

## SPECIES OF 22 DIPTERA FAMILIES OF THE AGGTELEK NATIONAL PARK

By

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Locality and flight period data of 249 species (by more than 4200 voucher specimens) of 22 dipterous families Bibionidae (8 spp.), Pleciidae (1 sp.), Scatopsidae (12 spp.), Anisopodidae (2 spp.), Coenomyiidae (1 sp.), Xylophagidae (1 sp.), Scenopinidae (1 sp.), Megamerinidae (1 sp.), Lauxaniidae (32 spp.), Heleomyzidae (27 spp.), Clusiidae (8 spp.), Sphaeroceridae (90 spp.), Asteiidae (4 spp.), Aulacigastridae (2 spp.), Camillidae (1 sp.), Drosophilidae (43 spp.), Odiniidae (1 sp.), Milichiidae (4 spp.), Carnidae (6 spp.), Acartophthalmidae (2 spp.), Gasterophilidae (1 sp.) and Hypodermatidae (1 sp.) are given with remarks on life-habits. Seven species new for the Hungarian fauna were found, incl. the type of one species formerly described (*Paramyia hungarica* L. Papp, 1993), which had been collected in the Aggtelek National Park but no new species is described in this part.

As in my previous papers on the flies of the Bükk National Park (Papp 1993a, 1996), the families in the present paper are not phylogenetically related. They are those 22 families, which I can identify down to species without difficulties. Unfortunately, a bigger part of all the materials (and species) collected in the Aggtelek National Park (ANP) and preserved in the collection of the Department of Zoology, Hungarian Natural History Museum, Budapest (HNHM) will not be identified and recorded, since there is no specialist for them in our country. However, papers in this volume are representative enough to show also the richness of the dipterous fauna of our mountainous national park, which is protected mainly for the sake of its numerous caves.

Among the old specimens in the HNHM we list also those with labels "Gombaszög" (Silica, Gombasecká jaskyna) and "Szádelő, Szádelői-völgy" (Zádiel, Zádielska dolina) which sites are just on the other side of the Hungarian-Slovakian border.

### LIST OF SPECIES

#### BIBIONIDAE

All bibionid materials preserved in the collection of the HNHM from the ANP were identified. Much to our bad surprise, the number of specimens preserved is not high (61 individuals only). Since the old collection of the HNHM was destroyed in 1956, the newly collected material is not so numerous. Eight species were found. *B. ferruginatus* is new to Hungary.

**Bibio clavipes** Meigen, 1818 — Aggtelek: Medvés-kert; Jósavafő: Tohonya-patak; Szin: Patkós-völgy; Szögliget: Patkós-völgy. 8.IX–11.X. — An autumn species, four males and two females were caught in the ANP. Zilahi-Sebess (1960) recorded as "IV–VI., IX–X.", however, his specimens were destroyed (his identification cannot be checked) and we do not know specimens from the spring months.

**Bibio ferruginatus** (Linné, 1767) — Jósvafő, 21. VII. 1990, leg. S. Tóth. — Only one male was caught (probably by a Malaise trap). New to the fauna of Hungary. Although Kri-vosheina (1986b) recorded it also from Hungary, Zilahi-Sebess (1960) listed it only as a species expected to occur in this country (with name in square brackets). I do not know any other collection with specimen(s) from Hungary either.

**Bibio hortulanus** (Linnaeus, 1758) — Komjáti: Alsó-hegy. ?-V-?. — This is the commonest bionid species in Hungary but actually it occurs in high numbers in the lowlands only. Although it has been collected also in our low mountains, only one female was found here.

**Bibio johannis** (Linnaeus, 1758) — Aggtelek: Szelce-völgy, Szilicei kaszálók; Jósvafő: Szelce-völgy; Szin: Szelcepuszta. 30.IV-10.V. — A widespread and abundant species, particularly on our lowland pastures, sheep-runs, etc. It develops mainly in cow pats, which overwinter, in corral dung and in stable dung put down in open fields (32 specimens preserved).

**Bibio leucopterus** (Meigen, 1804) — Szögliget: Ménes-patak völgye. V. — Only one female of this species was caught in the Aggtelek NP; it looks rare in Hungary.

**Bibio marci** (Linnaeus, 1758) — Aggtelek: Almás-völgy, Szelcepuszta; Jósvafő: Lófej-völgy; Szögliget: Ménes-patak völgye. 7-12.V. — This is a very abundant species but only four specimens were preserved of those collected in the Aggtelek NP.

**Bibio varipes** (Meigen, 1804) — Aggtelek: Szelcepuszta; Jósvafő: Szelce-völgy; Perkupa: Telekes-völgy; Szin: Patkós-völgy. 7-9.V. — Three males and three females; these are the first specimens from Hungary identified as such after 1956 in the collection of the HNHM. (A questionable damaged female from Aggtelek, Medvés-kert, 2. VIII. was also preserved, which is possibly a related species and not a female of *varipes*.)

**Dilophus febrilis** (Linnaeus, 1758) — Hidvérgárdó: égerláp szélén [on the edge of a marsh with alder]; Jósvafő; Komjáti: Lótusz-forrás. 8.V-11.IX. — A common species, which has probably the same life-habits as *B. johannis*; many more specimens were caught but only seven males were preserved. One of them is with fore tibial spines in the form typical for *D. femoratus* Meigen, 1804. However, Haenni's (1982) figures and key give an aid in its reliable identification.

#### PLECIIDAE

The only representative of this family in Central Europe was also found in the ANP.

**Penthetria funebris** Meigen, 1804 (= *holosericea* Meigen, 1818) — Aggtelek: Ménes-völgy, Medvés-kert; Perkupa: Telekes-völgy. 9-12.V. — It seems to be a common species in the cool and humid mountain creek valleys of Hungary, where it develops in wet litter. We saw numerous specimens on wet decaying leaves at Medvés-kert and several females were caught alive on the 12th of May, 1988; they laid eggs in the laboratory. Eggs hatched later and we managed to get numerous first instar and some second instar larvae, which are preserved in alcohol here.

#### SCATOPSIDAE

No special collectings were made for the scatopsid species during our programme, so their material is meagre. Only 31 specimens of *Apiloscatopse* were found in the old material and 56 scatopsid specimens collected during our research programme were identified. Although the material is small, it is rather rich in species. I would like to thank Dr. J.-P. Haenni (Muséum Neuchâtel, Switzerland) for the identification of some problematic specimens.

**Ectactia clavipes** (Loew, 1846) — Aggtelek: Ménes-patak völgye, Medvés-kert; Jósvafő. 16.V., 20.VII. — Two females only.

**Anapausis albhalterata** Duda, 1928 — Szögliget: Ménes-patak völgye. 12–18.V. — Two males were caught on apple bait and on the creek shore. It was reported as new to Hungary from the Bükk NP.

**Apiloscatopse filamentosa** (Duda, 1928) — Aggtelek: Ménes-völgy; Jósvafő: Gerge-bérc; Szin: Szelcepuszta; Szögliget: Patkós-völgy. 9–12.X. — Four males and six females were identified; the females of this species are easily recognizable by their ventrally yellow postabdomen on the genital area. One male was caught on horse dung, the other specimens in less dry forests.

**Apiloscatopse flavicollis** (Meigen, 1818) — Aggtelek: Almás(kerti)-völgy, Lófej-forrás; Szögliget: Patkós-völgy. 15.IX–9.X. — Only four males were found in the new material but numerous other specimens (22 males, 8 females) with label “Tornai-karszt [Aggtelek or Jósvafő], 1956. IX. 20.” in the named collection of the HNHM.

**Apiloscatopse picea** (Meigen, 1818) — “Tornai-karszt [Aggtelek or Jósvafő], 1956. IX. 20.” — One female whose relegation to this species is questionable was found in the old material.

**Apiloscatopse scutellata** (Loew, 1846) — Szin: Patkós-völgy, Szelcepuszta; Szögliget: Ménes-völgy, Patkós-völgy. 9–12.X. — Twenty-five specimens were collected during our research programme of several years but only in a very limited range of days in the first half of October.

**Ferneiella incompleta** (Verrall, 1886) — Jósvafő: Szelce-völgy. 8.V. — Only a defected male was found in the material, which was swept near the Ménes creek.

**Cookella albitarsis** (Zetterstedt, 1850) — Jósvafő: Tohonya-forrás. 17.V. — A single female of this rare species was caught.

**Scatopse notata** (Linnaeus, 1758) — Jósvafő: Nagy-Tohonya-forrás. 13.X. — Only one female of this common species was found in the materials from the ANP.

**Reichertella nigra** (Meigen, 1804) — Jósvafő: Nagy-Tohonya-forrás. 13.X. — One female only.

**Swammerdamella brevicornis** (Meigen, 1830) — Aggtelek: Almás-völgy; Jósvafő: Gerge-bérc, Tohonya-forrás; Komjáti: Alsó-hegy; Perkupa: Telekes-völgy. 8–17.V., 25.IX–13.X. — It was collected on forest edges and on horse dung (one male, four females).

**Coboldia fuscipes** (Meigen, 1830) — Aggtelek: Szelcepuszta; Jósvafő: Tengeszem; Szin: Szelcepuszta. 13–14.IX. — Three females of this very abundant species were preserved.

#### ANISOPODIDAE

Only 27 specimens of this small family are preserved in the collection of the HNHM from the ANP. All but a very limited number of specimens of the old collection were destroyed in 1956; only one specimen had been collected earlier, all the others were caught in the course of our recent programme. Of the five species Zilahi-Sebess reported from Hungary (not six species as given in Papp 1996), only two were found in the ANP.

**Sylvicola cinctus** (Fabricius, 1787) — Aggtelek: Almáskerti-völgy, Patkós-völgy [actually Patkós-oldal], Ménes-patak völgye, Medvés-kert; Jósvafő: Lófej-forrás; Szin: Szelcepuszta; Szögliget: Patkós-völgy. 10–11.V–?–2.VIII.–13.X. — One male and 22 females are deposited in the HNHM. In addition, Zilahi-Sebess caught one male at “Tornai karszt, 1956. IX. 27.”, which he identified as “*Anisopus fenestralis* Scop.” As it is stated by Papp (1996), *S. cinctus* is a common species in Hungary; it seems highly probable that Zilahi-Sebess (1960) misidentified most of the specimens in this group, since he reported *cinctus* only from Sopron in the old collection material. Indeed, *S. cinctus* and *S. fenestralis* are easily separable as for the males only; the small females belong to *cinctus*, the large females to *fenestralis*, but there is an intermediate range, where one cannot make reliable distinction in these two species.

**Sylvicola fenestralis** (Scopoli, 1763) — Jósvafő: Szelce-völgy. 10.V. — Only one female was caught in a forest, other two females are dubious (Aggtelek: Medvés-kert, 19. VII, 17. IX); cf. the above-mentioned difficulties of identification.

## COENOMYIDAE

Only one European species is known in the family, which was represented also in the materials from the Aggtelek NP.

**Coenomyia ferruginea** (Scopoli, 1763). — Aggtelek: Ménes-völgy, Medvés-kert; Szögliget: Kecksés-f. völgye. 16–23.V. — Five specimens were collected.

