ZooNotes 84: 1-3 (2015)
www.zoonotes.bio.uni-plovdiv.bg
ISSN 1313-9916

Is the Kotschy's Gecko *Mediodactylus kotschyi* (Steindachner, 1870) (Reptilia: Gekkonidae) active during the winter?

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Abstract. The current communication reports few cases of unusual winter activity of the Kotschy's Gecko – *Mediodactylus kotschyi rumelicus* from the city of Plovdiv and *Mediodactylus kotschyi daniliewskii* from Hrishteni Village (Stara Zagora District) in Bulgaria.

Key words: *Mediodactylus kotschyi*, winter activity, Bulgaria.

The Kotschy's Gecko - *Mediodactylus kotschyi* (Steindachner, 1870) is one of the representatives from the Gekkonidae family, occurring in Bulgaria, which is considered to be a synanthrope (Beshkov & Nanev 2002). The species inhabits predominantly human settlements, as only few "wild" populations from Bulgaria are known (Beshkov & Nanev 2002, Stojanov et al. 2011).

The seasonal activity of this species, according to Stojanov et al. (2011) is from mid-March to the beginning of November, without giving specific dates. According to the unpublished MSs Thesis of Dobrev (1986) the earlies observations of active geckos from Bulgaria are from Elhovo Town on March 31st 1983 and the latest – Tsarevo Town on October 12th 1984. According to Undzhian (2000) the seasonal activity of the species is October (sometimes November) to March-April.

Data about unusual winter activity in lizards in Bulgaria is quite scares in the herpetological literature. So far winter activity in the country has registered only for two species. Activity during the coldest months - December, January and February was recorded in *Podarcis muralis* by Buresh & Tsonkov (1933), Beshkov (1977), Undzhian (2000), Beshkov & Nanev (2002), Westerström (2005) and Tsankov et al. (2014). Winter activity in *Podarcis erhardii* was recorded by Buresh & Tsonkov (1933), Beshkov (1977) and Pulev & Sakelarieva (2011). Both lizard species are petrophylic (prefer rocky habitats). Their winter activity can be explained by the warmer microclimate in between the cracks of the rocks in sunny and warm weather.

We observed an active *M. k. rumelicus* from "Halm na Osvoboditelite" Hill (Bunarzdik Tepe) in Plovdiv (UTM LG16), Bulgaria. The observation was made on January 18th 2007 by I. Mollov and by far is the earliest observation of an active gecko in the country. The hill is located at the center of the city and is declared as "nature monument" by the Bulgarian legislation (Mollov 2005). The observed gecko was recorded in one of the support walls of the

Accepted: 29 October 2015
Published: 7 December 2015
Университетско издателство "Паисий Хилендарски"
Plovdiv University Press "Paisii Hilendarski"

alleys (which is a common microhabitat for this species on the hills of Plovdiv), on the west side on an unusually hot sunny January day.

Several active sub adult and adult specimens of *M. k. daniliewski* were observed on January 23rd 2015 at Hrishteni Village (Stara Zagora District – UTM LH90, 190 m a.s.l.), by D. Georgiev in an yard of a house, under some stone plates, also on unusually hot for the season day.

Also unusual late gecko activity (*M. k. rumelicus*) due to the unusual high temperatures was observed on November 9th 2015 and November 18th, 2015 in the building of the University of Food Technologies in Plovdiv (UTM LG16) by S. Basheva (Fig. 1).

Fig. 1. The observed specimens of M. kotschyi rumelicusfrom the building of the University of Food Technologies in Plovdiv (Bulgaria). A – an adult specimen, observed on 09.11.2015; B - an adult specimen, observed on 18.11.2015. Photos: S. Basheva.

So, it appears that if the temperatures are high enough and they can maintain in certain levels especially in micro habitats, such as stone cracks, in between rocks, under tiles in buildings, etc., the geckos can be active as long as temperatures allow it. According to Shterback & Golubev (1986) the minimum temperature at which active gecko's are observed is 12 °C. Also, since this species is mainly a synanthrope (Mollov 2014) and inhabits mostly urban areas and human settlements, we should consider the "urban heat island theory" (Oke 1972, Camilloni & Barros 1997), since the temperatures in the center of the cities and urban areas is 1-2 degrees Celsius higher than the city surroundings. This theory would partially explain the observed by us unusual gecko activity.

Acknowledgements. The authors would like to express their sincerest gratitude to Alexander Pulev (South-West University "Neofit Rilski" - Blagoevgrad, Bulgaria) for his valuable insights and additions to the manuscript.

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