, 1833

Key to species of *Geranomyia* in Israel

1. Proboscis very long, longer than half of body; wing unspotted except for slightly marked stigma.....***G. annandalei***
-. Proboscis shorter, subequal to combined length of head and thorax; wing with 6–7 spots at anterior margin.....***G. caloptera***

Geranomyia annandalei Edwards, 1913

Geranomyia annandalei Edwards, 1913: 47.
Geranomyia annandalei. Lackschewitz and Pagast, 1942: 47 (key).

Literature

Edwards, 1913: 47 (Plain of Gennesaret near Lake Tiberias); Bodenheimer, 1937: 183 (without localities); Alexander, 1970: 146, 148 (Ein Gedi); Savchenko et al., 1992: 353 (without localities).

Material examined

ISRAEL: ‘En Sheva (Tābīgha) [Tabgha], ii.1943, collector unknown (1♂); Bet She’an [Galilee Palestine, Beisan], 20.xi.1924, O. Theodor (1♂, 2♀); ‘En Beroshim, Judean Hills [Ein Arus], 28.v.1964, Margalit (1♂, 1♀); Nahal Perat [W. Kelt], 25.iii.1975, A. Freidberg (1♀); Yeriho [Jericho], 25.viii.1941, collector unknown (1♂); Nahal Qumeran, 22.iii.1993, A. Freidberg (2♂); ‘Enot Zuqim [Enot Zukim], 7.xii.1992, A. Freidberg (1♂); ‘Enot Qane [Kanne], 25.iii.1987 (1♂), 31.i.1995 (1♂), all A. Freidberg; ‘En [Ein] Gedi, 17.vii.1971, J. Kugler (1♂); Ne’ot HaKikkar, 22.x.1965, Margalit (1♀); ‘En ‘Avedat [Ein Ovdat], 15.v.1963, Margalit (1♀, 1 specimen) (all TAUI); Negev, ‘En ‘Avedat [En Ovdath], 8.v.1984, L. Botosaneanu (1♂) (ZMAN). EGYPT: Sinai, Ein Qsaib, 15.iii.1982, I. Yarom (1♂), A. Freidberg (1♀); Sinai, Wadi Hibran, 11.iv.1973, A. Freidberg (2♀) (all TAUI).

Distribution

Egypt, Israel. First record for Egypt.

Geranomyia caloptera Mik, 1867

Geranomyia maculipennis Mik, 1864: 791, Pl. 21A, Fig. 1 (wing).
Geranomyia caloptera Mik, 1867: 423 [a replacement name for *Geranomyia maculipennis* Mik, 1864, a junior primary homonym of *Geranomyia maculipennis* Curtis, 1835, Great Britain].
Geranomyia caloptera. Lackschewitz and Pagast, 1942: 49, Pl. 19, Fig. 85 (male terminalia), Pl. 12, Fig. 95 (wing).

Material examined

ISRAEL: ‘En [Ein] Meshoshim, 25.v.1977, A. Freidberg (2♂, 1♀) (TAUI).

Distribution

Southern part of Europe, Israel. First record for Israel.

Helius Lepeletier and Serville, 1829

Key to species of *Helius* in Israel

1. Wing with stigma barely distinct, elongate, light grayish ..... ***H. longirostris longirostris***
-. Wing with stigma conspicuous, short-oval, dark brown ..... ***H. pallirostris***

Helius longirostris longirostris (Meigen, 1818)

Limnobia longirostris Meigen, 1818: 146.
Helius longirostris. Edwards, 1938: 46, Text-fig. 7c (male terminalia).

Literature

Bodenheimer, 1937: 183 (as *Rhamphidia*; without localities); Savchenko et al., 1992: 321 (without localities).

Material examined

None.

Distribution

Europe, Israel, ?Egypt.

Helius pallirostris Edwards, 1921

Helius pallirostris Edwards, 1921: 206, Pl. 1, Fig. 5 (male terminalia).

Material examined

ISRAEL: Haspin [Khispin], 28.x.1983, I. Nussbaum (1♀); Ne'ot HaKikkar, vii.1965, light trap, Margalit (1♂, 4♀) (TAUI).

Distribution

Europe, Azerbaijan, Israel, Iran, Middle Asia. First record for Israel.

