

Common Non-biting Moth Flies (Insecta, Diptera, Psychodidae) New to the Fauna of Turkey

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SUMMARY: Nine species of moth flies have been recorded for the first time from Turkey: These include *Coprotophoda brevicornis* (Tonnoir), *Logima albipennis* (Zetterstedt), *L. satchelli* (Quate), *L. zetterstedti* Jezek, *Psychoya grisescens* (Tonnoir), *Psychoda uniformata* Haseman, *Psychomora trinodulosa* (Tonnoir), *Tinearia alternata* (Say) and *T. lativentris* (Berden). *Paramormia* (*Duckhousiella*) *ustulata* (Walker) and *Psychodocha cinerea* (Banks) are mentioned in addition. All important data of visited localities are given, with a general characterization of the biotopes and the actual distribution was included. The fauna of non-phlebotomine moth flies of Turkey is now represented by 17 genera and 31 species.

Key words: Psychodinae, fauna, distribution, check list, Turkey

Türkiye'de Yaygın ve Sokucu Olmayan Moth Flies (Insecta, Diptera, Psychodidae) Faunasında Yeni Türler

ÖZET: Türkiye'den 9 adet moth flies ilk kez kaydedildi. Bu türler *Coprotophoda brevicornis* (Tonnoir), *Logima albipennis* (Zetterstedt), *L. satchelli* (Quate), *L. zetterstedti* Jezek, *Psychoya grisescens* (Tonnoir), *Psychoda uniformata* Haseman, *Psychomora trinodulosa* (Tonnoir), *Tinearia alternata* (Say) ve *T. lativentris* (Berden) dir. Ayrıca bu 9 türe ek olarak *Paramormia* (*Duckhousiella*) *ustulata* (Walker) ve *Psychodocha cinerea* (Banks) türlerinin tanımlanması da bu çalışmada yer aldı. Çalışmanın yapıldığı lokalitelere ait önemli bilgiler kaydedildi. Biotoplar genel olarak belirlendi ve gerçek dağılımları ilave edildi. Halen Türkiye moth flies faunasına ait 17 cinse bağlı 31 tür tespit edilmiş bulunmaktadır.

Anahtar Sözcükler: Psychodinae, fauna, dağılım, kontrol listesi, Türkiye

INTRODUCTION

Very little data has been mentioned on non-phlebotomine moth flies of Turkey so far: (1-3, 9-13). Larvae are mostly collectors and shredders of detritus and decaying organic matter. Adult are found in a wide range of habitats, e.g. manure and wet localities. The life history of moth flies was characterized generally for example by Jezek and Jezek & Bartak (4,6). Those species whose adult feed on human excrements, kitchen refuse and garbage may be important in the transmission of human disease. Broken scales of the wings, setae, hairs, bristles, sensory filaments of moth flies can cause asthmatical outbreaks and allergy (7). Larva of eurytopic species from subfamily Psychodinae may be urinophilic (urinary myiasis) (8).

Moth flies were collected by the junior author during the years of 1995-1997. The localities are situated in Central and East Anatolia. Mainly cereal grains (wheat, barley and rye) are grown in the Central and East Anatolia. Distribution of studied species was actualized from new faunistic papers of many authors quoted by Jezek (5).

MATERIAL AND METHODS

The insect material was collected by the state farm officials as well as the junior author. The collected flies were preserved in 70% ethanol and sent to the senior author in the Czech Republic, who mounted them on slides and studied them. In total, many thousands of specimens, belonging to eleven species, were examined. Only selected material, mounted on slides in Canada balsam, is presented in this paper. The material is deposited in the Department of Entomology of the National Museum (Natural History), Prague (=NMPC), Czech Republic.