## XYLOPHAGIDAE

These are seldom collected flies. Their larvae are predacious on insect larvae in decaying wood, the adults are short-lived but excellent fliers and they do not move far from the dead trunks in forests. Since they are never abundant, it takes time and special attention to collect them. Only one male was caught during our collecting programme.

**Xylophagus compeditus** Meigen, 1820 — Jósvafő: Szelce-völgy, erdő, 10 May 1990, leg. L. Papp. — This species is new to the Hungarian fauna (cf. Majer 1977); it is the second species here but Majer (pers. comm.) says, he has collected also a third one (*X. cinctus*), which is still unpublished. Other specimens of *compeditus* from Hungary in the collection of the HNHM are: Zalalövő, Nova, Zákány, Bakonyszentlászló, Gánt: Fáni-v., Pilis Mts, Börzsöny Mts: Szokolya, Vasfazék-v., Szendehely, Keskenybükki-patak völgye, Zempléni Mts (6–22 May).

## SCENOPINIDAE

Adults of this small family are seldom collected outside buildings (regularly caught on windows; their Hungarian name “ablaklegyek” means window-flies). Paradoxically only one specimen, which represents a species new to Hungary was captured during our five year programme. Tóth (1977) reported three species from Hungary, a fourth one (*Scenopinus gobiensis* Kelsey) was found since that time.

**Scenopinus niger** (De Geer, 1776) — “ANP, Aggtelek: kemping, faházban [Camping, on window], 1989. V. 17., leg. Papp L.” — One male; this species was not formerly known in Hungary (cf. Tóth 1977).

## LAUXANIIDAE

A large family with an archaic type of life-habits: larvae develop in forest litter and in other dead vegetable materials. Adults show a very high variety in morphology. Most of the species are tropical and subtropical, temperate regions, like Hungary, are comparatively poor in species.

In the materials collected in the ANP, representatives of only 32 species were found, none of them is new to Hungary but some rare species are included.

**Homoneura biumbrata** (Loew, 1847) — Jósvafő. 7–25.VII. — Two specimens.

**Homoneura interstincta** (Fallén, 1820) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert; Jósvafő, Malaise; Komjáti; Szin: Patkós-völgy. 14.VI–15.IX. — All the specimens were collected in forests, incl. banks of creeks, a part of them by Malaise traps (18 specimens).

**Homoneura notata** (Fallén, 1820) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert; Bódvaszilas, Alsó-hegy; Jósvafő: Nagy-Tohonya-forrás, Tengersizem; Komjáti: Lótusz-forrás; Perkupa: Telekes-völgy; Szin: Patkós-völgy. 16.VII–17.IX. — Formerly it was regarded as a less abundant species but here we found it in all parts of the ANP, most of them in humid forests; 68 specimens were preserved.

**Homoneura patelliformis** (Becker, 1895) — Aggtelek; Jósvafő; Komjáti. 16.VI–16.VIII. — In Hungary it appears to be rare; the adult are collected in mountain slopes (14 specimens, some of them by a Malaise trap).

**Homoneura subnotata** L. Papp, 1978 — Komjáti: Lótusz-forrás. 14.VIII. — It was collected only once, but at that time 14 specimens were caught.

**Frendelia longipennis** (Fabricius, 1794) — Aggtelek: Almás-völgy, Ménes-patak; Komjáti, Alsó-hegy; Perkupa: Telekes-völgy. 7.V–27.VIII. — Adults were found in forests, on forest edges (also by Malaise traps) but also in apple bait. A very common species so only a limited number of voucher specimens was preserved (16 ind.). *Frendelia* Collin was formerly regarded as a subgenus of *Minettia*. Body characteristics and some features of the male genitalia give grounds for a generic status.

**Minettia loewi** (Schiner, 1864) — Szin: Patkós-völgy. 9. V. — Only one specimen was found in a forested valley.

**Minettia plumicornis** (Fallén, 1820) — Jósavfő. 27. VII. — Although it is common only in lowlands in Hungary, it occurs also in some parts of our low mountains. However, only one specimen was caught in the course of our programme.

**Minettia rivos**a (Meigen, 1826) — Jósavfő. 19. V. — A common Holarctic species but only one specimen was found in the materials of the ANP.

**Tricholauxania praeusta** (Fallén, 1820) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert; Bódvaszilas: Alsó-hegy; Jósavfő: Nagy-Tohonya-forrás (and also several other sites); Komjáti: Alsó-hegy; Perkupa: Telekes-völgy; Szin: Patkós-völgy; Szögliget: Ménes-patak. 8.V–15.IX. — This is the most common species in all forested part of our country. Several hundreds or possibly more than 1000 specimens were collected during our project programme but only 38 specimens preserved.

**Peplomyza intermedia** E. Remm, 1979 — Aggtelek: Lófej-forrás; Szin: Patkós-völgy, Szelcepuszta, vadászház. 12–15.IX. — It is less abundant than the next species, only four specimens were collected, all in September.

**Peplomyza litura** (Meigen, 1826) — Aggtelek: Lófej-forrás, Medvés-kert, Patkós-völgy; Bódvaszilas; Alsó-hegy; Hídvégardó, égerláp [alder swamp]; Jósavfő: Nagy-Tohonya-forrás; Perkupa: Telekes-völgy; Szin: Ménes-völgy, Patkós-völgy, Szelcepuszta, vadászház; Szögliget: Ménes-völgy, Patkós-völgy. 19.VII–11.X. — A very common species which develops in forest litter; larvae are miners in dead leaves, females lay eggs on/into dying leaves still in the canopy (32 ind. preserved).

**Eusapromyza multipunctata** (Fallén, 1820) — Komjáti: Lótusz-forrás. 14.VIII. — A widespread European species, which is uncommon in Hungary (only one ind.).

**Cnemacantha muscaria** (Fallén, 1823) — Jósavfő; Komjáti: Alsó-hegy, karszbokorerdő. 11–19.V. — A rare and little known species. Most of the specimens (eight of nine) were caught on leaves of some *Berberis* bush on a karsty slope. Its life habits are not known.

**Aulogastromyia anisodactyla** (Loew, 1845) — Aggtelek: Lófej-forrás; Szin: Patkós-völgy; Szögliget: Patkós-völgy. 14–17.IX. — It is widespread but not abundant species in forests (6 ind.)

**Lyciella decempunctata** (Fallén, 1820) — Aggtelek: Lófej-forrás; Bódvaszilas, Alsó-hegy; Jósavfő: Nagy-Tohonya-forrás (and also other sites); Szin: Patkós-völgy. 3.VI–17.IX. — It is common though not abundant in humid forests. Twenty-one specimens were preserved from materials collected in the ANP.

**Lyciella decipiens** (Loew, 1847) — Jósavfő: Tengerszem; Komjáti: Lótusz-forrás; Szin: Patkós-völgy; Szögliget: Ménes-völgy. 8.V–13.IX. — A psychrophilous species which were collected in humid forests but also on meadows (9 ind.).

**Lyciella platycephala** (Loew, 1847) — Aggtelek: Almás-völgy, Medvés-kert, Patkós-völgy; Bódvaszilas, Alsó-hegy; Jósavfő: Nagy-Tohonya-forrás (and other sites in Jósavfő); Perkupa: Telekes-völgy; Szin, Ménes-völgy, Patkós-völgy; Szögliget: Patkós-völgy. 9.V–17.IX. — The majority of the specimens was caught near creeks and other waters (30 specimens preserved)

**Lyciella rorida** (Fallén, 1820) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert; Bódvaszilas, Alsó-hegy; Hídvégardó, égerláp [alder swamp]; Jósvafő: Lófej-forrás, Nagy-Tohonya-forrás; Komjáti: Alsó-hegy; Perkupa: Telekes-völgy; Szin: Ménes-völgy, Patkós-völgy; Szögliget, Ménes-patak, Patkós-völgy. 8.V–17.IX. — This is the commonest and most abundant lauxaniid in Hungary. More than 1000 specimens were collected in our project programme but only 50 specimens are preserved as voucher specimens. The larvae develop in forest litter (dead leaves, possibly also in dead decayed twigs).

**Lyciella subfasciata** (Zetterstedt, 1838) — Bódvaszilas: Alsó-hegy. VIII., 28.VIII. — A rare West Palaearctic species, only one specimen was found in the older materials of the HNHM.

**Callixania minor** (Martinek, 1974) — Komjáti: Alsó-hegy. V., 11.V. — It was collected only once in 12 specimens. The related *Lauxania cylindricornis* (Fabr.), which is regarded as common in spring months in Hungary, has not been collected in the ANP.

**Calliopum aeneum** (Fallén, 1820) — Aggtelek: Almás-völgy; Bódvaszilas, Alsó-hegy; Jósvafő: Gerge-bérc, Szelce-völgy; Komjáti: Alsó-hegy; Szalonna: Bódva; Szinpetri. 11.V–6.X. — Larvae develop in wide variety of decaying vegetable materials, so it occurs also in arable lands. Several hundred specimens were found among the adult flies caught in the ANP (16 specimens preserved).

[**Calliopum elisae** (Meigen, 1826) — Szádelő: Szádelői-völgy. — One specimen was collected by J. Balogh és Z. Kaszab in 1939. It is rare but widespread in humid forest of Europe.]

**Calliopum simillimum** (Collin, 1933) — Bódvaszilas: Alsó-hegy; Hídvégardó, égerláp [alder swamp]; Jósvafő: Nagy-Tohonya-forrás (and other parts of Jósvafő); Perkupa: Telekes-völgy; Szin: Patkós-völgy; Szögliget: Derenk. 14.VIII–16.IX. — Less abundant than *C. aeneum* but it occurs in all humid forests in Hungary, also on the lowlands. Thirty specimens are preserved from the ANP.

**Sapromyzosoma quadricincta** (Becker, 1895) — Bódvaszilas: Alsó-hegy. 2.IX. — It is common on lowlands of Hungary, but only one specimen was found in the older materials of the HNHM from the Aggtelek area.

**Sapromyzosoma quadripunctata** (Linné, 1767) — Bódvaszilas: Alsó-hegy; Jósvafő; Komjáti: Lótusz-forrás. 12.VI–2.IX. — Though it prefers humid places, rather common on our lowlands. Only four specimens were found in the ANP.

**Sapromyza intonsa** Loew, 1847 — Aggtelek: Medvés-kert, Patkós-völgy; Bódvaszilas, Alsó-hegy; Jósvafő: Tengerszem; Szin, Patkós-völgy. 26.VI–17.IX. — Adults are found in humid forests, in the ANP in somewhat higher altitudes (11 ind.).

**Sapromyza opaca** Becker, 1895 — Jósvafő; Perkupa: Telekes-völgy. 28.VI–16.VIII. — It is a bad surprize that this species, which seems common in humid deciduous forests in Europe (and found also in Mongolia) was caught only three times during our project programme (4 ind.).

