SPECIES OF THIRTEEN DIPTEROUS FAMILIES OF THE BÜKK NATIONAL PARK (DIPTERA)

By

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Locality and flight period data of 207 species of 13 dipterous families (Scatopsidae, Lauxaniidae, Sphaeroceridae, Periscelididae, Asteiidae, Aulacigastridae, Diastatidae, Camillidae, Drosophilidae, Gasterophilidae, Oestridae, Hypodermatidae, Hippoboscidae; more than 5600 specimens) are given with remarks on life-habits, habitats and collecting methods. Eleven species are new for the Hungarian fauna. Further 15 species are also included, which were collected near to the national park.

The dipterous families discussed in the present paper do not form a natural group. They are published together here, because the present author is a specialist of them and/or excellent works (revisions, catalogues) were published most recently for these species. The material of several other dipterous families will be elaborated for the second volume of the Fauna of the Bükk National Park in the near future.

Prior to our five year collecting programme, extensive collectings were made by Dr. Sándor Tóth at Tard and in some area of the Bükk Mts ca. 30 years ago. Out of Tard, his collecting labels do not contain place-names but names of the mountains etc. in the present national park. His label "Bükk hg., Tardi-patak völgye" will be listed as "Cserépváralja: Tardi-patak", since that stream flows through the fields of that village if in the Bükk Mts. Dr. Ferenc Mihályi and some other workers of the Hungarian Natural History Museum (below HNHM) collected also some valuable material after 1956.

In our collectings all the collection methods applied during our former programmes in other national parks were used (sweep netting, Malaise trap, pitfall traps, sifting, singling with aspirators, etc.). All the materials collected were selected under a stereomicroscope and only voucher specimens were mounted. In giving locality data, our colleagues were not precise enough in numerous cases (mainly place-names were neglected, e.g. "Bükk N. P., Nagymező"). Mostly we managed to decide on the place-names undoubtedly; if not, label data are quoted in quotation marks.

More than 5600 specimens of 222 species were identified; 207 species are represented by the specimens from the area of the national park. However, further 15 species were only collected in its close environs, mainly from Tard by S. Tóth. These data are listed separately. If these data are the only ones for the species, the scientific name of the species is given in square brackets. Eleven species were found to be new for our fauna: two species in Scatopsidae, four species in Sphaeroceridae, one species in Diastatidae and

five species in Drosophilidae. In the case of these species other data from Hungary (if any) will also be given.

I am indebted to Gábor Kaufman for his cooperation in the identification of the hippoboscids and to Albert Szappanos for the identification of bot-fly larvae.

List of species

Scatopsidae

Small to very small stout nematocerans. Hitherto 26 species have been found in Hungary, the actual number is over 40 species. Their life-habits are inadequately known. The species with known habits (ca. 5-6 species) develop in dung and in decaying vegetable material; one species (*Coboldia fuscipes*) is usually reared from fungi (mainly in mushroom culture units but also in the nature). In the Bükk National Park representatives of 15 species were caught and some specimens of other three species were found in the close vicinity of the park. Both the number of the species and that of the specimens are significant (220 specimens). Two species, *Anapausis albohalterata* Duda, 1938 and *Rhegmoclema bifida* (Zilahi-Sebess, 1956), are new to the Hungarian fauna.

Ectaetia clavipes (Loew, 1846) — Cserépváralja: Tardi-patak. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. ?-30. V-15. VI-? — A European species, which is common in all areas of our country. Imagoes are found on wet meadows and forests, on dung heaps. It has been reared from dung (6 specimens).

Anapausis albohalterata Duda, 1928 — Mályinka: Látó-kövek; Répáshuta. 5. VI-6. VII. — New for the fauna of Hungary. It is known from The Netherlands, Germany, Austria and Poland. Our specimens (3 males, 2 females) were collected on flowering Umbelliferae and on lights.

Anapausis talpae (Verrall, 1912) — Szilvásvárad: Szalajka-völgy. 20-25. VII. — A rare European species; only one female is known from the Bükk Mts.

Rhegmoclema halteratum (Meigen, 1838) — Cserépváralja: Tardi-patak; Bükkábrány. 30. V-11. IX. — Widespread in Europe; in our country it is more abundant on the lowlands. Its only known locality in the Bükk is on the southernmost part (not a true mountain area).

Rhegmoclema bifida (Zilahi-Sebess, 1956) — Mályinka: Mária-forrás. 2-4. VII. — It was described from Transylvania (Roumania: Gödemesterháza). Its type(s) are lost, but one male (caught on a forest clearing) from the Bükk National Park fits very well to the description of bifida. In order to solve this problem it is indispensable to designate a neotype. In any case this specimen represents a species new for the fauna of Hungary.

Apiloscatopse filamentosa (Duda, 1928) — Cserépváralja: Tardi-patak. 26. X. — It was described from Gyón (now Dabas, Central Hungary). In the southernmost part of the Bükk Mts. one male and two females were collected, which fit completely to its description and to the drawing of Zilahi-Sebess (1960) of the genitalia,

Apiloscatopse flavicollis (Meigen, 1818) — Cserépváralja: Tardi-patak; Miskolc: Lusta-völgy. ?-4-26. X. — Widespread in Europe; it is more abundant on our lowlands, where it has been found also in the spring. The 19 specimens from the Bükk were caught on forest trails, imagoes are crawling on the forest litter, so it is caught also by pitfall traps.

Apiloscatopse picea (Meigen, 1818) — Cserépváralja: Tardi-patak; Miskolc: Lusta-völgy. ?-4-26. X. — Two males and three females were caught together with the previous species. However, contrarily to flavicollis, it has not been collected on our lowlands (for old collecting data see Zilahy-Sebess 1960).

Apiloscatopse scutellata (Loew, 1846) — Cserépváralja: Tardi-patak; Miskolc: Csipkéskút; Nagyvisnyó: Leány-völgy. ?-8-26. X. — A widespread European species; in our country it occurs in

the mountains (Börzsöny, Mátra, Bükk) only. Twenty-two specimens were collected in the Bükk Mts, mainly on forest litter.

Colobostema nigripenne (Meigen, 1830) — Szilvásvárad: Tótfalu-völgy. 30. VII. — Known from Europe and North Africa. In our country it was reported from the Hortobágy National Park and Visegrád. Only one male was caught in the Bükk Mts.

[**Colobostema triste** (Zetterstedt, 1850) — It has not been found in the Bükk Mts but not far from them (Hejőbába).]

[**Ferneiella incompleta** (Verrall, 1886) — Bükkábrány. 14. V. — It is known from North and West Europe (Krivosheina and Haenni 1986), in our country also from Ócsa and other lowland localities. One female was collected at Bükkábrány, not far from the Bükk National Park.]

Holoplagia albitarsis (Zetterstedt, 1850) — Nagyvisnyó: Elza-lak. 28. V-4. VI. — A rare European species; only one female was caught in the Bükk.

[**Reichertella geniculata** (Zetterstedt, 1850) — A European species, known also from Hungary. One female is known from Hejőbába.]

Scatopse notata (Linnaeus, 1758) — Miskolc; Nagyvisnyó: Hármaskút. — Tard. IV-X. — A very common cosmopolitan species, it is more or less synanthropic, the larvae develop in dung water, in several kinds of dung, in cesspools, etc. Our 108 specimens were collected in a cellar, in privies and caught also on lights.

Coboldia fuscipes (Meigen, 1830) — Felsőtárkány; Mályinka: Szenlélek-hegy; Varbó: Haricaforrások. — Tard. IV-IX. — It is also a common cosmopolitan species. Our specimens were caught on flowering Umbelliferae and reared from fungi, but it is common and abundant on dung heaps. The larvae develop in all kinds of decaying materials.

Swammerdamella brevicornis (Meigen, 1830) — Miskolc: Szentléleki-völgy. — Tard. VI-XI. — Widespread in Europe but known also from Asia and North Africa. It is common on pastures, since its larvae develop in dung; this is probably why it is more abundant on our lowlands (17 specimens).

Swammerdamella pediculata (Duda, 1928) — Nagyvisnyó: Elza-lak. 29. V-4. VI. — A rare European species (Germany, Hungary). One female only.

Lauxaniidae

Small to medium-sized flies with extremely various morphological features in the adult stage. The larvae develop in leaf litter (in several species the first instar larvae, or all larval instars between the epidermal layers), in rotting tree stumps. Probably most of the species feed on dead leaves of deciduous trees consuming also microorganisms, fungal mycelia, etc. They overwinter in the larval or pupal stage. In our country a majority or all of the species are univoltine but a diapause is possible in the egg or in larval stage. The adults (may) survive as long as three months. In Hungary 70 species have been found and several further species are expected to occur in our country. In the Bükk Mts 42 species were collected, and one more in the adjacent area. That is, a high proportion of our fauna has been found in the Bükk National Park. Much to our regret, there is no species among them which would be new for the Hungarian fauna. Over 1000 specimens are preserved in the HNHM, several thousands were not mounted. Most of the specimens were caught by the conventional sweep netting, other specimens were collected by Malaise trap and they are usually caught also on apple bait for collecting drosophilids.

Homoneura biumbrata (Loew, 1847) — Miskolc: Miskolctapolca. — Hejőbába. ?-VI-?. — A West Palaearctic (European) species; it is more or less sylvicolous though less abundant in the mountains (2 specimens).

Homoneura interstincta (Fallén, 1820) — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Felsőtárkány; Mályinka: Odvas-kő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 8. VI-5. IX. —

A European species (other records are questionable). A psychrophilous species, its imagoes are usually collected in our mountains (28 specimens).

Homoneura notata (Fallén, 1820) — Cserépváralja: Tardi-patak; Szilvásvárad. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). VI-IX. — Widespread, though its records are all from Europe. A sylvicolous species, its larvae are probably developing in forest litter (5 specimens).

Homoneura patelliformis (Becker, 1895) — Bélapátfalva: Bél-kő. 11-17. VII. — It is known from Central and South Europe only. A rare species in our mountain slopes (3 specimens).

Minettia (Frendelia) longipennis (Fabricius, 1794) — Bélapátfalva: Lak-völgy; Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Mályinka: Látó-kövek; Miskolc: Garadna-völgy; Nagyvisnyó: Elza-lak, Nagy-völgy; Szarvaskő: Eger; Szilvásvárad: Szalajka-völgy. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. 14. V.-2. VIII. — A common Holarctic species, 64 specimens were collected, mainly in wet forests.

Minettia (Minettia) fasciata (Fallén, 1826) — Felsőtárkány: Pap-kő-bérc ("Pap-hegy"). 15. VII. — A common but not abundant European species, its life-habits are unknown (2 specimens).

Minettia (Minettia) flaviventris (Costa, 1844) — Cserépváralja: Tardi-patak; Felsőtárkány: Pap-kő-bérc ("Pap-hegy"). 2-18. VI. — It is known from the middle and south belts of Europe from Great Britain to Italy. Its life-habits are unknown (11 specimens).

