

**Modern Achievements in Population, Evolutionary, and Ecological Genetics : International Symposium**, Vladivostok – Vostok Marine Biological Station, September 3–8, 2017 : Program & Abstracts. – Vladivostok, 2017. – 52 p. – Engl. ISBN 978-5-8044-1648-6

**HELD BY:**

*Far Eastern Branch of Russian Academy of Sciences (FEB RAS),  
National Scientific Center of Marine Biology, NSCMB FEB RAS,  
Federal Scientific Center of Biodiversity of East-Asia Land Biota FEB RAS,  
Far Eastern Federal University,  
Vladivostok Public Foundation for Development of Genetics*

**SPONSORS:**

*Russian Foundation for Basic Research, Federal Agency of Scientific Organizations,  
LabInstruments Company, AlbioGen Company,  
Khimexpert Agency*

Editors: Yuri Ph. Kartavtsev, Oleg N. Katugin

**Современные достижения в популяционной, эволюционной и экологической генетике** : Международный симпозиум, Владивосток – Морская биологическая станция «Восток», 3–8 сентября 2017 : Программа и тезисы докладов. – Владивосток, 2017. – 52 с. – Англ.

**ОРГАНИЗАТОРЫ:**

*Дальневосточное отделение РАН (ДВО РАН),  
Национальный научный центр морской биологии ДВО РАН,  
ФНЦ биоразнообразия наземной биоты восточной Азии ДВО РАН,  
Дальневосточный федеральный университет,  
Владивостокский общественный фонд развития генетики*

**ФИНАНСОВАЯ ПОДДЕРЖКА:**

*Российский фонд фундаментальных исследований,  
Федеральное агентство научных организаций,  
ООО «ЛабИнструментс», ООО «АльбиоГен»,  
ООО «Химэксперт»*

Ответственные редакторы: Ю.Ф. Картавец, О.Н. Катугин

ISBN 978-5-8044-1648-6

**MOLECULAR GENETIC DIVERSITY OF THE MUYA VALLEY VOLE  
*ALEXANDROMYS MUJANENSIS***

**<sup>1</sup>Vasiljeva T.V., <sup>1</sup>Kartavtseva I.V., <sup>1</sup>Sheremetyeva I.N., <sup>2</sup>Golenishchev F.N.,  
<sup>3</sup>Moroldoev I.V.**

<sup>1</sup>*Federal Scientific Center of the East Asia Terrestrial Biodiversity, FEB RAS,  
Vladivostok, 690022, Russia;*

<sup>2</sup>*Zoological Institute RAS, Saint Petersburg, 199034, Russia;*

<sup>3</sup>*Institute of Systematics and Ecology of Animals SB RAS, Novosibirsk, 630091,  
Russia*

The Muya Valley vole *Alexandromys* (= *Microtus*) *mujanensis* Orlov et Kovalskaya, 1978 was first described based on chromosomal analysis and hybridization in Muya River valley (in the environs of Muya vill.) in Buryatia. This is the sibling species to Maximowicz's vole *A. maximowiczii* Schrenck, 1858, who is polymorphic in diploid number of chromosomes ( $2n = 36-44$ ) while chromosome number for Muya Valley vole is constant ( $2n = 38$ ). Until recently, *A. mujanensis* was known from Muya Valley only on the basis of chromosomal studies (Orlov and Kovalskaya, 1978; Meyer et al., 1996; Lemskaya et al., 2015). According to data published in 2015 (Golenishchev et al., 2015), Muya Valley vole was found also in Dzherginsky Nature Reserve and in the environs of Baunt Lake (Buryatia) by the study of karyotype and cytochrome b gene sequence (mitochondrial DNA). We analyzed control region sequence of mtDNA, which is studied for a number of species within genus *Alexandromys* (Haring et al., 2010) and is characterized by higher level of variability compared to cyt b gene. Small genetic distances between groups of individuals within one species could be detectable by using control region. We analyzed 55 specimens belonging to three mentioned localities. When DNA analysis was performed it was confirmed that all specimens belong to Muya Valley vole. Phylogenetic tree was inferred and it showed that all investigated specimens split into three clusters corresponding to three geographic populations. At the same time, genetic distances were lower between geographically close populations of Baunt Lake region and Dzherginsky Nature Reserve, while population near Taksimo vill. (vicinity of the type locality) is characterized by higher distances in relation to the other two clusters. Moreover, this clade (Taksimo) differs at a higher intrapopulation diversity level. Therefore, our study showed that the three geographical populations of Muya Valley vole differ in mtDNA control region. Possible colonization paths are discussed.

The work was supported by RFBR grants № 12-04-00662a, № 15-04-03871 and № 16-04-00983-a.