**Sapromyza schnabli** L. Papp, 1987 — Aggtelek: Almás-völgy, Lófej-forrás, Patkós-völgy; Jósvafő: Nagy-Tohonya-forrás (and other parts of Jósvafő); Perkupa: Telekes-völgy; Szin, Ménes-völgy, Patkós-völgy; Szögliget, Patkós-völgy. 7.VII–17.IX. — It was described from Hungary in comparison with its closely related *S. setiventris* Zetterstedt, a nordic species (former records of *setiventris* from C Europe refer to this species). Adults are commonly caught in early September in the ANP; 73 specimens are preserved in the HNHM. They were collected in humid forested valleys, on forest edges (also by Malaise traps) and even on apple bait.

**Sapromyza sexpunctata** Meigen, 1826 — Jósvafő. 22.VII–29.VIII. — Its adults are collected in humid deciduous forests in Europe. Surprisingly only nine specimens were caught in the ANP programme, all of them by S. Tóth in a Malaise trap on a forest edge.

**Sapromyza zetterstedti** Hendel, 1908 — Jósvafő. VI. — One specimen, which is the second known record from Hungary (cf. Papp 1979).

**Nannomyza basalis** (Zetterstedt, 1847) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert, Patkós-völgy; Jósavfő, Tengersizem; Perkupa: Telekes-völgy; Szögliget: Patkós-völgy. 18.VII–17.IX. — A Palearctic species, which develops in deciduous forest litter. Only a part of the specimens collected (39 ind.) is preserved. They were collected in humid forested valleys, on forest edges (also by Malaise traps) and even on apple bait. *Nannomyza* and *Sapromyzosoma*, which were regarded formerly as subgenera of *Sapromyza*, are separated here as genera; the Palearctic and other species of *Sapromyza* badly need revision. A separation of some monophyletic units as genera does not solve the problem, merely reduces the dustbin nature of the genus *Sapromyza*.

#### MEGAMERINIDAE

This is a small family with two genera and species in the Palearctic Region. One of them, *Megamerina dolium*, a widespread but uncommon species, was found also in the ANP.

**Megamerina dolium** (Fabricius, 1805). — Aggtelek: Almás-kert; Jósavfő. 12–29.VIII. — Only three males and four females were collected. All but one specimen were caught by Malaise trap.

#### HELEOMYZIDAE

As a consequence of some systematic collection (also in winter), 72 species of this family are known from Hungary (two of them have not been published, cf. Papp 1981); specimens of 27 species are found in the ANP. We apply here a strict concept of the family, i.e. Trixoscelididae are excluded.

The material below includes type-specimens of formerly described species (cf. Papp 1981; Papp and Woznica 1993) and a number of very rare species, which were collected during our project programme. A part of the heleomyzids lives in caves or in the humid and cool microclimate of the entrance zone of caves. Unfortunately, there were very limited number of opportunities to collect in caves during our surveying programme, and we were quite unlucky in those cases. Since a good number of the heleomyzid flies occurs in higher mountains of Hungary only, our expectations for a high number of species had to be lower than for that from the Bükk NP area.

**Oldenbergiella seticerca** L. Papp, 1980 — Aggtelek: Ménes-völgy. 23.IV., 10.X. — It has been found in several other mountains of Hungary and also in Slovakia. All the eight specimens caught in the ANP were collected on human feces (cf. also Papp 1992c).

**Oecothea fenestralis** (Fallén, 1820) — Aggtelek: Ménes-völgy. Gombaszög, 1915. VI. 15., Kertész. 21.III–V. 9. — It develops in small mammal runs (so collected by soil traps) but also repeatedly collected on windows of village houses (6 ind.).

**Eccoptomera microps** (Meigen, 1830) — Bódvaszilas: Bódva. 26.IX. — One specimen was caught on mud.

**Eccoptomera obscura** (Meigen, 1830) — Perkupa: Telekes-völgy. 14.VIII. — Only one specimen was captured on a forest edge; I think, it was from a hidden cave or deep crevice nearby.

**Eccoptomera pallescens** (Meigen, 1830) — Jósavfő: Vass Imre barlang. 6.IX. — One specimen was found in a cave.

**Neoleria inscripta** (Meigen, 1830) — Aggtelek: Lófej-forrás, Medvés-kert. 10.V., 15. IX. — A widespread Palearctic species, which seems rare in Hungary. Four specimens were collected here, all of them on carrion.

**Neoleria ruficauda** (Zetterstedt, 1847) — Aggtelek: Medvés-kert, Ménes-völgy; Jósavfő: Szelce-völgy; Szin: Ózes-tető. 23.IV–10.V. — Although a significant number (54 specimens) was captured during our project programme, this is not a common species. All these adults were collected in early spring and all of them were captured on carrion (from dead birds, fox and deers). The majority of the specimens of this species in the HNHM is from the ANP.

**Morpholeria ruficornis** (Meigen, 1830) — Aggtelek: Medvés-kert. 6.IX. — A widespread species, which is not rare e.g. in the Bükk Mountains. Only one specimen was collected during our project years. The low mountains in the ANP are possibly not high enough for its habits.

**Scolioecentra brachypterna** (Loew, 1873) — Aggtelek: Szelcepuszta; Szin: Szelcepuszta. 28.IV–9.V. — This species was found in numerous caves also in Hungary but it occurs also free in forests and human settlements in winter and in early spring. Seven specimens were captured, all of them outside caves.

[**Gymnomus europaicus** L. Papp et Woznica, 1993 — Gombaszög, Ludmilla-barlang. — This paratype specimen was collected just on the Slovakian side of our border, adjoining the ANP.]

**Heleomyza captiosa** (Gorodkov, 1962) — Aggtelek: Aggteleki-barlang; Szin: Szelcepuszta; Szögliget: Derenki-barlang; Gombaszög: Ludmilla-barlang. 9.V. (caves: 27.III–16.IX.) — It is the commonest heleomyzid species in the caves of Hungary. On the other hand, it occurs free in forests and villages from November till March. It develops in stables, other animal dens, cess-pools, etc.). It was collected also by light traps (altogether only 7 specimens).

**Suillia affinis** (Meigen, 1830) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert, Ménes-völgy, Patkós-völgy; Bódvaszilas: Alsó-hegy; Jósvalfő: Lófej-völgy; Perkupa: Telekes-völgy; Szin: Patkós-völgy. V–X. — Its larvae develop in sporophores of a huge number of macrofungi species; imagoes are not only common but abundant in humid forests in creek valleys, etc. also on our lowlands. Several hundred adults were captured and 68 specimens preserved from the materials of the ANP.

**Suillia atricornis** (Meigen, 1830) — Aggtelek: Almás-völgy, Medvés-kert. VI–IX. — It is also a mushroom feeder but less abundant than the former one (five ind.).

**Suillia bicolor** (Zetterstedt, 1838) — Aggtelek: Almás-völgy, Lófej-forrás, Medvéskert, Ménes-völgy, Patkós-völgy; Perkupa: Telekes-völgy; Szin, Ménes-völgy, Patkós-völgy; Szögliget: Ménes-völgy, Patkós-völgy. V–X. — Larvae are abundant in sporophores of mushrooms; it was reared from 130 species of macrofungi in Hungary. The larvae which develop in late autumn, emerge as adults in spring. Twenty-two specimens were preserved as voucher specimens from the hundreds captured.

**Suillia fuscicornis** (Zetterstedt, 1847) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert; Szin: Patkós-völgy. VI–X. — It is a common, though not very abundant mushroom-feeder (Papp 1981). Eleven specimens were collected in the ANP, most of them in the Patkós valley.

**Suillia imberbis** Czerny, 1924 — Aggtelek: Medvés-kert, 300 m, patakpart, apple bait, 1990.IX. 17. (2 ex.). — It is an extremely rare species: in Hungary it was formerly known from Kőszeg only.

**Suillia laevifrons** (Loew, 1862) — Szögliget: Patkós-völgy. 14.IX. — A widespread but rare Palaearctic species, whose life-habits are little known (Papp 1981). One specimen was found. In Hungary it lives in our mountains only and imagoes have not been collected later than August.

**Suillia oxyphora** (Mik, 1900) — Komjáti: Alsó-hegy. V–?. — It is a common but not abundant mushroom-feeder (Papp 1981). Contrary to some systematic collectings for *Suillia* spp. in August and September, only one specimen was captured.

**Suillia pallida** (Fallén, 1820) — Aggtelek: Almás-völgy, Lófej-forrás, Ménes-patak, Medvés-kert, Ménes-patak, Patkós-völgy; Jósvalfő; Perkupa: Telekes-völgy; Szin: Patkós-völgy. V–X. — A widespread Palaearctic species. It is rather common in our forests. Its larvae develop in underground macrofungi (savoy truffle, etc.) (27 ind. preserved).

**Suillia parva** (Loew, 1862) — Jósvalfő: Szelce-völgy; Szin: Szelce-patak; Szinpetri: patakpart; Szögliget: Ménes-völgy. 21–30.IV.–?. — It seems rare in Hungary; the majority (15 ind.) of the specimens ever collected is from the ANP. This is possibly a consequence of the short flight period of this fly.

**Suillia strobli** (Czerny, 1904) — Aggtelek: Ménes-völgy. 20.VII. — A very rare species; only one specimen was collected here.

**Suillia ustulata** (Meigen, 1830) — Aggtelek: Lófej-forrás (and another site not specified in the Aggtelek vicinity). 19. V., 15.IX. — Two specimens of this large-bodied but uncommon species were caught.

**Heteromyza atricornis** Meigen, 1830 — Aggtelek: Aggteleki-barlang; Szögliget: Derenki-barlang. Gombaszög (probably Ludmilla cave). 23.II–20.XII. (in caves) — It is characteristic for caves and populations develop there permanently but it seldom occurs also in cool and humid forests (8 ind.).

**Heteromyza rotundicornis** (Zetterstedt, 1846) — Aggtelek: Medvés-kert; Jósavfő: Szelce-völgy; Perkupa: Telekes-völgy; Szin, Szelcepuszta. 10.V–20.IX. — This is a little known species, somewhat more common in winter in Hungary (Papp 1981). Eleven specimens are preserved from the ANP.

**Tephrochlamys flavipes** (Zetterstedt, 1838) — Jósavfő: Tengersizem; Szin: Patkós-völgy. 14.IX–13.X. — A European species, which occurs in the mountains of Hungary (2 ex.). It was reared from the sporophores of *Armillarea mellea*.

**Tephrochlamys rufiventris** (Meigen, 1830) — Aggtelek: Lófej-forrás, Szelcepuszta; Jósavfő: Szelce-völgy; Komjáti: Lótusz-forrás. 7.V–15.IX. — It is common also in Hungary though not very abundant in the ANP (seven specimens).

**Tephrochlamys tarsalis** (Zetterstedt, 1847) — Aggtelek: Medvés-kert, Ménes-völgy, Szelcepuszta; Jósavfő: Gerge-bérc, lótrágyáról [on horse dung]; Szin: Szelcepuszta. 7.V.–?–17.IX–13.X. — It must be common also in the ANP (seven specimens preserved).