Minettia (Minettia) loewi (Schiner, 1864) — Miskolc: Garadna-völgy, Jávorkút, Létrás-tető; Répáshuta: Pénzpatak. 26. V-16. VI. — Known from Central Europe only; the imagoes are collected mainly in forests (26 specimens).

Minettia (Minettia) lupulina (Fabricius, 1787) — Cserépváralja: Tardi-patak; Felsőtárkány: Pap-kő-bérc ("Pap-hegy"); Mályinka: Látó-kövek, Mária-forrás; Miskolc: Hosszú-bérc. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. V-VII. — A common Holarctic species found also on open meadows, e.g. in the Hortobágy National Park. Our 41 specimens from the Bükk Mts are from forests up to 650 m a.s.l.

[**Minettia (Minettia) plumicornis** (Fallén, 1820) — Tard. IX. — It is known from all parts of Europe south to the tree-line. It has not been collected in the Bükk Mts. Although it is more abundant on our lowlands, some specimens have been caught in other mountains.]

Minettia (Minettia) rivosa (Meigen, 1826) — Cserépváralja: Tardi-patak; Felsőtárkány: Pap-kő-bérc ("Pap-hegy"). VI-VII. — A common Holarctic species, known also all over Hungary (3 specimens).

Tricholauxania praeusta (Fallén, 1820) — Bükkszentkereszt: Hollóstető; Cserépfalu: BNP kutatóház, Hór-völgy; Cserépváralja: Tardi-patak; Felsőtárkány: Kis-som; Mályinka: Mária-forrás; Miskolc: Eszperantó-forrás, Forrás-völgy, Jávorkút, Lillafüred, Nagy-galya; Nagyvisnyó: Málabérc; Répáshuta: Pénzpatak, Tebepuszta; Szarvaskő: Eger, Margit-forrás, Tardos-hegy; Szilvásvárad; Varbó: Harica-források. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. 19. V-15. IX. — A very common and abundant West Palaearctic species; psychrophilous but not strictly sylvicolous (110 specimens).

Peplomyza discoidea (Meigen, 1830) — Cserépfalu; Répáshuta. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 11. VI-5. IX. — A sylvicolous European species. The larvae develop in the leaf litter of humid deciduous forests (3 specimens).

Peplomyza litura (Meigen, 1826) — Bükkszentkereszt: Hollóstető; Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Felsőtárkány: Lők-völgy; Miskolc: Bán-kút, Lillafüred, Lusta-völgy, Nagymező; Répáshuta: Pénzpatak. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). VII-2. X. — A common West Palaearctic (European) species. It is very common in our mountain forests (56 specimens).

Eusapromyza multipunctata (Fallén, 1820) — Szilvásvárad. — Hejőbába; Tard. ?-VI-?. — Widespread from Sweden to Italy. Its life-habits are unknown, it has been collected in the forests of Hungary (5 specimens).

Aulogastromyia anisodactyla (Loew, 1845) — Cserépfalu: Hór-völgy; Miskolc: Bán-kút, Csanyikvölgy, Jávorkút; Nagyvisnyó: Taró-völgy; Répáshuta; Szilvásvárad: Szalajka-völgy. 27. VI-11. X. — A sylvicolous European species, it is more abundant in our low mountains than in our lowlands. Contrarily, only 9 specimens were collected during our five-year programme.

Lyciella (Meiosimyza) platycephala (Loew, 1847) — Mályinka: Látó-kövek, Mária-forrás, Odvas-kő, Szentlélek-hegy; Miskolc: Bán-kút, Eszperantó-forrás, Garadna, Garadna-völgy, Jávorkút, Hosszú-bérc, Lillafüred; Nagyvisnyó: Bálvány, Elza-lak, Taró-völgy; Répáshuta: Pénzpatak, Tebepuszta; Szilvásvárad: Keskeny-rét, Szalajka-völgy; Varbó: Harica-források. 29. V-27. IX. — Widespread from South Sweden to Italy; it is a common and characteristic species of the forests of our cool mountains, very rare or exceptional on our lowlands (112 specimens).

Lyciella (Lyciella) affinis (Zetterstedt, 1847) — Cserépfalu: BNP kutatóház, Hór-völgy; Mályinka: Látó-kövek, Mária-forrás, Szentlélek-hegy; Miskolc: Bán-kút, Eszperantó-forrás, Garadna, Garadna-völgy, Jávorkút, Ómassa; Nagyvisnyó: Hármaskút, Huta-bérc; Szilvásvárad: Tar-kő; Varbó: Harica-források. VI-VIII. — A psychrophilous European species. In our country it is known from the Bükk Mts only but it seems rather common here (27 specimens). The larvae have been reared from decayed tree trunks and in all probability they develop also in other dead vegetable materials.

Lyciella (Lyciella) conjugata (Becker, 1895) — Miskolc: Bán-kút, Lillafüred; Nagyvisnyó: Bálvány. 4. VIII-15. IX. — A rare European species; in our country it was collected in mountains only. Four specimens were caught in the forests of the Bükk Mts.

Lyciella (Lyciella) decempunctata (Fallén, 1820) — Cserépfalu: BNP kutatóház, Hór-völgy; Mályinka: Mária-forrás; Miskolc: Lillafüred; Répáshuta: Pénzpatak; Szarvaskő: Eger; Szilvásvárad. 12. VI-15. IX. — A widespread European species, it is characteristic for wet forests of our hills and mountains (25 specimens).

Lyciella (Lyciella) decipiens (Loew, 1847) — Bükkzsérc: Pazsag-völgy; Cserépváralja: Tardipatak; Mályinka: Látó-kövek; Miskolc: Lillafüred. 10. VI-15. IX. — It is known from Europe and the Caucasus. A psychrophilous species, imagoes were collected also on wet meadows (56 specimens).

Lyciella (Lyciella) illota (Loew, 1847) — Mályinka: Látó-kövek, Mária-forrás, Odvas-kő, Szentlélek-hegy; Miskolc: Bán-kút, Nagy-mező; Nagyvisnyó: Csurgói erdészlak, Fodor-hegy; Répáshuta; Szilvásvárad: Keskeny-rét, Szalajka-völgy. 4. VI-15. IX. — A psychrophilous and sylvicolous European species collected mainly in our mountains (19 specimens).

Lyciella (Lyciella) illota-group females — *L. illota, L. mihalyii, L. subfasciata* are closely related species, their females are not always separable. Thirteen females of this group were collected at Bükkzsérc (Pazsag-völgy), Bükkszentkereszt (Hollóstető), Miskolc (Jávorkút, Hosszú-bérc) and Nagyvisnyó (Bálvány, Huta-rét).

Lyciella (Lyciella) mihalyii L. Papp, 1978 — Miskolc: Hosszú-bérc, Jávorkút; Nagyvisnyó: Bálvány. 9. VI-20. VIII. — It is known from Central Europe only. A psychrophilous sylvicolous species, hitherto collected in the forests of the Mátra and Bükk Mts (3 males).

Lyciella (Lyciella) pallidiventris (Fallén, 1820) — Varbó. 1. VII. — A European species, in our country it was collected mainly in forests on hills and mountains (only one male in the Bükk Mts).

Lyciella (Lyciella) rorida (Fallén, 1820) — Bánhorváti: Lázbérc; Bükkszentkereszt: Hollóstető; Cserépfalu: BNP kutatóház, Hór-völgy; Felsőtárkány: Kis-som; Mályinka: Látó-kövek, Mária-forrás, Szentlélek-hegy; Miskolc: Bán-kút, Dolka-hegy, Forrás-völgy, Garadna-völgy, Lillafüred, Lusta-völgy, Miskolctapolca, Ómassa, Szentléleki-völgy; Nagyvisnyó: Ablakos-kő-völgy, Elza-lak, Nagy-mező, Taró-völgy; Répáshuta: Pénzpatak, Tebepuszta; Szarvaskő: Eger; Szilvásvárad: Keskeny-rét, Szalajka-völgy, Tar-kő; Varbó: Harica-források. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 2. VI-16. IX. — Widespread in all parts of Europe south to the tree-line; the larvae develop in decayed twigs and trunks and in leaf litter, i.e. a sylvicolous species. It is very common in the Bükk Mts (99 specimens).

Lyciella (Lyciella) stylata L. Papp, 1978 — Cserépváralja: Tardi-patak; Szarvaskő; Varbó. 4. V-1. VII. — A rare European species. In Hungary it lives in the mountains (8 specimens).

Lyciella (Lyciella) subfasciata (Zetterstedt, 1838) — Miskolc: Hosszú-bérc; "Fekete-rét". 9. IV-9. VI. — A West Palaearctic (European) species, rare in Hungary. Only three males were caught in the Bükk Mts; our specimen from "Fekete-rét" may come from Fekete-sár (Miskolc or Szilvásvárad).

Lyciella (Lyciella) vittata (Walker, 1849) — Miskolc: Forrás-völgy, Garadna-völgy, Jávorkút. 26. V. — Known from Europe and Mongolia. A very rare species. In the Bükk Mts two males and two females were caught on herb along streams and by a small pond.

Sapromyza (Sapromyzosoma) quadripunctata (Linnaeus, 1767) — Felsőtárkány: Pap-kő-bérc ("Pap-hegy"). Tard. VI-VII. — It was found in all parts of Europe, there are questionable data also from Siberia and the Far East. It is less psychrophilous than the other species of *Sapromyza*, imagoes are frequently collected out of forests. Only one specimen was collected in the Bükk National Park, another one at Tard.

Sapromyza (Schumannimyia) hyalinata (Meigen, 1826) — Cserépváralja: Tardi-patak; Felsőtárkány: Hereg-rét; Mályinka: Odvas-kő; Miskolc: Bán-kút, Forrás-völgy, Garadna-völgy; Nagyvisnyó: Bánkúti turistaház; Szarvaskő: Eger. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 26. V-30. VII. — A Palaearctic species (Europe and Mongolia). Its life-habits are unknown. It has been collected in all parts of Hungary (incl. Hortobágy National Park) but never abundant (25 specimens).

Sapromyza (Sapromyza) apicalis Loew, 1847 — Cserépváralja: Tardi-patak. — Miskolc: Miskolctapolca. 8-9. VI. — A West Palaearctic species, which has been collected in all parts of Hungary. Surprisingly, only two specimens were caught here.

Sapromyza (Sapromyza) basalis Zetterstedt, 1847 — Mályinka: Odvas-kő; Miskolc: Forrás-völgy, Nagy-mező, Szentlélek; Nagyvisnyó: Nagy-völgy, Taró-völgy; Szarvaskő. 11. VI-15. IX. — Known from Europe and Mongolia. The larvae develop in leaf litter of wet forests. In our country it occurs in mountain forests only (16 specimens).