Limonia Meigen, 1803

Key to species of *Limonia* in Israel

1. Femora with three dark rings. ..... ***L. nubeculosa***
-. Femora with at most two dark rings. **2**
2. Prescutum yellow, with single narrow dark median stripe ..... ***L. phragmitidis***
-. Prescutum brown with extensive pattern consisting of three broad shiny dark brown stripes ..... ***L. nussbaumi* sp. n.**

Limonia nubeculosa Meigen, 1804

Limonia nubeculosa Meigen, 1804: 60.

Limonia nubeculosa. Lackschewitz and Pagast, 1940: 15, Pl. 1, Fig. 7 (wing), Pl. 3, Fig. 26 (male terminalia).

Material examined

ISRAEL: Har [Mt.] Hermon (1700 m), 10.vi.1983, I. Nussbaum (1♂), (1600 m), 25.v.1977 (1♂, 1 specimen), 14.v.1981 (2♂, 2♀), 19.v.1983 (1♂), 9.vi.1992 (2♀), 23.v.1998 (1♂, 1♀), 12.vi.2003 (1♂), all A. Freidberg, 16.v.1995, I. Yarom (1♂, 3♀), (1500–1600 m), 22.v.1990 (1♀), (1400–1650 m), 18.v.1976 (2♀), (1500 m), 16.v.1995 (8♂), all A. Freidberg; Bar'am, 28.xi.1977, A. Freidberg (1♂); Har Meron Reserve, Peqi'in (900 m) (32°59'N 35°20'E), 25.iv.2002, A. Freidberg (1♂) (all TAUI).

Distribution

Canada, USA, Europe, Canary Islands, North Africa, Turkey, Transcaucasia, Israel, Asian Russia including Russian Far East, North Korea, Japan. First record for Israel.

Limonia nussbaumi Starý and Freidberg, sp. n.

(Figs. 22–23)

Description

Medium-sized, robust species: body length 5.5–10.0 mm, wing length 6.5–10.5 mm. General coloration dark brown, patterned with reddish-yellow, prescutum shiny, abdomen banded.

Male. **Head**. Black, with dense gray microtrichia on frons and vertex. Rostrum dark brown. Antenna dark brown, moderate in length, extending beyond anterior margin of prescutum, flagellomere 1 yellowish at base. Flagellomeres generally short- to long-ovoid, progressively decreasing in breadth distally. Longest verticils about twice as long as their respective flagellomeres. Short, suberect pubescence observable on all flagellomeres.

Thorax. Mostly brown, patterned by reddish-yellow. Pronotum polished dark brown. Prescutum brown in various hues, with broad, polished dark brown median stripe and somewhat paler lateral stripe on each side. Stripes divided by reddish-yellow streaks extended around prescutal pits. Lateral margin of prescutum with whitish microtrichia. Scutum and scutellum patterned by brown and reddish-yellow, with whitish microtrichia medially. Mediotergite predominantly brown. Pleuron dark brown, somewhat paler anterodorsally, with whitish microtrichia throughout. Wing tinged with brownish, with pattern usual for genus, consisting of three brown spots near anterior margin: at origin of vein Rs, at tip of vein Sc_1 and over vein R_2 (stigma), with additional seams along crossveins and some longitudinal veins. No clouds observable in cells. Venation typical for genus. Halter whitish-yellow, knob dark brown. Coxae and trochanters reddish-yellow. All femora yellow, conspicuously darkened at tips, fore femur with extensive median darkening. Tibiae yellow, tarsi darkened.

Abdomen. Banded, with anterior parts of segments reddish-yellow, posterior parts dark grayish-brown; basal and apical segments often dark brown throughout. Male terminalia (Figs. 22–23) reddish-yellow. Tergite 9 essentially semicircular, with posterior margin formed by pale bar producing two short lobes and very narrow median notch. Gonocoxite stout, with numerous dense and rather long setae dorsally. Gonostylus conical, slightly curved, pale, not especially swollen, gradually tapered into narrowly rounded apex. Aedeagus club-shaped at apex, rather broad at base. Parameres short, as in Fig. 23.

Female. Resembling male in general appearance. Female terminalia with cercus almost straight, acute at tip, slightly longer than tergite 10.

