Molecular and morphological differentiation of rapid racerunner *Eremias* velox (Lacertidae) with comments on taxonomy and biogeography of Middle-Asian racerunners

S.I. DOLOTOVSKAYA<sup>1</sup>; M. CHIRIKOVA<sup>2</sup>; <u>E.N. SOLOVYEVA<sup>1</sup></u>; N.A. POYARKOV<sup>1</sup>; L.WAN<sup>3</sup> & V.F. Orlova<sup>4</sup>

<sup>1</sup> Department of Vertebrate Zoology, Biological faculty of Lomonosov Moscow State University, Moscow, Russia: povarkov@orc.ru, letanie@vandex.ru, anolis@vandex.ru

Moscow, Russia, <u>poyarkovajore.ru</u>, <u>retantelajvanaex.ru</u>, <u>anotislajvanaex.ru</u>

<sup>2</sup> Laboratory of Ornithology and Herpetology, MON Institute of Zoology, Alma-Ata, Kazakhstan

<sup>3</sup> Lanzhou Normal University, Lanzhou, Gansu, People's Republic of China

<sup>4</sup> Zoological Museum of Lomonosov Moscow State University, Moscow, Russia

Eremias, or racerunners, is a genus of lacertids inhabiting deserts and steppes of Near East, Middle and Central Asia. The genus consists of ca. 40 species and up to now their phylogenetic relationships were not studied molecularly. We studied mtDNA sequences (Cytochrome B, Cytochrome Oxydase I and 16S-rRNA, ca. 1800 bp altogether) and morphology to clarify this matter. Our data indicate that morphological and molecular schemes of subgeneric structure do not coincide. Among several subgenera recognized (Eremias, Ommateremias, Pareremias, Rhabderemias, Scapteira), the subgenus Eremias seems not to be monophyletic. Rapid racerunner (E. (*Eremias*) velox) is the most wide-spread species of the subgenus. Within this species we found unexpectedly deep molecular differentiation, probably a Paratethys-related vicariance event. Morphologically some marginal southern populations of rapid racerunner were found to be different from nominative subspecies. Transcaucasian populations (E. v. caucasia) group together with nominative subspecies from Central and Eastern Kazakhstan (E. v. velox), while Western Chinese populations from Xinjiang (E. v. roborovskii) form a sister-clade to southern populations from Uzbekistan and Iran. We will discuss probable phylogenetic relationships between E. velox complex and other Eremias members (E. suphani, E. persica, E. regeli, E. nikolskii), give some considerations on taxonomic structure of E. velox complex and discuss probable phylogeographic scenario for the group. North - South split, corresponding to the Paratethys basin is a common pattern of geographic variation for several Middle-Asian desert-dwelling lizard groups: examples include various representatives of Phrvnocephalus (Agamidae) and Eremias (Lacertidae).