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АДМИНИСТРАЦИЯ ПРИМОРСКОГО КРАЯ,
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**ЭВОЛЮЦИЯ, ГЕНЕТИКА, ЭКОЛОГИЯ
И БИОРАЗНООБРАЗИЕ:
МЕЖДУНАРОДНАЯ КОНФЕРЕНЦИЯ**

**ВЛАДИВОСТОК - МОРСКАЯ БИОЛОГИЧЕСКАЯ СТАНЦИЯ «ВОСТОК»
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Ред. А.П. Крюков, Ю.Ф. Картавец

COMPARATIVE STUDY OF B-CHROMOSOME SYSTEM OF THE KOREAN FIELD MOUSE *APODEMUS PENINSULAE* FROM CONTINENTAL AND INSULAR POPULATIONS

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The mitotic chromosomes of 415 specimens of *Apodemus peninsulae* from 45 continental (from Siberia to Primorye) and 9 insular (from islands: Sakhalin; Russky, Stenina, the Sea of Japan, and Hokkaido, Japan) local populations were studied. Populations from both continental and a number of insular sites (from islands: Hokkaido, Japan; Russky, Russia) exhibited polymorphisms due to the presence of a system of B-chromosomes. For individual populations, the maximal frequency of specimens without B-chromosomes was approximately 30% in Primorsky Region, 50% in Khabarovsk Region and 0% in Siberia and Hokkaido. The mice karyotypes from other islands (Sakhalin, Stenina) were surprisingly stable and B-chromosomes were absent. In addition, animals from Stenina Island were different in a few karyological features.

Data regarding the karyotype of *A. peninsulae* from Stenina Island (Sea of Japan) are presented in this report for the first time. A set of 15 animals studied exhibited 48 acrocentric chromosomes. C-banding revealed a small amount of constitutive heterochromatin at the pericentromeric regions of almost all autosomes except for one pair of medium size. It also included a smaller band of faintly stained C-heterochromatin at the centromeric region. One pair of big sized autosomes also showed C-positive bands at the telomeric regions. C-banding patterns of mice from the Russian Far East (including Russky and Sakhalin Islands) usually displayed C-bands at the centromeric regions of all autosomes.

The X chromosome in Stenina mice was stained similar to that of continental mice. The Y chromosome of Stenina mice showed additional differential C-bands at the centromeric and telomeric regions. In addition, it was smaller in comparison to that of continental populations of mice. Far-Eastern populations of mice (including animals from Sakhalin Island) had Y-chromosomes that were completely C-positive. The Y chromosome of field mice from Stenina was more similar to that of *A. peninsulae* from Siberia (Borisov, 1990), than from the Russian Far East (including Sakhalin and Russky Islands) (Kartavtseva et al., 2000) in both the size and C-banding pattern. Consequently, the range of chromosome variability was much higher in mice from Siberia and Hokkaido Island in comparison with mice from the Far East. Every population of *A. peninsulae* had the specific karyological features. Thus, mice from Russky Island had a system of B-chromosomes similar with that from continental Far-Eastern mice. On the contrary, the B-chromosome system of mice from Hokkaido Island was remarkably similar with mice from Siberia. The mice from Stenina were distinguished in C-banding patterns from other continental and even insular (Russky, Hokkaido) *A. peninsulae*.

The causes leading towards the observed monomorphism of the insular populations of *A. peninsulae* are not clear. One hypothesis is that it may be connected with insular isolation and environmental conditions.