

long arm of the 8th sized metacentric, the other located terminally at short arm of the 2th sized submetacentric, and c) both *C. asiatica* and *C. argus* possessed two pairs of silver-stained NORs, which all located terminally at short arm of chromosomes. The NOR-bearing chromosomes are the 1st submetacentric and the 1st subacrocentric in *C. asiatica*, as well as the 1st metacentric and the 14th subacrocentric for species of *C. argus*.

Three kinds of NOR polymorphism such as a) relative sizes of NORs, b) number of NORs per genome and c) chromosomal location of NORs were documented in present study. The variation of the relative size of NORs were found in all species. For three species of *P. fulvidraco*, *C. asiatica* and *C. argus*, the variation of NOR-bearing chromosomes are 1-4 per genome, but in most case only one pair NOR-bearing chromosomes were noted. The one pair silver-stained of NORs of *P. fulvidraco*, *C. asiatica* and *C. argus* located at the 8th metacentric, the 1st submetacentric and the 1st metacentric, respectively. Regarding variation in chromosomal location of NORs, what both homologues have twice the usual amount of NOR silver sites were detected in *P. fulvidraco*. Besides, one homologue have twice silver sites of the other, which were found in *S. asotus* and *C. asiatica*. No difference in NOR polymorphism mentioned above were observed among individuals.

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4. Kartavtseva, I.V.¹⁾ & Vorontsov, N.N.²⁾ : **Chromosome differences among subspecies of hamster *Allocricetulus eversmanni* (Rodentia, Cricetidae) and the new taxon of subspecific rank description**

Allocricetulus eversmanni Brant, 1859 has color polymorphism of fur, which allow Mitina (1959) to develop the scheme of latitudinal distribution of two subspecies: *All. ev. eversmanni* Brant, 1859 and *All. ev. beljaevi* Argiropulo, 1932. The first of two subspecies have red-brown fur and throat spot. The subspecies is distributed in the steppes of Russia and north Kazakhstan from Volga River to Irtish River. The second subspecies *All. ev. beljaevi* has light-grey fur and throat spot. The native area is semi-desert of Kazakhstan region. The unknown previously hamster is suggested to be a deviate form of *All. eversmanni*, which has no throat spot and which do not differ from the separate species *All. curtatus*. Presumably the new form is inhabit the sands of North-West part of the Zungaris (Agir Kum sands in the east Zaissan hollow).

It is known, that karyotype *All. eversmanni* (2n=26) has differences from karyotype of *All. curtatus* (2n=20) (Matthey, 1960). Matthey (1960) has probably described chromosomes of the collection *All. ev. eversmanni*.

In the present paper the chromosomes of three forms of the genus *Allocricetulus* are described, with the purpose to clear up the taxonomic rank of the new form from the Agir Kum sands.

The individuals of *All. ev. eversmanni* (2♀♀) were trapped in the Lower Volga River near Ozinki town and one female near Uralsk City (material was presented by I.V. Zagorodnyuk). The hamster *All. ev. beljaevi* (1♂ and 1♀) were trapped in the western part of the Zaissan hollow steppes. The only one male of the new form was trapped in Agir Kum sands in the east Zaissan hollow (the North-West of the

Zungaris) (material was presented by E.A. Ljapunova). The chromosomes were investigated in the cells of bearn narrow with common technique.

The karyotypes of two subspecies *All. ev. eversmanni* and *All. ev. beljaevi* exhibit identical morphology of chromosomes (Fig. 1) and differ in it from the description given earlier (Matthey, 1960) except for a polymorphic pair XII which varied from subtelocentric to acrocentric (ST/ST, ST/A, A/A).

In the kariotype of the new form the three group of autosomes are obtained (Fig. 2). The first group holds four metacentric pairs: pair I is largest, pairs II and III are of intermediate size and pair IV is smallest. The second group holds only one subtelocentric pair V which is intermediate in the size. The third group holds the acrocentric pairs VI-XI which decrease their size gradually. The pair XII is heteromorphic-ST/A. X- and Y-chromosomes are

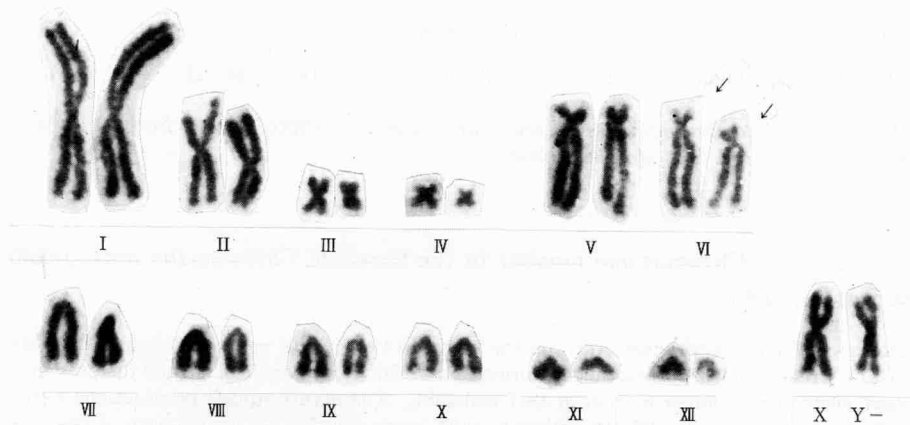


Fig. 1. Karyotype of *All. ev. eversmanni* and *All. ev. beljaevi*. $2n=26$, pair YI is subtelocentric.

