

Ivo Evstatiev Ivanchev, Sofia, Bulgarien

Überwinterung von *Testudo hermanni* und *Testudo graeca* in der Natur und unter sehr naturnahen Bedingungen in Bulgarien

Hibernation experience of Testudo hermanni and Testudo graeca in natural and very close to natural conditions in Bulgaria

Abstract

The observations show that in the area studied, both species of land tortoises overwinter in 15-20 cm deep burrows. Hibernation period has a mean duration of 147 days for *Testudo hermanni* and 139 days for *Testudo graeca*, during which *Testudo hermanni* loose 1.0-16.0% and *Testudo graeca* 1.0-10.0 % of their body mass. Mean burrow temperatures are in the range 4.3-6.1 °C, while the average environmental ones are in the range 0.4-5.5 °C. Considerable tolerance to subzero temperatures up to 13 days intervals with constant burrow temperatures below zero was observed. Slight activity during warm winter days, especially by the end of the hibernation period was observed.

The combination of observations in the wild and in the enclosure, which is a part of the natural habitat, provides great opportunities of studying *Testudo hermanni* and *Testudo graeca* biology and ecology in Bulgaria. The results might contribute to captive breeding and especially to all kinds of programs of tortoise research, preservation and reintroduction. Further studies have to be supplied with more technical equipment in order to obtain greater amount of relevant data.

A lot still has to be done to further investigate *Testudo hermanni* and *Testudo graeca* biology and ecology in Bulgaria. The conditions in Eastern Balkan range, where stable populations of both species still exist, are favourable for various studies. Main long-term guarantees for the future of *Testudo hermanni* and *Testudo graeca* in the region are their highest protection by the Bulgarian legislation, the existence of 42.3 ha protected area Iracly (Pic.12), and the prospective for including considerably larger part of the whole region in the directive of the EU-Natura 2000 for establishing protected areas.

Key words

Testudines: Testudinidae, *Testudo hermanni*, *Testudo graeca*, Bulgaria, hibernation

Authors

Ivo Evstatiev Ivanchev

E-Mail: geain2003@yahoo.com