Sapromyza (Sapromyza) intonsa Loew, 1847 — Cserépváralja: Tardi-patak; Répáshuta: Pénz-patak. — Tard. 2. VI-5. VIII. — A European sylvicolous species. Its life-habits are unknown, it occurs also in lowland forests (7 specimens).

Sapromyza (Sapromyza) obscuripennis Loew, 1847 — Mályinka: Mária-forrás, Szentlélek-hegy; Répáshuta. 5. VI-11. VII. — A little known European, psychrophilous and sylvicolous species; only two males and one female were caught in the Bükk Mts.

Sapromyza (Sapromyza) opaca Becker, 1895 — Cserépfalu: Hór-völgy; Mályinka: Harica, Látó-kövek, Mária-forrás; Felsőtárkány: Lők-völgy; Nagyvisnyó: Bálvány; Szarvaskő: Margit-völgy. — Tard. 8. VI-31. VII. — It is known from Europe and Mongolia. Living in deciduous forests, it is rare in Hungary and caught mainly in wet mountain forests (8 specimens in the Bükk).

Sapromyza (Sapromyza) schnabli L. Papp, 1987 — Bükkszentkereszt: Hollóstető; Bükkzsérc: Pazsag-völgy; Miskolc: Bán-kút, Csipkéskút, Létrás, Lillafüred, Lusta-völgy; Répáshuta: Pénzpatak; Szilvásvárad: Közép-bérc, Tar-kő. 23. VII-29. IX. — A recently described species, reported formerly as "setiventris Zetterstedt". A part of the paratype series was collected in the Bükk Mts. Its distribution is little known since all the former data are to be checked. It is not rare in the Bükk Mts (30 specimens).

Sapromyza (Sapromyza) sexpunctata Meigen, 1826 — Mályinka: Látó-kövek, Szentlélek-hegy; Miskolc: Lillafüred; Varbó: Harica-források. 3. VII-15. IX. — Widespread in Europe south from the tree-line. A psychrophilous sylvicolous species. In Hungary it is a rare species of wet mountain forests (18 specimens).

Sapromyza (Sapromyza) simplicior Hendel, 1908 (= *simplex* Loew, 1847) — Nagyvisnyó: Bánkúti turistaház. — Tard. 5. VI. — Known from Europe to Mongolia. In Hungary it is more abundant on lowlands (forests and wet meadows); only 2 specimens.

Calliopum aeneum (Fallén, 1820) — Bánhorváti: Lázbérc; Bélapátfalva: Bélkő; Bükkszentkereszt: Hollóstető; Bükkzsérc: Pazsag-völgy; Cserépváralja: Tardi-patak, Felsőtárkány: Kis-Som; Mályinka: Harica, Mária-forrás, Szentléleki-hegy; Miskolc: Bán-kút, Jávorkút, Lillafüred; Nagyvisnyó: Bánkúti turistaház, Hármaskút, Huta-bérc; Szilvásvárad: Keskeny-rét, Tar-kő. — Bükkábrány; Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. 11. VI-14. IX. — It is known from all parts of Europe. In Hungary this is one of the commonest dipterous species. The larvae develop in various decaying vegetable materials; even commoner on the lowlands (57 specimens).

Calliopum elisae (Meigen, 1826) — Cserépváralja: Tardi-patak; Mályinka: Látó-kövek; Miskolc: Létrás; Szarvaskő: Tardos-hegy. 31. V-27. IX. — It occurs in all parts of Europe south to the tree-line (doubtful records from the Nearctic), it lives in wet forests (13 specimens).

Calliopum simillimum (Collin, 1933) — Cserépváralja: Tardi-patak; Kács; Szilvásvárad. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. 27. V-11. IX. — It is known from the deciduous forests of Europe. A psychrophilous species collected also on the lowlands (14 specimens).

Lauxania (Lauxania) cylindricornis (Fabricius, 1794) — Bélapátfalva: Ravaszlyuk; Felsőtárkány: Mellér-völgy; Miskolc: Bán-kút, Létrás-tető, Nagy-mező; Nagyvisnyó: Bálvány, Elza-lak, Hármaskút. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. 27. V-11. VI. — A widespread Holarctic species (south to the tree-line); in Hungary it is a sylvicolous species, the imagoes are on the wing in spring only (47 specimens).

Lauxania (Callixania) minor Martinek, 1974 — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Szarvaskő: Tardos-hegy. — Tard. 31. V-4. VII. — Known from Europe to Mongolia. An univoltine sylvicolous species, the imagoes are on the wing from April to June (on the lowlands) or from May till July in the mountains (32 specimens).

Sphaeroceridae

The species or species-groups of the sphaerocerids or the lesser dung flies have various life-habits: apart from the coprophagous species there are genera or groups which are terricolous (living in burrows of small mammals, or, their larvae develop in mycelia or fruiting bodies of fungi, etc.), several species develop in carrion, and quite many develop in mud. An outgrowth of the collectings in the last two decades (with various collecting methods) is that the Hungarian fauna of sphaerocerids has become one of the best known faunas in Europe: 144 species have been collected hitherto. The sphaerocerid fauna of the Bükk National Park is rather rich: 95 species are listed below from the Bükk Mts and further four species from adjacent areas. They were caught by sweep netting, Malaise traps, pitfall traps, etc.; a special aspirator was used to catch sphaerocerids and other small flies on dung, decaying grass, fungi, etc. During our five-year collecting programme several thousands of flies were caught but only voucher specimens of each collecting were mounted (see also Papp 1987). Data of 3413 specimens are listed below. The value of specimens per species is about 36 (32.6 for the sphaerocerid collectings in the Hortobágy National Park, 49.9 for the Kiskunság National Park), i.e. only a reasonable part was preserved (of course, all the specimens that are important for our collection). Four species, *Crumomyia notabilis* Collin, *Copromyza similis* Collin, *Gigalimosina flaviceps* Zetterstedt and *Terrilimosina schmitzi* Duda are new for the Hungarian fauna, several very rare species were also reported. If compared to the sphaerocerids of the Kiskunság National Park, this material is less rich in coprophagous species developing in dung pats (in the genera *Ischiolepta, Norrbomia,* etc.), the species developing in mud are also less numerous. On the other hand, more psychrophilous species (in the genera *Crumomyia, Herniosina*) were caught.

Sphaerocera curvipes Latreille, 1805 — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Mályinka: Mária-forrás; Miskolc: Forrás-völgy, Hosszú-bérc, Lusta-völgy, Nagy-mező; Nagyvis-

nyó: Bálvány, Bánkúti turistaház, Csurgói erdészlak; Répáshuta: Pénzpatak; Szilvásvárad. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. IV-XII. — A common coprophagous species, overwintering in dung heaps but develops also in all kinds of dung; in the Bükk Mts it was collected mainly on deer and horse dung (65 specimens).

Ischiolepta nitida (Duda, 1920) — Miskolc: Bán-kút, Nagy-mező, Forrás-völgy; Nagyvisnyó: Hármas-teber, Nagy-mező; Szilvásvárad. V-IX. — A psychrophilous coprophagous species; our specimens from the Bükk Mts — collected almost exclusively on horse dung — represent a majority of the specimens in the collection of the HNHM; it is rare or exceptionally rare on the lowlands of Hungary (67 specimens).

Ischiolepta pusilla (Fallén, 1820) — Cserépfalu: Hór-völgy; Miskolc: Bán-kút, Nagy-mező, Jávorkút; Nagyvisnyó: Nagy-mező. — Tard. V-IX. — Collected on horse dung, kitchen refuse and on rotten grass. A common species (see also Papp 1987), numerous specimens were caught but only 60 preserved.

Ischiolepta vaporariorum (Haliday, 1836) — Miskolc: Forrás-völgy; Nagyvisnyó: Nagy-mező. ?-IX. — Only 4 specimens were collected on horse dung.

Lotobia pallidiventris (Maigen, 1830) — Nagyvisnyó: Nagy-mező. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. V-IX. — An obligate coprophagous species (here on horse dung) in pastures (12 specimens).

Alloborborus pallifrons (Fallén, 1820) — Cserépfalu: Hór-völgy; Miskolc: Bán-kút, Nagy-mező; Nagyvisnyó: Hármas-teber, Nagy-mező. V-24. IX. — Specimens were caught on horse dung on pastures, excepting a single specimen from deer carrion (89 specimens).

Lotophila atra (Meigen, 1830) — Bélapátfalva: Bél-kő; Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Mályinka: Látó-kövek; Miskolc: Bán-kút, Jávorkút, Lusta-völgy, Nagy-mező; Nagyvisnyó: Bálvány; Répáshuta: Pénzpatak; Szilvásvárad: Keskeny-rét. — Tard. IV-IX. — A common coprophagous species, mainly on horse dung and on herbs in forest clearings (43 specimens).

Crumomyia fimetaria (Meigen, 1830) — Bélapátfalva: Ravaszlyuk; Miskolc: Garadna-völgy; Szilvásvárad: Őserdő. V-IX. — Eleven specimens were collected on rotten fungi and in a deep creek valley.

Crumomyia glabrifrons (Meigen, 1830) — Miskolc: Bánkúti-víznyelő, Diabáz-barlang, Kecske-lyuk, Nagy-mező; Nagyvisnyó: Bálvány. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. V-X. — A psychrophilous species, abundant in the entrance zone of caves but it occurs also on our lowlands (35 specimens).

Crumomyia nigra (Meigen, 1830) — Bélapátfalva: Ravaszlyuk; Cserépfalu: Hór-völgy; Miskolc: Bánkúti-víznyelő, Bán-kút, Csanyikvölgy, Diabáz-barlang, Kecske-lyuk, Létrás, Nagy-mező; Nagyvisnyó: Bálvány, Nagy-mező; Szilvásvárad: Szalajka-völgy. — Tard. III-15. IX. — Numerous specimens were caught on light, on horse dung and in the entrance zone of caves but only 203 specimens were preserved.

Crumomyia nitida (Meigen, 1830) — Bélapátfalva: Ravaszlyuk; Miskolc: Bán-kút, Diabáz-barlang, Nagy-mező; Répáshuta: Pénzpatak; Szilvásvárad: Őserdő. V-15. XI. — It occurs in mountain forests (incl. caves) in our country; it was not collected in the Hortobágy and Kiskunság National Parks (32 specimens).

Crumomyia notabilis (Collin, 1930) — Miskolc: Bánkúti-víznyelő, Diabáz-barlang. 21. VIII-23. IX. — New to Hungary. Thirty-three specimens were collected in the entrance zone of two caves; other specimens from Hungary are from Dobogókő (female, 11. III, on snow), and from Verőcemaros, Magyarkút (female, 11. XI, on snow).

Crumomyia rohaceki Norrbom et Kim, 1985 (= *glacialis*: authors, incl. Papp 1973) — Miskolc: Bánkúti-víznyelő, Diabáz-barlang. 15-17. IX. — Tard. V. — The identity of *C. glacialis* (Meigen, 1830) was cleared rather recently, the true *glacialis* has not been found in Hungary. This species

(under the name *glacialis*) was reported from several localities, incl. our lowlands in winter (e.g. Hortobágy National Park, Papp 1983) (9 specimens).