#### CLUSIIDAE

This is an interesting small family of the acalyptrate flies with a dozen or so species in Hungary. Formerly they were thought to be rare and indeed, the old collection of the HNHM (which survived the big fire in 1956) contained a very limited number of specimens. Nevertheless, in the course of the collecting trips in the last decade in Hungary it turned out that they are readily collectible on dead trunks in forests (particularly so for humid forests) not only in our mountains but also on the lowlands. The material from the Aggtelek National Park is exceptional. There are not only specimens of three species new for the Hungarian fauna but also the other specimens are significant. Only one species formerly collected from Hungary (*Heteromeriingia nigrimana* (Loew, 1864)) was not represented in the ANP, which is known only from Pécs (one male). In addition, also *Clusiodes* (*Clusiaria*) *geomyzinus* (Fallén, 1823) may occur here, which was collected in the Carpathian Mts at Körösmező (Ukraine, Zakarpat'e) and Nagyilva (Ilva Mare, Romania).

**Hendelia beckeri** Czerny, 1903 — Jósavfő, Szelce-völgy, erdő [forest], 1990. V. 8., Papp L. (3 males); Aggtelek: Almás-völgy, erdő, 1989. V. 19., Papp L. (1 female). — A genus new to Hungary; formerly known from Austria and Finland only (Soós 1984).

**Clusiodes** (**Clusiodes**) **albimanus** (Meigen, 1830) — Aggtelek: Almás-kert, Medvés-kert; Szin; Jósavfő; Perkupa: Telekes-völgy. 14.VIII–6.IX. — It seems the commonest clusiid in our country, six specimens were preserved from the materials from the ANP.

**Clusiodes** (**Clusiaria**) **apicalis** (Zetterstedt, 1848) — Jósavfő: Lófej-völgy. 10–19. V. Jósavfő, Lófej-völgy (seventeen males). — A male of this species or a closely related new species, was caught at Komjáti, Lótusz-forrás, 200 m (1990. VIII. 14., Papp L.). New to our fauna (cf. Soós 1981, 1984). The other specimens from Hungary are from the Bükk National Park (Nagyvisnyó: Hármaskút, Miskolc: Nagy-mező, Szilvásvárad: Tar-kő), from Visegrád (Apát-kúti-völgy) and from Budapest (Pestlőrinc, Péterhalmi-erdő). They were caught on banks of mountain creeks but also in a dry forest on sandy soil on fallen, dry or decaying hornbeam, white poplar and oak trunks. They were caught from the end of April (Budapest, Pestlőrinc, Péterhalmi-erdő) to the end of July (Bükk Mts). Specimens in the HNHM also from Tiszaborkút (Ukraine), Mehádia and Szászkabánya (Sasca Romana) in Romania.

**Clusiodes (Clusiaria) pictipes** (Zetterstedt, 1855) — Jósavafő, Lófej-völgy, erdő, korhadó bükk [forest, decaying beech trunk], 10.V.1990., Papp L. (one male). — A species new to Hungary; formerly was known from North Europe incl. northern part of the European Russia (see Soós 1984).

**Clusiodes (Clusiaria) ruficollis** (Meigen, 1830) — Aggtelek: Almás-kert, Almás-völgy, Ménes-patak völgye; Jósavafő: Lófej-völgy, Szelce-völgy. 7.V–14.VIII. — A very rare species, which has been caught also in Budapest (Pestszentlőrinc, Péterhalmi-erdő, 1–20.V.). Eleven specimens were collected in the ANP.

**Clusiodes (Columbiella) verticalis** (Collin, 1912) — Aggtelek: Medvés-kert, Ménes-patak part, Ménes-p. völgye, Aggtelek: Lófej-forrás. V–IX. — It is one of the rare species in our mountain forests (eight specimens).

**Clusia flava** (Meigen, 1830) — Aggtelek: Almás-kert, Almás-völgy, Medvés-kert; Perkupa: Telekes-völgy; Szin: Patkós-völgy; Szögliget, Patkós-völgy. 7.V–14.IX. — It occurs in very cool, humid forested valleys only; 13 specimens were caught in the ANP.

**Paraclusia tigrina** (Fallén, 1820) — Perkupa: Telekes-völgy. 14.VIII. — Two males and one female were caught on the edge of a deciduous forest. Widespread, though not common in Hungary (Soós 1981).

#### SPHAEROCERIDAE

The representatives 90 species (1960 voucher specimens) of this family were found in the ANP. We may regard this number as high, since 95 species were reported from the Bükk Mountains (Papp 1993a), which are not only larger but the mountains are higher there and so some additional species occur in the Bükk NP. In the Jósavafő, Gerge-bérc there is a pasture where horses are pastured; there are numerous sphaerocerids attached to horse dung on pastures, were found there. Papp (1990) listed 143 sphaerocerid species from Hungary, *Lotobia africana* (Becker) and *Xenolimosina setaria* (Villeneuve) were found since that time.

**Sphaerocera curvipes** Latreille, 1805 — Aggtelek: Hollófészek-völgy, Medvés-kert, Ménes-völgy, Szelcepuszta, Vörös-tó; Bódvaszilas: Alsó-hegy, Banán-zsomboly; Jósavafő: Gerge-bérc, Lófej-völgy; Perkupa: Telekes-völgy; Szin: Patkós-völgy, Szelcepuszta; Szögliget: Derenk, Patkós-völgy. 21.IV–12. X. — An extremely common and abundant species; 17 specimens were preserved from materials collected on dung and on carrion (incl. that of frogs), in forests, in marshy sites, etc. In addition, it was recorded also from one vertical karst pit of the ANP (Papp and Plachter 1976).

**Sphaerocera monilis** Haliday, 1836 — Bódvaszilas: Alsó-hegy, Fenyves-zsomboly, Töltényes-zsomboly. VIII. — It was recorded from the above two vertical karst pits of the ANP (Papp and Plachter 1976) but not found during our project programme.

**Ischiolepta micropyga** (Duda, 1938) — Aggtelek: Medvés-kert, Ménes-völgy; Szin: Patkós-völgy. 28. IV–19.VII. — A rare terricolous species, which was collected on human feces and on apple bait here; five specimens are preserved.

**Ischiolepta nitida** (Duda, 1920) — Aggtelek: Lófej-forrás, Ménes-völgy; Jósavafő: Gerge-bérc, Lófej-völgy; Szin: Patkós-völgy; Szögliget: Szelce-völgy. 22. IV–13. X. — Formerly it was thought as less abundant in Hungary, since it occurs on lowlands exceptionally. Thirty-three voucher specimens are kept in the HNHM, which were caught mainly on horse dung but also on human feces.

**Ischiolepta pusilla** (Fallén, 1820) — Aggtelek: Lófej-forrás, Medvés-kert, Szelce-völgy; Jósavafő: Gerge-bérc; Szögliget: Szelce-völgy. 29. IV–13. X. — This is one of the commonest coprophilous sphaerocerid flies also in Hungary. Voucher specimens are preserved only one by one and this is why only eight specimens are kept.

**Ischiolepta scabricula** (Haliday, 1836) — Jósvafő: Gerge-bérc. 13. X. — It is an interesting species: widely distributed in the Old World, not only in the Palaearctic but in tropical Africa, India, etc., at the same time, it is rare everywhere (its populations are always small), much contrarily to the “core-satellite” hypothesis. One specimen was caught on horse dung.

**Ischiolepta vaporariorum** (Haliday, 1836) — Aggtelek: Szelcepuszta, Vörös-tó; Jósvafő: Gerge-bérc, Lófej-forrás; Perkupa: Telekes-völgy. 29. IV–26. IX. — It is almost so widespread as *I. pusilla*, but it seems restricted to open pastures. Thirteen voucher specimens are kept, all collected on horse and cattle dung.

**Lotobia pallidiventris** (Meigen, 1830) — Aggtelek: Lófej-forrás; Jósvafő: Gerge-bérc. 11. V–6. IX. — It develops exclusively in dung on open pastures; six specimens were preserved from flies collected on horse and cattle dung. Its closely related species, *L. africana* (Becker) occurs in the lowland pastures only.

**Copromyza equina** (Fallén, 1820) — Aggtelek: Lófej-forrás; Jósvafő: Gerge-bérc; Szinpetri. 11. V–13. X. — A widespread, common coprophagous fly; on cow pats and on horse dung also in the ANP (14 ind.).

**Lotophila atra** (Meigen, 1830) — Aggtelek: Lófej-forrás, Ménes-völgy, Szelcepuszta, Vörös-tó; Jósvafő: Gerge-bérc, Lófej-völgy, Szelce-völgy, Tohonya-patak; Komjáti: Lótusz-forrás; Perkupa: Telekes-völgy; Szin: Kuhogy. 21. IV–13. X. — A common Palaearctic, coprophagous sphaerocerid species. It was collected here in forests, on pastures, along creeks and also on human feces (26 ind.).

**Borborillus vitripennis** (Meigen, 1830) — Jósvafő: Gerge-bérc. 17. V–26. IX. — Twelve specimens were caught, exclusively on the horse pasture at Gerge-bérc.

**Norrbomia costalis** (Zetterstedt, 1847) — Jósvafő: Gerge-bérc. 14. IX–13. X. — A widespread Palaearctic species but females lay eggs on fresh horse dung only; 15 specimens were kept from Gerge-bérc.

**Norrbomia hispanica** (Duda, 1923) — Aggtelek: Lófej-forrás. 11. V. — Two specimens of this coprophilous species were collected on horse and cattle dung. It is more abundant in some lowland horse pastures (e.g. on Hortobágy).

**Norrbomia nitidifrons** (Duda, 1923) — Aggtelek: Lófej-forrás. 11. V. — Only one specimen.

**Norrbomia somogyii** (L. Papp, 1973) — Jósvafő: Gerge-bérc. 11. V–13. X. — It was described from Hungary and Mongolia, but found also in Spain. It develops on horse dung; 17 voucher specimens were kept.

**Norrbomia sordida** (Zetterstedt, 1847) — Aggtelek: Lófej-forrás; Jósvafő: Gerge-bérc. 11. V–13. X. — A widespread though never abundant coprophilous species; 23 specimens on horse and cattle dung.

**Alloborborus pallifrons** (Fallén, 1820) — Jósvafő: Gerge-bérc. 11. V–13. X. — This species, characteristic on horse dung, was formerly regarded as uncommon but exceptionally high number was collected at Gerge-bérc; 55 voucher specimens were kept.

**Crumomyia fimetaria** (Meigen, 1830) — Aggtelek: Almás-völgy, Medvés-kert, Patkós-völgy. 10. V–17. IX. — It occurs only in the cool humid mountain valleys in Hungary. Sixteen specimens were captures on apple baits, human feces (Papp 1992c) and fungi along a creek bank.

**Crumomyia glabrifrons** (Meigen, 1830) — Aggtelek; Bódvaszilas: Alsó-hegy, Éveszsomboly. 19. V., 18. X. — Only one specimen was collected during our project years, but it was recorded also from one vertical karst pit of the ANP (Papp and Plachter 1976).

**Crumomyia nigra** (Meigen, 1830) — Aggtelek: Baradla-hegy, Lófej-forrás, Ménes-völgy, Szelicei-kaszáló, Vörös-tó; Jósvafő: Gerge-bérc, Lófej-völgy, Szelce-völgy, Tohonya-patak; Komjáti: Lótusz-forrás. 22. IV–10. X. — Rather numerous specimens were collected on human feces, horse and cattle dung, above forest trails, etc. It is a less specific coprophilous species than those of *Norrbomia* and *Borborillus* (29 ind.).

