

# The *Wilfredomys pictipes* (Rodentia: Sigmodontinae) karyotype with comments on the karyosystematics of Brazilian Thomasomyini

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Karyotypic analysis of two specimens of *Wilfredomys pictipes* (Osgood, 1933), collected in the Atlantic forest of São Paulo State, Brazil, showed  $2n = 36 / FN = 34$ . Comparative karyologic analysis indicated that *W. pictipes* was very different from species belonging to the tribe Oryzomyini and to the genus *Delomys* but similar to *Rhipidomys* species. These findings indicated that the tribe Thomasomyini is not a karyotypically homogeneous taxon. The low diploid number of *W. pictipes* is likely to be a derived trait among sigmodontine rodents.

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## Introduction

The genus *Wilfredomys* comprises two known species, *W. oenax* (Thomas, 1928) and *W. pictipes* (Osgood, 1933); the former occurring from SE Brazil to central Uruguay, and the latter in SE Brazil and NE Argentina (Musser and Carleton 1993). Both species were originally described as belonging to the genus *Thomasomys* (Thomas, 1928; Osgood, 1933); the genus *Wilfredomys*, to which *pictipes* and *oenax* are presently assigned, was later proposed by Ávila-Pires (1960). However, Pine (1980) did not agree with this generic denomination and suggested that “*Thomasomys pictipes* seems to stand in an annectant position to *T. oenax* and certain of the Andean forms of the genus”. Hershkovitz (1962), following Thomas (1906), grouped the genus *Rhipidomys* and *Thomasomys* (including *Delomys* and *Wifredomys*) in the tribe Thomasomyini, whereas Reig (1984) grouped *Delomys*, *Wilfredomys* and *Rhipidomys* in the tribe Oryzomyini. Voss (1993), however, proposed that the genus *Delomys* “is one of many pentalophodont genera that cannot be assigned to any demonstrably monophyletic taxon less inclusive than the Neotropical murid ingroup identified earlier for the purpose of character analysis” and suggested that this genus, as well as others like *Rhipidomys* and *Wilfredomys*, should be considered as a “plesion” in formal classification.

Despite extensive karyological studies carried out in sigmodontine rodents, the karyotypes of *Wilfredomys* species are unknown, probably because these species show a restricted distribution and a naturally lower density. Considering the controversial status of *Wilfredomys* within the Sigmodontinae, karyological data might be useful for elucidating its relationship with other sigmodontine genera. In this paper, we describe the karyotype of *W. pictipes* and compare it with related forms.

### Material and methods

We analyzed two specimens collected in Intervales farm, São Paulo State (EM 1180 and INT 4). Skins and skulls will be deposited in the mammals collections of Museu Nacional (Rio de Janeiro). Chromosome preparations were obtained from bone marrow cultures in RPMI 1640, 20% fetal calf serum, ethidium bromide (5  $\mu\text{g/ml}$ ) and colchicine  $10^{-6}$  M for two hours. G- and C-banding were done as described by Seabright (1971) and Sumner (1972) respectively.

### Results

Karyological analysis showed  $2n = 36 / FN = 34$ . The autosome complement is composed by 17 pair of acrocentric chromosomes varying in size from large to small. The X chromosome is a medium sized acrocentric and the Y is a small acrocentric. The G-band karyotype of *W. pictipes* is shown in Fig. 1. C-banding showed centromeric heterochromatin in all autosome pairs and in the X chromosome (Fig. 2).