Copromyza equina Fallén, 1820 — Bélapátfalva: Ravaszlyuk; Bükkszentkereszt: Hollóstető; Cserépfalu: Hór-völgy; Mályinka: Harica, Mária-forrás, Szentlélek-hegy; Miskolc: Bán-kút, Lillafüred, Nagy-mező; Nagyvisnyó: Bálvány, Hármas-teber, Nagy-mező; Répáshuta: Pénzpatak. — Tard. IV-XII. — Several hundred specimens were caught (on light, on horse dung) but only 60 specimens were preserved.

Copromyza similis (Collin, 1930) — Miskolc: Nagy-mező; Nagyvisnyó: Hármas-teber, Nagy-mező. 27. V-24. IX. — New to Hungary. These specimens (5 males, 3 females) were caught on horse dung in a mountain pasture, other specimens from Hungary are from Sopron, Fáber-rét (light trap, one male, 3 females).

Copromyza stercoraria (Meigen, 1830) — Cserépváralja: Tardi-patak; Nagyvisnyó: Hármas-kút. 1-10. VI-? — A widespread but not abundant terricolous species (here one male, one female).

Norrbomia costalis (Zetterstedt, 1847) — Bükkszentkereszt: Hollóstető; Miskolc: Bán-kút, Nagy-mező; Nagyvisnyó: Bálvány, Nagy-mező; Répáshuta: Pénzpatak. IV-IX. — On horse dung; 282 specimens were preserved (pinned) from those caught in the mountain pastures of the Bükk Mts. It is abundant on pastures only, where horses have been kept for decades.

Norrbomia hispanica (Duda, 1923) — Miskolc: Bán-kút, Nagy-mező; Nagyvisnyó: Nagy-mező. 27. V-15. IX. — On horse dung (6 females); more abundant on the plains.

Norrbomia nitidifrons (Duda, 1923) — Nagyvisnyó: Bálvány. 26. IV. — Tard. 12. V. — A seldom collected coprophagous species (only four specimens from the Bükk Mts, two specimens from the Kiskunság National Park).

Norrbomia sordida (Zetterstedt, 1847) — Miskolc: Bán-kút, Nagy-mező. 27. V-15. IX. — On horse dung (4 males, 7 females).

Borborillus vitripennis (Meigen, 1830) — Bükkszentkereszt: Hollóstető; Felsőtárkány; Miskolc: Bán-kút, Lillafüred, Nagy-mező; Nagyvisnyó: Bálvány, Hármas-teber, Huta-rét; Répáshuta: Pénzpatak. IV-15. IX. — A significant number of specimens (36 males, 40 females) was collected on horse dung and by light trap. Imagoes can cover a longer distance (? several kilometers) by wind. Recently (Papp 1988) the genus *Borborillus* Duda, 1923 was redefined; in the Palaearctic only this species and its type species *B. uncinatus* (Duda, 1923) belong to the genus *Borborillus*. Most of the species formerly relegated to this genus are included in the new genus *Norrbomia* L. Papp, 1988 (together with numerous other species from other regions).

Coproica acutangula (Zetterstedt, 1847) — Cserépfalu: Hór-völgy; Miskolc: Bán-kút, Lillafüred, Nagy-mező; Nagyvisnyó: Hármas-teber, Nagy-mező, Nagy-völgy. 27. V-15. IX. — A common species on horse dung; 9 males and 6 females were collected during our five-year programme, i.e. it is not abundant in the Bükk Mts.

Coproica digitata (Duda, 1918) — Cserépváralja: Tardi-patak. ?-13. XII. — A single male was collected by S. Tóth on "ürülék" (? horse dung); it is a characteristic species for horse dung on the lowland pastures of our country.

Coproica ferruginata (Stenhammar, 1854) — Cserépfalu: Hór-völgy; Mályinka: Harica; Miskolc: Bán-kút, Forrás-völgy, Nagy-mező; Nagyvisnyó: Csurgói erdészlak, Nagy-mező. V-IX. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). — A common and highly abundant coprophagous species; in the Bükk National Park specimens were collected on horse dung, on human faeces, in horse and cow stables and also in forests.

Coproica hirticula Collin, 1956 — Mályinka: Harica, Szentlélek-hegy; Miskolc: Bán-kút, Forrás-völgy, Nagy-mező; Nagyvisnyó: Csurgói erdészlak. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). V-IX. — Its life habits are rather similar to those of the previous species though it is less abundant (39 specimens).

Coproica hirtula (Rondani, 1880) — Nagyvisnyó: Csurgói erdészlak. ?-VIII-?. — A single male was collected.

Coproica lugubris (Haliday, 1936) — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Miskolc: Forrás-völgy, Jávorkút, Nagy-mező; Nagyvisnyó: Bálvány, Nagy-mező; Varbó. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard: Bála-völgy. IV-XII. — A highly abundant species developing in dung on pastures (horse, cattle, etc.). Only 37 specimens were pinned.

Coproica pusio (Zetterstedt, 1847) — Nagyvisnyó: Csurgói erdészlak. ?-VIII-? — A single female was collected on kitchen refuse.

Coproica vagans (Haliday, 1833) — Cserépfalu: Hór-völgy; Mályinka: Harica, Szentlélek-hegy; Miskolc: Bán-kút, Forrás-völgy, Nagy-mező; Szarvaskő: Tardos-hegy. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. V-IX. — A common cosmopolitan species developing mainly in dung heaps but collected on horse dung on pasture and on human faeces, too.

Philocoprella italica (Deeming, 1964) — Miskolc: Bán-kút, Nagy-mező. 27. V-? — Six specimens were caught on horse dung.

Philocoprella quadrispina (Lawrence, 1952) — Nagyvisnyó: Nagy-mező. ?-25. IX. — A single male was collected on horse dung.

Trachyopella atoma (Rondani, 1880) — Miskolc: Jávorkút. 25. VIII. — Two females were collected by an aspirator from rotten hay.

Trachyopella kuntzei (Duda, 1918) — Miskolc: Forrás-völgy, Jávorkút. 23-25. VIII. — Five specimens were caught on horse dung and on rotten grass.

Trachyopella leucoptera (Haliday, 1836) — Miskolc: Forrás-völgy, Jávorkút. 23-25. VIII. — Four specimens were caught together with those of the previous species.

Trachyopella lineafrons (Spuler, 1925) — Miskolc: Forrás-völgy, Jávorkút. 23-25. VIII. — It was found in these two collectings only; 88 specimens were caught on horse dung on a forest road and on rotten grass, which represents a major part of the HNHM collection of this species.

[**Thoracochaeta zosterae** (Haliday, 1833) — Tard. 9. IV. — A single male was collected in this village (not far from the Bükk Mts) in a privy.]

Elachisoma aterrimum (Haliday, 1833) — Mályinka: Harica; Miskolc: Bán-kút, Forrás-völgy, Nagy-mező. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). VI-IX. — A minute but rather common coprophagous species (57 specimens).

Elachisoma bajzae L. Papp, 1984 — Miskolc: Forrás-völgy. ?-23. VIII-16. IX. — Nine specimens were collected on horse dung dropped on a forest road.

Elachisoma pilosum (Duda, 1924) — Miskolc: Forrás-völgy, Jávorkút; Nagyvisnyó: Nagy-mező. ?-23. VIII-15. IX. — A rare coprophagous species (5 specimens).

Halidayina spinipennis (Haliday, 1836) — Cserépfalu: Hór-völgy; Miskolc: Bán-kút, Forrás-völgy, Nagy-mező; Nagyvisnyó: Bálvány; Szilvásvárad: Őserdő, Tar-kő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. 27. IV-5. IX. — A coprophagous species collected on horse dung and on human faeces but it was caught also on a deer carrion in the Bükk Mts.

Chaetopodella scutellaris (Haliday, 1836) — Cserépfalu: BNP kutatóház, Hór-völgy; Cserépváralja: Tardi-patak; Miskolc: Lusta-völgy, Nagy-mező; Nagyvisnyó: Bálvány; Varbó. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. IV-XII. — Numerous specimens were caught on horse, cattle and sheep dung and on wet meadows (57 specimens pinned).

[**Puncticorpus cribratum** Villeneuve, 1918 — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 9. V-5. IX. — A terricolous species of micromycophagous habit; it was reared from fungi and found in small mammalian burrows and in ant nests. A total of 128 specimens was collected with pitfall traps from oak forest litter in the Síkfőkút Project; it seems mysterious why we did not catch it during our five-year collecting programme in the Bükk Mts.]

Limosina silvatica (Meigen, 1830) — Cserépfalu: Hór-völgy; Miskolc: Bánkúti-víznyelő, Csanyikvölgy, Diabáz-barlang, Kecske-lyuk; Nagyvisnyó: Hármaskút, Leány-völgy; Szilvásvárad. —

Tard. V-XI. — A rather high number of specimens was caught in caves and in the entrance zones of karst pits. In late autumn it is common also on forest litter (220 specimens).

Gigalimosina flaviceps (Zetterstedt, 1847) — Miskolc: Bánkúti-víznyelő, Bán-kút, Diabáz-barlang; Répáshuta: Pénzpatak; Szilvásvárad: Őserdő. 26. III-15. XI. — New to Hungary. Numerous (107) specimens were caught in entrance zone of caves and in shady cool *Fagus* forests (e.g. on *Phallus impudicus*). Its only other known locality in Hungary is in the Bakony Mts (Királykapu).

Apteromyia claviventris (Strobl, 1909) — Cserépfalu: Hór-völgy; Miskolc: Forrás-völgy, Kecske-lyuk; Szarvaskő: Tardos-hegy; Szilvásvárad: Őserdő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). V-VIII-? — Twelve specimens were collected on decaying mushrooms and from a cave.

Herniosina bequaerti (Villeneuve, 1917) — Miskolc: Kecske-lyuk, Vörös-patak. 25. VIII. — A single male was caught on old dry human faeces dropped in a dark culvert under the forest road. Another specimen (female) was caught in the Kecske-lyuk cave: "Com. Borsod, Kecskebarl. Bokor, 1925" more than 60 years ago.

Minilimosina (Allolimosina) secundaria (Duda, 1918) — Cserépfalu: BNP kutatóház, Hór-völgy. 18. IX. — Only one male of this extremely rare species was taken.

Minilimosina (Svarciella) splendens (Duda, 1928) — Szarvaskő. 30. VII. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 15. VI. — Two males of this rare terricolous species were caught during our collecting programme.

Minilimosina (Svarciella) v-atrum (Villeneuve, 1917) — Szilvásvárad: Keskeny-rét. 24. VIII. — Only one female of this rare terricolous species was collected.