**Crumomyia nitida** (Meigen, 1830) — Aggtelek: Szelicei-kaszáló; Jósvafő; Szin: Patkós-völgy. 10–19. V., IV–VIII (karst pits) — A psychrophilous species, which is common in late autumn in our mountain forest on forest litter; only three specimens were caught here, plus two other specimens were reported by Papp and Plachter (1976).

**Crumomyia notabilis** (Collin, 1902) — Jósvafő: Vass Imre-barlang. 6. IX. — One specimen was caught in a cave; otherwise it is rare in Hungary and some specimens were captured in mountains on snow (cf. Papp 1993a).

**Crumomyia pedestris** (Meigen, 1830) — Komjáti: Lótusz-forrás; Szögliget: Derenk. 22. IV–8.V. — Its larvae develop in dead snails and so adults are found in swamps and on shore vegetation; so was also the case with the eight specimens collected in the ANP.

**Crumomyia rohaceki** Norrbom and Kim, 1985 — Bódvaszilas: Alsó-hegy, Favágó-zsomboly, Iskola-zsomboly, Töltényes-zsomboly. (in karst pits) IV–VIII. — Not found during our project years, but it was recorded from the above three vertical karst pits of the ANP (seven specimens, Papp and Plachter 1976, under the name "*C. (Crumomyia) glacialis*").

**Coproica acutangula** (Zetterstedt, 1847) — Aggtelek: Lófej-forrás; Jósvafő: Gergebérc; Komjáti: Alsó-hegy; Perkupa: Telekes-völgy. 11.V–10. X. — It develops in pasture dung; 12 specimens were kept from all those captured mainly on horse dung.

**Coproica digitata** (Duda, 1918) — Jósvafő: Gergebérc. 6. IX–10. X. — Nine specimens were caught on horse dung.

**Coproica ferruginata** (Stenhammar, 1854) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert, Ménes-vögy, Szelcepuszta, Vörös-tó; Jósvafő: Gergebérc, Lófej-völgy, Nagy-Tohonya-forrás, Szelce-völgy; Szinpetri; Szögliget: Derenk, Patkós-völgy. 29.IV–18. X. — A highly abundant coprophagous species, which was collected also on carrion. Altogether several hundred specimens were captured, of which 24 voucher specimens are kept.

**Coproica hirticula** Collin, 1956 — Aggtelek: Almás-völgy, Medvés-kert, Ménes-völgy, Szelcepuszta; Jósvafő: Gergebérc, Nagy-Tohonya-forrás, Szelce-völgy; Perkupa: Telekes-völgy; Szin: Szelcepuszta. 29.IV–13.X. — Although this is less abundant than the former one, 74 voucher specimens are prepared, since this is a small fly which is not easily identifiable when collected.

**Coproica hirtula** (Rondani, 1880) — Aggtelek: Hollófészek-völgy, Ménes-völgy. 9–10.V. — Two specimens were caught on a dead bird and a dead frog.

**Coproica lugubris** (Haliday, 1836) — Aggtelek: Szelcepuszta, Vörös-tó; Jósvafő: Gergebérc, Nagy-Tohonya-forrás; Perkupa: Telekes-völgy; Szögliget: Ménes-völgy. 29. IV–13. X. — Common and abundant on pasture dung (it develops there; 20 specimens preserved).

**Coproica pappi** Carles-Tolrá, 1990 — Jósvafő: Gergebérc. 6. IX–13. X. — This is a very interesting species, which had been found in some lowland pastures in Hungary (40 voucher specimens from the ANP). Formerly it was reported as *Coproica dentata* L. Papp, 1973, and it was also listed in the Hungarian fauna as such (Papp 1990), but a comparison of the male genitalia showed that this species is different from the holotype of *C. dentata* (Mongolia) and conspecific with the species described from Spain.

**Coproica pusio** (Zetterstedt, 1847) — Jósvafő: Gergebérc. 11. V. — One specimen of this rare species was collected on horse dung.

**Coproica vagans** (Haliday, 1833) — Aggtelek: Lófej-forrás, Medvés-kert, Ménes-völgy, Szelcepuszta, Szelicei-kaszáló; Jósvafő: Gergebérc, Nagy-Tohonya-forrás, Szelce-völgy, Tohonya-patak; Komjáti: Lótusz-forrás; (Szalonna: Bódva); Szin: Kuhogy, Ózes-tető; Szögliget: Ménes-völgy, Szelce-völgy. 29. IV–13. X. — An extremely abundant coprophagous species, millions and millions of specimens are developing in dung heaps, etc. In the ANP adults were captured on various kinds of dung, on mud, on dead fox, on dead bird, etc. (47 voucher specimens preserved in the HHNM).

**Elachisoma aterrimum** (Haliday, 1833) — Aggtelek: Almás-völgy, Lófej-forrás, Szelcepuszta, Vörös-tó; Jósvafő: Gerge-bérc, Tohonya-patak; Perkupa: Telekes-völgy; Szögliget: Derenk. 29.IV–13.X. — This is a minute coprophagous species, which is common and widespread but less frequently collected as a consequence of its size (40 ind.)

**Elachisoma bajzae** L. Papp, 1983 — Aggtelek: Szelcepuszta. 16. IX. — Closely related but less abundant than the former one (one specimen).

**Elachisoma pilosum** (Duda, 1924) — Aggtelek: Almás-völgy, Szelcepuszta; Jósvafő: Szelce-völgy, Tohonya-patak; Perkupa: Telekes-völgy. 7–17.V. — An interesting coprophagous species (11 specimens).

**Philocoprella italica** (Deeming, 1964) — Aggtelek: Almás-völgy, Lófej-forrás; Jósvafő: Gerge-bérc; Komjáti: Alsó-hegy; Perkupa: Telekes-völgy. 7.V–26. IX. — A very small bodied coprophagous species; 36 specimens were captured on sheep, cattle and horse dung.

**Trachypella (Nudopella) leucoptera** (Haliday, 1836) — Aggtelek: Almás-völgy; Jósvafő: Gerge-bérc. 7.V–13. X. — Two specimens were caught on sheep and horse dung.

**Gonioneura spinipennis** (Haliday, 1836) — Aggtelek: Hollófészek-völgy, Lófej-forrás, Medvés-kert, Ménes-völgy, Szelcepuszta, Szelicei-kaszáló, Vörös-tó; Jósvafő: Gerge-bérc, Lófej-völgy, Szelce-völgy; Perkupa: Telekes-völgy; Szin: Ménes-völgy, Szelce-patak; Szinpetri; Szögleget: Szelce-völgy. 23.IV–10. X. — Several hundred specimens were collected on various kinds of dung, on human feces, on carrion and over forest trails, but only 20 preserved.

**Chaetopodella scutellaris** (Haliday, 1836) — Aggtelek: Almás-völgy, Lófej-forrás, Ménes-völgy, Szelcepuszta, Szelicei-kaszáló, Vörös-tó; Jósvafő: Gerge-bérc, Tohonya-patak; Komjáti: Lótusz-forrás; Perkupa: Telekes-völgy; Szin: Kuhogy; Szögliget: Derenk. 22.IV–13.X. — A less specific coprophagous species; numerous specimens were collected on mud, on various kinds of dung, on human feces and on marsh vegetation (28 ind. preserved).

**Limosina silvatica** (Meigen, 1830) — Aggtelek: Ménes-völgy; Bódvaszilas: Alsó-hegy, Favágó-zsomboly, Töltényes-zsomboly; Jósvafő: Vass Imre-barlang; Szögliget: Patkós-völgy. 22.IV–6. IX. (in karst pits: IV–IX). — Seven specimens were preserved from materials collected on forest litter, on human feces, etc., plus twelve specimens were reported by Papp and Plachter (1976).

**Apteromyia claviventris** (Strobl, 1909) — Bódvaszilas: Alsó-hegy, Kifli-zsomboly, Kilátó-zsomboly, Iskola-zsomboly, Töltényes-zsomboly; Jósvafő: Lófej-völgy. 10. V. (in karst pits: IV–IX). — Three specimens were caught on forest litter; 21 specimens were reported by Papp and Plachter (1976).

**Herniosina bequaerti** (Villeneuve, 1917) — Hídvégardó. 11. IX. — It was reported from numerous caves in Europe. Contrarily, only one specimen was captured in the ANP in an alder swamp, from under cut alder twigs.

**Terrilimosina racovitzai** (Bezzi, 1911) — Aggtelek: Baradla-cave; Bódvaszilas: Alsó-hegy, Róka-zsomboly, Töltényes-zsomboly. VIII. — It was recorded from the above cave and two vertical karst pits of the ANP (43 ind., Papp and Plachter 1976) but otherwise not found during our project programme.

**Terrilimosina schmitzi** (Duda, 1918) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert, Patkós-völgy; Jósvafő: Lófej-völgy; Szin: Ózes-tető, Szelce-patak; Szögliget: Ménes-völgy, Patkós-völgy. 22. IV–9. X. — Formerly it was thought as rare: it was reported for the first time from the Bükk NP, so it is interesting that 118 specimens were captured during our project years (on apple bait, on a dead fox, along a creek).

**Minilimosina (Allolimosina) alloneura** (Richards, 1952) — Jósvafő: Gerge-bérc. 13. X. — One specimen of this extremely rare species was captured on horse dung.

**Minilimosina (Allolimosina) secundaria** (Duda, 1918) — Aggtelek: Lófej-forrás. 15. IX. — One male.

**Minilimosina (Minilimosina) fungicola** (Haliday, 1836) — Aggtelek: Medvés-kert; Jós-vafő: Tohonya-patak; Perkupa: Telekes-völgy; Szögliget: Ménes-völgy, Patkós-völgy, Szelce-völgy. 9.V–10.X. — Thirteen specimens were collected on apple bait, on marshy vegetation and along a creek.

**Minilimosina (Minilimosina) parvula** (Stenhammar, 1854) — Aggtelek: Medvés-kert; Jós-vafő; Szögliget: Szelce-völgy. 10. V–20. VII. — Fifteen specimens were collected in forests, some of them on a dead fox.

**Minilimosina (Svarciella) splendens** (Duda, 1928) — Aggtelek: Ménes-völgy; Szögliget: Ménes-völgy. 18. V–13. X. — Two specimens.

**Minilimosina (Svarciella) v-atrum** (Villeneuve, 1917) — Aggtelek: Medvés-kert; Jós-vafő. 10–19. V. — Two specimens, one of them from apple bait (for collection of drosophilids).

**Minilimosina (Svarciella) vitripennis** (Zetterstedt, 1847) — Aggtelek: Vörös-tó; Jós-vafő: Gerge-bérc. 29.IV–6. IX. — Three specimens.

**Paralimosina fucata** (Rondani, 1880) — Aggtelek: Ménes-völgy; Bódvaszilas: Alsó-hegy. 23. IV–1. IX. — Two specimens were collected on human feces.

