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First cytogenetic analysis of the genus *Bibimys* (Cricetidae, Rodentia)

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The South American Scapteromyini (Rodentia: Cricetidae), comprise three genera: *Scapteromys* with two species (*S. tumidus* and *S. aquaticus*), *Kunsia* with two species (*K. principalis* and *K. fronto*), and *Bibimys*, also with two species (*Bibimys torresi* and *Bibimys labiosus*) (Walker 1964; Brum-Zorrilla et al. 1986).

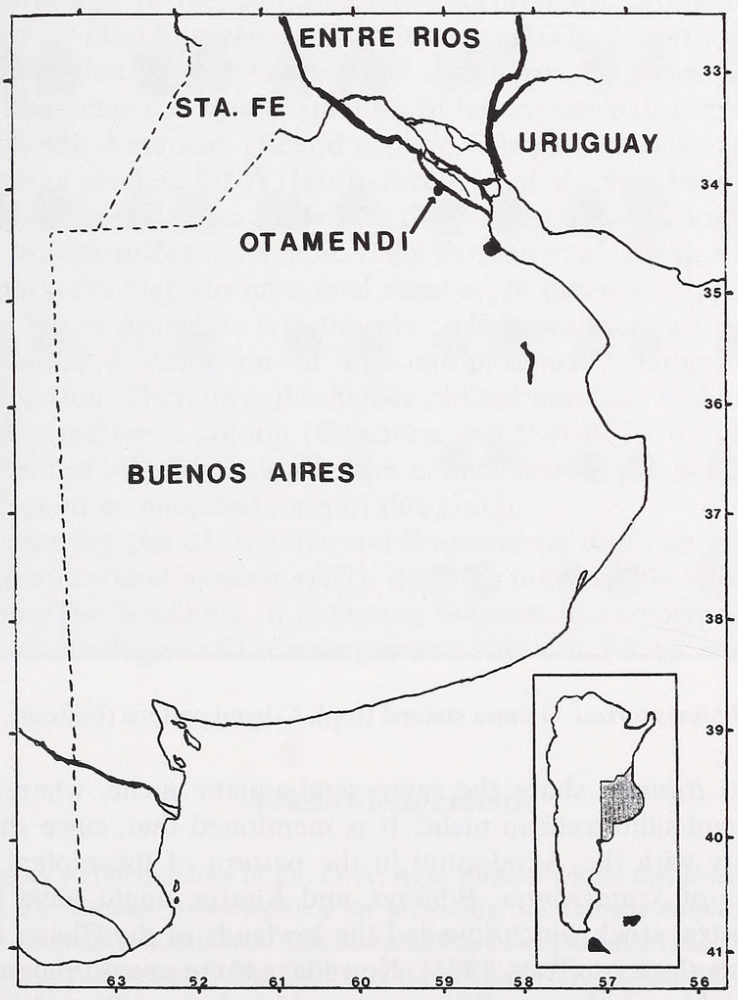

Fig. 1. Map of collection locality of *Bibimys torresi*.

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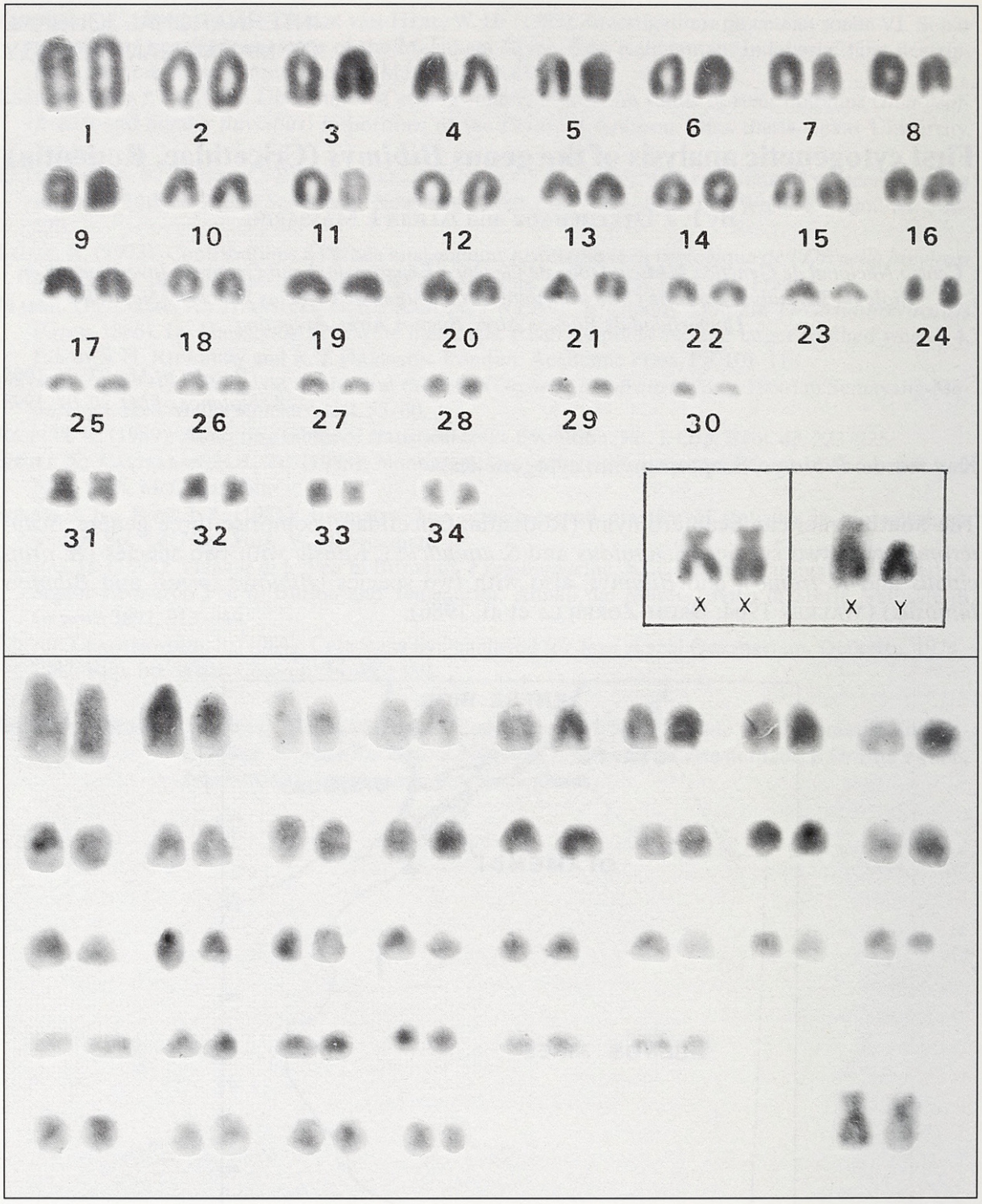

