

Genetic structure and ecological characteristics of local populations of rock lizard *Darevskia dahli* in Armenia

Feodor A. Osipov¹, A.A. Vergun^{2,3}, V.G. Petrosyan¹

¹Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences, Moscow 119071, Russia

²Institute of Gene Biology of the Russian Academy of Sciences, Moscow 119334, Russia

³Moscow State Pedagogical University, Moscow, Russia

Based on specific allele combinations of microsatellite loci in 111 individuals of parthenogenetic species *Darevskia dahli* from 5 local populations located at a distance from 9.5 to 46.3 km from each other, 11 genotypes were identified. It was established that 72 individuals belong to the major clone, 21 individuals to the intermediate clone, and the rest form 9 rare clones that are represented by several individuals. The use of genotype-specific markers revealed the presence of at least 3 independent acts of hybridization between parental species. Ecological characteristics of populations with revealed clonal lines are given. Such characteristics as: altitude, average annual temperature and average temperature in the warm season, total amount of precipitation in the dry period and in the warm period of the year are not statistically significantly different by criterion Tukey HSD Post hoc ($P < 0.05$), i.e. *D. dahli* individuals in these populations live in similar ecological conditions. However, a comparative analysis of the ecological characteristics of *D. dahli* with parental species *D. portschinskii* and *D. mixta* based on 271 localities obtained from literature data and field research showed that there are significant differences between the species. The habitats of *D. portschinskii* are lower in altitude and higher in average annual temperature than *D. dahli* and *D. mixta*. The most humid habitats are preferred by *D. mixta* in comparison with *D. dahli* and *D. portschinskii*. In general, a statistically significant difference between *D. mixta* from other species and partial similarity of ecological parameters for *D. dahli* and *D. portschinskii* was shown. On the basis of complex statistical analysis and computer modeling, it was revealed that the formation of the multiclonal structure of the populations of *D. dahli* is largely associated with genetic factors, rather than with environmental factors.

This study supported by the RFBR № 18-34-00361, № 17-00-00427.