**Paralimosina macedonica** (Roháček, 1977) — Aggtelek: Patkós-völgy. 18.VII. — One specimen of this rare species was captured.

**Paralimosina subcibrata** (Roháček, 1977) — Bódvaszilas: Alsó-hegy. 1.IX. — One specimen.

**Spelobia (Bifronsina) bifrons** (Stenhammar, 1854) — Aggtelek: Almás-völgy; Jós-vafő: Gerge-bérc, Szelce-völgy. 11.VII–13. X. — Five specimens of this common species were caught on horse and sheep dung.

**Spelobia (Eulimosina) ochripes** (Meigen, 1830) — Aggtelek: Lófej-forrás; Jós-vafő: Gerge-bérc, Nagy-Tohonya-forrás; Szin: Kuhogy; Szinpetri. 29. IV–13. X. — A common coprophagous species; only seven specimens preserved.

**Spelobia (Spelobia) clunipes** (Meigen, 1830) — Aggtelek: Almás-völgy, Hollófészek-völgy, Lófej-forrás, Medvés-kert, Ménes-völgy, Patkós-völgy, Szelcepuszta, Szelce-völgy, Szelicei-kaszáló, Vörös-tó; Bódvaszilas: Alsó-hegy, Róka-zsomboly, Töltényes-zsomboly; Jós-vafő: Gerge-bérc, Lófej-völgy, Nagy-Tohonya-forrás, Vass Imre-barlang; Komjáti: Lótusz-forrás; Perkupa: Telekes-völgy; Szin: Ménes-völgy, Patkós-völgy, Szelce-patak; Szögliget: Derenk, Ménes-völgy, Patkós-völgy. 23. IV–10. X. — The commonest species of this large genus; adults were found in forests, on pastures, in swamps, on various kind of dung, on human feces, on carrion (bird, fox), etc. The specimens of this species cannot be separated from those of *C. manicata* in field collections; this is why so many (197 ind.) specimens are preserved as voucher specimens. It was found also in two vertical karst pits and recorded under the name "*Limosina crassimana*" (25 ind., Papp and Plachter 1976).

**Spelobia (Spelobia) czizeki** (Duda, 1918) — Bódvaszilas: Alsó-hegy: Banán-zsomboly, Töltényes-zsomboly; Jós-vafő: Vass Imre-barlang. 6.IX. (in karst pits IV–VIII) — Eighteen specimens were captured in the Vass Imre cave. It was also reported from the above two karst pits (two males, Papp and Plachter 1976). A troglophilous species but found even on our lowlands in early spring.

**Spelobia (Spelobia) luteilabris** (Rondani, 1880) — Aggtelek: Medvés-kert; Jós-vafő: Szelce-völgy; Szin: Szelce-patak. 29.IV–9.X. — Six specimens were caught, almost exclusively on dead animals.

**Spelobia (Spelobia) manicata** (Richards, 1927) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert, Ménes-völgy, Patkós-völgy; Hídvégardó; Jós-vafő: Lófej-völgy; Perkupa: Telekes-völgy; Szin: Ménes-völgy, Patkós-völgy, Szelce-patak; Szögliget: Ménes-völgy, Patkós-völgy, Szelce-völgy. 21.IV–12.X. — It is very common in litter of deciduous forests but found also on human feces (Papp 1992c) and on carrion. Numerous specimens were caught and 215 specimens are preserved (see more under *S. clunipes*).

**Spelobia (Spelobia) palmata** (Richards, 1927 — Aggtelek: Almás-völgy, Medvés-kert, Patkós-völgy; Bódvaszilas: Alsó-hegy; Iskola-zsomboly, Cickány-zsomboly; Jósvafő: Szelce-völgy; Perkupa: Telekes-völgy; Szin: Ménes-völgy, Pakós-völgy, Szelce-patak; Szögliget: Patkós-völgy. 21. IV–12. X. — A common polyphagous species, which develops e.g. in dead snails (31 ind.). It was reported from the above two karst pits (two females, Papp and Plachter 1976) and on human feces (Papp 1992c).

**Spelobia (Spelobia) parapusio** (Dahl, 1909) — Aggtelek: Medvés-kert; Szin: Patkós-völgy, Szelce-patak; Szögliget: Patkós-völgy. 17. VII–12. X. — This is one of the commonest mycophagous flies in Hungary (7 females).

**Spelobia (Spelobia) pseudosetaria** (Duda, 1918) — Aggtelek: Szelcepuszta. 16. IX. — A species which tends to be synanthropic; one male was caught here on cattle dung.

**Spelobia (Spelobia) rufilabris** (Stenhammar, 1854) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert; Komjáti: Lótusz-forrás. 8.V–15. IX. — A sylvicolous species, which seems rare in Hungary. Interestingly, 24 specimens were captured in forests, along a creek and also on apple bait.

**Spelobia (Spelobia) talparum** (Richards, 1927) — Aggtelek: Vörös-tó; Szin: Ménes-völgy. 29. IV–16. IX. — It lives in small mammal runs. One of the two specimens caught, was found at the entrance of a souslik run.

**Pullimosina antennata** (Duda, 1918) — Aggtelek: Medvés-kert; Szögliget: Derenk, Ménes-völgy. 22. IV–20. VII. — It is rare in Hungary; three specimens were caught at humid places.

**Pullimosina heteroneura** (Haliday, 1836) — Aggtelek: Lófej-forrás, Medvés-kert, Ménes-völgy, Szelcepuszta; Jósvafő: Gerge-bérc; (Szalonna: Bódva); Szin: Patkós-völgy; Szögliget: Derenk, Patkós-völgy. 10. V–13. X. — A cosmopolitan, partly synanthropic species, which was caught also on various kinds of dung, on apple bait, on mud, on a dead fox, etc. (23 ind.).

**Pullimosina mejerei** (Duda, 1918) — Szögliget: Patkós-völgy. 5. IX. — A terricolous, mostly brachypterous species; eleven specimens were collected in a single site.

**Pullimosina moesta** (Villeneuve, 1918) — Aggtelek: Almás-völgy, Medvés-kert; Hídvégárdó; Jósvafő: Gerge-bérc, Nagy-Tohonya-forrás, Tohonya-patak; Perkupa: Telekes-völgy; Szin: Patkós-völgy; Szögliget: Ménes-völgy, Patkós-völgy. 28.IV–10. X. — A common sylvicolous species, which was found in an alder swamps, on horse dung, etc. (58 ind.) plus several specimens caught on human feces (Papp 1992c).

**Pullimosina pullula** (Zetterstedt, 1847) — Bódvaszilas: Alsó-hegy; Jósvafő: Tengerszem; (Szalonna: Bódva). 14.VIII–1.IX. — Three females.

**Kimosina (Kimosina) plumosula** (Rondani, 1880) — Aggtelek: Lófej-forrás, Medvés-kert, Ménes-völgy; Bódvaszilas: Alsó-hegy; Hídvégárdó; Jósvafő: Lófej-völgy, Tohonya-patak; (Szalonna: Bódva); Szin: Patkós-völgy; Szögliget: Ménes-völgy, Patkós-völgy. 10. V–12. X. — It is common on mud and in humid places, mainly in forests (33 ind.).

**Telomerina eburnea** Roháček, 1983 — Aggtelek: Medvés-kert, Ménes-völgy. 9–10.V. — It is a rare carrion-feeder. Three specimens were captured on a dead bird and on a dead fox.

**Telomerina pseudoleucoptera** (Duda, 1924) — Aggtelek: Almás-völgy, Lófej-forrás, Szelcepuszta; Perkupa: Telekes-völgy; Szögliget: Derenk. 7.V–16.IX. — A minute coprophagous species on pastures, which is rare in collections. However, 18 specimens were captured on sheep, cattle and horse dung.

**Opalimosina (Dentilimosina) denticulata** (Duda, 1924) — Aggtelek: Medvés-kert. 10.V. — One specimen of this rare species was collected on a dead fox.

**Opalimosina (Hackmanina) czernyi** (Duda, 1918) — Aggtelek: Medvés-kert. 10.V. — One specimen of this species was collected (together with the above one) on a dead fox.

**Opalimosina (Opalimosina) mirabilis** (Collin, 1902) — Aggtelek: Lófej-forrás, Medvés-kert, Ménes-völgy, Szelcepuszta, Vörös-tó; Jósvafő: Gerge-bérc, Szelce-völgy; Perkupa:

Telekes-völgy; Szin: Kuhogy, Patkós-völgy; Szögliget: Patkós-völgy. 24.IV–9.X. — This is a common sphaerocerid on dung heaps, but here found also on mud, on various kinds of dung, on carrion (birds, fox), etc. (16 specimens preserved).

**Opalimosina (Papiella) liliputana** (Rondani, 1880) — Aggtelek: Lófej-völgy; Jósmafő: Lófej-völgy; Szögliget: Szelce-völgy. 10. V–20. VII. — Five specimens were collected in forests.

**Pteremis fenestralis** (Fallén, 1820) — Jósmafő: Szelce-völgy; Szin: Kuhogy. 29.IV–8.V. — Three specimens were taken in forest along a creek and on carrion.

**Opacifrons coxata** (Stenhammar, 1854) — Aggtelek: Hollófészek-völgy, Lófej-forrás, Medvés-kert, Patkós-völgy, Vörös-tó; Bódvaszilas: Alsó-hegy, Töltényes-zsomboly; Hídvégardó; Jósmafő: Szelce-völgy, Tengersizem, Tohonya-patak; Komjáti: Lótusz-forrás; Perkupa: Telekes-völgy; (Szalonna: Bódva); Szin: Patkós-völgy, Szelcepuszta; Szögliget: Derenk, Patkós-völgy. 22.IV–10.X. — A very common species in humid or muddy places (76 specimens preserved). It was reported from the above karst pit (one male, Papp and Plachter 1976).

**Opacifrons humida** (Haliday, 1836) — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert, Ménes-völgy, Vörös-tó; Hídvégardó; Jósmafő: Lófej-völgy, Tengersizem, Tohonya-patak; Komjáti: Komlós-forrás, Lótusz-forrás; Perkupa: Telekes-völgy; (Szalonna: Bódva); Szin: Patkós-völgy; Szögliget: Derenk, Ménes-völgy, Patkós-völgy. 23.IV–13.X. — As for life habits, it is similar to *O. coxata* (38 ex.).

**Opacifrons moravica** (Roháček, 1975) — Aggtelek: Patkós-völgy, Vörös-tó; Bódvaszilas: Bódva; Komjáti: Lótusz-forrás; Szögliget: Derenk. 24. IV–16. IX. — It is much less abundant than the above two species (6 ex.).

**Leptocera (Leptocera) fontinalis** (Fallén, 1826) — Aggtelek: Almás-völgy, Lófej-forrás, Patkós-völgy; Jósmafő: Lófej-völgy, Nagy-Tohonya-forrás, Tengersizem; Komjáti: Lótusz-forrás; Perkupa: Telekes-völgy; Szin: Patkós-völgy; Szögliget: Ménes-völgy, Patkós-völgy. 8. V–26. IX. — Widespread; mainly in humid forests near some water (48 ex.).