Minilimosina (Svarciella) vitripennis (Zetterstedt, 1847) — Cserépváralja: Tardi-patak. 4. V. — A widespread Palaearctic species, which seems somewhat less rare in lowland soils. Only one male was caught in the Bükk Mts. (cf. Papp 1983, 1987).

Minilimosina (Minilimosina) fungicola (Haliday, 1836) — Miskolc: Forrás-völgy, Jávorkút, Kecske-lyuk; Nagyvisnyó: Csurgói erdészlak; Szilvásvárad: Őserdő. ?-VIII-? — It was collected on deer dung, on horse dung, on decaying grass and on kitchen refuse (29 specimens). Eight specimens were caught in the Kecske-lyuk cave "Kecskebarl." by E. Bokor. Its close relative, *M. parvula* has not been collected in the Bükk Mts (but reported from the Kiskunság and from the Hortobágy National Park).

Terrilimosina racovitzai (Bezzi, 1911) — Cserépfalu: Hajnóczy-barlang; Miskolc: Kecske-lyuk. — It was not collected during our five-year programme but caught several times by E. Bokor in 1924 and 1927 in "Kecskebarl." and in the "Ódori barl." caves. It was reported from two vertical karst pits "Kőlyuk I and II" by Papp and Platcher (1976).

Terrilimosina schmitzi (Duda, 1918) — Bélapátfalva: Ravaszlyuk; Miskolc: Diabáz-barlang, Forrás-völgy; Nagyvisnyó: Csurgói erdészlak; Szilvásvárad: Őserdő. V-IX. — New for the fauna of Hungary. It was collected on horse dung, on kitchen refuse and in caves (entrance zone). A Holarctic species but it has not been found on our lowlands.

Spelobia (Spelobia) clunipes (Meigen, 1830) — Cserépváralja: Tardi-patak; Cserépfalu: Hór-völgy; Miskolc: Bánkúti-víznyelő, Bán-kút, Lillafüred, Létrás, Nagy-mező; Nagyvisnyó: Bálvány, Csurgói erdészlak; Répáshuta: Pénzpatak; Szarvaskő; Szilvásvárad: Keskeny-rét, Őserdő. — Tard. IV-XII. — The most abundant species of this genus; several hundred specimens were caught in forests, on horse dung and in the entrance zone of caves (151 specimens of them were mounted for our collection).

Spelobia (Spelobia) czizeki (Duda, 1918) — Felsőtárkány: Csókási-barlang. — Only a single female is known from the Bükk National Park. It is a cave-dwelling species but it occurs also on the lowlands in early spring (cf. Papp 1987).

Spelobia (Spelobia) luteilabris (Rondani, 1880) — Miskolc: Kecske-lyuk. — It was not collected during our present collecting programme but two males and five females were caught by E. Bokor in 1925 in the wide and high opening of the cave "Kecskebarl.".

Spelobia (Spelobia) manicata (Richards, 1927) — Cserépfalu: Hór-völgy; Miskolc: Diabáz-barlang; Szilvásvárad: Őserdő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). VI-IX. — A sibling species of *S. clunipes*; it can be found mainly in forests and it occurs not seldom with *S. clunipes* (e.g. at opening of caves) (56 specimens).

Spelobia (Spelobia) palmata (Richards, 1927) — Mályinka: Odvas-kő; Miskolc: Forrás-völgy; Szilvásvárad: Őserdő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). VI-VIII-? — Twelve specimens were caught in a *Fagus* forest, on decaying mushroom and on horse dung.

Spelobia (Spelobia) parapusio (Dahl, 1909) — Miskolc: Forrás-völgy; Szilvásvárad: Őserdő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. V-IX. — The larvae develop in the fruiting body of fungi. Twenty-one females were caught (and no male), i.e. it is probable that also the Bükk populations of this species propagate by parthenogenesis.

Spelobia (Spelobia) pseudosetaria (Duda, 1918) — Miskolc: Kecske-lyuk. — Tard. ?-VII-VIII-? — Two females were collected by E. Bokor in 1925, further 11 specimens are from Tard.

Spelobia (Spelobia) simplicipes (Duda, 1925) — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Miskolc: Diabáz-barlang; Répáshuta: Pénzpatak. — Tard. IV-XII. — It was collected on dung and also on a deer carrion (15 specimens).

Spelobia (Spelobia) talparum (Richards, 1927) — Mályinka: Harica, Mária-forrás. IV-VI-? — A terricolous species, reported from small mammal runs and nests; three males and one female were caught in the Bükk Mts.

Spelobia (Bifronsina) bifrons (Stenhammar, 1854) — Miskolc: Forrás-völgy, Nagy-mező; Nagyvisnyó: Csurgói erdészlak. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). ?-VIII-IX. — A cosmopolitan coprophagous species; in the Bükk National Park eleven specimens were caught on horse dung and on a refuse heap.

Spelobia (Eulimosina) ochripes (Meigen, 1830) — Bélapátfalva: Ravaszlyuk; Cserépváralja: Tardi-patak; Miskolc. — Tard. V-VIII-? — A common coprophagous species; the specimens from the Bükk Mts were found on a sheep pasture and on light.

Telomerina flavipes (Meigen, 1830) — Miskolc: Forrás-völgy, Kecske-lyuk, Szeleta-barlang; Szilvásvárad: Őserdő. — Tard. ?-VIII-? — During our five-year programme five specimens were caught on horse dung, on decaying mushrooms and from a stable; further five specimens were collected by E. Bokor in the caves "Kecskebarlang" and "Szeletabarl." in 1924-25.

Telomerina pseudoleucoptera (Duda, 1924) — Cserépfalu: BNP kutatóház, Hór-völgy; Miskolc: Forrás-völgy. ?-IX. — A rare coprophagous species; it was reared from cattle droppings in England and in Hungary but caught also on horse dung (4 specimens).

Pullimosina antennata (Duda, 1918) — Mályinka: Harica; Miskolc: Jávorkút, Nagy-mező; Nagyvisnyó: Csurgói erdészlak. VI-IX. — Fifteen specimens were collected on horse dung and on kitchen refuse.

Pullimosina heteroneura (Haliday, 1836) — Cserépfalu: BNP kutatóház, Hór-völgy; Miskolc: Forrás-völgy, Jávorkút; Nagyvisnyó: Csurgói erdészlak. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. IV-IX. — A common cosmopolitan, semisynanthropic species collected on horse dung, on decaying grass, on a refuse heap and in forests during our collecting programme (20 specimens).

Pullimosina meijerei (Duda, 1918) — Felsőtárkány: Fekete-len; Miskolc: Forrás-völgy; Nagyvisnyó: Csurgói erdészlak; Szilvásvárad: Őserdő. VI-VIII. — A terricolous, usually brachypterous species, which was also caught on vegetable refuse and on horse dung in the Bükk Mts (15 specimens).

Pullimosina moesta (Villeneuve, 1918) — Cserépváralja: Tardi-patak; Miskolc: Jávorkút; Nagyvisnyó: Csurgói erdészlak; Szarvaskő; Varbó: Lenke-forrás. VI-VIII. — It develops in decaying vegetable materials in/on soil; 54 specimens were collected on rotten grass, on kitchen refuse and on forest litter.

Pullimosina pullula (Zetterstedt, 1847) — Bélapátfalva: Ravaszlyuk; Cserépváralja: Tardi-patak. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). VI-XII. — Most of the populations of this terricolous species propagates parthenogenetically in Hungary; four females were caught in the Bükk Mts.

Opalimosina (Pappiella) liliputana (Rondani, 1880) — Miskolc: Forrás-völgy, Kecske-lyuk; Nagyvisnyó: Csurgói erdészlak; Szarvaskő; Szilvásvárad: Őserdő. ?-VII-VIII-? — Ten specimens were collected on horse dung, on deer dung and on human faeces.

[**Opalimosina (Dentilimosina) denticulata** (Duda, 1924) — Eger: Szőlőcskepuszta ("Síkfőkút Project"). VI. — A single female was caught here; it is known also from the Hortobágy National Park.]

Opalimosina (Opalimosina) calcarifera (Rohácek, 1975) — Cserépfalu: BNP kutatóház, Hór-völgy; Miskolc: Forrás-völgy; Szilvásvárad: Őserdő. ?-VIII-IX. — A rare coprophagous species; here caught on deer droppings and on horse dung (2 males, 5 females).

Opalimosina (Opalimosina) collini (Richards, 1929) — Miskolc: Bán-kút, Forrás-völgy; Jávorkút. V-VIII. — It develops in dung of ungulates; a seldom collected minute fly (3 males).

Opalimosina (Opalimosina) mirabilis (Collin, 1902) — Cserépváralja: Tardi-patak; Mályinka: Harica; Miskolc: Forrás-völgy, Jávorkút; Nagyvisnyó: Csurgói erdészlak. — Tard. V-VIII-? — A common coprophagous species found also on carrion. These specimens were collected on kitchen refuse and on horse dung (18 specimens).

Paralimosina fucata (Rondani, 1880) — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Nagyvisnyó: Hármas-teber; Szarvaskő; Szilvásvárad: Őserdő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. IV-VIII. — A forest species (at least in our country); these specimens were caught on human faeces, on horse dung and on mushrooms (20 specimens).

Kimosina (Kimosina) plumosula (Rondani, 1880) — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Miskolc: Garadna-völgy, Lillafüred; Répáshuta: Pénzpatak; Szilvásvárad. — Tard. ? VII-X. — It is abundant in wet forests: a good part of the specimens in the collection of the HNHM (32 specimens) was collected in the Bükk Mts.

Pteremis fenestralis (Fallén, 1820) — Miskolc: Bán-kút, Létrás, Nagy-mező; Szilvásvárad. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). V-XI. — Six specimens were caught on faeces and from forest litter (for life-habits see Papp 1987).

Opacifrons coxata (Stenhammar, 1854) — Bélapátfalva: Ravaszlyuk; Cserépváralja: Tardi-patak; Miskolc: Csanyikvölgy, Forrás-völgy, Garadna-völgy, Jávorkút; Szilvásvárad: Szalajka-völgy; Varbó. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. V-XII. — A common and widespread psychrophilous species (90 specimens).

Opacifrons humida (Haliday, 1836) — Bélapátfalva; Cserépváralja: Tardi-patak; Mályinka: Odvas-kő; Miskolc: Bán-kút, Csipkéskút, Forrás-völgy, Garadna-völgy, Jávorkút, Lillafüred, Nagy-mező, Szentlélek; Nagyvisnyó: Csurgói erdészlak; Répáshuta: Pénzpatak; Szilvásvárad: Istállós-kői-barlang, Őserdő, Szalajka-völgy. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. V-X. — One of the most common sphaerocerids (145 specimens).

Opacifrons moravica (Rohácek, 1975) — Bélapátfalva; Cserépfalu: Hór-völgy; Miskolc: Forrás-völgy, Garadna-völgy, Nagy-Csipkés, Nagy-mező; Szilvásvárad. V-IX. — The imagoes were mostly collected on wet forest litter (18 specimens).

