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Sceloporus clarkii—Nocturnal Foraging

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was found which was cleared in a drop of lactophenol, coverslipped on a microscope slide, studied under a compound microscope, and identified as *Strongyluris similis* from the large intestines of LACM 95628 (1 female) and LACM 95637 (3 females). Voucher helminths were deposited in the United States National Parasite Collection, Beltsville, Maryland, USA as *Strongyluris similis* (USNPC 105895). *Strongyluris similis* is a common parasite of sceloporine lizards (Goldberg et al. 1995. J. Helminthol. Soc. Washington 62:188–196; Goldberg et al. 1996. Am. Midl. Nat. 135:299–309; Goldberg et al. 2003. Southwest. Nat. 48:208–217). *Sceloporus clarkii* represents a new host record for *Strongyluris similis*; Sinaloa, Mexico is a new locality record.

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***SCELOPORUS CLARKII* (Clark's Spiny Lizard). NOCTURNAL FORAGING ACTIVITY.** On 1 June 2007, an adult male *Sceloporus clarkii* was observed to be active at night during a full moon in tropical dry forest habitat near Alamos, Sonora, Mexico (27.0167°N, 108.9333°W; elev. 396 m). We found *S. clarkii* foraging for insects with poor success at 2230 h; only one attempt to feed on moths was successful. This behavior was observed at a distance of 4 m from the lizard for a period of two hours. Following our observations, the lizard slowly took shelter within a rock crevice located 1.5 m from the foraging locality. Unfortunately, we could not take its body temperature (T_b), but temperatures recorded at the nearest meteorological station were 35.5°C at 2230 h and 33°C at 0030 h (T_{ave} = 31.2°C, T_{max} = 43°C, T_{min} = 19.8°C).

Diurnal reptiles are characterized by maintaining a high T_b to perform daily activities (Avery 1982. *In* C. Gans and F. H. Pough [eds], Biology of the Reptilia, Vol. 12, Physiology C, pp. 93–166. New York). Nocturnal activity in diurnal lizard species has only been reported in laboratory conditions (Dial 1978. Science 155:1551–1553). However, the finding of diurnal species on roads at night has been documented previously (Trombulak and Frissell 1999. Conserv. Biol. 14:18–30). Many authorities suggest that diurnal reptiles are attracted to roads at night to elevate their body temperatures during cooler periods, thus turning the roads into "heat islands" (Dodd et al. 1989. J. Herpetol. 23:197–200.). Nevertheless, more data are necessary to qualify these observations as true activity, because species are not thermally passive during inactivity and select stable thermal microenvironments (Ruben 1976. Herpetologica 32:323–325) and a high nocturnal body temperature may promote digestion (Harlow et al. 1976. J. Comp. Physiol. 111:1–6).

More often, suboptimal ambient temperatures at night preclude the activity of many species of reptiles. It is at this time when T_b falls near or below the level of the minimum voluntary temperature, which is the lower limit for activity. It is well-known that many reptiles take shelter before the natural environment becomes thermally unfavorable. However, in the case of *S. clarkii,* high diurnal temperatures (up to 43°C) resulting in elevated temperatures of the air, tree trunks and rocks, was enough to maintain T_b in the activity range until midnight.

It can be difficult to establish the limits between activity and inactivity, as some species are known to opportunistically engage prey under suboptimal environmental conditions. Thus, the environment may maintain T_b adequate for low levels of activity. According to Huey (1982. *In* C. Gans and F. H. Pough [eds], *op. cit.*, pp. 25–91) some reptile species voluntarily spend the night outside of their burrows to prolong potential foraging time and actively select relatively low body temperatures (i.e., voluntary hypothermia). Furthermore, voluntary nocturnal hypothermia produces a lower T_b that reduces metabolic loss throughout the night. This may be an adaptive response for individuals that fail to obtain food during the day, even if voluntary hypothermia becomes unfavorable and makes the lizard more vulnerable to nocturnal predators. In the case of *S. clarkii*, this hypothesis may explain the fact that we found the lizard outside its burrow. We also suggest that the full moon light helps to prolong foraging time at night, as long as the degree of voluntary hypothermia does not fall below the level of the minimum voluntary temperature.

The physiological and ecological advantages of voluntary hypothermia may be important for species affected by global warming, as the behavior could serve as a mechanistic response to minimize the risk of overheating stress during diurnal foraging. For example, the lizard *Sceloporus serrifer* in the Yucatan Peninsula has been observed to have fewer opportunities for foraging during the day because the species limits its period of activity due to the extremely high diurnal temperatures recorded throughout the year (Sinervo et al. 2010. Science 328:894–899). Additional nocturnal surveys are needed in order to document nighttime active foraging behavior or voluntary hypothermia, particularly in populations and species where the probabilities of extinction are high due to climate change (Sinervo et al. 2010, *op. cit.*). This would help to determine the frequency of this phenomenon and whether it is more common in species more sensitive to global changes in climatic conditions.

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***SCELOPORUS MAGISTER* (Desert Spiny Lizard). ENDOPARASITES.** *Sceloporus magister* occurs in the Sonoran Desert of Arizona, southern California, Sonora, northern Baja California, and the Colorado Plateau in southeastern Utah, adjacent Arizona, and Colorado and northwestern New Mexico (Jones and Schwalbe 2009. *In* Jones and Lovich [eds.], Lizards of the American Southwest: A Photographic Field Guide, pp. 226–229. Rio Nuevo Publishers, Tucson, Arizona). The previous reports of helminths from *S. magister* (*sensu stricto*) are listed in Goldberg et al. (1994. J. Helminthol. Soc. Washington 61:73–83). The purpose of this note is to add to the helminth list of *S. magister*.

Two female *S. magister* (mean SVL = 96.5 mm ± 5.0 SD, range, 93–100 mm) collected June 1966 at Guaymas (27.316667°N, 109.916667°W) Sonora, Mexico, and deposited in the herpetology collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California, USA as LACM 25098, 25099 were examined. The digestive tract was removed through a mid-ventral incision and the esophagus, stomach, and small and large intestines were examined for helminths under a dissecting microscope. Individuals of one species of Nematoda were found in the large intestines; these were cleared in a drop of