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Characteristics of new localities of non-biting moth flies:

Çubuk, Ankara province: (40°14'N 33°02'E, small town 21 km N of Ankara, 940 m a.s.l.). Horse farm owned by Serum Production Unit of Hıfzısıhha Institute (Health Ministry). Horse stables, a polluted stream near the manure deposition, light trap, moth flies were collected by the state farm officials. Vegetation: A, B, E, L, O; iv, v, vi, vii, viii, ix, xi, xii, xvi, xviii, xx, xxv, xxx, xxxi, xxxii, xxxiii, xxxvi, xxxvii. (Loc. No.1)

Elmadağ, Ankara province: (39°55'N 33°54'E, small town 30 km SE of Ankara, Farm house 5 km N of Elmadağ near Samsun highway, 1130 m a.s.l.). An irrigation canal and a water well, light trap, Dr. Şükran Yağcı leg. Vegetation: B, D, K-M, O; i, iii, v, vi, vii, ix, xvi, xix, xx, xxv, xxx, xxxii, xxxvi. (Loc. No. 2)

Güvenli, Çorum province, Central Anatolia: (40°33'N 34°58'E, village 30 km NE of Çorum, 798 m a.s.l.). Manure deposition near the cowshed, polluted rill, outskirts of a mountain, light trap, Meral Aygen leg. Vegetation: B, D, E, G, L; iv, v, vii, ix, x, xi, xiii, xv, xvi, xxiii-xxv, xxx, xxxii, xxxiii, xxxvi. (Loc. No. 3)

Halikan, Malatya province: (38°21'N 38°18'E, village 20 km E of Malatya, 998 m a.s.l.). Irrigation canals, village gutters, a house-pond, light trap, Dr. Şükran Yağcı leg. Vegetation: C, D, K-M, O; iii, vii, x, xii, xvi, xix, xxiv-xxvi, xxix, xxx, xxxii, xxxv. (Loc. No. 4)

The Farm of VF-FU ENV., Elazığ province: (38°40'N 39°13'E, research object of Veterinary Faculty- Fırat University, 17 km W of Elazığ, 1100 m a.s.l.). Cowshed with water well, polluted rill and dustbins around, light trap, Dr. Şükran Yağcı leg. Vegetation: C, J, N; i, v, vii, x, xi, xiii, xiv, xvii, xxi, xxii, xxvii, xxx, xxxii, xxxiii, xxxvi. (Loc. No. 5)

Explanatory notes: M- male, F- female, LT- light trap, INS- inventory number of slide, *new species to Turkey. Veg.: A - O (trees): A - *Abies*, B - *Acacia*, C - *Armeniaca*, D - *Cydonia*, E - *Eleagnus*, G - *Juglans*, H - *Morus*, K - *Pirus*, L - *Populus*, M - *Prunus*, N - *Robinia*, O - *Salix*; i - xxxvii (plants and shrubs of undergrowth or crops): i - *Acantholimon*, ii - *Allium*, iii - *Anthemis*, iv - *Artemisia*, v - *Astragalus*, vi - *Avena*, vii - *Beta*, viii - *Caspicum*, ix - *Cicer*, x - *Citrullus*, xi - *Crocus*, xii - *Cucumis*, xiii - *Euphorbia*, xiv - *Gagea*, xv - *Helianthus*, xvi - *Hordeum*, xvii - *Ixilirion*, xviii - *Lens*, xix - *Medicago*, xx - *Mentha*, xxi - *Muscari*, xxii - *Ornithogalum*, xxiii - *Oryza*, xxiv - *Papaver*, xxv - *Phaseolus*, xxvi - *Phleum*, xxvii - *Pisum*, xxviii - *Poaceae*, xxix - *Rubus*, xxx - *Solanum*, xxxi - *Spinacia*, xxxii - *Triticum*, xxxiii - *Verbascum*, xxxiv - *Viola*, xxxv - *Vitis*, xxxvii - *Zea*.

FAUNISTIC RESULTS

Paramormia (Duckhousiella) ustulata (Walker, 1856): Çubuk (Fig 1., Loc.1), June 1995, F, LT, INS 6303; Halikan (Fig 1., Loc. No.4), 26.6.1995, M, INS 10221.