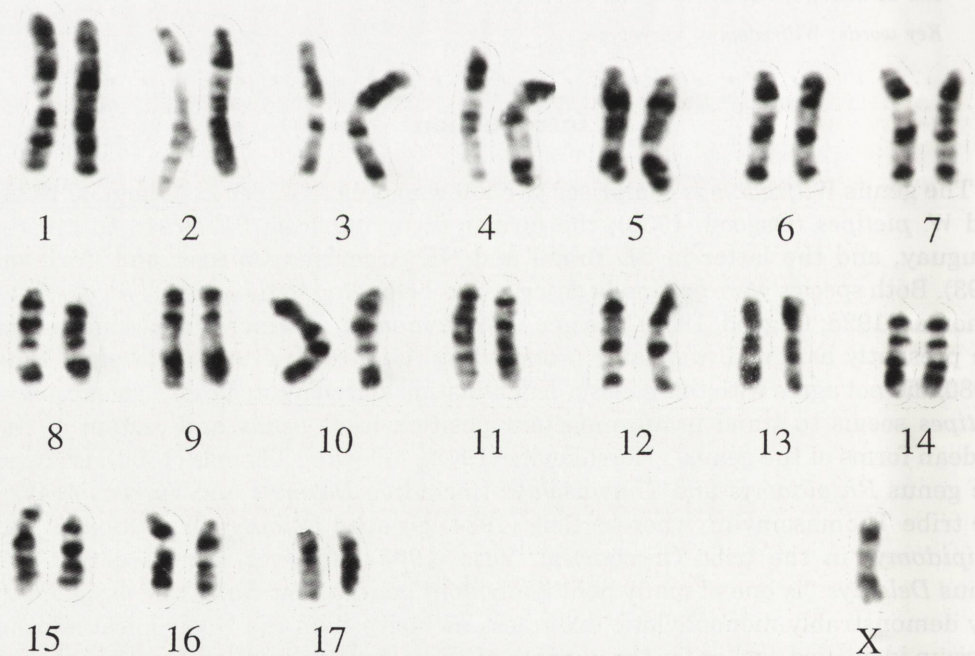


Fig. 1. G-band karyotype of *Wilfredomys pictipes* (male specimen, INT 4) from São Paulo State, Brazil (Y chromosome is missing in this metaphase).

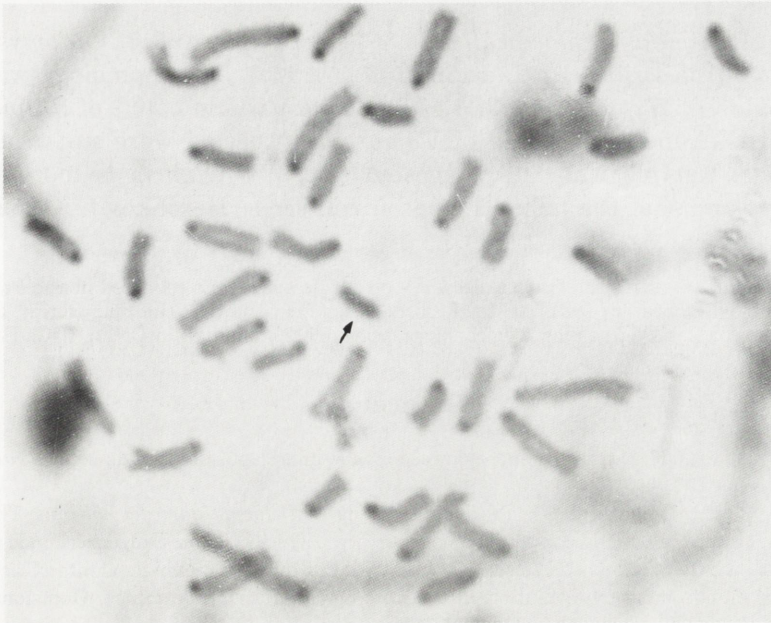


Fig. 2. C-banded metaphase of *Wilfredomys pictipes*. The Y chromosome is indicated by arrow.

### Discussion

Morphological studies placed *Wilfredomys* either in the tribe Thomasomyini (Hershkovitz 1962) or Oryzomyini (Reig 1984) while Voss (1993) concluded that this genus did not belong to any of these tribes. Furthermore, Pine (1980) questioned the status of *Wilfredomys* and the relationship between *W. pictipes* and *W. oenax*.

*Delomys*, *Rhipidomys* and *Wilfredomys* are the only three Thomasomyini genera of Brazil for which karyotypic data are available. *Delomys* comprises three species, *D. collinus* with  $2n = 80 / FN = 86$  (Bonvicino and Geise 1995), and *D. dorsalis* and *D. sublineatus* with  $2n = 80 / FN = 80$  and  $2n = 74 / FN = 90$  respectively (Zanchin *et al.* 1992a). *Rhipidomys* comprises 22 species (Tribe 1996). In this genus, 20 species are characterized by a constant diploid number ( $2n = 44$ ) but with a variable fundamental number, from 48 in *R. latimanus* (Gardner and Patton 1976) to 74 in *R. mastacalis* (Zanchin *et al.* 1992b). The other two species, *R. nitela* and *R. cf. nitela* showed  $2n = 48$  and  $2n = 50$  respectively (Tribe 1996). *Wilfredomys* comprises two species, karyotypically unknown to the present.

*W. pictipes*, herewith studied, showed  $2n = 36 / FN = 34$ . This species was karyotypically different from *Delomys* species and from species of the tribe Oryzomyini *sensu* Voss (1993) in showing a lower diploid and fundamental number which is considered to be a derived trait among sigmodontine rodents (Reig 1984). The karyotype herewith described shared at least one homology with the G-band

karyotype of *Rhipidomys mastacalis* ( $2n = 44 / FN = 74$ ) and *Rhipidomys* sp. ( $2n = 44 / FN = 50$ ) described by Zanchin *et al.* (1992b). This homology was evident between pair 1 of *W. pictipes*, pair 1 of *R. mastacalis* and pair 2 of *Rhipidomys* sp. Conversely, G-band karyotypes of *Tomasomys* species were not available for comparisons. Karyological data suggested that *Wilfredomys* is more similar to *Rhipidomys* and that the tribe Thomasomyini *sensu* Hershkovitz (1962) is not a karyotypically homogeneous taxon.

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