Material examined

Holotype ♂, ISRAEL: [Central Coastal Plain:] Tel Aviv [32°08'N 34°50'E], 12.ii.1973, A. Freidberg (TAUI) Paratypes: ISRAEL: Nahal 'Iyyon [N. Fyon], 10.iii.1982, I. Nussbaum (1♂); Tel Dan, 13.iv.1983, A. Freidberg (1♀); Dafna, 18.iii.1973, M. Kaplan (1♂); Panyas [Banyas], 8.iii.1984, I. Nussbaum (5♂); HaGoshrim, 28.ii.1977, A. Freidberg (2♂, 3♀); Galilee, 'En Theo spring, 29.–30.iv.1984, at light, L. Botosaneanu (1♂) (ZMAN); Gonen, 15.iii.1975, A. Freidberg (2♂); Nahal Keziv, 5.iii.1978, M. Kaplan (1♀); Monfort, 4.iii.1976 (11♂, 5♀), 5.iii.1978 (1♂, 1♀), 10.iv.1993 (1♂), all A. Freidberg, 10.iii.1981 (1♂), 17.iii.1983 (2♂, 2♀), all F. Kaplan; Park HaYarden, 14.iv.1999, A. Freidberg (1♂, 1♀); Rīhāniya, 16.iv.1992, A. Freidberg (1♂); Har Meron [Mt. Meiron] (1100 m), 27.iv.1984, I. Yarom (1♂), 14.iv.1999 (2♂, 1♀), (1000 m), 16.iv.1992 (1♂, 1♀), all A. Freidberg, (900 m), 7.iv.1987 (3♂), (950 m), 18.iv.1984 (1♂), all I. Nussbaum; Zefat, 3.iv.1971, J. Kugler (1♂, 1♀); Nahal 'Ammud, 31.i.1982 (3♂, 3♀), 21.iii.1982 (4♂, 2♀), 31.iii.1982 (1♂), all I. Nussbaum, 23.ii.1983, I. Yarom (1♂, 1♀); 'Ein el Asad [En-el-asad], 18.iv.1984, I. Nussbaum (1♂); Qusbīye, 15.iv.1982, S. Foltyn (1♂); Nesher, 4.iii.1975, F.Kaplan (1♂, 1♀); Yagur [Jadjur] nr. Hefa [Haifa], 4.iii.1924, O. Theodor (1♂, 2♀); Har Carmel, 6.iii.1971, J. Kugler (2♂), 14.ii.1976, A. Freidberg (6♂, 1♀); Hefa [Haifa], 24.ii.1968, J. Kugler (1♂); Hefa [Haifa], Nahal Siah, 26.ii.1994, Y. Nussbaum (3♂); Nahal Oren, 4.iii.1975, M. Kaplan (8♂, 4♀), F. Kaplan (1♂, 1♀), 22.ii.1981, T. Furman (1♂); Me'arot Telimon [h. Telimon], 3.iii.1982, I. Nussbaum (1♂); Muhraqa [Nuhtaga], 18.iii.1987, I. Nussbaum (1♂); Har Tavor [Mt. Tabor], 31.iii.1973, D. Furth (3♂, 3♀); Gesher, 16.iii.1973, D. Furth (1♀); Reshafim, 17.ii.1973, D. Furth (1♂, 1♀); Gilboa', 17.iii.1978, D. Simon (1♀); Tiv'on, 6.iii.1975, A. Freidberg (21♂, 15♀, 1 specimen), 2.iv.1975, F. Kaplan (1♂, 4♀); Dalya, 23.iii.1973, D. Furth (3♂); Elro'i, 4.iii.1975, F. Kaplan (2♂); Ma'agan Mikha'el [Michael], 4.iii.1975, M. Kaplan (1♀); Nahal Poleg, 6.ii.1974, A. Freidberg (1♂); Sabastiya, 24.iii.1973, D. Furth (2♂, 1♀); Upper Nahal Tirza [Up. W. Faria], 20.ii.1974, A. Freidberg (2♂, 1♀); Central Nahal Tirza [C. W. Faria], 20.ii.1974, A. Freiberg (2♂); Nahal Tirza [W. Faria], 6.iii.1974, D. Furth (1♂), 1.iii.1973, A. Freidberg (2♂); Qedumim, 20.iii.1999, L. Friedman (1♀); Shekhem [Nablus], 1.iii.1973, D. Furth (1♂); 'Azzūn. 1.iii.1973, M. Kaplan (1♀); 'Ez Efrayim, 7.iii.1997, L. Friedman (2♀); Horashim, 19.ii.1975, F. Kaplan (1♀); Herzliyya, Malaise trap, 13.iv.1982 (1♂), 25.ii.1982 (1♀), all A. Freidberg; Tel Aviv, 24.i.1968 (1 specimen), J. Kugler, 12.ii.1973 (1♂), 26.ii.1973 (10♂, 5♀), 14.iii.1973, A. Freidberg (1♀); Tel Aviv, Abu Kabir, 2.iii.1954, L. Fishelsohn (1♀); Bar-Ilan, 3.iii.1982,? Y. Zvik (1♂, 1♀); Petah Tiqwa [Petach-Tikva], 29.iii.1982 (1♂), 2.iv.1982 (1♂), all I. Nussbaum; Antipatris, 28.iii.1982, I. Nussbaum (2♂, 5♀); Rantis Juction nr. Nahshonim, 13.iv.1999, A. Freidberg (1♂); Shoham (32°00.122'N 34°57.667'E), 2.iii.2004, I. Zonstein (1♀), I. Gahanama (1♂); Har Tuv, 3.iii.1954, Bramson (1♂); Bet Shemesh, 30.iii.2004, I. Zonstein (1♀); Zomet