Distribution: Belgium, Bosnia, Bulgaria, Czech Republic, Denmark, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Macedonia, the Netherlands, Poland, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey; Azores, Canary I., Corsica, Madeira, Olanda I., Sardinia; Algeria, Israel, Morocco, Tunisia; Afganistan, China, Iran, Mongolia; USA.

Coprosychnoda brevicornis (Tonnoir, 1940): Çubuk (Fig 1., Loc.1), June 1995, M, LT, INS 6302

Distribution: Czech Republic, Denmark, France, Germany, Great Britain, Ireland, the Netherlands, Norway, Russia, Slovakia, Sweden. **New to the fauna of Turkey.**

Logima albipennis (Zetterstedt, 1850): Çubuk (Fig 1., Loc.1), June 1995, F, LT, INS 6306; Elmadağ (Fig 1., Loc.2) 15.6.1996, F, INS 12280; same, 20.6.1996, F, INS 12292; Farm VF-FU (Fig 1., Loc.5), 4.-16.7.1995, F, LT, INS 10102; Güvenli (Fig 1., Loc.3), 12.6.1997, F, INS 12277; Halikan (Fig 1., Loc.4), 26.6.1995, F, INS 10222.

Distribution: Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Luxemburg, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Sweden; Azores, Canary I., Madeira, Sardinia; Afganistan, China, India, Japan, North Korea, Syria; Africa, Australia, New Zealand, South America, USA; Campbell I., Juan Fernandez I., Kerguelen I., Macquarie I. **New to Turkey.**

Logima satchelli (Quate, 1955): Elmadağ (Fig 1., Loc.2), 20.6.1996, F, LT, INS 12291; Güvenli (Fig 1., Loc.3), 12.6.1997, F, INS 12278.

Distribution: Austria, Bosnia and Herzegovina, Czech Republic, Greece, Ireland, Italy, the Netherlands, Russia, Slovakia, Slovenia; Canada, USA. **New to Turkey.**

Logima zetterstedti Jezek, 1983: Elmadağ (Fig 1., Loc.2), 20.6.1996, F, INS 12293; Güvenli (Fig 1., Loc.3), 12.6.1997, M, INS 12275.

Distribution: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, the Netherlands, Norway, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland; Azores, Canary I.; Japan; Fiji I., Rjukju I. **New to Turkey.**

Psycha grisescens (Tonnoir, 1922): Çubuk (Fig 1., Loc.1), June 1995, F, LT, INS 6300; Halikan (Fig 1., Loc. 4), 26.6.1995, M, INS 10218.

Distribution: Austria, Belgium, Bosnia and Herzegovina, Czech Republic, Denmark, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Slovakia, Slovenia, Sweden; Algeria, Tunisia. **New to the fauna of Turkey.**

