

*An Exceptional Activity for *Darevskia derjugini* (Nikolsky, 1898) From Turkey*

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Abstract. Observations of reptiles out of their active periods in the field are very surprising for the researchers. The current short note presents data on the exceptional activity of *Darevskia derjugini* for the first time in Turkey. Changing climates and global warming may affect the hibernation period of most lizards in the northern hemisphere.

Key words: Hibernation, *Darevskia derjugini*, lizard, Northern Hemisphere.

Introduction

The climatic changes principally affect summer and winter activity of reptiles (ZUG *et al.*, 2001). Hibernation, as a behavioral response to seasonal change, is most likely a direct response to cold temperatures and changes in food availability (GREGORY, 1982; ADOLPH & PORTER, 1993). After hibernation, ectotherms need to be higher air and body temperature for fecundity, mobility and escape from the predator in their habitats (ADOLPH & PORTER, 1993). In addition, the effect of the photoperiod on seasonal acclimation seems to be significant (RISMILLER & HELDMAIER, 1988).

As known, all members of the *Lacertidae* family in the Northern Hemisphere are hibernating species the winter season. Most of them are active from early April to the middle of October in moderate lowland populations. However, the active periods may be changed from early May to late

September in colder highland populations (above 2000 m a.s.l.).

The Derjugin's lizard, *Darevskia derjugini* (Nikolsky, 1898) is distributed from sea level to 1700 m (BISCHOFF, 1982; BARAN & ATATÜR, 1998). This species is active between April and September (ORLOVA & BISCHOFF, 1984). It typically inhabits humid areas in forested habitats, and some individuals are rarely recorded from rocks or walls (TUNIYEV *et al.*, 2009).

Winter activity was observed in some other lizard species as reported for *Podarcis muralis* (BURESH & TSONKOV, 1933; BESHKOV, 1977; BESHKOV & NANEV, 2002; WESTERSTRÖM, 2005; TZANKOV *et al.*, 2014), *Podarcis erhardi* (BURESH & TSONKOV, 1933; BESHKOV, 1977), *Lacerta viridis* (VONGREJ *et al.*, 2008), *Sceloporus jarrovi* (TINKLE & HADLEY, 1973), *Zootoca vivipara* (GRENOT *et al.*, 2000) and *Mediodactylus kotschyji* (MOLLOV *et al.*, 2015).

In the present short note, we present for the first time data about the extraordinary activity of *Darevskia derjugini* in Turkey.

Materials and Methods

The specimen was found during an excursion, during the day, between 10:30 and 11:30 AM. When the observation was made, the air temperature in the locality was 8°C. The specimen was caught by hand. The sex of the individual was diagnosed based on primer sexual character (presence

of hemipenis). After the specimen was photographed, it was released back to its natural habitat.

Results and Discussion

A male specimen of *D. derjugini* was observed in the 2 March 2013 from Turkey (Arsin, Trabzon), shown in Fig. 1. The observation site was located at the 210 m a.s.l. (40°55'18'' N; 39°57'93'' E). The specimen was found under dry hazelnut leaves and cut nut wood in harvest season.



Fig. 1. A male specimen *Darevskia derjugini* (Nikolsky, 1898), observed from Arsin, Trabzon (Turkey) during the winter period (2 March 2013).

Although active periods during the winter were reported for some lizards (SHTERBACK & GOLUBEV, 1986; OKE, 1982, CAMILLONI & BARROS, 1997; VONGREJ *et al.*, 2008; MOLLOV *et al.*, 2015), this phenomenon was not previously reported for *D. derjugini*. Our data may contribute to the knowledge of the annual activity of *D. derjugini*. In our opinion, the unusual activity may be a result of global warming of the world in the Northern Hemisphere.

Lower air temperatures were very effective to hibernate the lizards because they cannot perform their vital activities such as food availability, mobility, fecundity and escape from predators in lower

temperatures (ADOLPH & PORTER, 1993). In parallel with the air temperature in the present study for *D. derjugini* was very low to be carried out its vital activities. The early awakening from hibernation of some lizards may be caused due to constant changing of the air temperatures. The lizards that can cope with lower temperatures may be monitored in different areas of the Northern Hemisphere in the future.

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