HaEla, 3 km E, 11.iii.2000, A. Freidberg (3♂); 'En Hemed [Aqua Bella, Jerusalem], 21.iii.1954, O. Theodor (1♂); Yerushalayim, Bet haKerem [Palestine, Jerusalem, Beth Hakerem, Wadi Ruaz], 22.iii.1952 (1♀), 20.iv.1953 (1♀), 25.iv.1950 (1♀), all O. Theodor; Yerushalayim [Jerusalem], Hadassa, 16.iv.1972, collector unknown (1♀); Yerushalayim [Jerusalem], iii.1958, Werner (1♀); Ma'alé haHamisha, 30.iii.1974, F. Nachbar (1♂); Nahal Ezyona, 26.iii.1974, D. Furth (2♂, 4♀); Bet [Beit] Guvrin, 31.iii.1975 (2♀), 31.iii.1981 (1♂, 1♀), all F. Kaplan, 31.iii.1975, A. Freidberg (3♂, 2♀); Nahal Perat [W. Kelt], 15.iii.1975 (1♂), 25.iii.1975 (1♂), all A. Freidberg (TAUI, JSO). GREECE: Kos I., Mt. Dikeos, N of Zia (3–400 m), 26.iv.1993 (3♂), 29.iv.1993 (1♀), 4 km S Kos (1–200 m), 28.iv.1993 (3♀), Mt. Dikeos, S of Zia (2–300 m), 29.iv.1993 (7♂, 7♀), all P. Oosterbroek and C. Hartveld; Mt. Dikeos, Old Pyli [Pili], 15 km W of Kos ruines, 17.iv.1984, D. Vermoolen (2♂); Rodos Is., Lindos, 28.iii.1970 (3♂), 1.iv.1970 (1♂, 1♀), all A. C. and W. N. Ellis, 4.iv.1971, V. S. v.d. Goot (1♂, 1♀) (ZMAN). TURKEY: Prov. Izmir, Ephese, 14.iv.1988, J. A. W. Lucas (1♀; ZMAN); Muğla, Milas, 8 km from village Selimiye (427 m), 12.iv.2003 (1♂, 1♀); Muğla, Yatagan, village Sahinler (472 m), 11.iv.2002 (1♂, 1♀), 12.iv.2003 (1♂); Muğla, Milas, Oren, 12.iv.2002, (in ethanol) (2♂), all H. Koç (MUTR). Hatay, Yayla Dagi, road between Harbiye and Senkey (600 m), 3.–13.v.1982, fam. v. Oorschot and G. Hesselbarth (1♀) (ZMAN). CYPRUS: Orga, 10.iii.1981 (2♂); Kantara, 13.iii.1981 (1♂); Kyrenia, 14.iii.1981 (4♂, 3♀), 19.iii.1981 (2♂); Klepini, 11.iii.1981, (1♂, 1♀); Amathus, 31.iii.1978, (1♀); Evrykhou, 1.iv.1978 (1♂, 1♀); Mt. Kornos, 15.iii.1981 (1♂); Cedars Valley, 4.iv.1978 (1♂, 1♀); Pissouri, 1.iv.1978 (1♂); Kellaki, 4.–5.iii.1955, G. Mauromoustakis (1♂, 1♀); Palaco, Kastrisca, 16.iii.1981 (1♂), 17.iii.1981 (2♂), all H. G. M. Teunissen (ZMAN). Kalo Chório (34°52' N 33°01' E), 9.iv.2002, M. Vála (1♂); Lemesos env., Akrounta nr. Germasogeia dam, 6.iv.2002, J. Roháček (2♂) (JSO). LEBANON: Basin of Aarqa, a stream near village Houaich, 26.iii.2000 (1♂); Basin of Oustouanea, Jaouz brook near village Koubayette, 14.iii.1999, (all in ethanol) (1♂, 1♀), all A. Dia (AUBL).