**Leptocera (Leptocera) nigra** Olivier, 1813 — Aggtelek: Almás-völgy, Medvés-kert, Patkós-völgy; Bódvaszilas: Alsó-hegy; Jósmafő: Nagy-Tohonya-forrás, Tengersizem; Komjáti: Lótusz-forrás; Perkupa: Telekes-völgy; Szin: Kuhogy; Szinpetri; Szögliget: Ménes-völgy. 29. IV–13. X. — This is one of the most abundant flies in Hungary. Only 19 specimens are preserved.

**Leptocera (Leptocera) oldenbergi** (Duda, 1918) — Szögliget: Ménes-völgy. 12.V. — It is a rare species, populations seem to be local, at least so in Hungary. In the Ménes valley 41 specimens were collected.

**Leptocera (Rachispoda) limosa** (Fallén, 1820) — Aggtelek: Lófej-forrás, Medvés-kert, Vörös-tó; Bódvaszilas: Bódva. 24.IV–15. IX. — A species common on mud in Hungary (15 ind.).

**Leptocera (Rachispoda) lutosa** (Stenhammar, 1854) — Aggtelek: Lófej-forrás, Vörös-tó; Komjáti: Lótusz-forrás; (Szalonna: Bódva); Szögliget: Derenk. 24. IV–26. IX. — Its larvae develop in mud in high numbers (18 ind.).

**Leptocera (Rachispoda) lutoidea** (Duda, 1938) — Aggtelek: Hollófészek-völgy, Vörös-tó; Jósmafő: Nagy-Tohonya-forrás, Szelce-völgy; Komjáti: Lótusz-forrás; Perkupa: Telekes-völgy; (Szalonna: Bódva); Szögliget: Derenk. 24.IV–26. IX. — Same as for the former species (28 specimens preserved).

**Leptocera (Rachispoda) modesta** (Duda, 1924) — Aggtelek: Ménes-völgy, Vörös-tó; Jósmafő: Szelce-völgy; (Szalonna: Bódva); Szögliget: Derenk. 21.IV–16.IX. — It is common though less abundant than the former two three species; 25 specimens were preserved from materials collected in swamps and on mud.

**Leptocera (Rachispoda) pseudohostica** (Duda, 1924) — Bódvaszilas: Alsó-hegy. 28. VIII. — No special collections for mud-dwelling *Rachispoda* species was made in the ANP, this is why our material is poor in species. Only one specimen of this species was captured.

## ASTEIIDAE

The representatives of four species of this family were found in the ANP (68 ind.).

**Leiomyza dudai** Sabrosky, 1956 — Aggtelek: Almás-völgy, Lófej-forrás, Medvés-kert; Hídvégardó: égerláp; Perkupa: Telekes-völgy; Szin: Ménes-völgy; Szögliget: Patkós-völgy. 14.VIII–16.IX. — It is a common mushroom-feeder in all forests in Hungary (five males, three females).

**Leiomyza scatophagina** (Fallén, 1823) — Perkupa: Telekes-völgy; Szögliget: Patkós-völgy. 14.VIII–12.IX. — One male and two females were caught. It is rare and only rather recently reported from Hungary.

**Asteia amoena** Meigen, 1830 — Aggtelek: Lófej-forrás, Medvés-kert, Patkós-oldal, Szelcepuszta; Hídvégardó: égerláp; Szalonna: Bódva; Szin: Patkós-völgy. 7.V–17.IX. — This is the only common asteiid species in Hungary. Of the specimens captured only 56 ind. were preserved for our collection.

**Asteia concinna** Meigen, 1830 — Jósvafő. 11.VII. 1 One male only.

## AULACIGASTRIDAE

Formerly only one species, *Aulacigaster leucopeza* Meigen, of this family was known in the Western Palaearctic. Very recently other three species were found or described as new in the Palaearctic Region (Papp 1998). Now three species, *A. falcata*, *A. leucopeza* and *A. neoleucopeza* are listed in the Hungarian fauna. Besides the common one, also *A. neoleucopeza* Mathis et Freidberg was collected in the ANP. This is an important new record since it was formerly reported from a 50 km vicinity of Budapest only.

**Aulacigaster leucopeza** Meigen, 1830 — Aggtelek: Almás-völgy, Lófej-forrás; Jósvafő: Szelce-völgy. 7.V–15.IX. — It develops in the sap of wounds of numerous tree species. No special collecting was performed in the ANP, so only two males and females each were caught.

**Aulacigaster neoleucopeza** Mathis et Freidberg, 1994 — Jósvafő: Tengerszem. 20. VII. — Two males and two females were caught on a wound of an oak tree. They were not included in the revision paper of the Palaearctic *Aulacigaster*, since the specimens had been in a vial in alcohol with drosophilids since their capture and were found only just before completing this manuscript.

## CAMILLIDAE

The life-habits of the European camillid species are little known, so it is impossible to make systematic collectings for them. Only one species was found in the ANP.

**Camilla atrimana** Strobl, 1910 — Jósvafő: Szelce-völgy; Komjáti: Lótusz-forrás. 8–10.V.–?. — Only one male and two females were caught on the edge of a marsh and in a forest.

## DROSOPHILIDAE

In Hungary 66 species were recorded (cf. Papp 1992a). Together with other two species of *Scaptodrosophila*, which have not been published hitherto, so today 68 drosophilid species are known from Hungary.

The representatives of 43 species were found in the ANP (36 in the Bükk NP). Over 1000 voucher specimens are preserved in the HNHM.

**Amiota (Amiota) alboguttata** (Wahlberg, 1839) — Aggtelek: Ménes-völgy, Medvés-kert; Bódvaszilas: Alsó-hegy; Jósvafő: Lófej-völgy, Gerge-bérc, Szelce-völgy, Tohonya-forrás; Komjáti: Lótusz-forrás; Szin: Patkós-völgy; Szögliget: Ménes-patak völgye, Patkós-völgy. V–IX. — Twenty-two specimens; it was collected also on apple-bait (Papp 1992b).

**Amiota (Amiota) basdeni** Fonseca, 1965 — Szögliget: Patkós-völgy. 12. IX. — It is a very rare species; in Hungary it has been collected in the Vértes, Gerecse and Zempléni Mts, i.e. none in the national parks (1 male).

**Amiota (Amiota) rufescens** (Oldenberg, 1914) — Aggtelek: Ménes-völgy, Medvéskert. 15.VIII. 1990. — Recorded for the first time in Hungary from the ANP (one male); it was collected on apple-bait (Papp 1992a,b).

**Amiota (Phortica) variegata** (Fallén, 1823) — Aggtelek: Almás-völgy, Ménes-völgy, Medvés-kert. Szin: Ménes-völgy; Szögliget: Mánes-patak völgye. V–IX. — Numerous specimens were captured, of which twelve were kept as voucher specimens; it was collected also on apple-bait (Papp 1992b). The related *A. (Ph.) semivirgo* Máca has not been collected in the ANP.

**Cacoxenus indagator** Loew, 1858 — Aggtelek: Kemping; Jósavfő: Szelce-v. 10–17. V. — Two females were caught in a forest and on the window of a bungalow.

**Gitona distigma** Meigen, 1830 — Szin: Szelcepuszta. 14.IX–22.X. — Numerous specimens were captured, but only 80 are preserved; most of them were caught on windows.

**Leucophenga maculata** (Dufour, 1839) — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert. VIII–X. — More than 400 specimens were captured but only 20 voucher specimens preserved. It was collected also on apple-bait (Papp 1992b).

**Chymomyza amoena** (Loew, 1862) — Aggtelek: Lófej-forrás, Lófej-völgy, Ménes-völgy, Medvés-kert. VII–IX. — In Hungary numerous specimens were collected on freshly cut popular trunks, on fermenting apples (apple-bait), etc., incl. three specimens from the ANP (Papp 1992a,b), other four males were collected here.

**Chymomyza caudatula** Oldenberg, 1914 — Aggtelek: Ménes-völgy, Medvés-kert. VII. — Two males only.

**Mycodrosophila poecilogastra** (Loew, 1874) — Aggtelek: Ménes-völgy, Medvés-kert. VIII–IX. — Two specimens were collected during our survey programme (one on apple-bait, Papp 1992b).

**Scaptomyza (Parascaptomyza) pallida** (Zetterstedt, 1847) — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert; Jósavfő: Nagy-Tohonya-forrás, Tengersizem; Perkupa: Telekes-völgy; Szin: Kuhogy, Patkós-völgy, Szelce-puszta; Szögliget: Derenk, Ménes-patak völgye. VII–X. — The commonest drosophilid in Hungary; it was collected also on apple-bait (Papp 1992b); 63 specimens preserved.

**Scaptomyza (S.) flava** (Fallén, 1823) — Jósavfő: Tohonya-forrás; Szögliget: Patkós-völgy. V., IX. — One male and one female.

**Scaptomyza (S.) graminum** (Fallén, 1823) — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert, Szilicei kaszálók; Jósavfő: Gerge-bérc, Szelce-völgy; Szin: Patkós-völgy; Szögliget: Ménes-patak völgye. VII–X. — A very common species (41 ind.).

**Scaptomyza (S.) griseola** (Zetterstedt, 1847) — Bódvaszilás: Bódva; Jósavfő: Gerge-bérc. 14.VIII., 6.IX. — Two males of this rare species were collected.

**Lordiphosa andalusiaca** (Strobl, 1906) — Aggtelek: Ménes-völgy, Medvés-kert; Hidvégardó: égerláp [alder swamp]; Jósavfő. V–IX. — Four females, plus it was collected on apple-bait (Papp 1992b).

**Lordiphosa fenestrarum** (Fallén, 1823) — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert; Jósavfő: Tengersizem, Tohonya-forrás; Perkupa: Telekes-völgy; Szin: Patkós-völgy; Szögliget: Ménes-patak völgye. VII–X. — Twelve males, 18 females; it was collected also on apple-bait (Papp 1992b).

**Lordiphosa hexasticha** (L.Papp, 1971) — Jósavfő: Tohonya-forrás; Perkupa: Telekes-völgy. 17.V., 14.VIII. — One male and female were caught on forest edges.

**Hirtodrosophila confusa** (Staeger, 1844) — Aggtelek: Ménes-völgy, Medvés-kert; Jósavfő: Lófej-völgy; Szögliget. VII–X. — Its adults are common of *Fomes* fungi and it was collected also on apple-bait (Papp 1992b).

**Hirtodrosophila oldenbergi** (Duda, 1924) — Aggtelek: Lófej-forrás; Ménes-völgy, Medvés-kert; Perkupa: Telekes-völgy. VIII–IX. — A surprisingly high number (20 ex.) was collected on apple-bait (Papp 1992b).

**Scaptodrosophila ruffifrons** (Duda, 1973) — Komjáti: Lótusz-forrás; Szin: Ménes-völgy. VIII–IX. — Two males. The Central European species of *Scaptodrosophila* were most recently revised, but the paper has not been published by the submission of this paper, so this name is used in the sense of Papp (1973, etc.).

**Scaptodrosophila abdita** Papp, Rácz et Bächli, 1999 — Szin: Ménes-völgy. 16.IX. — Four paratype males were captured on the creek shore.

