Spider coenoses in strict forest reserves in Hesse (Germany)

T. Blick

The spider fauna of eight strict forest reserves in Hesse (situated centrally in Germany) has been investigated intensively since 1990. At present there are 31 strict forest reserves in Hesse with an average size of 40 ha. Strict forest reserves are areas where all forestry operations were stopped (since about 1988) allowing undisturbed development. The aim is "Primeval forests of tomorrow".

The spiders of four reserves, all at a height of 300 to 500 m a.s.l., were identified so far by Andreas Malten and the present author. Most reserves have adjacent normally treated forest patches for comparison to show the influence of forestry on the succession and the fauna. The common beech (*Fagus sylvatica*) dominates the majority of the strict forest reserves and the four analysed sites.

A total of 278 spider species have been found in the reserves until now, 40% of the spider species known from Hesse. 162 to 202 spider species were recorded in each reserve (30,000 to 49,000 spiders, incl. juveniles) using a broad set of methods over two whole years. Most important for the spiders are: pitfall traps and different types of stem eclectors. Spiders are one of the seven standard groups which are analysed completely to species level in each reserve – others are Lumbricidae, Heteroptera, Coleoptera, Hymenoptera-Aculeata, Macrolepidoptera and Aves. Additional groups are monitored if possible ("all taxa biodiversity inventory approach").

The spider fauna has been analysed in different aspects: (A) frequency of occurrence in Germany, (B) distribution type (parts of Europe to Holarctic), (C) habitat types, and others like preference of strata, height (a.s.l.), phenology, size groups and the status of endangerment in Germany. (A) several rare species were recorded (including new records for Hesse), and interestingly (B) a set of species with very restricted areas in Europe was seen to occur. The data show that (C) the forest spider fauna in Germany is deficiently known and that the diversity of spiders (as well as that of the other groups) even in normally treated forests is unexpectedly high.

Research is conducted in co-operation with and financially supported by Landesbetrieb Hessen-Forst.

T. Blick, Forschungsinstitut Senckenberg, Frankfurt am Main, Germany, theo.blick@senckenberg.de

24th European Congress of Arachnology

25. - 29. August 2008 in Bern, Switzerland

http://www.esa2008.unibe.ch