

LIFE IN CAVES

Currently, about 3,000 different species of animals are documented from caves in Germany.

Many of these enter the caves accidentally. These are called cave visitors (eutrogloxenes).

Other species are habitually seeking out caves during certain times of the year - for example bats. These are subtroglaphiles.



"Cave-loving" animals (eutroglophiles) are building stable populations in subterranean habitats, but also above ground.

Of special interest are the so-called "true" cave animals (eutroglobionts), which are exclusively living below ground and which are adapted to this way of life, for example by reduction of the eyes or the loss of coloration.



Verband der deutschen Höhlen-
und Karstforscher e.V.
www.vdhk.de
Bärbel Vogel (Vorsitzende)
Graßlberggasse 24
D - 83486 Ramsau
vorsitz@vdhk.de

Referat für Biospeläologie
Dieter Weber
Kirchgasse 124
D - 67454 Haßloch

Biospeläologisches Kataster
von Hessen
Stefan Zaenker
Königswarter Str. 2a
D - 36039 Fulda
info@hoehlentier.de

www.hoehlentier.de

CAVE ANIMAL OF THE YEAR 2013



Numerous species of animals are living in caves, depending on the constant climate conditions there.

One of these animals is the
Cave Fungus Gnat
Speolepta leptogaster

Cave Animal of the Year 2013.

CAVE ANIMAL OF THE YEAR 2013

The Cave Fungus Gnat – Speolepta leptogaster

The Cave Fungus Gnat *Speolepta leptogaster* was first described in the year 1863 by the German naturalist Johannes Winnertz. At that time, only two specimens of this species were known, mainly due to its secret mode of life. The animals are living in natural caves, mines and rock cellars all year round.

Fungus gnats belong to the insect order Diptera - two-winged insects. Almost 250 species of fungus gnats are found in caves and artificial subterranean habitats of the Western Palearctic. Little is known of the life history of these species. Although fungus gnats are rather abundant in their preferred habitats like mountain streams, swampy bushland, shady forest tracks, cavities between tree roots, mossy rock formations and similar areas with a high humidity, they are rarely noticed by common people, since neither their size nor their coloration captures the eye of the passer-by.

Larvae of the Cave Fungus Gnat



Pupa of the Cave Fungus Gnat

The Cave Fungus Gnat *Speolepta leptogaster* completes all its stages of development within caves - egg, larva, pupa and imago. The larvae, measuring 5 to 6 mm, are usually sitting on the walls of deep cave regions and are navigating within a net covered with sticky droplets. Similar net-building fungus gnats are only known from caves in Asia, Australia and New Zealand. Therefore, in Europe the species can be identified even in the larval stage with security. The pupa is usually hanging outside of the net. The imagoes are rarely encountered outside of caves. The copulation of the grown-up gnats is taking place in the darkness of the cave.

The Cave Fungus Gnat *Speolepta leptogaster* inhabits subterranean cavities of the whole Palearctic. In Central Europe, the gnat is predominantly found in mountainous areas, especially in the large karst areas of the Frankonian and Suebian Alp. But also old mining areas with abandoned shafts and tunnels seem to offer an ideal habitat for all its developmental stages.

Currently, a research project involving the German Speleological Federation is conducted, to analyze the Cave Fungus Gnat by DNA-barcoding. In the long-term, all known cave species in Germany will be included in the project.

THE CAVE AS HABITAT

For all living beings, caves are a very special place. The most obvious trait is the lack of sunlight.

What seems to be a disadvantage on first sight, also has its merits:

- There is no danger of burning or desiccation, and no need for camouflage.
- Cave animals have neither to adapt to daily or seasonal cycles, unless their food source shows such cycles.
- Temperatures are uniform, with no danger of freezing.

In Central Europe, the main challenge is the low food supply. Cave animals cope by developing a small body size, slow movements and a low metabolism.

Cave animals react very sensibly to changes in the conditions. Therefore, a strong protection of subterranean habitats is essential.

