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A NEW KARYOTYPE IN THE *NECTOMYS SQUAMIPES* COMPLEX (RODENTIA, SIGMODONTINAE)

Cibele Rodrigues Bonvicino
Divisão de Genética, Diretoria de Pesquisa, Instituto Nacional do Câncer, Rua André Cavalcanti, 37, 4° andar, 20231-050 Rio de Janeiro, RJ, e Departamento de Medicina Tropical, IOC-FIOCRUZ, Rio de Janeiro, RJ, Brazil.
A. L. Gardner
National Biological Service, National Museum of Natural History, MRC 111 RM 378, Washington, DC 20560, USA.

ABSTRACT

A New Karyotype in the Nectomys squamipes complex (Rodentia, Sigmodontinae). A previously undescribed 2n = 40, FN = 40 karyotype from *Nectomys* collected at two localities in eastern Ecuador is reported. The chromosomes consist of 1 very large pair of submetacentrics and 19 pairs of acrocentrics gradated in size from large to small. The available name for 2n = 40 population is *Nectomys apicalis* Peters, 1861.

Keywords: Karyotype, Nectomys squamipes complex, Rodentia, Sigmodontinae
Descritores: Cariótipos, Complexo Nectomys squamipes, Rodentia, Sigmodontinae

INTRODUCTION

Neotropical water rats of the genus *Nectomys* are endemic to South America and extensively widespread from Colombia and Trinidad south into Bolivia, Paraguay, Uruguay, and northern Argentina. HERSHKOVITZ (1944) considered *Nectomys* to be monotypic (*N. squamipes*) based on morphological criteria. Recent work based on karyological evidence (BARROS *et. al*., 1992) treated the genus as polytypic. Other studies have shown the genus to be chromosomally diverse with karyotypes varying from 2n = 16/17 in Trinidad and northern Venezuela (BARROS *et al*., 1992), to 2n = 38/42 in Peru, and 2n = 56-59 in Suriname and along the Atlantic coast of Brazil (GARDNER and PATTON, 1976; BAKER *et al*., 1983; MAIA *et al*., 1984).

Within a large geographic area extending from northern and Central Brazil along the Atlantic coast to Uruguay and northern Argentina, variation in diploid number appears to be continuous, from 2n = 52 to 2n = 59 (Fig. 1). This variation, however, results from up to three supernumerary chromosomes present in animals otherwise having basically different diploid number of either 52 or 56 (BONVICINO *et al*., 1996).

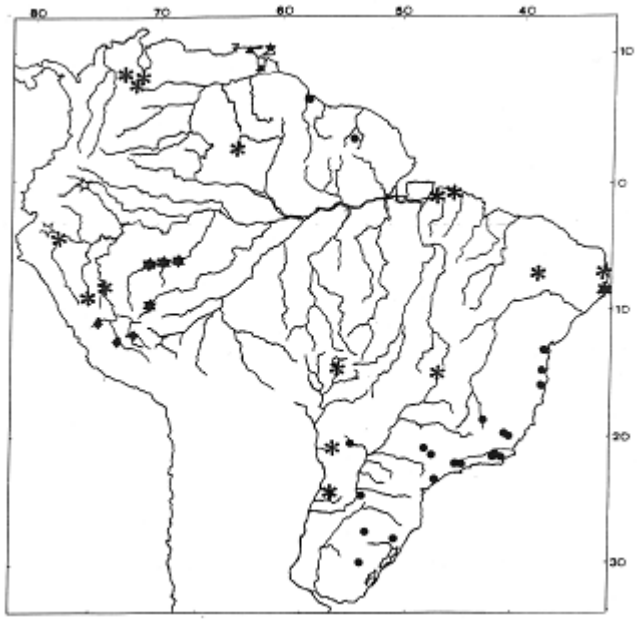

FIGURE 1 – Map with localities of occurrence of *Nectomys* with 2n = 16 (▲), 2n = 17 (★), 2n = 38 (◆), 2n = 42 ( ), 2n = 40 ( ), and 2n = 52 ( ), 2n = 56 (●).

MATERIAL AND METHODS

Here we report a previously undescribed 2n = 40, FN = 40 karyotype from *Nectomys* collected at two localities in eastern Ecuador. The first site was and agricultural research station located 4 km ENE Los Encuentros (03º45'S, 78º37'W, 850m), Prov. Zamorra-Chinchipe. The second was at the former Summer Institute of Linguistics community called Limoncocha (00º25'S, 76º38'W, 300m), Prov. Napo. Only one female from each site was analyzed. They are deposited in the mammal collections of the National Museum of Natural History, Smithsonian Institution, Washington, DC, USA (USNM 513584 and 513585, respectively). Chromosomes were processed from bone marrow using the technique described by PATTON (1967).

RESULTS AND DISCUSSION

The chromosomes consist of 1 very large pair of submetacentrics and 19 pairs of acrocentrics gradated in size from large to small (Fig. 2). The sex chromosomes are not identifiable because only females were processed; however, if similar to those of other western Amazon Basin population, the X

chromosome would be a medium sized acrocentric.

BONVICINO (1994) presented evidence that the primitive karyotype in *Nectomys* is 2n = 56, from which karyotypes having diploid numbers were derived. YONENAGA-YASSUDA *et al.* (1988) explained the transition from 2n = 56 to 2n = 52 by two tandem fusions, while GARDNER and PATTON (1976) explained the reductions from 2n = 42 to 2n = 38 as resulting from two centric fusions. The geographic distribution of populations of *Nectomys* having different diploid number (Fig. 1), however, does not allow us to infer a single parsimonious pathway of karyotypic evolution. In Peru, for example, a 2n = 42 karyotype is found at Balta on the Río Curanja (Depto Ucayali), and a population with 2n = 38 occurs in the vicinity of Hacienda Luisiana on the Río Apurimac (Depto Yacucho). While geographically close, these two areas belong to separate hydrographic basins and are isolated from each other by high mountains. These populations are bordered to the north and east by populations having 2n = 52 karyotypes.

The eastern Ecuador 2n = 40 population is distant from the 38- and 40-chromosome forms and isolated from them by populations having the 2n = 52 karyotype. Therefore it is likely that the 2n = 40 karyotype was derived independently from the lineage resulting in the populations having 38 and 42 chromosomes. Six basic karyotypes are known within the *Nectomys squamipes* complex (Fig. 1): 2n = 16-17, 2n = 38, 2n = 40, 2n = 42, 2n = 52 and 2n = 56. At least some of these represent different species. If the 2n = 40 population proves to represent a valid species, the available name is *Nectomys apicalis* Peters, 1861.

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