Leptocera (Leptocera) caenosa (Rondani, 1880) — Miskolc: Bánkúti-víznyelő, Diabáz-barlang; Répáshuta: Pénzpatak. — Tard. 15. V-28. XII. — A psychrophilous species; it was collected in the openings of caves and on light, S. Tóth caught it in a privy in Tard (5 specimens).

Leptocera (Leptocera) fontinalis (Fallén, 1826) — Bükkzsérc: Csipkés-tető; Cserépfalu: BNP kutatóház, Hór-völgy; Mályinka: Harica, Látó-kövek, Mária-forrás, Odvas-kő, Szentlélek-hegy; Miskolc: Diabáz-barlang, Jávorkút, Létrás-tető, Lillafüred; Nagyvisnyó: Bálvány, Csurgói erdészlak; Szarvaskő: Eger, Tardos-hegy; Szilvásvárad: Őserdő, Szalajka-völgy. — Eger: Szőlőcskepuszta

("Síkfőkút Project"); Tard. IV-X. — A widespread species; it mainly occurs in wet forest, along creeks, etc. (77 specimens).

Leptocera (Leptocera) nigra Olivier, 1813 — Bélapátfalva; Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Felsőtárkány; Miskolc: Szentléleki-völgy; Nagyvisnyó: Csurgói erdészlak, Hármaskút; Szilvásvárad: Szalajka-völgy; Varbó. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). III-X. — Common and very abundant; 157 specimens were mounted from the material of several thousands caught. Not far from the Bükk Mts at Tard S. Tóth collected numerous additional specimens (not included), several hundreds of these specimens are in the collection of the HNHM.

Leptocera (Leptocera) oldenbergi (Duda, 1918) — Miskolc: Diabáz-barlang; Nagyvisnyó: Nagy-völgy. 29. V., 15. IX. — One male and one female were caught during our five-year collecting programme. It occurs in wet forests, along creeks and its populations are probably local.

[**Leptocera (Rachispoda) anceps** (Stenhammar, 1854) — Tard. VI. — The only specimen was caught at Tard, it occurs in several countries of Europe. In most recent studies Roháček (1991*) found that this and the next species are problematic: namely, Stenhammar's types are not conspecific with those biological species, for which Duda, Papp, Roháček etc. used Stenhammar's names. Roháček has just published his results and I applied these two names in accordance with my former usage in my papers on sphaerocerids of other Hungarian national parks (Papp 1983, 1987).]

Leptocera (Rachispoda) breviceps (Stenhammar, 1854) — Cserépváralja: Tardi-patak. — Tard. IV-IX. — It is common on muddy lowland lake-shores only; some specimens were caught on the southernmost parts of the Bükk Mts. This species was also under revision (see above).

Leptocera (Rachispoda) brevior Roháček, 1991 — Cserépváralja: Tardi-patak. — Tard. IV-IX. — It is closely related to the previous species both taxonomically and ecologically (9 specimens).

Leptocera (Rachispoda) cilifera (Rondani, 1880) — Cserépváralja: Tardi-patak; Szilvásvárad: Istállós-kői-barlang. IV-VII-? — A Palaearctic species; it is rather rare or at least populations are very local; two males were caught in the Bükk Mts.

Leptocera (Rachispoda) duplex Roháček, 1991 — Cserépváralja: Tardi-patak. — Tard. — It was described most recently; formerly its specimens were published under the name *cryptochaeta*. Nineteen specimens were caught in the southernmost part of the Bükk Mts.

Leptocera (Rachispoda) hostica Villeneuve, 1917 — Bélapátfalva: Ravaszlyuk; Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Miskolc: Bán-kút, Jávorkút. V-X. — A Palaearctic species, which is not rare but nowhere abundant. A significant material of 18 specimens was collected in the Bükk Mts.

Leptocera (Rachispoda) intermedia (Duda, 1918) — Répáshuta: Pénzpatak. VI. — Only one female specimen of this common species was collected in the Bükk National Park.

Leptocera (Rachispoda) limosa (Fallén, 1820) — Bélapátfalva: Ravaszlyuk; Cserépváralja: Tardi-patak; Miskolc: Bán-kút, Garadna-völgy, Lillafüred, Nagy-mező; Szilvásvárad: Szalajka-völgy. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Tard. — 26 specimens.

Leptocera (Rachispoda) lutosa (Stenhammar, 1854) — Bélapátfalva: Ravaszlyuk; Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Mályinka: Mária-forrás; Miskolc: Garadna-völgy, Jávorkút, Létrás, Lusta-völgy; Varbó. — Tard. IV-X. — A common mud-living species (106 specimens).

Leptocera (Rachispoda) lugubrina (Zetterstedt, 1847) — Cserépváralja: Tardi-patak. VII. — Only one male was caught.

Leptocera (Rachispoda) lutosoidea (Duda, 1938) — Bélapátfalva: Ravaszlyuk; Bükkzsérc: Táskás-orom; Cserépfalu: Hór-völgy; Miskolc: Garadna-völgy, Jávorkút; Varbó, víztározó. — Eger: Szőlőcskepuszta ("Síkfőkút Project"); Bükkábrány; Tard: Bála-völgy. III-X. — A very common mud-inhabiting species (131 specimens).

* The manuscript of this paper was submitted in December, 1988 but Roháček's monograph was later taken into consideration.

Leptocera (Rachispoda) modesta (Duda, 1924) — Cserépváralja: Tardi-patak; Miskolc: Garadna-völgy, Jávorkút; Szarvaskő; Varbó, víztározó. — Tard. III-IX. — A widespread Palaearctic species, common also in Hungary (18 specimens).

Leptocera (Rachispoda) pseudohostica (Duda, 1924) — Cserépváralja: Tardi-patak; Miskolc: Garadna-völgy, Jávorkút. — Tard. — A widespread Palaearctic species; six males were caught on lights and along muddy sides of creeks.

Leptocera (Rachispoda) varicornis (Strobl, 1900) — Cserépváralja: Tardi-patak; Répáshuta: Pénzpatak. — Tard: Bála-völgy. V-X. — An Old World species which seems rather rare in our country (7 specimens).

Periscelididae and Aulacigastridae

The larvae of both families are developing in fermenting sap of deciduous trees, otherwise they are even more distantly related than it was though before: some recent studies on their larval morphology (Papp 1988) revealed significant differences. Contrarily to considerable effort in collecting on the wounds of trees, we managed to catch a rather small material (mainly by a special aspirator).

Periscelis (Microperiscelis) annulata (Fallén, 1823) — Varbó. 1. VII. — Two females only.

Aulacigaster leucopeza (Meigen, 1830) — Cserépváralja: Tardi-patak; Miskolc: Forrás-völgy; Répáshuta: Pénzpatak; Varbó. 22. III-1. XI. — One male and fifteen females.

Asteiidae

Six species of these small and fragile flies have been collected in Hungary. Our material from the Bükk Mts is unexpectedly small: only 12 specimens of three species was caught. Actually only two species are from the Bükk National Park, a third one is from Tard, south to the Bükk. In comparison to the Kiskunság National Park (216 specimens of five species) this is a rather poor finding. The life-habits of these asteiids are little known, i.e. we cannot offer reasons for this poor representation.

Leiomyza dudai Sabrosky, 1959 — Cserépváralja: Tardi-patak; Mályinka: Szentlélek-hegy. VI-IX. — Its larvae are developing in the fruiting bodies of fungi, imagoes are usually found on decaying mushroom, etc. In the Bükk Mts only three specimens were found in our rich material from fungi.

Asteia amoena Meigen, 1830 — Cserépváralja: Tardi-patak; Mályinka: Odvas-kő; Miskolc: Garadna-völgy. — Tard. V-X. — Seven males and one female were caught, mainly on flowering herbs.

[**Asteia elegantula** Zetterstedt, 1847 — Tard. 22. VII. — One female and two males were caught by S. Tóth. Though it is rare in every part of our country, it has been collected also in the lower mountains (Börzsöny) and at Bükkábrány, not far from the Bükk Mts.]

Diastatidae

Small, usually greyish flies. This family comprises rather few species but the phyletic relations of the family has been much disputed. McAlpine (1962) revised the Palaearctic species of *Campichoeta* Macquart. The species of *Diastata* Meigen were revised most recently by Chandler (1988), who found several incongruencies in the previous usage of names compared to the specific relegation of the type-specimens he studied. Papp (1984) published the diastatid part in the Catalogue of Palaearctic Diptera several years prior to this revision, i.e. the Catalogue reflects the usage of O. Duda, L. Papp and others. Chandler's revision resulted in the synonymization of several names and the description of nine Palaearctic species; one of them has been found also in Hungary. In the Bükk Mts six species were found, and the presence of other two species seems probable.

[**Diastata adusta** Meigen, 1830 (= *unipunctata* Zetterstedt, 1847) — No record from the Bükk Mts but in the collection of the HNHM there is a male from "Hejő-p.", inundation area of the river Tisza, which is not far from the Bükk Mts.]

Diastata costata Meigen, 1830 (= *fuscula*: authors, incl. Papp 1973, 1984, not Fallén, 1823, misidentifications). — Mályinka: Mária-forrás. 4-7. VI. — One female was caught on flowering Umbelliferae.

Diastata fuscula (Fallén, 1823) (= *inornata* Loew, 1864) — Miskolc: Lillafüred; Nagyvisnyó: Ablakos-kő-völgy. ?-VII-X. — One male and one female specimens were collected.

Diastata vagans Loew, 1864 — Miskolc: Nagy-mező. 29. V. — A single female was collected on an open pasture for horses. It was collected also in the Hortobágy National Park.

[**Campichoeta grandiloba** McAlpine, 1962 — One female was caught in the Csanyikvölgy, Miskolc (11. X.) but this species cannot be safely identified in this sex.]

Campichoeta griseola (Zetterstedt, 1855) — Bükkzsérc: Csipkés-tető; Miskolc: Garadna-völgy. VI-IX. — Four males; this is a psychrophilous species, which is not rare but never abundant in our country.

Campichoeta obscuripennis (Meigen, 1830) — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Miskolc: Garadna-völgy; Varbó, víztározó. 12. IV-26. X. — A common species, 26 specimens were collected in forests, on wet meadows and on the vegetation along streams.

Campichoeta punctum (Meigen, 1830) — Miskolc: Csanyikvölgy, Lillafüred, Lusta-völgy; Répáshuta; Szilvásvárad: Közép-bérc. V-X. — It occurs in all parts of our country but it is not an abundant species (4 males, 4 females).

Camillidae

Bluish black or brassy black, beautiful small flies. They are rare or their populations are rather local. Some specimens were reared from the ground soil of rabbit burrows but their life-habits are otherwise little known. Only one species has been collected in the Bükk Mts but other three species were preserved from the extensive collectings made by S. Tóth at Tard.

