

ARTHROPOD FAUNA OF TWO INFLOW CAVES IN THE BÜKK MTS.

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Introduction

In 1998 I have participated at the mapping and scientific investigation of the inflow caves of Mexikóvölgy and Nagykőmázsa in the Bükk Mts., NE Hungary. The caves were discovered in 1969, since then protected by law, and have not yet been explored from the speleological point of view. My part of the research was to study the arthropod fauna, to compile a list of the species, and to evaluate them with regards of their life forms in the cave.

Materials and methods

Collection in the caves was carried out together with my colleagues in the cave research group. In the inflow cave of Mexikóvölgy, we have collected four times at two different dates (14-15 March, and 11-12 April, 1998), whereas at Nagykőmázsa only once on 5 September 1998. The animals were collected by singling, preserved in 70 % ethanol, and deposited in the Hungarian Natural History Museum.

Species were identified and categorised according to Dudich (1932) (Table 1.).

Table 1. Life forms in the caves according to Dudich

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| <ol style="list-style-type: none">1. Eutroglobiont: They are completely adapted by their morphology and biology to the cave environment (total absent of light, relative stability of abiotic factors).2. Hemitroglobiont: They are likely to be found in caves, but conspecifics are equally abundant at the soil surface.3. Pseudotroglobiont: They stay in caves only for definite periods, such as for wintering, summer resting, etc., but always intentionally.4. Tychotroglobiont: They can be found in caves only by chance, or by the power of natural factors such as wind, water, animal vector, etc. They sooner or later die in the inappropriate environment. |
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1. Inflow cave of Mexikóvölgy

This cave is situated to east of the stream valley Szinva at the settlement Bükkszentlászló, ca. 10 km SW of Miskolc. It is periodically active inflow, directing the water of the stream Szinva to the wells of Miskolctapolca. Geologically the cave is built in Triassic Upper Anisus limestone. It has a complicated passage system up to 420 meters long but on an area of only 54 x 54 square meters. The entrance is a fissure of 60 x 50 cm in cross section followed by a 7 m deep shaft.

List of species

ARANEAE

1. *Meta menardi*: hemitroglobiont, three specimens were found near the surface.
2. *Tegenaria silvestris*: tychotroglobiont, sylvicol species, it can be found in caves only by chance.
3. *Porrhoma convexum*: hemitroglobiont, two females were collected.
4. *Trogulus tricarinatus*: tychotroglobiont, sylvicol element.
5. *Nesticus cellulanus*: hemitroglobiont, it prefers the entrance area with some light.

DIPLOPODA

6. *Polydesmus complanatus*: tychotroglobiont, common species on surface.

CHILOPODA

7. *Lithobius forficatus*: tychotroglobiont, common species on surface.

COLEOPTERA

8. *Bembidion inustum*: tychotroglobiont, it was likely transported by water into the inner parts of the cave.
9. *Quedius* sp.: hemitroglobiont, it was found several times on different places near the surface and at the endpoint of the cave. *Quedius mesomelius* was also found by Loksa (1962) in the István and Forrás Cave.
10. *Platynus ruficornis*: probably tychotroglobiont, it was found near the surface, in the root zone of plants.
11. *Drusilla canaliculata*: tychotroglobiont, its cave occurrence has not yet been published.

LEPIDOPTERA

12. *Scoliopteryx libatrix*: pseudotroglobiont, it prefers cave for hibernation which is shown by the observation in March.

ONISCOIDEA

13. *Cylisticus convexus*: tychotroglobiont, common species on the surface, it is mentioned from several caves.

2. Inflow cave of Nagykőmázsa

This cave is situated close to the other one, also to east of the stream Szinva, ca. 2 km from Miskolctapolca. It is an inactive inflow with a small drainage area. Its embedding stone is white and grey Upper Triassic Ladini limestone. The entrance opens at 275 m a. s. l. at the base of the E-W valley between the hills Nagykőmázsa and Galyatető, with a vertical shaft of 100 x 80 cm in cross section.

List of species

ARANEAE

1. *Porrhoma* sp. juv.: hemitroglobiont, juvenile specimens of the Linyphinae subfamily were found several times on different places in the cave.
2. *Porrhoma convexum*: hemitroglobiont, three adult specimens were found: 2 males and 1 female.
3. *Araniella* sp. juv.: tychotroglobiont, sylvicol species.

DIPLOPODA

4. *Glomeris hexasticha*: tychotroglobiont, common species on the surface, and mentioned from several caves. It was also found by Dudich (1932) in the Baradla Cave, Szalay (1940) in the Kecske-lyuk, and Gebhardt (1934) in the Mánfai-kőlyuk
5. *Megaphyllum projectum*: tychotroglobiont, it was also found by Szalay (1940) in the Kecske-lyuk.

LEPIDOPTERA

6. *Scoliopteryx libatrix*: pseudotroglobiont, it prefers cave for hibernation.

COLEOPTERA

7. *Pterostichus niger*: tychotroglobiont, only one specimen was found in the endpoint of the cave, it was probably transported by us with our equipment.
8. *Harpalus rufipes*: tychotroglobiont.

Conclusions

In both caves the majority of the soil dwelling arthropods belong to the tychotroglobiont (troglonexene) species of the entrance section. The reason for this is morphology of the caves and collecting methods. The typical sylvicol species easily enter in the vertical shaft of the inflow caves.

For nature conservation considerations there was no possibility to use pitfall traps in the cave, so the mesofaunal groups (Collembola, Acari) were excluded from the study.

Future directions in order to gain a complete faunal list may include the limited use of traps, and sampling of cave litter with Berlese funnel apparatus.