Distribution

Greece, Turkey, Cyprus, Lebanon, Israel.

Etymology

This species is named after Itzchak Nussbaum, an amateur dipterist, who collected part of the type material of this species, as well as specimens of many other species studied by us. The specific epithet is a noun in genitive singular.

Remarks

The new species is clearly the most similar and most closely related to *L. maculipennis* (Meigen, 1818), differing from the latter in many details of coloration and structure of the male terminalia. It is generally paler, having the prescutum brown in various hues, with distinct polished dark brown stripes (not expressly black throughout as in *maculipennis*), and the wing pattern paler and less extensive, without any clouds in the cells. The male terminalia of *L. nussbaumi* sp. n. differ from those of *L. maculipennis* in that tergite 9 is generally narrower, with a very narrow median notch at its posterior margin (broader in *maculipennis*, with the notch wider), the dorsal aspect of the gonocoxite is provided with numerous long and dense setae (setae distinctly shorter and

less numerous in *maculipennis*), and the gonostylus is pale, conical, gradually tapered into a narrowly obtuse apex (darkened apically in *maculipennis*, somewhat swollen medially beyond mid-length, then emarginate, with apex more or less truncate; see also Starý, 1990, Figs. 1−4). The distinctive shape of the aedeagus, unusual for the genus, is shared by the two species, and indicates a close relationship between them. It is club-shaped at apex, somewhat narrower in *L. nussbaumi* sp. n. than in *L. maculipennis*. The medial process of the paramere is slightly longer and narrower in the new species. *L. nussbaumi* sp. n. appears to be the commonest limoniid in Israel, being widespraed also throughout the eastern Mediterranean.

***Limonia phragmitidis* (Schrank, 1781)**

Tipula phragmitidis Schrank, 1781: 426 [senior synonym; re-instated by Savchenko et al. (1992) from synonymy of *Tipula tripunctata* Fabricius, 1781 (= *Limonia*), a junior primary homonym of *Tipula tripunctata* Müller, 1764; an unrecognized species].

Tipula tripunctata Fabricius, 1781: 405.

Limonia tripunctata. Lackschewitz and Pagast, 1940: 10, Pl. 2, Fig. 15 (male terminalia).

Literature

Bodenheimer, 1937: 183 (as *Limnobia tripunctata*; without localities); Savchenko et al., 1992: 361 (without localities).

Material examined

None.

Distribution

Europe, Turkey, Transcaucasia, Israel, Jordan, Middle Asia, West Siberia.

***Orimarga* Osten Sacken, 1869**

Subgenus *Orimarga* s. str.

***Orimarga (Orimarga) frommeri* Alexander, 1970**

Orimarga (Orimarga) frommeri Alexander, 1970: 145, Figs. 1 (wing), 2 (male terminalia).

Literature

Alexander, 1970: 145 (Ein Gedi); Savchenko et al., 1992: 328 (without localities).

Material examined

ISRAEL: ‘En Dawid [Ma’ayan David], 10.viii.1975, M. Kaplan (4♂); ‘En [Ein] Gedi, 16.viii.1957, J. Wahrman, (1♂), 17.vii.1971, J. Kugler (1♂), 6.iv.1983, A. Freidberg (1♂) (TAUI).

Distribution

Israel.