Camilla atrimana Strobl, 1910 — Szilvásvárad: Őserdő. — Tard. 18-28. V. — Two females only; this species is characteristic for the sandy areas in the Kiskunság from April to July.

[**Camilla glabra** (Fallén, 1823) — Tard. 14. VII. — One male only.]

[**Camilla flavicauda** Duda, 1922 — Tard. V-VII. — Six males and five females were collected in a garden.]

[**Camilla nigrifrons** Collin, 1923 — Tard. 18. V-14. VII. — A majority of the specimens in the collection of the HNHM (39 specimens) derives from sweep netting in a garden (four occasions during the above period).]

Drosophilidae

Small to moderately large acalyptrate flies, some species displaying significant sexual dimorphism. Their life-habits are rather various: a majority of the species feeds on microorganisms of decaying fruits, others develop in rotting fungi or other decaying plant material, in oozing sap of deciduous trees, several species in their larval stage feed in flower heads. There are some species which are predators or parasitoids. Numerous species are maintained in the laboratory and used in genetic research, in insect physiology, in cytology, etc.

The Hungarian fauna was reviewed by Papp and Pecsenye (1989) and 57 species have been recorded. That work was completed as a manuscript some years ago but it has not been published (at least not before the closing of the present paper), that is why reports on the species new to Hungary in the former paper are left out of consideration here: five species are reported below as new for the Hungarian fauna. Thirty-six species were collected in the Bükk National Park, i.e. a higher propor-

tion of our fauna has been represented in our collection than from the Kiskunság National Park or from the Hortobágy National Park. Previously no bait collectings were performed and only once (at the end of our collecting programme) did we make collecting on apple bait. Recently another programme for apple-bait collectings has been commenced, this way several other species of drosophilids are hoped to be detected. The number of specimens (751 specimens) is reasonable when compared to the number of species. The new species for our fauna are: *Chymomyza amoena, Chymomyza costata, Chymomyza fuscimana, Drosophila (Hirtodrosophila) oldenbergi* and *Drosophila unimaculata.* There is no village involved in the Bükk National Park, it is probable that this is the reason why only a part of the so-called synanthropic species was collected; very common synanthropic species, e.g. *Drosophila immigrans* and *D. repleta* have not been found.

Stegana furta (Linnaeus, 1767) — Cserépfalu: Hór-völgy. VI. — Only one female was collected; a widespread West Palaearctic (European) species but its life-habits are little known.

Gitona distigma Meigen, 1830 — Cserépváralja: Tardi-patak; Répáshuta: Pénzpatak. III-? — One male and one female only; otherwise it is a common Palaearctic species. Its larvae develop in the flowering heads of Asterales; imagoes are usually caught also on lights.

Leucophenga maculata (Dufour, 1839) — Bükkzsérc: Csipkés-tető; Cserépfalu: Hór-völgy; Miskolc: Bán-kút, Garadna-völgy, Létrás, Lillafüred, Lusta-völgy; Nagyvisnyó: Nagy-völgy, Taró-völgy; Répáshuta: Pénzpatak; Szilvásvárad: Istállós-kő, Közép-bérc, Őserdő. IV-X. — It develops in mushrooms and imagoes are found there. Numerous specimens were caught and 44 specimens mounted.

Amiota (Amiota) alboguttata (Wahlberg, 1839) — Cserépfalu: BNP kutatóház, Hór-völgy; Cserépváralja: Tardi-patak. ?-16. IX-10. X. — Fourteen males were collected most of them on a metal barrier at the field research base (BNP kutatóház).

Amiota (Amiota) subtusradiata Duda, 1934 — Répáshuta: Pénzpatak. 12. XI. — One female was caught by a light trap. Its life-habits are not known (much rarer than the previous species).

Amiota (Phortica) semivirgo Máca, 1977 — Bánhorváti: Lázbérc; Cserépváralja: Tardi-patak. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). ?-2. VIII-8. IX. — Four males.

Amiota (Phortica) variegata (Fallén, 1823) — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Miskolc: Dolka-hegy, Garadna-völgy, Jávorkút, Lillafüred; Nagyvisnyó: Csurgói erdészlak, Taró-völgy. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). IV-X. — A very common species, particularly in early autumn, attacking also the eyes of humans in forests (106 specimens).

Chymomyza amoena (Loew, 1862) — Nagyvisnyó: Ablakos-kő-völgy. 9. X. — New for the fauna of Hungary. In the Bükk Mts six males and two females were collected on fermenting apple and other fruits. Other localities in Hungary are Verőcemaros, Magyarkút, 28. IX. 1986, apple bait (2 males, 1 female); Budakeszi, Makkosmária, 400 m, 26. IX. 1986, apple bait (4 males, 3 females); Őriszentpéter, Lugosi erdészház, forest clearing, 30. VII. 1980 (1 male). It has obviously been introduced from North America, also known from Czechoslovakia.

Chymomyza costata (Zetterstedt, 1838) — Miskolc: Nagy-mező. 26. V. — New for the fauna of Hungary. One male was caught in a spruce forest.

Chymomyza fuscimana (Zetterstedt, 1838) — Miskolc: Garadna-völgy. 26. V. — One male was collected on high herbs in the stream valley. New for the fauna of Hungary.

Mycodrosophila poecilogastra (Loew, 1874) — Miskolc: Hámori-tó, Létrás-tető; Nagyvisnyó: Taró-völgy. ?-11. X. — One male and two females were caught on fungus *Fomes fomentarius* and on apple bait. A rare Palaearctic species; its populations are small and local.

Scaptomyza (Parascaptomyza) pallida (Zetterstedt, 1847) — Bánhorváti: Lázbérc; Bélapátfalva: Ravaszlyuk; Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Kács; Mályinka: Mária-forrás, Szentlélek-hegy; Miskolc: Bán-kút, Csanyikvölgy, Jávorkút, Létrás, Lillafüred; Nagyvisnyó: Hármaskút, Taró-völgy; Répáshuta: Tebepuszta; Szilvásvárad: Szalajka-völgy; Varbó: Örvény-kő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). V-X. — It is one of the commonest flies also in the

Bükk Mts. Several thousands of specimens were caught during our five-year programme (159 specimens were mounted). Its larvae develop in decaying vegetable material and in fungi.

Scaptomyza (Scaptomyza) graminum (Fallén, 1823) — Cserépváralja: Tardi-patak; Mályinka: Szentlélek-hegy; Miskolc: Bán-kút, Csanyikvölgy, Diabáz-barlang, Eszperantó-forrás, Jávorkút, Garadna-völgy, Létrás, Lillafüred, Nagy-mező; Nagyvisnyó: Bálvány, Elza-lak, Nagy-mező; Szilvásvárad: Istállós-kő, Szalajka-völgy, Tar-kő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 26. IV-17. X. — A common and widespread Holarctic species; larvae are miners (86 specimens).

Drosophila (Lordiphosa) andalusiaca Strobl, 1906 — Mályinka: Látó-kövek. ?-VII-? — Only one female was caught on flowering Umbelliferae. It is widespread in the West Palaearctic but never abundant.

Drosophila (Lordiphosa) fenestratum Fallén, 1823 — Cserépváralja: Tardi-patak; Miskolc: Garadna-völgy, Lillafüred; Nagyvisnyó: Csurgói erdészlak. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 20. IV-16. IX. — It is a terricolous species; imagoes are usually collected on wet forest litter but it is caught also with apple bait (9 specimens).

Drosophila (Lordiphosa) hexasticha L. Papp, 1971 — Cserépváralja: Tardi-patak. 16. IV, 15. V. — Its holotype is from Tard, Bála-völgy, these data are for the partatype females. It is known also from other parts of our country, from Romania, Czechoslovakia and from the European part of the Russia.

Drosophila (Hirtodrosophila) confusa Staeger, 1844 — Miskolc: Lillafüred; Nagyvisnyó: Csurgói erdészlak, Nagy-mező, Taró-völgy; Szilvásvárad: Őserdő, Tar-kő; Varbó. 28. IV-15. IX. — Most of our specimens (127) were caught on tinder fungus on beech-trees; in our country it is usually abundant also in catches on apple bait.

Drosophila (Hirtodrosophila) lundstroemi Duda, 1935 — Cserépváralja: Tardi-patak. 27. VIII. — A West Palaearctic (European) species; only one male was found in the materials from the Bükk National Park.

Drosophila (Hirtodrosophila) oldenbergi Duda, 1924 — Bükkzsérc: Csipkés-tető; Nagyvisnyó: Nagy-völgy. 15-21. IX. — New for the Hungarian fauna. It is a rare European species. One male and one female were collected; its larvae develop in fungi (tinder fungus, etc.).

Drosophila (Dorsilopha) busckii Coquillet, 1901 — Répáshuta: Pénzpatak. 6. VII., 11. X. — It is a synanthropic species; no wonder that it is rare in the Bükk Mts (probably in villages only).

Drosophila (Scaptodrosophila) rufifrons Loew, 1873 — Cserépváralja: Tardi-patak. — Tard. 24. III-24. X. — A West Palaearctic species, the larvae develop in the fermenting sap of trees (mainly oak trees) (15 specimens).

Drosophila (Sophophora) ambigua Pomini, 1940 — Szarvaskő: Eger. 25. V. — One female only.

Drosophila (Sophophora) bifasciata Pomini, 1940 — Cserépváralja: Tardi-patak. 12. IV. — One female only.

Drosophila (Sophophora) melanogaster Meigen, 1830 — Nagyvisnyó: Ablakos-kő-völgy, Hármaskút. — Tard. VI-XI. — A synanthropic species, it is rare or exceptionally rare in the areas far from human settlements. This is why it was collected in two places only in the Bükk National Park (30 specimens).

Drosophila (Sophophora) obscura Fallén, 1823 — Miskolc: Forrás-völgy, Hámori-tó; Nagyvisnyó: Ablakos-kő-völgy. ?-VIII-X. — A widespread European species (known also from Iran). In the Bükk Mts it was collected on apple bait and on fermenting pears (10 specimens).

Drosophila (Sophophora) subobscura Collin, 1930 — Cserépváralja: Tardi-patak; Miskolc: Forrás-völgy; Nagyvisnyó: Ablakos-kő-völgy. ?-VIII-X. — One male and two females were caught on apple bait, on fermenting pears and in a garden. It is a common Palaearctic species which has been collected in all parts of our country.

Drosophila (Drosophila) funebris (Fabricius, 1787) — Répáshuta: Pénzpatak. — Tard. IV-VIII-? — It is a synanthropic or semi-synanthropic species in human settlements or not far from villages (14 specimens).

Drosophila (Drosophila) histrio Meigen, 1830 — Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Nagyvisnyó: Taró-völgy. VII-IX. — Though widespread (Bächli and Rocha Pité 1984), it was collected in our mountain areas only. Four females.

