

Ecologo-morphological description of some Asian populations of *Zootoca vivipara* (Jacquin, 1787)

¹Orlova, V.F., ²Kuranova, V.N.

The present report is based on the results of the investigations of *Z. vivipara* Asian populations represented in the collections of Moscow State University Zoological Museum and Tomsk State University Zoological Museum, as well as the materials collected in the expeditions to Altai, Kuznetskii Alatau, Tomsk and Kemerovo regions (south-east of Western Siberia) from 2000 to 2006. In the Asian part of its area *Z. vivipara* is presented in ovoviviparous populations which belong to the eastern chromosomal form (Kupriyanova and Rudi, 1990). It inhabits plains and mountains up to the height of 2200 m a.s.l. in Kazakhstan, 2430 m a.s.l. in the Russian Altai and from 2400 m to 2900 m a.s.l. in the western slopes of the Mongolian Altai (Orlova and Terbish, 1997). On the plains of Western Siberia it was registered in taiga forests, north and south forest-steppe zone, but it does not inhabit the steppe zone. The maximum of population density is observed in various habitats of the south-taiga zone (0.8 – 15 individuals/hectare), while these indicators decrease towards the north and the south. The lizard is numerous in the foothills and low mountains of the North-East Altai (40 – 50), in the Central Altai it was registered only in mountain-forest and mountain-tundra zones (0.02). In the Southern Altai it was registered everywhere up to subalpine meadows where the population density on some sites reaches 14 – 15 individuals per hectare. The northern border of distribution of *Z. vivipara* in Yakutia (without taking the latest results into consideration) coincides with the one of the *Pinus silvestris* (Borkin et al, 1984). We have investigated metric and meristic characteristics (from 6 to 24 in different samples) of 317 individuals (103 males and 214 females) from 14 populations of plain and mountainous parts of Western, Middle and Eastern Siberia, Russian and Kazakh Altai. The obtained data were processed with the help of program package STATISTICA 6. It was revealed the sexual dimorphism on body length (SVL, $p < 0.05$) in all samples, except the not numerous one from Yamal ($n=9$). The maximum number of metric (measured) indicators (7), different for both sexes, was registered in the southern peripheral population from the Kazakh Altai, Markakolskaya Depression, somewhat less – for the populations inhabiting Tomsk region plains (3 – 5 indicators, $p < 0.05$). According to six meristic characteristics the populations are divided into two groups called northern and southern. The northern group includes samples from Yamal and Yakutia while the southern one consists of three plain and three mountainous population samples. Females from five populations from northern and southern groups according to eight metric characteristics. Previously we noticed the clinal variation of the female bodies' length which was not observed for males (Orlova, 1973, 1975). Bigger females inhabit the northern part of the area, while bigger males live in the southern parts (Orlova, 1975). According to the new data obtained the biggest females are in the sample from Khakassia (SVL=73.2±1.1mm, $n=11$), the smallest ones are from the Kazakh Altai (SVL=54.4±0.95mm, $n=26$). The biggest males are in two plain populations of Tomsk region (the south-eastern part of Western Siberia) (SVL 53.7 – 55.9 mm, $n=19$), the smallest ones are from the lake Baikal (SVL=47.3±1.0mm, $n=9$) and from the Russian Altai (SVL=47.5±0.8mm, $n=11$). These variations are determined by the geographical location and the environmental conditions of the certain landscapes. The patterns of joining of scuta praefrontalia were analyzed for 949 individuals from 10 samples. There are four basic patterns which are called here the median, cross, transversal, and rectangular (Voipio, 1968). Median type is the most widespread in all samples: from 43.2% in the southern mountainous populations of the Kazakh Altai (48° 46' northern latitude) and 47.3% in the Russian Altai (51°34' northern latitude) to 92.2 % in Yakutia (60° 28' northern latitude). The decrease of the number of median type individuals in Altai populations leads to the increase of the number of transversum type individuals (35.2 – 37.4 %).

Transversum type of scuta praefrontalia is the second widespread one (7.8 – 37.4 %) in eight samples. The third one is cross type (2.6 – 16.7 %) and the rarer one is rectangular type (1.2 – 11.1 %). The individuals of the rectangular type are assumed to be characterized by reduced viability in the period from birth to maturity (Voipio, 1968). However, its occurrence in the most northern sample (Yamal, 61° 41' northern latitude) is 11.1 %.

¹ Zoological Museum of Moskow Lomonosov State University, Moscow 125009

² Tomsk State University, Tomsk 634050