

SPRINGTAILS OF THE AGGTELEK NATIONAL PARK (HEXAPODA: COLLEMBOLA)

By

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150 Collembola species with their locality data and habitat preference are reported from the Aggtelek National Park. 15 species are first recorded in Hungary.

The Aggtelek National Park situated in NE Hungary – close to the Slovak border –, is very famous for its lime-stone caves. The springtail fauna was first studied there by J. Stach, who determined the Collembola material of the “Baradla cave”, collected mostly by E. Dudich. Stach annotated 17 troglophilous species, two new to science: *Lepidocyrtus aggtelekiensis* Stach, 1929 and *Arrhopalites aggtelekiensis* Stach 1929.

Some decades later I. Loksa (1966, 1967) made extensive research on the springtails of the carstic shrubberies of the “Tornai-karszt”. On the surface he collected 35 Collembola species, the most frequent species there were *Onychiurus burmeisteri* (Tornanádaska: Alsó-hegy) and *Hypogastrura inermis* (Jósvafő: Nagy-oldal). From the cave he described (Loksa 1967) five new species: *Neanura dudichi*, *Onychiurus kadici*, *Onychiurus schoeviszki*, *Folsomia atricola* and *Arrhopalites hungarica*.

During the years 1987–1989, the staff of the Hungarian Natural History Museum made intensive collections in this area. The samples were largely elaborated by Prof. S. Mahunka and by L. Mahunka-Papp. Collembollas were also captured by A. Bankovics, O. Merkl and Gy. Sziráki. The samples mostly come from the carst-hills of different habitat surface-soils, only one sample is from the cave.

The average altitude is 300-400 metres above sea level here, the annual precipitation is about 700 mm/year. 22% of the whole district is covered by forest, from which the best are those of the valleys where the *Quercus-petraea-Carpinetum*, on the carst the *Tilio-Fraxinetum* plant associations are dominant, but the most characteristic trees are in the *Quercetum-petraea-pubescentis* forests.

Until now 53 species were found and published from this area (Loksa 1966, 1967). With the recent collections, the total number of the ascertained species of the Aggtelek NP has raised to 150. Among them are 15 species are first reported from Hungary in spite of that some of them are in the list of Stach (1928) “Verzeichnis der Apterygogenea Ungarns”, but these localities are since then abroad. These are the following: *Hypogastrura aequipilosa*, *Hypogastrura ripperi*, *Hypogastrura sahlbergi*, *Ceratophysella succinea*, *Xenylla welchi*, *Friesea laszloi*, *Pseudachorutes subcrassus*, *Supraphorura furcifera*, *Onychiurus rectospinatus*, *Onychiurus rectopapillatus*, *Stenaphorurella lübböcki*, *Agrenia bidenticulata*, *Vertagopus westerlundi*, *Orchesella xerothermica*, *Gislinianus flammeolus*. Species needing more study are: *Ceratophysella* cf. *granulata*, *Ceratophysella* cf.

laricis, *Odontella* cf. *stachi*, *Deutonura* cf. *stachi*, *Neanura* *dudichi* – it is may be an *Albanura* sp. – *Protaphorura* cf. *octopunctatus*, *Tetracanthella* cf. *wahlgreni*, *Coloburella* cf. *vandeli*, *Isotoma* cf. *intermedia*, *Pseudosinella* cf. *fallax*, *Tomocerus* cf. *minutus*.

Close to this region 71 Collembola species were recorded in the territory of the Slovak Karst Biosphere Reserve which show together with our list a very rich sprigtail fauna of this locality (Kovac et al. 1996).

The recently collected material is deposited in the Hungarian Natural History Museum and especially in the University of Sopron, in the collection of the author in the Institute for Forest Protection. However, the elaboration of these samples has not yet been entirely completed, there are some doubtful species in the list. These are some *Hypogastrura*, *Odontella*, *Neanurinae*, *Onychiurinae* etc. species. The taxa were identified by works listed in the Literature. In the systematical list of the species as well as in nomenclatorial questions I followed mainly the checklist of the Collembola by K. Christiansen and P. Bellinger (1998) shown in the Collembola Network by Frans Janssens, also the checklist of the Austrian Collembola species by E. Christian (1987)

LIST OF SPECIES

PODUROMORPHA

HYPOGASTRURIDAE

Hypogastrura aequopilosa (Stach, 1949) — Szin: Háló-völgy. IX. — In *Quercus petraea-Carpinetum* forest litter.

Hypogastrura assimilis Krausbauer, 1898 — Aggtelek: Ménes-völgy, Szelcepuszta, Égerszög: Tóth-völgy. IV–IX. — In a decayed dunghill and from an ant nest.

Hypogastrura manubrialis (Tullberg, 1869) — Aggtelek: Szelcepuszta. IV. — In a decayed dunghill.

Hypogastrura purpurescens (Lubbock, 1869) — Stach (1932) found this species as pseudotroglobiont, we found it in the “Baradla-barlang”, too.