Drosophila (Drosophila) hydei Sturtevant, 1921 — Cserépfalu: BNP kutatóház, Hór-völgy; Nagyvisnyó: Ablakos-kő-völgy. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). ?-VII-X. — A cosmopolitan synanthropic species; the larvae develop in fallen and fermenting fruits but almost exclusively in human settlements (5 specimens).

Drosophila (Drosophila) kuntzei Duda, 1924 — Cserépváralja: Tardi-patak; Miskolc: Lillafüred, Lusta-völgy; Nagyvisnyó: Nagy-völgy; Répáshuta: Pénzpatak; Szilvásvárad. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). V-X. — Its larvae develop in the fruiting bodies of fungi. A common species in mountain forests in Hungary. It is usually caught on apple bait. In lack of bait collectings, only seven specimens were collected during our five-year programme.

Drosophila (Drosophila) limbata von Roser, 1840 — Cserépfalu: BNP kutatóház, Hór-völgy; Miskolc: Garadna-völgy, Lillafüred. V-IX. — A rare mushroom-feeder, only three females were caught.

Drosophila (Drosophila) phalerata Meigen, 1830 — Bükkzsérc: Csipkés-tető; Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Mályinka: Mária-forrás; Miskolc: Bán-kút, Csanyikvölgy, Lillafüred, Lusta-völgy; Nagyvisnyó: Nagy-völgy, Taró-völgy; Szilvásvárad: Szalajka-völgy. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 30. III-5. X. — It is the commonest drosophilid species in our forests. The larvae develop in all kinds of mushrooms (fungi), but the imagoes are collected also on garbage heaps, on fallen fruit and they are usually collected also on apple bait. Numerous specimens were caught (33 specimens mounted).

Drosophila (Drosophila) testacea von Roser, 1840 — Bükkzsérc: Csipkés-tető; Cserépfalu: Hór-völgy; Cserépváralja: Tardi-patak; Miskolc: Bán-kút, Lillafüred, Nagy-mező; Nagyvisnyó: Taró-völgy. — Tard. V-IX. — A common mushroom-feeder, though it is less abundant than *phalerata* (15 specimens).

Drosophila (Drosophila) transversa Fallén, 1823 — Cserépváralja: Tardi-patak; Miskolc: Csanyikvölgy, Lillafüred; Szilvásvárad: Istállós-kő. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). IV-IX. — Its larvae develop in fungi; it is as abundant as phalerata or nearly so. In lack of regular collectings with special methods, only 11 specimens were caught.

Drosophila unimaculata Strobl, 1893 — Miskolc: Garadna-völgy, Hámori-tó. ?-16. IX-9. X. — New for the fauna of Hungary. Twenty-four specimens were collected on apple bait. Another known locality in Hungary: Visegrád (10-16. VIII. 1983, one male). It is one of the ungrouped *Drosophila* species (Bächli and Rocha Pité 1984).

Drosophila trivittata Strobl, 1893 — Miskolc: Bán-kút. 20. IX. — One single female. It develops in tinder fungi. Its taxonomic position was long debated. Bächli and Rocha Pité (1984) placed it in the subgenus *Hirtodrosophila* Duda, which is probably the best solution.

Gasterophilidae, Oestridae and Hypodermatidae

The species of these three bot fly families used to be very abundant in Hungary. As a consequence of intensive veterinary protection of our domestic animals, the species infesting them have become rare, or, e.g. *Hypoderma lineatum* is probably extinct from our country. The species parasitizing game animals or other wild animals are still rather abundant but the imagoes of the latter species are also seldom collected, since they are living only for some days as imagoes. The occurrence of one gasterophilid, one oestrid and two hypodermatid species have been established hitherto in the Bükk National Park.

Gasterophilus intestinalis (De Geer, 1776)— Miskolc: Csipkéskút, Nagy-mező; Szilvásvárad. — The horses of the Szilvásvárad State farm pastured in the Bükk were treated against gasterophilosis; only larvae seen, no imagoes found.

Cephenemyia auribarbis (Meigen, 1824) — Miskolc: Bán-kút. 2. VI. — Two specimens were caught on a look-out tower.

Oestromyia leporina (Pallas, 1778) — Bükkzsérc: Kis-rét; Cserépfalu: BNP kutatóház, Hór-völgy; Miskolc: Létrás; Répáshuta: Csúnya-völgy. 19. IX-4. X. — It seems to be an endemic parasite of small rodents in the southern half of the Bükk National Park. Fourteen imagoes and four larvae (BNP kutatóház: 3, Kis-rét: 1) were collected.

Hypoderma diana Brauer, 1858 — Cserépváralja: Tardi-patak. 27. IV. — One male was collected in a forest, otherwise it is a common parasite of red deer and roe-deer in Hungary.

Hippoboscidae

The old collection of the HNHM perished in fire in 1956 but all the old data are reliable, since that material was identified by Á. Soós (1955). All the newly collected material, incl. more than one hundred specimens from the Bükk Mts., was recently identified by G. Kaufman and a new collection has been set up. Four species of these ectoparasites were caught in the Bükk National Park, a fifth one at Tard.

Ornithoica turdi (Olivier in Latreille, 1811) — Cserépváralja: Tardi-patak. 12. VIII. — This is one of the three specimens of the species hitherto collected in our country.

Ornithomyia avicularia (Linnaeus, 1758) — Varbó. 1. VII. — A single male was collected; otherwise it is a common species parasitizing numerous bird species.

Hippobosca equina Linnaeus, 1758 — Cserépfalu: Hór-völgy; Felsőtárkány: Vasbánya-tető; Miskolc: Csanyikvölgy, Jávorkút, Lillafüred; Nagyvisnyó: Nagy-mező; Szarvaskő; Szilvásvárad: Közép-bérc, Tar-kő. V-X (mainly VIII). — Eleven specimens were collected, mostly on humans.

[**Hippobosca longipennis** Fabricius, 1805 — Tard. VII-VIII. — Eighteen specimens were caught, all of them on dogs.]

Lipoptena cervi (Linnaeus, 1758) — Cserépfalu: BNP kutatóház, Hór-völgy; Cserépváralja: Tardi-patak; Miskolc: Csanyikvölgy, Létrás, Létrás-tető, Lusta-völgy; Nagyvisnyó: Huta-rét, Taró-völgy; Répáshuta: Csúnya-völgy, Pénzpatak; Szilvásvárad: Istállós-kő, Szalajka-völgy. — Eger: Szőlőcskepuszta ("Síkfőkút Project"). 27. IV-10. XI. — Numerous (76) specimens were collected on deer, on humans and on dead deer. It is a common parasite of the red deer but it attacks also humans (mainly in XI-XII) in our country. This is the only species, which was represented in the old collection of the HNHM (see Soós 1955).

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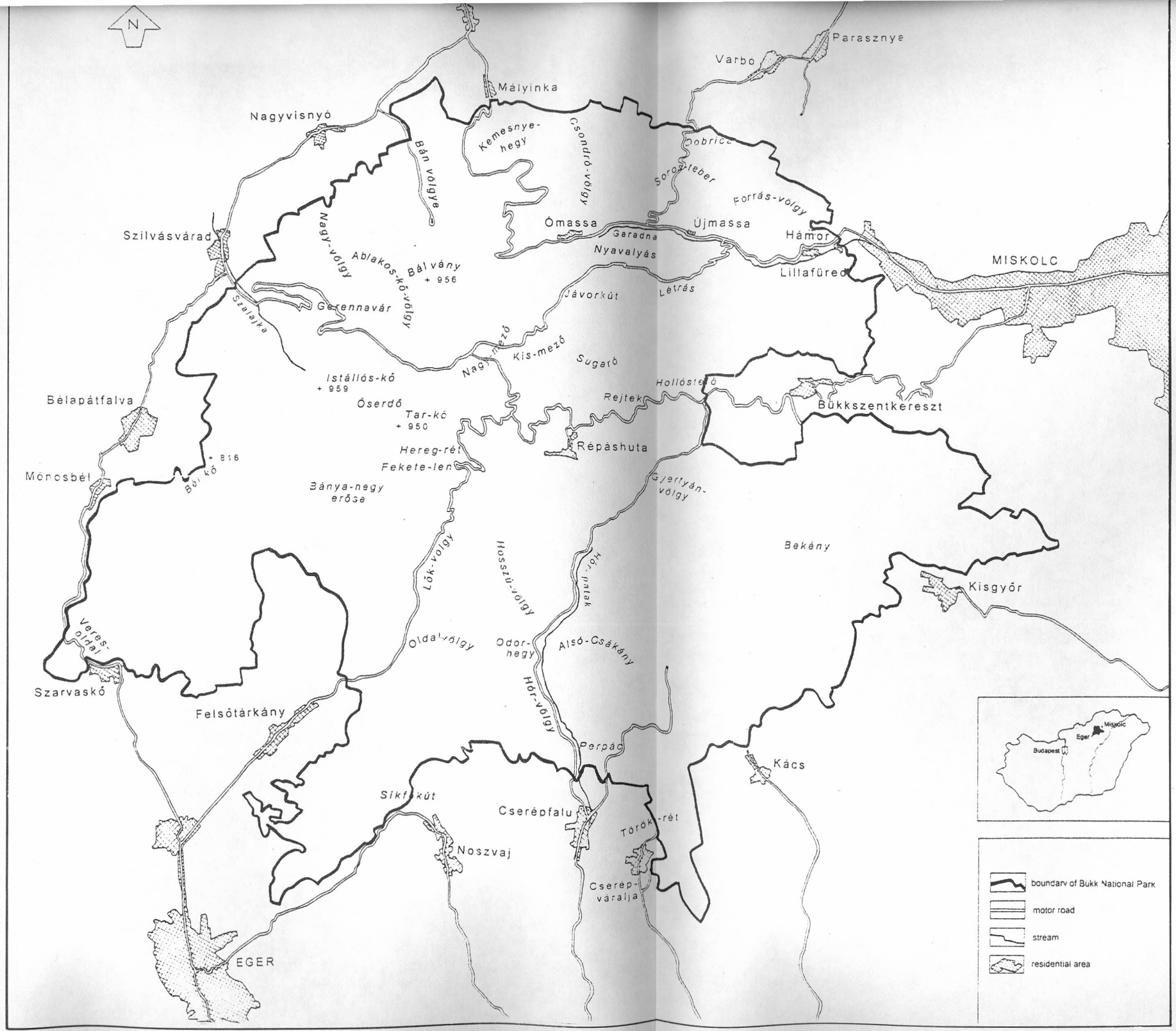
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Nagy-völgy
Ablakos-kő-völgy
Bálvány
+ 956
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Garennavár
Jávorkút
Létrás
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Istállós-kő
+ 959
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Bükkszentkereszt
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Tar-kő
+ 950
Rejtek
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+ 816
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Perpác
Kács
Síkfőkút
Cserépfalu
Török-rét
Noszvaj
Cserép-váralja
EGER
Budapest
Eger
Miskolc
boundary of Bükk National Park
motor road
stream
residential area