

## SOMATIC CHROMOSOMES OF LONG-EARED DESERT HEDGEHOG, *HEMIECHINUS AURITUS*.(\*)

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The chromosome analysis of Western and Eastern European hedgehogs has already been reported<sup>3-4</sup>, and the chromosome polymorphism of these two species has been discussed<sup>5</sup>. However there seems to be no report on somatic chromosome patterns of the Asian species, in the literature so far published.

The specimens reported in this study (3 male and 2 females) were caught in the vicinity of the State Razi Institute, 45 km west of Tehran, Iran. No distinctive phenotypic difference could be observed between the animals that were captured, nor did their chromosomes differ from the standpoint of total number or morphology.

The study was accomplished by: 1- Short term blood lymphocyte culture, in BME+calf serum, supplemented by PHA and, 2- By kidney-cell culture using the said growth medium without PHA.

The modal diploid number in either technique was found to be 48, which very well agrees with the finding of other workers in the field<sup>1-4</sup>.

The chromosome patterns of this species, as appears in the presented karyotype (Fig. 7), was also compared with the idiogram formulated by GEISLER and GROPP who have compared the chromosomes of Eastern and Western European hedgehogs<sup>5</sup> (Fig. 8).

The analysis of the idiograms reveals a notable variation in the structural patterns of three autosomes of *Hemiechinus auritus*, as compared with those of *Erinaceus europaeus europaeus* and *Erinaceus europaeus roumanicus*. The sex chromosomes X&Y although arbitrarily labelled apparently follow the same patterns as demonstrated in a and b, designating the X as a maximum sized metacentric, and the Y as, presumably a tiny sub-metacentric, slightly smaller in this case, than chromosomes No. 22 and 23.

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The Karyotype of Long Eared Hedgehog  
Hemiechinus auritus



Fig 7



Fig.1-Reproduction of idiograms as presented by M.GEISLER and A.GROPP of (a) Erinaceus eu.europaeus, and (b)Erinaceus eu.roumanicus to which is added that of Hemiechinus auritus (c),with structurally different chromosomes drawn in black.

Fig. 8

Fig. 1 - Reproduction of idiograms as presented by M. GEISLER and A. GROPP of (a) Erinaceus eu. europaeus, and (b)Erinaceus eu. roumanicus to which is added that of Hemiechinus auritus (c), with structural different chromosomes drawn in black.

As regards the variability of autosomes among the three species, it is somewhat evident that the sub-metacentric chromosome No. 3, as found in both a and b, is substituted by a metacentric in c, whereas the two metacentrics labeled as No. 4 and 5, are identical in c, and a, as compared with their counterpart in b. The interesting feature in the comparative idiogram is that the medium and the very small acrocentric chromosomes in a and b respectively (No. 21), are absent in c and instead there is a metacentric chromosome, which is a little larger than No. 22 and 23 in the homologous series.

In view of the fact that the corresponding autosomes as well as the sex chromosomes are quantitatively equal, and structurally somewhat similar in all three species, one can therefore assume that the chromosomes of *Hemiechinus auritus*, as appears in the presented karyotype, are seemingly less affected by such aberrations as translocation and/or any type of inversion that the chromosomes No. 4 in b, and No. 21 in both a and b have possibly undergone.

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#### References:

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3. Hsu, T. C. and Penirschke, K. 1968. Atlas of Mammal Chromosomes. Vol. 2, Folio 52.
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5. Geisler, M. and Gropp, A. 1979. Nature 214:396. «

#### Legends:

Fig. 7. Karyotypes of *Hemiechinus auritus*.

Fig. 8. Comparative idiograms among Eastern and Western European hedgehogs and *Hemiechinus auritus*.