Acknowledgements

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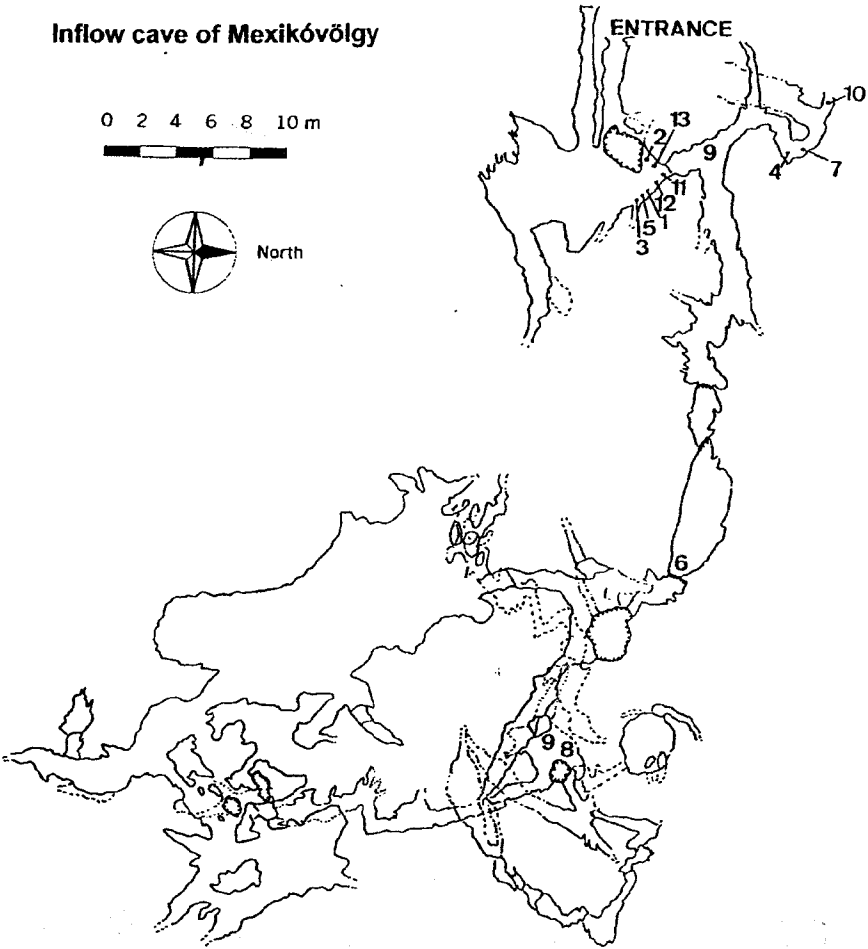
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Inflow cave of Mexikónölgý

0 2 4 6 8 10 m



North



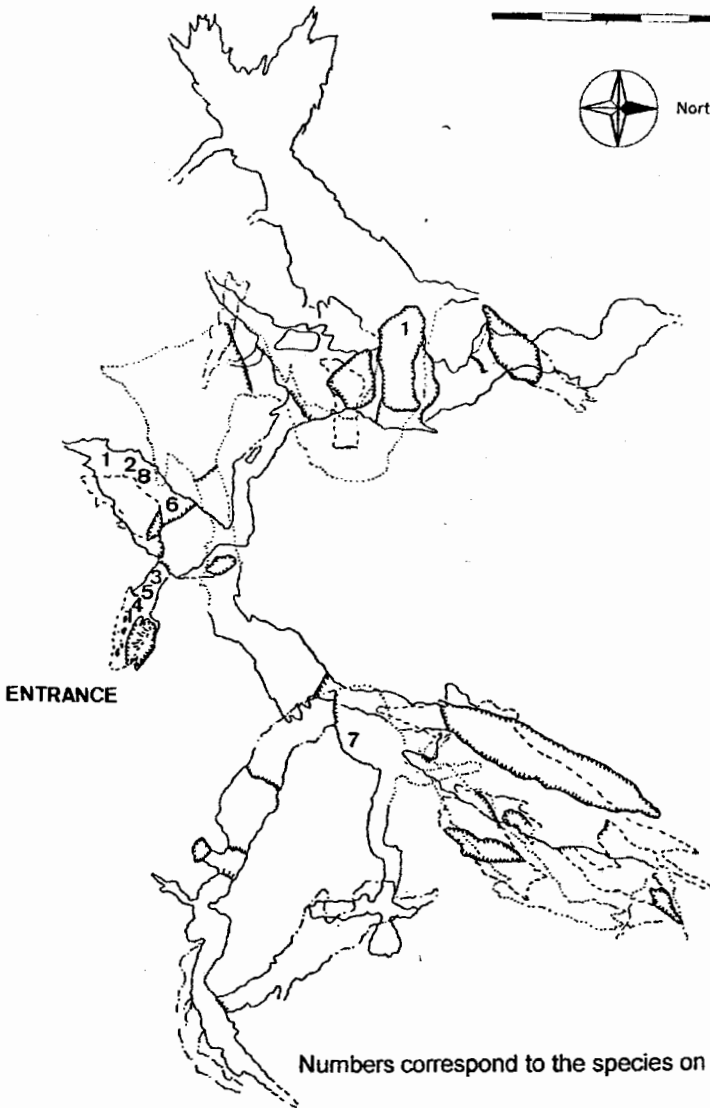
Numbers correspond to the species on the fauna list

Inflow cave of Nagykőmázsa

0 2 4 6 8 10



North



Numbers correspond to the species on the fauna list