Remarks

The male terminalia of this species seem to have been illustrated accurately in detail by Alexander (1970, Fig. 2), but some parts were severely misinterpreted, apparently caused by pressing on the slide. What is shown as being a paramere [gonapophysis] represents a curious combination of setiferous lobes of both tergite 9 and sternite 9, whereas the true parameres (pale membraneous, roughly triangular blades with a long, very slender apical portion and without any setae (as in other *Orimarga*)), are not drawn at all.

Trentepohlia **Bigot, 1854**

Subgenus *Trentepohlia* s. str.

Trentepohlia is a large genus, comprising over 200 species, mostly distributed in the tropics of both the Old and the New World. It is currently divided into seven subgenera based on the wing venation, which is rather diverse, showing some quite unusual features, such as R_5 being fused to M_{1+2} to form the anterior border of the discal cell, from which four veins issue extending to the wing margin, viz. R_5, M_{1+2}, M_3 and M_4. The genus was assigned to Eriopterini (= Chioneinae) (e.g. Alexander, 1956a). Recently, it was suggested to belong to the subfamily Limoniinae (see Starý, 1992). Some structural details of the male terminalia, such as the median interruption of sternite 9, well-developed lateral (parameral) apodemes and presence of the so-called ventral bridge (term coined by Tjeder (1958) for *Orimarga*), suggest a relationship of *Trentepohlia* with *Orimarga* (see Fig. 27 and Tjeder, 1958, Figs. 27–34). Based on the larval characters, Oosterbroek and Theowald (1991) considered *Trentepohlia* to be closely related to *Limnophilomyia* Alexander, 1921, a genus closely related to the Limoniinae in their phylogeny.

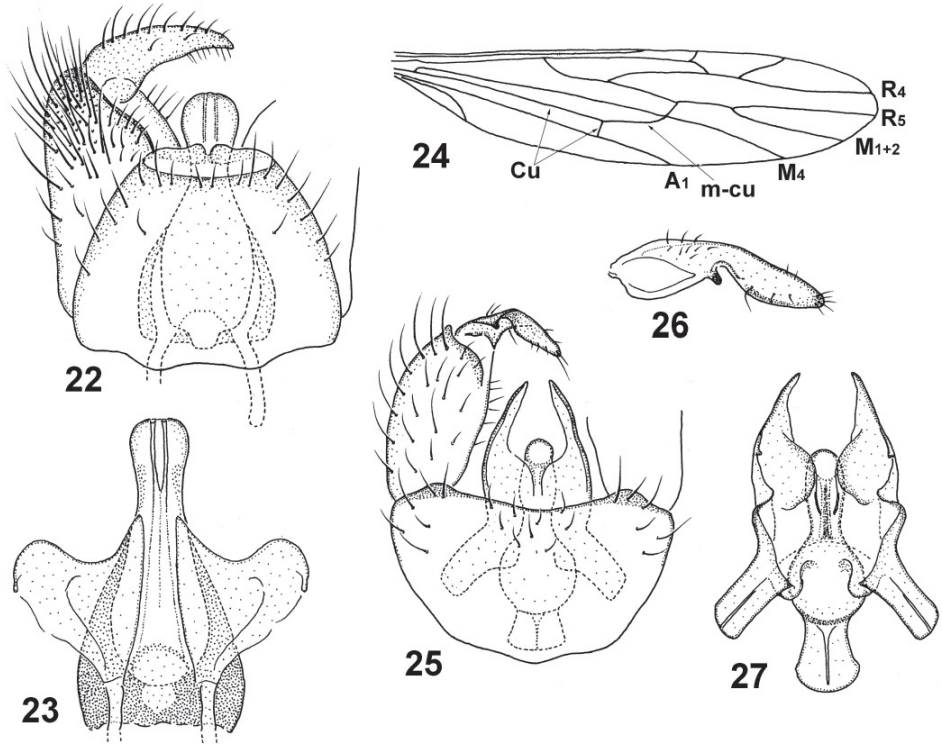
In some *Trentepohlia* species, the veins Cu and A_1 are widely separate at the wing margin, as is usual in the family Limoniidae and all lower Diptera (Nematocera). However, in other species, these veins are proximate at the apex, resembling the situation in the lower Brachycera. In still other species, the veins are fused for a short distance proximal to the apex to form a closed cell cu (so-called anal cell in Brachycera). It is noteworthy that McAlpine (1989: 1414) noted that this fusion never occurs in the Nematocera. In a few *Trentepohlia* s. str. species, vein Cu becomes considerably retracted, its distal section occupying a vertical position, while crossvein M-Cu becomes lengthened and bent rearwards (Fig. 24) as if drawn back by the retracting vein Cu. This unusual venation is present also in *T. (T.) zambesiae* (Alexander, 1912), the single *Trentepohlia* so far known from the West Palaearctic.