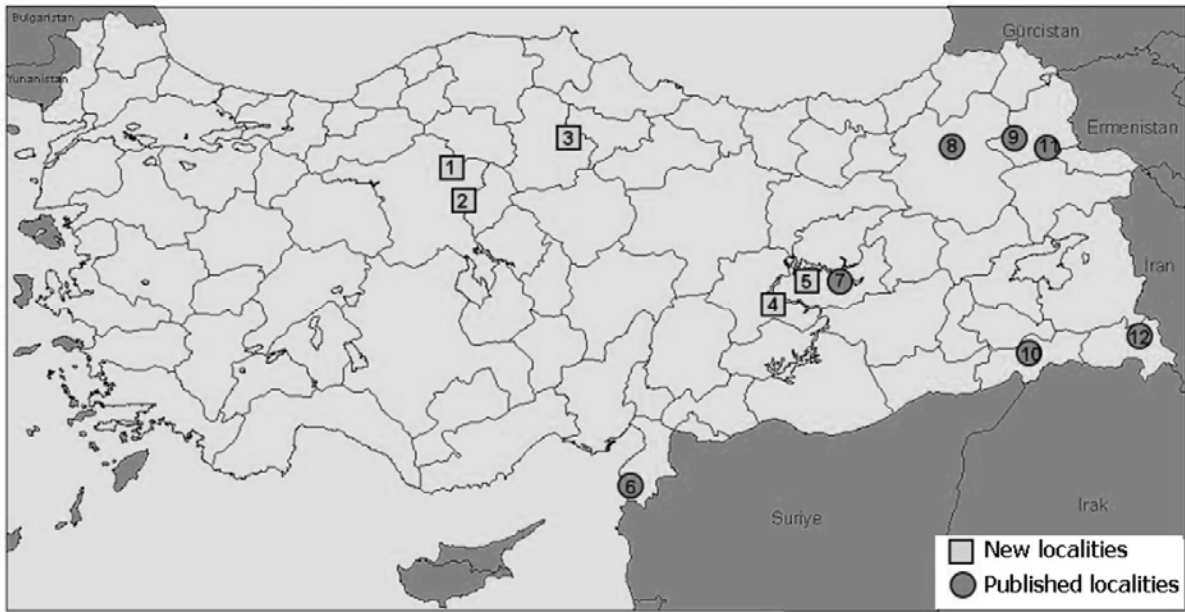


Figure 1. Present state of the faunistic research of common non-biting moth flies (Diptera: Psychodidae) in Turkey

New localities (1-5) of the subfamily Psychodidae from Turkey

1. Çubuk (Ankara province)
2. Elmadağ (Ankara province)
3. Güvenli (Çorum province)
4. Halikan (Malatya province)
5. The farm of the Veterinary Faculty of Fırat University (Elazığ province)

Published Localities (6-12) of Psychodidae moth flies from Turkey (1-3, 11-13)

6. Çevik (Hatay province)
7. Elazığ (Elazığ province)
8. Tortum (Erzurum province)
9. Sarıkamış (Kars province)
10. Beytüşebap (Şırnak province)
11. Kağızman (Kars province)
12. Yüksekova (Hakkari province)

***Psychoda uniformata* Hasaeman, 1907:** Çubuk (Fig 1., Loc.1), June 1995, F, LT, INS 6301; Farm VF-FU (Fig 1., Loc.5), 4.-16.7.1995, F, LT, INS 10103; Güvenli (Fig 1., Loc.3) 12.6.1997, F, INS 12279; Halikan (Fig 1., Loc.4), 26.6.1995, F, INS 10220.

Distribution: Austria, Czech Republic, Greece, Italy, Slovenia; Iran, Mongolia; USA. **New to Turkey.**

***Psychodocha cinerea* (Banks, 1894):** Çubuk (Fig 1., Loc.1), June 1995, F,LT, INS 6299; Farm VF-FU (Fig 1., Loc. 5), 4.-16.7.1995, F, LT, INS 10101; Halikan (Fig 1., Loc.4), 26.6.1995, F, INS 10223.

Distribution: Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Czech Republic, Denmark, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey; Azores, Canary I., Cyprus, Madeira, Sardinia; Algeria, Israel, Tunisia; Abkhazia, Afghanistan, Iran; Africa mer.; Australia, New Zeland; Argentina, Brazil, Canada, Chile; Juan Fernandez I., Puerto Rico I.; USA.

***Psychomora trinodulosa* (Tonnoir, 1992) :** Güvenli (Fig 1., Loc.3), 12.6.1997, F, INS 12276.

Distribution: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Romania, Russia, Sardinia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland; Algeria; USA. **New to Turkey.**

***Tinearia alternata* (Say, 1824):** Çubuk (Fig 1., Loc.1), June 1995, F, LT, INS 6304; Elmadağ (Fig 1., Loc.2), 20.6.1996, F,INS,12294; Farm VF-FU (Fig 1., Loc.5) 4.-16.7.1995, F, LT, INS 10099; Halikan (Fig 1., Loc.4), 26.6.1995,F,INS 10217.