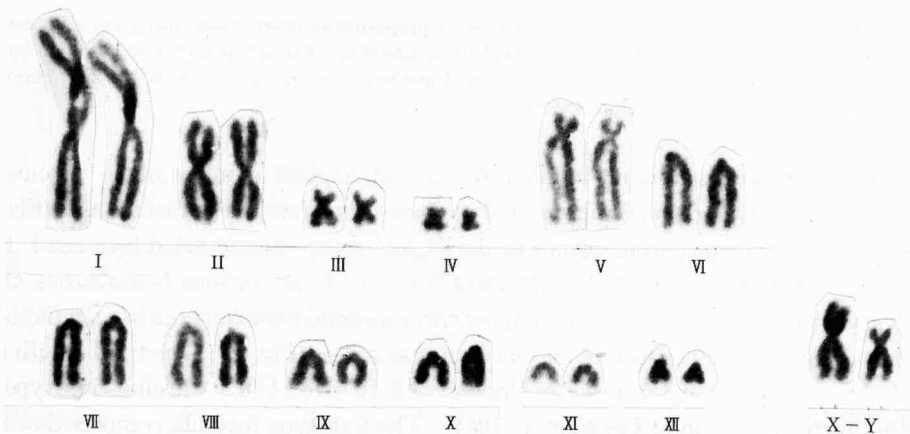


Fig. 2. Karyotype of *All. ev. pseudocurtatus* ssp. nov. $2n=26$, pair YI is acrocentric.

metacentric and intermediate in size. Y-chromosome is smaller than X-chromosome.

The new form differs from forms *eversmanni* and *beljaevi* in morphology of the pair VI and in size of Y-chromosome. This form has acrocentric pair VI and in size of Y-chromosome. This form has acrocentric pair VI and heteromorphic X- and Y-chromosomes. The *eversmanni* and *beljaevi* forms have subtelocentric pair VI and isomorphic X- and Y-chromosomes. We suggest that the difference in chromosome pair VI appeared as a result of the deletion in the short arm of subtelocentric chromosome. heteromorphic pair XII and X-, Y-chromosomes may be the results of deletion of chromosome arms. We know that all species of Palearctic hamsters has smallest subtelocentric pair with constant morphology. In this paper the variability in morphology of smallest subtelocentric pair of chromosome are obtained.

In the investigation of the karyotypes of three forms of the genus *Allocricetulus* the differences are obtained among the pairs of subspecies *All. ev. eversmanni*, *All. ev. beljaevi* and the new form. This form may be considered as the taxon of subspecific rank of *Allocricetulus eversmanni* and it is named as *All. ev. pseudocurtatus ssp. nov.*

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5. Goswami, U. : **Chromosome number in the barnacle *Chthamalus malayensis* from Goa waters, India.**

Chromosomal studies were undertaken on the barnacle *Chthamalus malayensis* from Goa waters by Late Prof. D.J. Crisp of marine science laboratories, Menai Bridge, Gwynedd, U.K. and the present author during short visits of the former to NIO in 1977 and 1984. Temporary squash preparations were made from the male, female gonads and the embryos using aceto-carmine & aceto-orcein stains. Several hundred cells were encountered and the chromosome number was ascertained. However, due to the lack of good metaphase plate photographs the publication of the results was kept pending.

Presently, the specimens of *Chthamalus malayensis* were collected from the Dona-Paula jetty, Goa, in the month of February, 1992 by the author. Air-dried preparations were made using the conventional methods and stained in Giemsa stain. The metaphase plates were photographed for diploid and haploid number of chromosomes and incorporated. To the knowledge of the author it is the first report of barnacle chromosomes from the Indian waters.

The species showed a diploid number of 32 and haploid number of 16 chromosomes encountered during spermatogonial mitosis and meiosis -I and meiosis-II metaphases (Figs. 1-6). The total length of various chromosomes of the diploid complement varied between 1-1.5 μ m. There was no conspicuous morphological identification of the various homologous chromosomes. Karyogram was prepared by arranging chromosomal complements in a declining order of size and taking the two consecutive chromosomes as a pair (Fig. 7). The total length of pair numbers 1-3 was 1.5 μ m ; of 4-7 was 1.25 μ m and of 8-16 was 1 μ m. Chromosome types were identified following criterion of Levan et al. 1964. The karyotype formula comprised of 26 M + 6 st. The metacentric chromosomes were mostly rod shaped with both the ends rounded. The