Trentepohlia (Trentepohlia) zambesiae (Alexander, 1912)

(Figs. 24–27)

Mongoma zambesiae Alexander, 1912: 86, Fig. 3 (wing).

Trentepohlia efflatouni Pierre, 1923: 83, Figs. a (wing), b-c (male terminalia), d-e (female terminalia), **syn. n.**



Figs. 22–23. *Limonia nussbaumi* sp. n. (holotype), male terminalia: 22. General view, dorsal. 23. Aedeagal complex, dorsal. Figs. 24–27. *Trentepohlia (Trentepohlia) zambesiae* (Alexander). 24. Wing (holotype). Figs. 25–27. Male terminalia (lectotype of *efflatouni*): 25. General view, dorsal. 26. Gonostylus, caudal. 27. Aedeagal complex, dorsal.

Redescription (of male terminalia; Figs. 25–27)

Tergite 9 with posterior margin shallowly emarginate, with indistinct tubercle on each side. Sternite 9 extensively desclerotized, consisting of two lobes widely separated in middle. Gonocoxite simple, conical in lateral view. Single gonostylus constricted and slightly bent at about mid-length, rounded at apex and provided with blackened lobule just proximal to constriction (Fig. 26). Aedeagal complex (Fig. 27) large compared to entire hypopygium. Paramere rather long, sword-like, subacute at tip and broadened proximally. Aedeagus short and broad, curved ventrally at apex. Vesica spherical. Apodeme of vesica rounded and generally fan-shaped. Lateral (parameral) apodeme well-developed, long and generally oblong, conspicuously projecting laterally.

Type material examined

Mongoma zambesiae: Holotype ♀ (original designation and monotypy), MOZAMBIQUE: Quelimane [spelled "Queliniani" by Alexander, 1912], Zambesi River, 20.xii.1908, 1 slide (♀ wing), C. W. Howard (USNM), labelled "Holotype 851 / Trentepohlia / zambesiae (Alex.) /♀ / Quelimane / Port. East Africa / Dec. 20, 1908 / (C. W. Howard)" (hand-written label glued on the slide).

Trentepohlia efflatouni: This species was described from numerous males and females, collected at three localities in Egypt: "… le 6 décembre 1919, à Ghézireh ["… éclos des larves …"] … Nouzha: 18.7.21; Cléopâtra: 14.8.21." (Pierre 1923: 85). The senior author examined two syntypes, a male and a female. Lectotype ♂ (present designation), EGYPT: without locality label (MNHN), labelled "Trentepohlia (Trentepohlia) / efflatouni Pierre / C. Pierre det. 1923" and "Muséum Paris" (both labels printed). Labelled as lectotype by the senior author ("LECTOTYPE / Trentepohlia / efflatouni Pierre ♂ / J. Starý 2005", printed red label) and identified as *Trentepohlia (Trentepohlia) zambesiae*. The specimen, in perfect condition, is micro-pinned on a large circular cardboard disc, with the legs outspread. Another small blank paper disc below on the main pin. Apex of abdomen cut off. Terminalia dissected by the senior author (Figs. 25–27) and placed in a sealed plastic tube with glycerine, pinned with the specimen. The lectotype is designated here to stabilize the concept of the name as proposed herewith, particularly should the unexamined syntypes prove to belong to a different species. Paralectotype: 1♀ (MNHN), labelled "Trentepohlia / Efflatouni / Cléopâtra / 18–7–21 / 14–8–21 / Ghézire eclosion / 6–12–19" [evidently a serial label with the data slightly different from what is quoted above from Pierre's description]. Mounted as the lectotype, with other two labels the same, labelled as paralectotype by the senior author.

Other material examined (From Israel and elsewhere).