Hypogastrura ripperi Gisin, 1952 — Aggtelek: Szelcepuszta. IV. — In a dunghill on a meadow.

Hypogastrura sahlbergi (Reuter, 1895) — Aggtelek: Ménes-völgy. III. — In *Aegopodia-Alnetum* forest litter.

Hypogastrura socialis (Uzel, 1891) — Szögliget: Ménes-völgy, Öreg-tető, Szin: Háló-völgy. I–IV. In *Quercus petraea-Carpinetum* forest litter.

Ceratophysella armata (Nicolet, 1841) — Stach (1932) found it as a pseudotroglobiont species in the Baradla-cave.

Ceratophysella bengtssoni (Agren, 1904) — Aggtelek: Szelcepuszta. IV. — In a decayed dunghill in a meadow.

Ceratophysella crassispina (Cassagnau, 1952) — Szögliget: Éles-tető. IV. — In *Quercus* forest litter and soil.

Ceratophysella denticulata (Bagnall, 1941) — Aggtelek: Ménes-völgy, Szár-hegy. Vár-bóc: Henz-völgy. Szögliget: Ménes-völgy. Martonyi. Tornanádaska: Pasnyag-forrás. Bódvaszilás: Vecsem-patak. I–XI. — In humous soil, in moss at the foot of alder (*Alnus*) trees.

Ceratophysella cf. **granulata** Stach, 1949 — Szin: Szelcepuszta. V. — Forest litter. This species is very similar to *C. granulata*, but in the few specimens which I have, the distance between the medial macrochaetae on Abd. 4 is shorter than the same Abd. 5.

Ceratophysella inermis (Tullberg, 1871) — Loksa (1966) found it at Tornanádaska: Alsó-hegy, Jósvafő: Nagy-oldal.

Ceratophysella cf. laricis Martinova, 1977 — This species is very close to *C. armata*, but the ventroapical "file" of Ant. 4 poorly developed. I found clearly such a species, whose chaetotaxy is similar to *C. armata*, however, it is doubtful to be the true *C. laricis*. — Aggtelek: Mész-hegy, Haragistya, Szelcepuszta. I–IV. — In *Quercus petraea-Carpinetum* forest litter.

Ceratophysella sigillata (Uzel, 1891) — Stach (1932) found it as a pseudotroglobiont. We caught it in Szögliget, in coniferous forest litter. IV.

Ceratophysella succinea (Gisin, 1949) — Aggtelek: Baradla barlang, Szelcepuszta. Jósvafő: Szelce-völgy. IV–XI. — In lichens on the bark of trees.

Xenylla boernerii Axelson, 1905 — Aggtelek: Ménes-völgy, Baradla-tető, Verő-tető, Szelcepuszta. Égerszög: Foglалás. Trizs: Rozsnyói úti bérc. Varbóc: Henz-völgy. Szögliget. VII–IX. — In the forest litter of deciduous and coniferous forests, among moss and lichen also on the bark.

Xenylla brevicauda Tullberg, 1869 — Aggtelek: Lókosár, Szögliget, Ménes-völgy. Jósvafő: Lipinye, Szelcepuszta. Loksa (1966) found it also: Jósvafő: Nagyoldal. Tornanádaska: Alsó-hegy. IV–XI. — In decayed woods, in moss and lichen on the bark.

Xenylla brevisimilis Stach, 1949 — Aggtelek: Dobos. Martonyi. I–VII. — In moss and wood detritus.

Xenylla corticalis Börner, 1901 — Aggtelek: Ménes-völgy. VII. — In an ant nest.

Xenylla maritima Tullberg 1869 — Égerszög: Tóth-völgy; Jósvafő: Lipinye. Szin: Háló-völgy. Martonyi. Loksa (1966) collected in: Tornanádaska: Alsó-hegy, Jósvafő: Nagyoldal. VII–IX. — In *Quercus petraea-Carpinetum* forests, in moss also on the bark.

Xenylla welchi Folsom, 1916 — Aggtelek: Szelcepuszta. Égerszög: Foglалás, Tóth-völgy, Simon-völgy. Jósvafő: Lipinye, Nagyoldal. Szögliget: Ménes-völgy, Öreg-tető. I–IX. — In deciduous forest litter and detritus, in moss also on the bark.

Willemia anophthalma Börner, 1901 — Loksa (1966) found it in Jósvafő: Nagyoldal. Tornanádaska: Alsó-hegy.

Willemia scandinavica Stach, 1949 — Aggtelek: Baradla-barlang. Égerszög: Simon-völgy. III–IX. — In forest litter of hornbeam trees.

Microgastrura duodecimoculata Stach, 1922 — Loksa (1966) caught it in Jósvafő: Nagyoldal. Tornanádaska: Alsó-hegy. Present study: Jósvafő: Szelce-völgy. IV. — In the soil of the meadow.

ODONTELLIDAE

Xenyllodes armatus Axelson, 1903 — Jósvafő: Lipinye. Perkupa: Telekes-völgy. III–IV. — In *Aegopodio-Alnetum* forest litter.

