

LIFE IN CAVES

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

Those which enter a cave accidentally are called cave visitors (eutrogloxenes).

Other species are regularly cave-dwelling 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 pigmentation.

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CAVE ANIMAL OF THE YEAR 2017



Many animals are depending on caves
as sheltered and frost-free refuges.

One of these animals is the
**Four-spotted
Cave Ichneumon Wasp**

Diphyus quadripunctorius -
Cave Animal of the Year 2017

CAVE ANIMAL OF THE YEAR 2017

Four-spotted Cave Ichneumon Wasp *Diphyus quadripunctorius*

The Four-spotted Cave Ichneumon Wasp, which belongs to the order of hymenopters, was first mentioned in 1776 by the Danish zoologist Otto Friedrich Müller. It doesn't seem to have a common name in English, Four-spotted Cave Ichneumon Wasp is a translation of the German common name, "Vierfleck-Höhlenschlupfwespe".

In natural caves, mining tunnels and rock cellars, these animals are overwintering in large numbers. For this reason, the Four-spotted Cave Ichneumon Wasp was elected as Cave Animal of The Year 2017.

During spring and summer, the Four-spotted Cave Ichneumon Wasp is found in meadows and at the margins of forests. The females are not very choosy when it comes to deposit their eggs. A multitude of butterfly species from several families are known as hosts, with noctuid or owlet moths being the most common. A single egg is injected into the caterpillar. These are pupating before the parasitic larva of the wasp starts feeding. The adult Ichneumon wasp is finally emerging from the pupa. The males of the Four-spotted Cave Ichneumon Wasp are found only in summer. They die after the copulation, only the fertilized females are overwintering.



Female of the Four-spotted Cave Ichneumon Wasp – identifying characteristics



Diphyus quadripunctorius – Overwintering community

For overwintering, they are seeking out frost free localities, like caves, mine tunnels and rock cellars, but also cracks in the rock and cavities in old trees. Here they can be found as early as June, up to August often together with the males. In subterranean cavities, the females are often building large congregations of up to 100 animals, which are sitting tightly packed in cracks and niches. It is by far the most common species of Ichneumon wasps. The Four-spotted Cave Ichneumon Wasp is classified as subtroglophil, it penetrates caves down to the region of permanent darkness.

The female of this black and yellow Ichneumon Wasp is distinguished by a white ring on the long feelers, and yellow tights of the hind legs. On the black abdomen, four pale dots are found, from which the common name is derived. The males are lacking the white ring on the feelers, the tights of the hind legs are orange. The first segments of the abdomen are yellow in the males. The body length of this Ichneumon wasp measures 13 to 15 mm.

The distribution range of the Four-spotted Cave Ichneumon Wasp extends from Northern Africa and Near East over the whole of Europa to the British Isles and Scandinavia. To the East, the range stretches to the European part of Russia. In Germany, the species is known from all cave areas, where they overwinter in large numbers.

The Verband der deutschen Höhlen- und Karstforscher e.V. (German Speleological Society) has chosen the Cave Animal of the Year with the intention to point out the immense deficiencies in the research of subterranean ecosystems and their associated faunas.

THE CAVE AS HABITAT

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

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

- There is no danger of sunburn 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 constant, with no danger of freezing.

In Central Europe, the main challenge for cave dwellers is the low food supply. Cave animals adapted to these conditions by developing a small body size, slow movements and a low metabolism.

Cave animals are very sensible to environmental changes. Therefore, a strict protection of subterranean habitats is essential.

