

VARIATION IN ADULT BODY LENGTH AND SEXUAL SIZE DIMORPHISM IN THE EUROPEAN COMMON LIZARD, *ZOOTOCA VIVIPARA*: TESTING THE EFFECTS OF LINEAGE AND CLIMATE
Roitberg E.S.¹, Orlova V.F.², Kuranova V.N.³, Bulakhova N.A.⁴, Eplanova G.V.⁵, Zinenko O.I.⁶, Arribas O.⁷, Hofmann S.⁸, Ljubisavljević K.⁹, Shamgunova R.R.¹⁰, Fokt M.¹¹, Kratochvíl L.¹¹, Starikov V.P.¹⁰, Strijbosch H.¹², Clasen A.¹, Yakovlev V.A.¹³, Tarasov I.G.¹⁴, Leontyeva O.A.¹⁵, Böhme W.¹

1 – Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany

2 – Zoological Research Museum, Moscow State University, Moscow, Russia

3 – Tomsk State University, Tomsk, Russia

4 – Institute of Biological Problems of the North, Magadan, Russia

5 – Institute of Ecology of the Volga River Basin, Togliatti, Russia

6 – Museum of Nature, Kharkiv National Karazin University, Kharkiv, Ukraine

7 – Avda Francisco Cambó 23, Barcelona, Spain

8 – Umweltforschungszentrum (UFZ), Leipzig, Germany

9 – Institute for Biological Research, University of Belgrade, Belgrade, Serbia

10 – Surgut State University, Surgut, Russia

11 – Charles University, Praha, Czech Republic

12 – Radboud University, Nijmegen, Netherlands

13 – Altaiskiy State Reserve, Altai Republic, Russia

14 – Department of Natural Resources and Nature Protection of the Tomsk Region, Tomsk, Russia

15 – Moscow State University, Moscow, Russia

eroit@web.de

Intraspecific variation is important because it links macroevolutionary patterns to microevolutionary processes that lead to the phenotypic diversity we wish to understand. Wide-ranging species present promising models for simultaneous evaluation of various factors shaping phenotypic diversity, because the variation of target traits can be documented for numerous populations exhibiting diverse combinations of putative predictors. However, comprehensive range-wide studies of geographic variation in widespread species are rare, even for fundamentally important traits such as body size (Roitberg et al., 2013, 2015 and references therein).

A particularly promising candidate for such study is the European common lizard, *Zootoca vivipara*, the most widespread terrestrial reptile in the world. It occupies almost the entire Northern Eurasia and includes several viviparous and oviparous lineages. Using original and published data on the snout-vent length (SVL, a conventional measure of body size in lizards) for over ten thousand individuals from 72 geographically distinct study samples covering a major part of the species range from northern Spain to the Sakhalin island, we analysed how sex-specific adult body size and sexual size dimorphism (SSD) is associated with lineage identity and two climatic variables (continentality rate aridity rate of the warmer season).

Geographic differences in mean male size were weak and were poorly explained with our predictors. In contrast, mean female size and SSD showed a considerable intraspecific variation, a substantial proportion of which (up to 60%) could be predicted by lineage and two climatic variables, and/or by their interactions.

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