Odontella empodialis Stach, 1934 — Égerszög: Foglалás. Jákfa. IX. — In rotted wood and moss, in aspen (*Populus tremula*) litter, too.

Odontella pseudolamerrifera Stach, 1949 — Aggtelek: Dobos. Égerszög: Simon-völgy. Szin: Szelcepuszta. Szögliget. IV–IX. — In deciduous and coniferous litter and soil.

Odontella cf. stachi Denis, 1947 — Aggtelek: Lókosár. XI. — On the foot a pears (*Pyrus*) trees.

NEANURIDAE

Anurida sp. — Aggtelek: Kecő-patak völgye. IX. — In alder (*Alnus*) and willow (*Salix*) litter.

Friesea denisi Kseneman, 1936 — Perkupa: Telekes-völgy. III. — In *Aegopodio-Alnetum* litter.

Friesea laszloi Palacios-Vargas et Traser, 1996 — Szögliget: Ménes-völgy. I. — In humous soil. Only two specimens were found of this species. Spread as far as the Caucasus.

Friesea truncata Cassagnau, 1958 — Aggtelek: Mogyorós-kút. Égerszög: Simon-völgy, Foglалás. Varbóc: Henz-völgy. Szögliget: Ménes-völgy. Martonyi. I–IX. — In meadows and forests, also in moss.

Deutonura conjuncta Stach, 1926 — Aggtelek: Lókosár, Szelcepuszta, Verő-tető. Égerszög: Simonvölgy, Foglалás. Jósvafő: Lipinye. Szögliget: Kecskés-forrás. Trizs: Rozsnyói úti bérc. Loksa (1966) also caught it: Tornanádaska: Alsó-hegy. Jósvafő: Nagyoldal. IV–IX. — In coniferous and deciduous forest litter, in the moss, also on the bark.

Deutonura phlegraea (Caroli, 1912) — Aggtelek: Dobos víznyelő, Szelcepuszta, Kecskő-patak völgye. Jósvafő: Lipinye. Szögliget: Ménes-völgy. Varbóc: Henz-völgy. I–IX. — In forest litter, in the moss on the bark too.

Deutonura cf. stachi (Gisin, 1952) — Szögliget: Éles-tető, Kecskés-forrás. Jósvafő: Nagy-oldal. Varbóc, Henz-völgy. — This species is very close to *D. stachi*, but the macrochaetes here are wide, not so slender as in *D. stachi*. IV–IX. — In forest litter and soil, also at the foot of the alder (*Alnus*) trees.

Pumilinura loksai (Dunger, 1976) — Aggtelek: Haragistya út, Mész-hegy. Jósvafő: Szelce-völgy. Szögliget: Ménes-völgy. I–IV. In humus, moss and soil.

Cf. **Albanura dudichi** (Loksa, 1967) — Aggtelek: Kecskő-patak. IX. — In alder (*Alnus*) litter, with decayed wood. Only one specimen was caught from this probably endemic species. Loksa (1967) found it as hemitroglobiont (described as *Neanura dudichi* — this specimen is clearly different from the genus *Pumilinura* but not is it a typically *Albanura*).

Neanura muscorum (Templeton, 1835) — Stach caught it as hemitroglobiont. Loksa (1966) found it in Jósvafő: Nagyoldal. Tornanádaska: Alsó-hegy. Present study: Aggtelek: Lókosár, Ménes-völgy. Égerszög: Foglалás. Perkupa: Telekes-völgy. Szögliget: Kecskés-forrás. III–IX. — In moss and detritus of forest litter.

Neanura parva Stach, 1951 — Szögliget: Ménes-völgy. X. — With decayed wood, soil.

Neanura sp. — Aggtelek: Mész-hegy. Égerszög: Foglалás. Szögliget: Ménes-völgy. Trizs: Rozsnyói úti bérc. I–IX. — In humus, detritus and forest litter.

Thaumanura carolii (Stach, 1920) — Stach found it as pseudotroglobiont. Present study: Aggtelek: Kecskő-patak, Lókosár, Szár-hegy, Ménes-völgy. Szin: Szelcepuszta. Szögliget: Ménes-völgy. Varbóc: Henz-völgy. V–XI. — In deciduous litter and decayed wood, under the peeling bark.

Pseudacho rutella asigillata (Börner, 1901) — Aggtelek: Ménes-völgy. Szögliget: Ménes-völgy. VII–X. — In decayed wood.

Pseudachorutes corticolus (Schaeffer, 1896) — Szögliget: Ménes-völgy. I. — In humous soil.

Pseudachorutes dubius Krausbauer, 1898 — Aggtelek: Ménes-völgy. Bódvaszilas: Vecsembükk. Égerszög: Foglалás. Perkupa: Telekes-völgy. III–IX. — In *Aegopodio-Alnetum* forest litter.

