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Notes on thermal ecology of *Podarcis tiliguerta* (Gmelin, 1789) on Lavezzu island

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Riassunto. Note sull'ecologia termica di *Podarcis tiliguerta* (Gmelin, 1789) sull'isola di Lavezzu. I dati presentati in questa nota descrittiva sull'ecologia termica di *Podarcis tiliguerta*, lucertola endemica di Corsica e Sardegna, si riferiscono alla popolazione di Lavezzi, a SE della Corsica. Le osservazioni, svolte nel periodo di inizio giugno, hanno mostrato che nei maschi le temperature corporee sono significativamente maggiori rispetto alle femmine, con medie di 31,3 °C e 30,0 °C rispettivamente. In entrambi i sessi la temperatura corporea appare correlata con quella dell'aria e del substrato e sembra essere maggiore per gli individui in movimento.

Keywords. Corsica, Lizard, *Podarcis tiliguerta*, thermal ecology.

Podarcis tiliguerta (Gmelin, 1789) is a medium-small sized lizard (in the studied population, males: n=113, mean SVL±SD=57.59±3.75 mm; females: n=37, mean SVL±SD=52.50±3.67 mm) endemic to Corsica, Sardinia and most of the relative satellite islands (Bruschi et al., 2010). Results here presented are part of a broader research (in collaboration with Parc International des Bouches de Bonifacio) dealing with *P. tiliguerta* ecology on minor islands. In particular, here we present data on *P. tiliguerta* thermal ecology on Lavezzu (41° 20' 20"N, 09°15'30"; 0.729 km²; 40 m a.s.l.), an island in SE Corsica where *Euleptes europaea* and *Hierophis viridiflavus* are also present. Preliminary data on the studied population were given by Lo Cascio et al. (2010) but thermal ecology is one of the several aspects of *P. tiliguerta* ecology that are still little studied and there exist very few papers dealing with it (Van Damme et al., 1990; Lo Cascio et al., 2010). With our data we intend to give a contribution to the knowledge of this topic. We caught 150 active lizards (113 males, 37 females) by noosing. Data were gathered from 2010 to 2012 (38 lizards in 2010, 70 in 2011, 42 in 2012), in early June for the three years, under similar meteorological conditions (sunny days), during the whole day (from 8 a.m to 8 p.m.), with air temperatures ranging from 20.6° C to 31° C. Each year we sampled comparable male-female ratios (G test, G=0.154, P=0.926), with females ranging from 21 to 26% of the

sampled individuals. For each lizard we measured (Van Damme et al., 1990; Castilla et al., 1999): body temperature (Tb), soon after capture, using a cloacal thermometer; snout-vent length (SVL), using electronic callipers; air temperature (Ta, shaded bulb, 20cm above the observed lizard) and substrate temperature (Ts), in the place of first sight.

Contrary to what found by Van Damme et al. (1990) in a population from N Corsica, our results indicate that Tb significantly differed among sexes (T test, $t=-2.348$, $P=0.020$), with males showing mean $Tb \pm SD = 31.3 \pm 2.7^\circ\text{C}$ (Min=24.2°C, Max=37.0°C), and females mean $Tb \pm SD = 30.0 \pm 3.2$ (Min=21.2°C, Max=34.2°C). In both males and females Tb positively correlated with Ta (Pearson correlation, males: $r=0.548$, $P<0.001$; females: $r=0.527$, $P=0.001$) and Ts (males: $r=0.440$, $P<0.001$; females: $r=0.386$, $P=0.022$), as it happens in other lizards species. No correlation was found between Tb and SVL (males: $r=-0.114$, $P=0.305$; females: $r=-0.026$; $P=0.897$). We also recorded that the lizards which were moving, when first sighted, showed higher Tb than the ones that were basking: such difference was significant in males (T test, $t=-2.735$, $P=0.007$; moving: $n=35$, mean $Tb \pm SD = 32.6 \pm 2.5^\circ\text{C}$; basking: $n=78$, mean $Tb \pm SD = 30.6 \pm 2.8^\circ\text{C}$), but not in females, probably due to small sample size ($t=1.014$, $P=0.320$; moving: $n=11$, mean $Tb \pm SD = 30.2 \pm 2.3^\circ\text{C}$; basking: $n=16$, mean $Tb \pm SD = 28.8 \pm 3.3^\circ\text{C}$). This could mean that individuals we observed while moving had, on average, already thermoregulated. Probably, lizards do not risk to expose themselves to predation, playing other activities, until they have not reached enough high Tb, and it is possible that basking, as observed, mostly takes place next to refuges (mainly rock crevices) where they can quickly hide. However, our data are simply descriptive and further, specific studies are needed to deepen such aspect. According to Van Damme et al. (1990), we observed that *P. tiliguerta* shows a bimodal diurnal activity pattern, with a peak during late afternoon (pers. obs.).

REFERENCES

- Bruschi, S., Corti, C., Capula, M. (2010): *Podarcis tiliguerta* (Gmelin, 1789). In: Fauna d'Italia vol. XLV Reptilia, p. 417-427. Corti, C., Capula, M., Luiselli, L., Razzetti, E., Sindaco, R., Eds, Calderini-Edizioni Calderini de Il Sole 24 ORE S.p.A., Bologna.
- Castilla, A.M., Van Damme, R., Bauwens, D. (1999): Field body temperatures, mechanisms of thermoregulation and evolution of thermal characteristics in lacertid lizards. *Nat. Croat.* **8**: 253-274.
- Lo Cascio, P., Corti, C., Delaugerre, M., Grita, F. (2010): A preliminary ecological survey on *Podarcis tiliguerta* from Lavezzi Island, southern Corsica (France). In: Atti VIII Congresso Nazionale *Societas Herpetologica Italica* (Chieti, 22-26 settembre 2010), p. 233-235. Di Tizio, L., Di Cerbo, A.R., Di Francesco, N., Cameli, A., Eds., Ianieri Edizioni, Pescara.
- Van Damme, R., Bauwens, D., Castilla, A.M., Verheyen, R.F. (1990): Comparative ecology of the sympatric lizards *Podarcis tiliguerta* and *Podarcis sicula*. *Acta Oecol.* **11**: 503-512.