**Drosophila (Dorsilopa) busckii** Coquillett, 1901 — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert; Jóságfő: Tengersizem, Szelce-pusztá; Szögliget: Szelcepusztá. VII–X. — Fourteen specimens, plus 34 ind. were collected also on apple-bait (Papp 1992b).

**Drosophila (Sophophora) ambigua** Pomini, 1940 — Aggtelek: Ménes-völgy, Medvés-kert; Szin: Ménes-völgy. VII–IX. — One male; other four specimens were collected on apple-bait (Papp 1992b).

**Drosophila (Sophophora) helvetica** Burla, 1948 — Aggtelek: Ménes-völgy, Medvés-kert. VII–X. — One male was collected on apple-bait (Papp 1992a,b).

**Drosophila (Sophophora) melanogaster** Meigen, 1830 — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert; Szin: Patkós-völgy, Szelce-pusztá; Szögliget: Derenk. VII–X. — Numerous specimens caught, 17 voucher specimens preserved; it was collected also on apple-bait (Papp 1992b). No specimen of *D. simulans* was found in the materials from the ANP.

**Drosophila (Sophophora) obscura** Fallén, 1823 — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert; Szögliget: Derenk, Ménes-patak völgye. VII–X. — It was the dominant species in samples collected on apple-bait in the ANP (Papp 1992b) and a good part of them is kept as voucher specimens.

**Drosophila (Sophophora) subobscura** Collin, 1936 — Aggtelek: Ménes-völgy, Medvés-kert; Szin: Ménes-völgy; Szögliget: Ménes-patak völgye. VII–X. — It was less abundant in samples collected by apple-bait than the former species (Papp 1992b).

**Drosophila (Sophophora) subsilvestris** Hardy et Kaneshiro 1968 — Aggtelek: Ménes-völgy, Medvés-kert. IX. — It was collected on apple-bait (53 ind.) in September samples (Papp 1992b).

**Drosophila (Sophophora) tristis** Fallén, 1823 — Aggtelek: Ménes-völgy, Medvés-kert. VIII. — It was collected also on apple-bait (3 ind. in one sample, Papp 1992b).

**Drosophila (Drosophila) cameraria** Duda, 1924 — Aggtelek: Lófej-forrás. 15.IX. — This is a very interesting rare species, whose relegation (to subgenus, etc.) is still questionable; eight males were caught here.

**Drosophila (Drosophila) funebris** (Fabricius, 1787) — Aggtelek: Ménes-völgy, Medvés-kert; Jóságfő: Szelvüce-völgy; Szin-Szelcepusztá. VII–X. — A common synanthropic species; it was collected also on apple-bait (Papp 1992b).

**Drosophila (Drosophila) histrio** Meigen, 1830 — Aggtelek: Ménes-völgy, Medvés-kert. VII–X. — It was collected on apple-bait (Papp 1992b), also in 1987.

**Drosophila (Drosophila) hydei** Sturtevant, 1921 — Aggtelek: Ménes-völgy, Medvés-kert; Jóságfő: Tengersizem; Szin: Szelce-pusztá. IV–X. — A common synanthropic species; it was collected also on apple-bait (Papp 1992b).

**Drosophila (Drosophila) immigrans** Sturtevant, 1921 — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert, Szelce-pusztá; Jóságfő: Tengersizem; Szin: Patkós-völgy. VII–X. — A common synanthropic species; it was collected also on apple-bait (Papp 1992b); over 50 are preserved as voucher specimens.

**Drosophila (Drosophila) kuntzei** Duda, 1924 — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert; Szin: Patkós-völgy. VII–X. — It was collected also on apple-bait (Papp 1992b) but other-

wise it is one of the commonest species on mushrooms in Hungary. Nearly 100 specimens preserved, since it is very difficult to distinguish specimens from those of *D. phalerata* in the field.

***Drosophila (Drosophila) limbata*** von Roser, 1840 — Aggtelek: Almás(kerti)-völgy, Ménes-völgy, Medvéskert; Jósvafő: Gerge-bérc; Perkupa: Telekes-völgy. VII–X. — Three males and three females, plus one was collected on apple-bait (Papp 1992b).

***Drosophila (Drosophila) littoralis*** Meigen, 1830 — Aggtelek: Ménes-völgy, Medvéskert. IX. — Two specimens were collected on apple-bait (Papp 1992b). A rare species in Hungary.

***Drosophila (Drosophila) phalerata*** Meigen, 1830 — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert; Jósvafő; Szin: Patkós-völgy. VII–X. — More than 280 voucher specimens were preserved, because they are hardly separable from those of *D. kuntzei* in the field. It is very common also on apple-bait (Papp 1992b).

***Drosophila (Drosophila) repleta*** Wollaston, 1858 — Szin: Szelcepuszta; Szögliget: Derenk. IX–X. — One male and four females of this synanthropic species were collected.

***Drosophila (Drosophila) testacea*** von Roser, 1840 — Aggtelek: Lófej-forrás, Ménes-völgy, Medvéskert. VII–X. — It was collected on apple-bait (Papp 1992b).

***Drosophila (Drosophila) transversa*** Fallén, 1823 — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert; Szin: Ménes-völgy, Patkós-völgy; Szögliget: Ménes-patak völgye. VII–X. — It was collected on also apple-bait (Papp 1992b); over 150 specimens preserved.

***Drosophila unimaculata*** Meigen, 1830 — Aggtelek: Ménes-völgy, Medvéskert. VII–X. — It was collected in high number on apple-bait (3 ind. in the ANP, but 311 in the Bükk NP, see Papp 1992a,b), though reported as new for the Hungarian fauna rather recently. Bächli and Burla (1985) listed it in the “*melanica*-Gruppe”, together with the next species.

***Drosophila (Drosophila) tsigana*** Burla et Gloor, 1952 — Jósvafő: Tengersizem. VII. — It was collected on oozing sap of an oak tree at Jósvafő and also on apple bait samples in other parts of Hungary (Papp 1992a,b). Formerly known only from France and Portugal.

#### ODINIIDAE

Rare flies with special habits (the larvae are mostly predators of xylophilous insects), and since there were no special collectings for odiniids in the ANP., only one species was found in these materials.

***Odinia boletina*** (Zetterstedt, 1848) — Aggtelek: Lófej-forrás. — 15.IX. — A single female was caught.

#### MILICHIIDAE

Seven specimens of four species were found in the collection of the HNHM from the ANP. On the one hand, the holotype of *Paramyia hungarica* L. Papp, 1993 was collected (Papp 1993b), which represents a genus new to the whole Palaearctic Region; on the other, representatives of some very common species are missing. For instance, no specimens of the genus *Desmometopa* was found in the material from the ANP.

***Phyllomyza donisthorpei*** Schmitz, 1923 — Jósvafő. 20.VII–20.VII. — Two females were caught by a Malaise trap.

***Phyllomyza equitans*** (Hendel, 1919) — Aggtelek: Medvés-kert. ?–25.IX. — One female of this rare species was collected along a creek.

***Paramyia hungarica*** L. Papp, 1993 — Aggtelek: Medvés-kert. 19.VII. — The unique holotype male was collected (on fermenting fruit bait) during our survey programme.

***Madiza glabra*** Fallén, 1820 — Jósvafő: Nagy-Tohonya-forrás; Szin: Szelcepuszta. ?–15–20.IX. — Only three males of this common species were preserved.

## CARNIDAE

Collectings for carnids need special methods and much time, since they are not collectible by the routine methods. In the Aggtelek Mts special attention was paid to the flies in horse and sheep dung; so the material contains some species, which develop in dung of large hoofers. The whole carnid material (32 ind. of six spp.; two females left unnamed) – though it is not very rich – is still more significant both in specimens and species than that from the Bükk NP (cf. Papp 1996).

**Meoneura carpathica** L. Papp, 1977 — Aggtelek: Almás-völgy, Medvés-kert; Komjáti: Lótusz-forrás; Szögliget: Ménes-patak völgye. 7.V–6.IX. — Seven males and two females were caught on cut and rotten grass, on marshy vegetation and on sheep dung. Formerly only one male of this species—which has been collected in the Alps and in the Carpathians—was known from Hungary. So this material from the ANP is very important.

**Meoneura flavifacies** Collin, 1930 — Aggtelek: Almás-völgy; Jósvafő: Gerge-bérc, Lófej-forrás, Tohonya-forrás. 17.V–13.X. — It is common on several kinds of dung. In the ANP it was caught on sheep, horse and cow dung (seven males, three females).

**Meoneura minutissima** (Zetterstedt, 1860) — Aggtelek: Almás-völgy. 7.V–?. — Two males of this interesting species were caught on sheep dung.

**Meoneura neglecta** Collin, 1930 — Jósvafő: Gerge-bérc; Szögliget: Ménes-patak völgye. 12.V–13.IX. — This is also a coprophagous species, less abundant than *M. flavifacies* in Hungary (four males, two females).

**Meoneura triangularis** Collin, 1930 — Jósvafő: Gerge-bérc. 17.V–?. — A coprophagous species, which seems rare in Hungary. Only one male was captured on horse dung.

**Meoneura vagans** (Fallén, 1823) — Aggtelek: Szelcepuszta. 7.V–?. — Based on our experience, it does not seem a specialised species: it has been caught on carrion, meat bait and on several kinds of dung. Here only one male was caught.

## ACARTOPHTHALMIDAE

Twenty-six specimens of two species were found but since there are only three species known from Hungary, this seems a satisfactory material for our purposes.

**Acartophthalmus bicolor** Oldenberg, 1910 — Aggtelek: Ménes-völgy, Medvés-kert; Jósvafő: Tohonya-forrás. 9.V–20.VII. — Less abundant than the next species. In the ANP it was caught on apple-bait, on a dead bird and on a humid pasture (four males and two females).

**Acartophthalmus nigrinus** (Zetterstedt, 1848) — Aggtelek: Lófej-forrás, Ménes-völgy, Medvés-kert; Hídvégardó: égerláp; Jósvafő: Szelcepuszta; Komjáti: Alsó-hegy; Perkupa: Telekes-völgy. 11.V–25.IX. — The adults can be found on various kinds of dead organic material (carrion, human feces, other dung, decaying wood with fungi, etc. (10 males, 10 females).

## GASTEROPHILIDAE

**Gasterophilus intestinalis** (De Geer, 1776) — Jósvafő: Gerge-bérc. — Egg-shells and dead eggs attached to hairs of several horses were collected on the 13th of October 1988, and so the presence of this species is ascertained in the Park. It is obvious from the data that empty egg-shells remain on hairs for several weeks and so their identification is the best (easiest) way to detect *gasterophilosis* in a stud.

## HYPODERMATIDAE

**Hypoderma diana** Brauer, 1858 — Aggtelek: Hollófészek-v., Ménes-völgy; Jósvafő: Lófej-völgy; Szögliget: Derenk, Ménes-völgy; Perkupa: Telekes-völgy. 9–18.V. — Nineteen specimens (16 males and three females) were caught on the roads. It must be a common parasite of the roe-deer and the red deer in the ANP.

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