Pseudachorutes parvulus Börner, 1901 — Loksa (1966) found it in Jósvafő: Nagyoldal. Tornanádaska: Alsó-hegy. Recently at Aggtelek: Dobos víznyelő, Szár-hegy. Jósvafő: Nagyoldal. Martonyi. Szögliget: Ménes-völgy. Trizs: Rozsnyói úti bérc. I–XI. Mostly in *Quercus-petrae-Carpinetum* forest litter and soil.

Pseudachorutes subcrassus Tullberg, 1871 — Aggtelek: Lókosár. Varbóc: Henz-völgy. Szögliget: Ménes-völgy. Martonyi. I–VIII. — Mostly in alder (*Alnus*) litter.

ONYCHIURIDAE

Tetrodontophora bielensis (Waga, 1842) — Aggtelek: Dobóbel, Ménes-völgy, Szelce-patak. Perkupa: Telekes-völgy. Szögliget: Kecskés-forrás. III–XI. — This is the biggest European spring-

tail, its length may be 9 mm! It is a typically submontane, Circum-pannonical species (Rusek 1997), which first was recorded here by E. Dudich in 1924 from Jósvafő. — It was caught mostly in the brook valleys in the alder (*Alnus*) litter, but also in the wet *Quercus-petraea-Carpinetum* forest.

Micraptorura absoloni (Börner, 1901) — Aggtelek: Lókosár, Szelce-patak. Szögliget: Ménes-völgy. IX–XI. — In coniferous and deciduous litter.

Hymenaptorura sibiricus (Tullberg, 1876) — The species was found by J. Stach only in the Baradla cave.

Heteraptorura terricola (Kos, 1940) — Aggtelek: Dobos, Ménes-völgy, Márton-völgy, Kecskés-patak, Szár-hegy, Szelce-patak, Mogyorós-kút. I–XI. — Mostly in wet habitats of the brook valleys, in deciduous litter and also soil.

Kalaptorura paradoxa (Schaeffer, 1900 — Aggtelek: Ménes-völgy, Szár-hegy. Szögliget: Ménes-völgy. Martonyi. Jósvafő: Lipinye. Bódvaszilas: Vecsembükk. Tornanádaska. I–XI. — *Kalaptorura paradoxa* var. *clavipila* (Stach, 1920) was found also. This species was caught mostly in the humus rich soils. Loksa (1966) reported this species as *Onychiurus burmeisteri*.)

Protaptorura armatus (Tullberg, 1869) — Stach found this species as hemitroglobiont. Loksa (1966) also caught it. It is the one of the most frequently encountered species. I do not give the whole list of the locality data because it may be found in most habitats in forests and also on the meadows.

Protaptorura campatus (Gisin, 1952) — Aggtelek: Haragistya út. Jósvafő: Lipinye, Nagy-oldal. IV–XI. — In forest litter and soil.

Protaptorura cancellatus (Gisin, 1956) — Aggtelek: Dobos, Szelcepuszta. — In moss on stone, but in a dunghill too.

Protaptorura latus (Gisin, 1956) — Really frequent species, the most dominant population was found in: Aggtelek: Dobos víznyelő. Szögliget: Éles-tető, Ménes-völgy, Kecskés-forrás. Szin: Szelcepuszta. Jósvafő: Lipinye. — In different forest types in litter and soil.

Protaptorura cf. **octopunctatus** (Tullb.) (Stach, 1954) — Jósvafő: Tohonya-völgy. (In the soil on a meadow.) — Of course, rather doubtful, whether this is a real *P. octopunctatus* record, but these specimens display a PsO format (43/022/33343 on the first thoracic segment: i2m) which is typically for *P. octopunctatus*, however, I have not found any females.

Protaptorura subarmatus (Gisin, 1957) — Aggtelek: Ménes-völgy, Szár-hegy. — In *Aegopodium-Alnetum* litter. — No doubt the *P. armatus* populations are very rich in some different aberrations in the PsO format and this renders the status of *P. subarmatus* problematical, but in some cases only this “species”, (M/s=17/9 see Gisin 1960) was found also the differences were consistent in *P. armatus*.

Supraptorura furcifera (Börner, 1901) — Tornanádaska, on the foot of a willow (*Salix*) tree, in the soil. This is the first record in Hungary!

Onychiuroides granulatus Stach, 1930 — Szögliget: Ménes-völgy. I. — In humus, Loksa (1966) found it in Tornanádaska: Alsó-hegy. Jósvafő: Nagyoldal.

Onychiuroides pseudogranulosus Gisin, 1951 — Aggtelek: Szelce-patak völgye, Verő-tető. Szögliget: Ménes-völgy, Kecskés-forrás. I–IX. — In deciduous forest litter and soil. Loksa (1966) also found it.

Orthonychiurus rectopapillatus Stach, 1933 — Aggtelek: Kecskés-patak völgye, Ménes-völgy, Szelcepuszta. Jósvafő: Szelce-völgy. Szögliget: Éles-tető. Trizs: Rozsnyói uti bérc. IV–IX. — In coniferous and deciduous forest litter.