Fig. 2. Karyotype of *Bibimys torresi.* Giemsa stained (top), C-band pattern (bottom).

Scapteromys and *Bibimys* share the same semi-aquatic niche, whereas the giant rat *Kunsia* inhabits a semi-subterranean niche. It is mentioned that, since the Scapteronyini share a great affinity with the Akodontini in the pattern of the molars, the adaptation to different habitats of *Scapteromys*, *Bibimys*, and *Kunsia*, might have developed from an akodontine ancestral stock which invaded the lowlands of the Chaco region and later on expanded towards the east (Reig 1984). Nowadays there are no records of living specimens of *Bibimys labiosus* whereas *Bibimys torresi* has been collected in sites restricted to the delta of the Parana river in the Buenos Aires Province of Argentina. Neverthe-

less, the finding of fossils of *Bibimys* specimens at Lagoa Santa, Brazil (Voss and Myers 1991) and Cueva Tixi and Centinela del Mar, Argentina (Pardiñas 1995), shows that in the late Pleistocene and Holocene, the area of distribution of this genus was larger than today.

The taxonomic relationships among the genera of the Scapteromyini, were based on the evaluation of morphological similarities. Until recently, cytogenetic information was available only for *Scapteromys* species, while the karyotypes of *Kunsia* and *Bibimys* were still unknown. Here we present the standard and C-banded karyotype of *Bibimys torresi*, a species described for the first time by Massoia (1979).

Two females and one male of *Bibimys* were collected at Otamendi, Buenos Aires Province (Argentina), on an island of the delta of the Parana river (Fig. 1). A period of three years was necessary to collect these specimens, considering the fact that they are very rare to find. Skin and skull vouchers of the studied specimens were catalogued in the collection of mammals of the Mar del Plata Municipal Natural History Museum.

Cytogenetic analysis was based on mitotic metaphase chromosomes from bone marrow of animals previously injected with yeast (Lee and Elder 1980). Standard karyotypes were stained with Giemsa and C-bands were performed according to Hsu (1974).

The karyotype of *Bibimys torresi* shows a diploid number of $2n = 70$ and $AN = 76$. This karyotype comprises 30 pairs of acrocentric autosomes: one medium sized and the remaining small sized, and four pairs of small metacentric autosomes. The X and Y are small sized submetacentric chromosomes (Levan et al. 1964) (Fig. 2, top). The C-band pattern performed in the females, shows a faint centromeric heterochromatic band in the X chromosome, whereas in the autosomes heterochromatin is absent except in pair 3 which presents a very faint intercallary C-positive band (Fig. 2, bottom).

It is noteworthy that *Bibimys torresi* and *Scapteromys* species display a similar C-banded pattern, characterized by low amounts of heterochromatin, compared with that of other species of South American cricetid genera. This pattern was explained by a reduction in the amount of satellite DNA (Brum-Zorrilla et al. 1986; Freitas et al. 1984).

The available cytogenetic data show that *Scapteromys* species karyotypes range from $2n = 24$ to $2n = 36$ (Brum-Zorrilla et al. 1986; Freitas et al. 1984), whereas *Bibimys torresi* presents a markedly high chromosomal number. In this respect, previous reports suggest that in other South American cricetid-related lineages there are evidences of a directional trend towards a reduction in the chromosomal number, in the course of chromosomal evolution. Therefore, the higher diploid numbers within a lineage may represent the most primitive condition (Gardner and Patton 1976). Hence, if the reductional trend existent in other cricetid lineages counts also for the Scapteromyini, then *Bibimys* would represent an ancestral form of this group.

However, the karyotypes of *Bibimys* and *Scapteromys* differ so much in their diploid number ($2n$) and autosomal number (AN), that it is not possible to establish a comparison between them. The feasibility of obtaining G-bands in karyotypes of *Bibimys* would help to determine homologies and rearrangements with other Scapteronyini species.

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