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Head-body temperature difference in *Podarcis muralis*: experimental evidence

Sannolo, Marco[1]; Mangiacotti, Marco[1]; Sacchi, Roberto[2]; Scali, Stefano[1]

[1]Museo Civico di Storia Naturale di Milano, Milano, Italy
[2]Dipartimento di Scienze della Terra e dell'Ambiente, Università di Pavia, Pavia, Italy

Evidences of head-body temperature differences are known for many species of lizards and snakes, but not for Italians lizards. In this study, the authors experimentally heated several specimens of the lacertid lizard *Podarcis muralis*, in order to investigate their ability to generate and maintain local temperature differences between the head and the body. The authors put lizards into polystyrene boxes and heated the cages with incandescent lamp. Body temperatures were measured every twenty minutes for two hours with two different tools: an infrared thermometer and an infrared camera. The authors observed a statistically significant temperature gradient from the tip of the nose, the cooler part of the body, to the trunk, the hottest area of the body; head temperature is intermediate between them. *Podarcis muralis* shows a polymorphic dorsal colouration and is sexually dimorphic, but neither sex nor dorsal pattern are associated to temperature differences between specimens. Stationary body temperatures were reached within forty minutes, which means that this species potentially can thermoregulate very fast in optimal temperature condition. This study shows for the first time that the lacertid lizard *Podarcis muralis* can generates and maintains temperature difference between the head and the body. Ecological hypotheses and implications for head-body temperature difference are discussed.

stefano.scali@comune.milano.it