Orthonychiurus s variabilis (Stach, 1954) — Szin: Szelcepuszta. V. — From a sifted sample in forest litter.

Onychiurus rectospinatus Stach, 1932 — Aggtelek: Lókosár. XI. — On the foot of a pear (*Pyrus*) tree. This is the “true” *O. rectospinatus* (sensu Pomorwsky, 1998), with the very conspicuous clavate hairs.

TULLBERGIIDAE

Stenaphorulella lübböcki (Bagnall, 1935) — Aggtelek: Mogyorós-kút. I. — In *Aegopodio-Alnetum* litter. This is the first recorded reference in Hungary (Khanislamova 1997)!

Stenaphorura rella quadrispina (Börner, 1901) — Loksa (1966) found it at Jósvalfő and Tornanádaska (reported as *Tullbergia quarispina*)

Metaphorura affinis Börner, 1902 — This species was found only by Loksa (1966) (reported as *Tullbergia affinis*) in Jósvalfő and Tornanádaska.

Mesaphorura critica Ellis, 1976 — Szögliget, in coniferous litter. IX. This is the first published datum from Hungary, but I caught it some years ago in Bócsa, Ásványráró and Sopron.

Mesaphorura krausbaueri Börner, 1901 — Aggtelek: Ménes-völgy. Tornanádaska. VII–XI. — In deciduous forest litter.

Mesaphorura macrochaeta Rusek, 1976 — Aggtelek: Baradla-barlang. III. — It was found near to the entrance of the cave, in detritus.

Mesaphorura sylvatica Rusek, 1971 — Szögliget: Ménes-völgy. X. — This is the first record in Hungary.

ENTOMOBRYOMORPHA

ISOTOMIDAE BÖRNER

Tetracanthella cf. wahlgreni Linnaniemi, 1911 — Aggtelek: Baradla-barlang. III. — Only one specimen was found in the cave, near the entrance.

Coloburella cf. vandeli Cassagnau Delamare, 1951 — Aggtelek: Ménes-völgy. VII. — Only one specimen was caught in an ant nest.

Vertagopus cinerea (Nicolet, 1841) — Aggtelek: Baradla-barlang, Ménes-völgy. Égerszög: Foglálás. Jósvalfő: Lipinye. III–XI. — Mostly in deciduous forests in the moss on the bark.

Vertagopus westerlundi (Reuter, 1898) — Trizs: Rozsnyói úti bérc. IX. — In *Quercopetraea-Carpinetum* litter.

Anurophorus cuspidatus Stach, 1920 — Aggtelek: Haragistya út. XI. — In moss on trees. Loksa (1966) also found it.

Anurophorus laricis Nicolet, 1842 — Aggtelek: Szelcepuszta. XI. — In lichen on trees.

Isotomodes productus (Axelson, 1906) — Jósvalfő: Szelce-patak völgye. IV. — In the soil of a wet meadow. Loksa (1966) also found it.

Folsomia atricola Loksa, 1959 — This troglobiont species was found and described by I. Loksa from Égerszög in the cave.

Folsomia candida Willem, 1902 — Aggtelek: Baradla-cave. III. — In caves it is a very abundant species.

Folsomia fimetaria (Linné, 1758) — This Holarctic species was found by Stach (1932) to be a hemitroglobiont in the Baradla cave.

Folsomia manolachei Bagnall, 1939 — This is a very frequent species. It was found in most samples in coniferous and deciduous forest litter. Here by I give only a few collecting data: Aggtelek: Haragistya út.; Jósvalfő: Lipinye. Szögliget: Élestető. Szuhafő. — In a Scots pine forest.

Folsomia penicula Bagnall, 1939 — This species is very frequent too, e.g.: Aggtelek: Mész-hegy, Szelce-patak. Bódvaszilas: Vecsem-bükki zomboly. Jákfalva. I–XI. — Mostly in *Quercus petraea-Carpinetum* litter. Loksa (1966) also found it (reported as *F. multiseta*).

Folsomia quadrioculata (Tullberg, 1871) — It was as frequently found as the previously species. In determination I used the key of Dunger (1989).

Folsomides parvulus Stach, 1922 — Aggtelek: Ménes-völgy. VII. — From an ant nest.

Subisotoma pusilla (Shaeffer, 1900) — Aggtelek: Dobóbél. Jósvafő: Szelcepuszta, Nagy-oldal. Szögliget: Éles-tető, Ménes-völgy. Martonyi. III–XI. — In deciduous and coniferous forests.

Cryptopygos bipunctatus (Axelson, 1903) — Szögliget: Ménes-völgy. I. — In humus. Loksa (1966) found it at Jósvafő and Tornanádaska (reported as *Isotomina bipunctatus*).

Proisotoma hankoi Stach, 1930 — Égerszög: Tóth-völgy. IX. — In decaying dunghill near a stable.

Proisotoma minima (Absolon, 1901) — Szögliget: Ménes-völgy. IV–X. — In decaying wood, with soil.