ISRAEL: Hefa Bay, near Zur Shalom [Kurdani], 14.vii.1964, Margalit (1♂); Herzliyya, 1.xi.1978, A. Freidberg (1♂) (TAUI). NIGERIA: North West State, Badeggi, 22.xii.1968, J. T. Medler (1♀, 1 slide (♀ wing)) (USNM). MOZAMBIQUE [= "Portuguese East Africa"]: Luabo, 21.iii.1957 (2♂), 30.iii.1957 (1♂), 1.iv.1957 (1♂, 1 slide (♂ wing, mid leg)), vi.1957 (2♂, 1♀, 1 slide (♂ ant., wing, fore leg)), P. J. Usher [listed by Alexander, 1960b, 1964]; Quelimane, 20.xii.1908, C. W. Howard (3♀, 1 specimen) [in addition to a hand-written label "Quelimane 20–12–08", the specimens are labelled "Lor Marquez Africa" and "C W Howard Collector" (both labels printed); none belongs to the holotype slide] (USNM). SOUTH AFRICA: Natal, Umbilo, Durban, 23.iv.1955, (1 slide (♂ wing and legs)), A. L. Bevis (USNM) [listed by Alexander, 1956b].

Distribution

Egypt, Israel, Nigeria, Mozambique, South Africa. First records for Israel and Nigeria.

Remarks

The male lectotype of *T. (T.) efflatouni*, here designated, fits the description of *T. (T.) zambesiae* (Alexander, 1912), and is identical in the wing venation to the holotype wing of the latter species mounted on slide. The two species are likewise identical in the structure of both the male and female terminalia, as confirmed by examination of other specimens identified by Alexander as *T. (T.) zambesiae*. Thus, *T. (T.) efflatouni* is established here as a new junior synonym of *T. (T.) zambesiae*. The species appears to

be widely distributed throughout Africa, reaching the Mediterranean subregion of the Palaearctic Region (Egypt, Israel). Due to considerable uniformity of the male terminalia in *Trentepohlia*, the illustrations presented here (Figs. 25−27) mostly show higher-level characters, except for the structure of the aedeagal complex, which is species-specific, as confirmed by comparison to *T. (T.) gracilis* (see below).

T. (T.) zambesiae has two different spellings in the original description (Alexander, 1912): *zambesiae* on p. 86 in the species heading and twice on p. 88, and *zambeziae* (*"Mongonia"*) in the legend for Fig. 3 (p. 87). Since in a subsequent paper by the same author (Alexander, 1926: 177), *zambesiae* was used, the latter spelling is thereby fixed as the correct original spelling (Article 24.2.4. of ICZN, 1999).

Note. There have been several taxonomic and nomenclatural problems involving *T. (T.) zambesiae* and additional taxa which are reported below. The two syntypes of *T. (T.) gracilis*, from Madagascar, were examined by the senior author [1♂, 1♀ "Madagaskar / Ambodimanga / Hammerstein S. / Jan. 1906" (MZPW)]. Should *T. (T.) gracilis* Enderlein, 1912 [published February 1912] prove to be conspecific with *T. (T.) zambesiae* (Alexander, 1912) [published March 1912], it has priority. *T. (T.)* gracilis, however, is a distinct species, differing from *T. (T.) zambesiae* in many characters, both external (general coloration, wing venation, length of abdomen) and genital (structure of aedeagal complex). Other African species/subspecies with a similar wing venation (see Fig. 24) include *T. (T.) gracilis continentalis* Alexander, 1921 (South Africa: "Eastern Transvaal"), *T. (T.) nigripes* Alexander, 1953 (Madagascar), *T. (T.) leucophaea* Alexander, 1959 (Zimbabwe = "South Rhodesia") and *T. (T.) perelongata* Alexander, 1975 (Nigeria). According to their descriptions, these taxa likewise seem to differ from *T. (T.) zambesiae*, and, even if they do not, they do not threaten the latter species nomenclaturally. The unidentified *Trentepohlia* male reported by Hancock (1997) from Oman ["… Wadi al Khoud 23°33´N 59°35´E 22.x.1988 M. J. Ebejer" (NMWC)], is now without abdomen. It is clearly distinct from *T. (T.) zambesiae*, most probably belonging to *T. (T.) septemtrionalis* Alexander, 1921, described from Japan.

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