Distribution: Austria, England, Belgium, Bosnia and Herzegovina, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Macedonia, the Netherlands, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland; Afghanistan, Bangladesh, Borneo, India, Japan, Malaysia, Mongolia, North Corea, Philipinnes, Samoa, Taiwan; Africa, Australia, New Zeland; Canal Zone, Costa Rica, Jamaica, Nicaragua, North and South America;

Canary I., Cape Verde I., Hawaii, Macquarie I., Micronesia, Puerto Rico, Rjukju I., Trinidad. **New to Turkey.**

Tinearia lativentris (Berden, 1952): Çubuk (Fig 1., Loc.1), June 1995, F, LT, INS 6305; Elmadağ (Fig 1., Loc.2), 20.6.1996, F, INS 12290; Farm VF-FU (Fig 1., Loc.5), 4.-16.7.1995, F, LT, INS 10100; Halikan (Fig 1., Loc.4), 26.6.1995, F, INS 10219.

Distribution: Austria, Czech Republic, Denmark, France, Germany, Greece, Great Britain, Ireland, Italy, the Netherlands, Russia, Sardinia, Slovakia, Sweden; Syria, Tunisia; Afghanistan, China; Canada, Mexico, Nicaragua, USA. **New to the fauna of Turkey.**

DISCUSSION

There are many effective methods of sampling adults: Malaise traps, yellow pan traps, suction traps, water traps, light , sticky and emergent traps, but also sweeping may provide satisfactory material (3). Additional data are needed for a basic study of region's biodiversity of moth flies of Turkey, a survey of zoogeographic affinities and the determination of ecosystem bioindicators for conservation purposes. The entomofauna is undergoing profound ecological change and further research is required to monitor its effects. There are only several first papers on non-biting moth flies from Anatolia, however, many further species may still be found in future, including those new to science.

List of Psychodinae moth flies known from Turkey

Psychodinae

Mormiini

Brunettiina

Atrichobrunettia Satchell, 1953

sg. *Mirousiella* Vaillant, 1974

tenuipennis Wagner & Vaillant, 1983

Mormiina

Mormia Enderlein, 1935

revisenda (Eaton, 1893)

Paramormiini

Paramormiina

Paramormia Enderlein, 1935

sg. *Duckhousiella* Vaillant, 1972

ustulata (Walker, 1856)

Trichopsychodina

Philosepedon Eaton, 1904

symmetricus Wagner, 1986

Psychodini

Copropsychoda Vaillant, 1971

**brevicornis* (Tonnoir, 1940)

Logima Eaton, 1904

**albipennis* (Zetterstedt, 1850)

**satchelli* (Quate, 1955)

**zetterstedti* Jezek, 1983

Psycha Jezek, 1984

**grisescens* (Tonnoir, 1922)

Psychoda Latreille, 1796

**uniformata* Hasaeman, 1907

Psychodocha Jezek, 1984

cinerea (Banks, 1894)

Psychomora Jezek, 1984

**trinodulosa* (Tonnoir, 1922)

Tinearia Schellenberg, 1803

**alternata* (Say, 1824)

**lativentris* (Berden, 1952)

Pericomini

Joostiella Vaillant, 1983

caucasica Vaillant, 1983

Parabazarella Vaillant, 1983

subneglecta (Tonnoir, 1922)

Pericoma Walker, 1856

sg. *Pericoma* Walker, 1856

hakkariae Wagner, 1986

kariana Vaillant, 1978

orientalis Wagner, 1986

platystyla Wagner, 1986

taurica Jezek, 1990

tenuistylis Vaillant, 1979

sg. *Pachypericoma* Vaillant, 1978

blandula Eaton, 1893

pneumia Enderlein, 1935

canescens (Meigen, 1804)

malickyi (Vaillant, 1981) comb. N. (from *Satchelliella*)

schachti Wagner, 1986 comb. n. (from *Satchelliella*)

Thornburghiella Vaillant, 1982

jankai Jezek, 1992

quezeli (Vaillant, 1955)

Tonnoiriella Vaillant, 1972

turcica Wagner, 1986

hatayensis Jezek, 1999

syriensis Jezek, 1999

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