Proisotoma minuta (Tullberg, 1871) — Aggtelek: Ménes-völgy. Égerszög: Tóth-völgy. Szögliget: Ménes-völgy, Szelcepuszta. III–IX. — Mostly in dung and in humus.

Pseudisotoma sensibilis (Tullberg, 1876) — Aggtelek: Kecő-patak völgye. IX. — In alder (*Alnus*), willow (*Salix*) litter and detritus.

Agrenia bidenticulata (Tullberg, 1876) — Aggtelek: Ménes-völgy. III. — Only one specimen was found in an *Aegopodio-Alnetum* forest in the litter. This is the first record of this montane species in Hungary.

Isotomiella minor (Schaeffer, 1896) — This species is nowhere abundant, but frequent in most places, e.g.: Aggtelek: Kecő-patak. Bódvaszilas: Vecsembükk. Jósvafő: Tohonya-völgy. Szögliget: Kecskés forrás. Szög: Mocsolya-völgy. Szin: Háló-völgy. I–XII. — Mostly in *Querceto petraea-Carpinetum* forests.

Isotoma (Desoria) fennica (Reuter, 1895) — Aggtelek: Mész-hegy, Szár-hegy. Szögliget: Ménes-völgy. Varbóc: Henz-völgy. Trizs: Rozsnyói úti bérc. I–XI. — Mostly in deciduous forest litter.

Isotoma (Desoria) cf. intermedia Schött, 1902 — Aggtelek: Mész-hegy. Jósvafő: Szelce-völgy. I–IV. — In moss and on meadows.

Isotoma notabilis (Schaeffer, 1896) — Stach (1932) found a few specimens as pseudotroglobiont, Loksa (1966) also caught it. This is a very frequent species, it is present in most places. For e.g.: Aggtelek: Mogyorós kút, Szelce-patak. Szögliget: Kecskés-forrás. Varbóc: Henc-völgy. I–XII. — In coniferous and deciduous forest litter.

Isotoma propinqua var. **hexaspina** Axelson, 1902 — Aggtelek: Szelce-völgy, Ménes-völgy, Dobóbél, Vasas-orom. Szin: Szelcepuszta. Szögliget: Kecskés-forrás. Trizs: Rozsnyói úti bérc. Varbóc: Henc-völgy. II–XII. — Mostly in the brook-valleys in deciduous forest litter and in the moss.

Isotoma tigrina Tullberg, 1871 — (syn.: *I. olivacea*) — Aggtelek: Dobos, Ménes-völgy. Bódvaszilas: Vecsem-bükki-zomboly. Jósvafő: Lipinye. Szin: Szelcepuszta. Varbóc: Henz-völgy. I–XI. — In *Aegopodium-Alnetum* and *Querceto petraea-Carpinetum* forest litter.

Isotoma cf. violacea — Martonyi. VII. — In moss and detritus.

Isotoma viridis Bourlet, 1839 — Jósvafő: Szelce-völgy. Varbóc: Henz-völgy. IV–IX. — On the meadows.

ENTOMOBRYIDAE

Entomobrya oides mayrmecophilus (Reuter, 1886) — Aggtelek. Jósvafő: Tohonya-bérc. XI. — In ant nests.

- Entomobrya puncteola** Uzel, 1891 (syn.: *E. dorsalis*) — Aggtelek: Ménes-völgy, Szelcepuszta, Szuhafő. III–XI. — In coniferous and deciduous litter, in lichen on bark.
- Entomobrya handschini** Stach, 1922 — Trizs: Rozsnyói úti bérc. IX. — In moss and soil.
- Entomobrya lanuginosa** (Nicolet, 1842) — Aggtelek: on a big garbage heap. IX.
- Entomobrya marginata** (Tullberg, 1871) — Aggtelek: Baradla-tető, Ménes-völgy, Szelcepuszta. Égerszög: Foglálás. Szögliget: Tornanádaska. Jósvafő: Lipinye. IV–IX. — In humus, moss and detritus, often on the bark of trees.
- Entomobrya multifasciata** Tullberg, 1871 — Loksa (1966) found it at: Tornanádaska: Alsó-hegy. Jósvafő: Nagyoldal. — In *Cotino-Quercetum* forest.
- Entomobrya muscorum** (Nicolet, 1842) — Trizs: Rozsnyói úti bérc. Varbóc: Henz-völgy. V–IX. — In wet vegetation in forests and grassy area.
- Entomobrya nivalis** (Linne, 1758) — Szögliget: Ménes-völgy. X. — In forest detritus.
- Entomobrya quinquelineata** Börner, 1901 — Aggtelek: Szár-hegy. Jósvafő: Szelce-völgy. IV–V. — In forests and meadows, in wet habitats.
- Orchesella alticola** Uzel, 1890 — It was found by Loksa (1966) in *Cotino-Quercetum* forests at Tornanádaska: Alsó-hegy.
- Orchesella bifasciata** Nicolet, 1842 — This species is really frequent in most samples. Here only a few of the many locality data: Aggtelek: Dobos, Haragistya, Martony. Jósvafő: Lipinye. I–XII. — In coniferous and deciduous forests in detritus, moss and soil, sometime on the bark.
- Orchesella flavescens** (Bourlet, 1839) — This species is also frequent Aggtelek: Dobos, Mész-hegy, Szár-hegy. Égerszög: Foglálás. Bódvaszilás: Vecsembükk. Szögliget: Kecskés-forrás. Szuhafő: Pince-völgy. I–XI. — It was found in wet habitats in the forest litter.
- Orchesella multifasciata** Stscherbakow, 1898 — Aggtelek: near to border “triangle”. Szögliget: Ménes-völgy. I–IX. — In humus and detritus. — Loksa (1966) found it at Jósvafő and Tornanádaska in *Cotino-Quercetum* forest.
- Orchesella spectabilis** Tullberg, 1871 — Aggtelek: Ménes-völgy. Égerszög: Foglálás. Trizs: Rozsnyói úti bérc. Varbóc: Henz-völgy. VII–IX. — In opulent vegetation.
- Orchesella xerothermica** Stach, 1960 — Aggtelek: Haragistya. Tornanádaska. XI. — In the litter of oak trees and also in moss on the bark.
- Heteromurus major** (Moniez, 1889) Jósvafő: Nagyoldal. Tornanádaska: Alsó-hegy. Loksa (1966) found it in *Cotino-Quercetum* forests.
- Heteromurus nitidus** Templeton, 1835 — Stach found it as hemitroglobiont, with two varieties (var. *margaritarius* and var. *paucidentatus*). In the present study: Aggtelek: Kecskés-patak völgye. Varbóc: Henz-völgy. V–IX. — In the detritus at the foot of *Alnus* and *Salix* trees.
- Willowsia buski** (Lubbock, 1869) — Aggtelek: Ménes-völgy, Szelcepuszta, Haragistya. Égerszög: Foglálás. Jósvafő: Lipinye. Trizs: Rozsnyói úti bérc. IV–IX. — In *Quercus petraea-Carpinetum* litter but in the moss and lichen on bark, too.
- Lepidocyrtus aggtelekiensis** Stach, 1929 — An endemic, eutroglobiont species, collected by Dudich and Bokor in 1928.
- Lepidocyrtus curvicollis** Bourlet, 1839 — Stach found it as pseudotroglobiont. Loksa (1966) collected at Tornanádaska and Jósvafő in *Cotino-Quercetum* forests.
- Lepidocyrtus cyaneus** Tullberg, 1871 — Aggtelek: Dobóbel, Haragistya, Ménes-völgy. Égerszög: Foglálás. Jósvafő: Nagy-oldal. Szin: Szelcepuszta. Szögliget. Trizs: Rozsnyói úti bérc. V–IX. — In detritus and soil in *Quercus petraea-Carpinetum* forest. — Loksa (1966) also found it.
- Lepidocyrtus lanuginosus** (Gmelin, 1788) — Loksa (1966) caught it in the *Cotino-Quercetum* forests of Jósvafő and Tornanádaska.
- Lepidocyrtus lignorum** (Fabricius, 1775) — This is one of the most frequently species. I do not give any locality because it may be found on the whole area of the Aggtelek NP.

Lepidocyrtus nigrescens Szeptycki, 1967 — Aggtelek: Haragistya út. Szögliget: Ménes-völgy. Jósvafő: Szelcepuszta. IV–XI. — In moss on the bark of trees, also in decaying wood.

Lepidocyrtus paradoxus Uzel, 1891 — Perkapu: Telekes-völgy. III. — In *Aegopodium-Alnetum* litter.

Lepidocyrtus violaceus (Fourcroy, 1785) — Aggtelek: Ménes-völgy. Szög: Mocsolya-völgy. Varbóc: Henc-völgy. V–IX. — In *Aegopodio-Alnetum* litter and in moss too.

Pseudosinella aggtelekensis Stach, 1929 — Aggtelek: Baradla cave (leg. et det.: J. Stach)

Pseudosinella alba (Packard, 1873) — Aggtelek: Mogyorós-kút, Kecső-patak, Border “triangle”. I–IX. — In wet habitats in the *Salix*, *Alnus* litter, humus. — Loksa (1966) found in *Cotino-Quercetum* forests, too.

Pseudosinella cf. fallax Börner, 1903 — Égerszög: Simon-völgy. IX. — In *Carpinus* litter.

Pseudosinella horaki Rusek, 1985 — For this very frequently species I do not give any locality because it may be found in the whole area of the Aggtelek NP in deciduous forest litter.

Pseudosinella imparipunctata Gisin, 1953 — Loksa (1966) found it at Tornanádaska: Alsó-hegy, in *Cotino-Quercetum* forest.

Pseudosinella zygophorus (Schille, 1908) — Stach found this species (reported as *Lepidocyrtus zygophorus*) as pseudotroglobiont.

CYPHODERIDAE

Cyphoderus albinus Nicolet, 1842 — Jósvafő: Tohonya-völgy, Szelce-völgy. Szin: Háló-völgy. VIII–IX. — In meadows, in grassy soil and in forest litter, a myrmecophilous species. These few specimens have mucro with only one tooth, and it is shorter than usually is.

ONCOPODURIDAE

Oncopodura crassicornis Shoebottom, 1911 — Aggtelek: Dobóbél, Ménes-völgy, vasas-órom. Szögliget: Ménes-völgy. I–IX. — In *Quercus-petraea-Carpinetum* forest litter. Loksa (1966) also found it.

TOMOCERIDAE

Tomocerus (Pogonognathellus) flavescens (Tullberg, 1871) — Aggtelek: Dobos víznyelő, Haragistya út, Ménes-völgy, Szelcepuszta. Égerszög: Foglálás. Jósvafő: Lipinye. Bódvaszilas: Vecsembükk. Perkapu: Telekes-völgy. Szögliget: Ménes-völgy. Varbóc, Henc-völgy. I–IX. Mostly in wet habitats in forest detritus.

Tomocerus (P.) longicornis (Müller, 1776) — Aggtelek: Ménes-völgy. XI. — In *Quercus-petraea-Carpinetum* litter.

Tomocerus (Tomocerus) minor (Lubbock, 1862) — Aggtelek: Ménes-völgy, Szelcepuszta, Sároghort. Szögliget: Kecskés-forrás. VII–VIII. — In *Quercus-petraea-Carpinetum* litter. Stach found it as pseudotroglobiont.

Tomocerus (T.) cf. minutus Tullberg, 1876 — Aggtelek: Ménes-völgy, Kecső-patak, Szelcepuszta. Bódvaszilas: Vecsembükk. Varbóc: Henc-völgy. V–IX. — In wet habitats in forest detritus. Gisin (1961) suggested, that the *T. minutus* recorded from the eastern part of Central Europe should be described as an other species. The most of the specimens collected at Aggtelek have the same spine form on the dens as it is known by *T. minutus*.

Tomocerus (T.) vulgaris (Tullberg, 1871) — Égerszög: Simon-völgy. Trizs: Rozsnyói úti bérc. Varbóc: Henc-völgy. VIII–IX. — In forest litter. Stach found it as pseudotroglobiont species.

NEELIPLEONA

NEELIDAE

Megalothorax incertus Börner, 1903 — Szögliget. IX. — In moss.

Megalothorax minimus Willem, 1900 — Loksa (1966) found this species at Jósavfő: Nagyoldal. Tornanádaska: Alsó-hegy.

SYMPHYPLEONA

SMAYNTHURIDIDAE

Sphaeridia pumilis (Krausbauer, 1898) — Aggtelek: Szelcepuszta: Ménes-völgy. IX. — On a meadow.

KATIANNIDAE

Sminthurinus aureus (Lubbock, 1862) — Aggtelek: Szár-hegy. Szin: Háló-völgy. Tornanádaska. IX–XI. — In forest litter.

Sminthurinus elegans (Fitch, 1863) — Aggtelek. Szögliget. IV–VIII. — In an old coniferous forest on the soil and in moss but in deciduous litter too.

Gisinianus flammeolus (Gisin, 1957) — Aggtelek: Dobos víznyelő, Szelcepuszta, Hara-gistya. I — XI. — In coniferous and deciduous forest litter.

ARRHOPALITIDAE

Arrhopalites aggtelekiensis Stach, 1930 — Stach first described this hemitroglobiont species as a subspecies of *A. pygmaeus*.

Arrhopalites hungaricus Loksa, 1967 — This troglobiont species was found in the “Ózlyuk” and “Kifli” caves. (Loksa 1967)

Arrhopalites pygmaeus (Wankel, 1860) — Stach found only a few specimens of this species together with *A. aggtelekiensis*.

Arrhopalites terricola Gisin, 1958 — Aggtelek: Baradla-barlang, Szár-hegy. Égerszög: Simon-völgy. Jósavfő: Lipinye. III–IX. — In forest litter, and also in the cave.

DICYRTOMIDAE

Ptenothrix atra (Linné, 1758) — Aggtelek: Ménes-völgy. IX. — In *Aegopodium-Alnetum* litter.

SMINTHURIDAE

Lipothrix lubbocki (Tullberg, 1872) — Aggtelek: Szelcepuszta, Kecső-patak, Ménes-völgy. Bódvaszilas: Vecsem-bükk. Égerszög: foglalás. Szin: Szelcepuszta, Háló-völgy. Varbóc: Henz-völgy. VII–IX. — In the detritus and litter of coniferous and deciduous forests.

Allacma fusca (Linné, 1758) — Aggtelek: Ménes-völgy. Jósavfő: Szelcepuszta. Perkupa: Telkes-völgy. Szin: Szelcepuszta. Szögliget. III–VII. — In coniferous and deciduous litter.

Sminthurus marginatus Schött, 1893 — Aggtelek: Szelcepuszta. IX. — In coniferous forest.

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