First report on the presence in France of a B-chromosome polymorphism in *Apodemus flavicollis*

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The yellow-necked mouse (*Apodemus flavicollis* Melchior, 1834) has a quite large distribution area in Europe. It is present from NW Spain, France, England and Wales in the West to the yrals in the East and from S Scandinavia and S Finland in the North to the Italian and Balkanic peninsulas, Syria, Lebanon and Israel in the South (Wilson and Reeder 1993).

The presence of supernumerary or B-chromosomes (B's) has frequently been reported in this species at least in several countries of Central and Eastern Europe : Germany (Wolf *et al.* 1972), Austria (Kral *et al.* 1979), Czech Republic, Slovakia, Slovenia, Greece, Macedonia, Bulgaria and Turkey (Zima 1984 ; Zima and Machólan 1995), Yugoslavia (Vujošević *et al.* 1991 ; Vujošević 1992) and former USSR (Sablina *et al.* 1985). However, in the weternmost part of its range, no information has ever been published about their possible occurrence.

The role and the determinism of the occurrence of B's in the genome of living organisms remains still unclear. It seems that they are not essential for the survival of their hosts (Blagojević and Vujošević 2000) and that their incidence is determined by stochastic effects influencing the genetic background of the populations (Zima and Machólan 1995).

B-chromosomes have been found in 34 mammal species, including 29 rodents (Vujošević 1993) and occur regularly in the genus *Apodemus*, namely in *Apodemus fla-*

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vicollis. In this species, they are similar to the five pairs of the smallest acrocentric autosomes of the normal set (2n = 48) either in size (Volobujev 1980 ; Vujošević 1992) or in their G-banding pattern (Vujošević *et al.* 1991). When present in a population, their number varies from one to five (Spasić and Vujošević 1993) but animals with only one B's are more frequent than those with two or more (Blagosević and Vujošević 1995).

The frequency of B's is variable between populations (Vujošević *et al.* 1991) whereas it seems stable in populations for long periods : in a population from Jastrebac (Yu), it remained constant at least over 5 years (Vujošević 1992) and it did not significantly change during the course of a year in the different ages classes (Blagosević and Vujošević 1995).

Six yellow-necked mice were captured in Miraval Cabardès (43°25'N - 2°20'E, Aude) (n = 2), Serandon (45°20'N - 2°20'E, Corrèze) (n = 3) and Saint-Merd-les-Oussines (45°34'N - 2°02'E, Corrèze) (n = 1) with Sherman traps. Trapping was done during 10 days in June 2000 with the collaboration of the National History Museum of La Rochelle. The study material is held in the collections of National Museum of Natural Museum of Lisbon (Museu Bocage). Mitotic chromosomes preparations were obtained by direct treatment of the bone marrow after a standard protocol. The G-banding was obtained by the technique of Seabright (1971) and C-banding by the method of Sumner (1972). One of the three animals from Serandon has a karyotype with 2n = 50 (Fig. 1), including two B-chromosomes whereas all the other animals possess 48 chromosomes. As far as our trapping effort was not dedicated to the capture of *A. flavicollis*, it is impossible to draw any other conclusion than to ascertain the presence of B's in French populations.

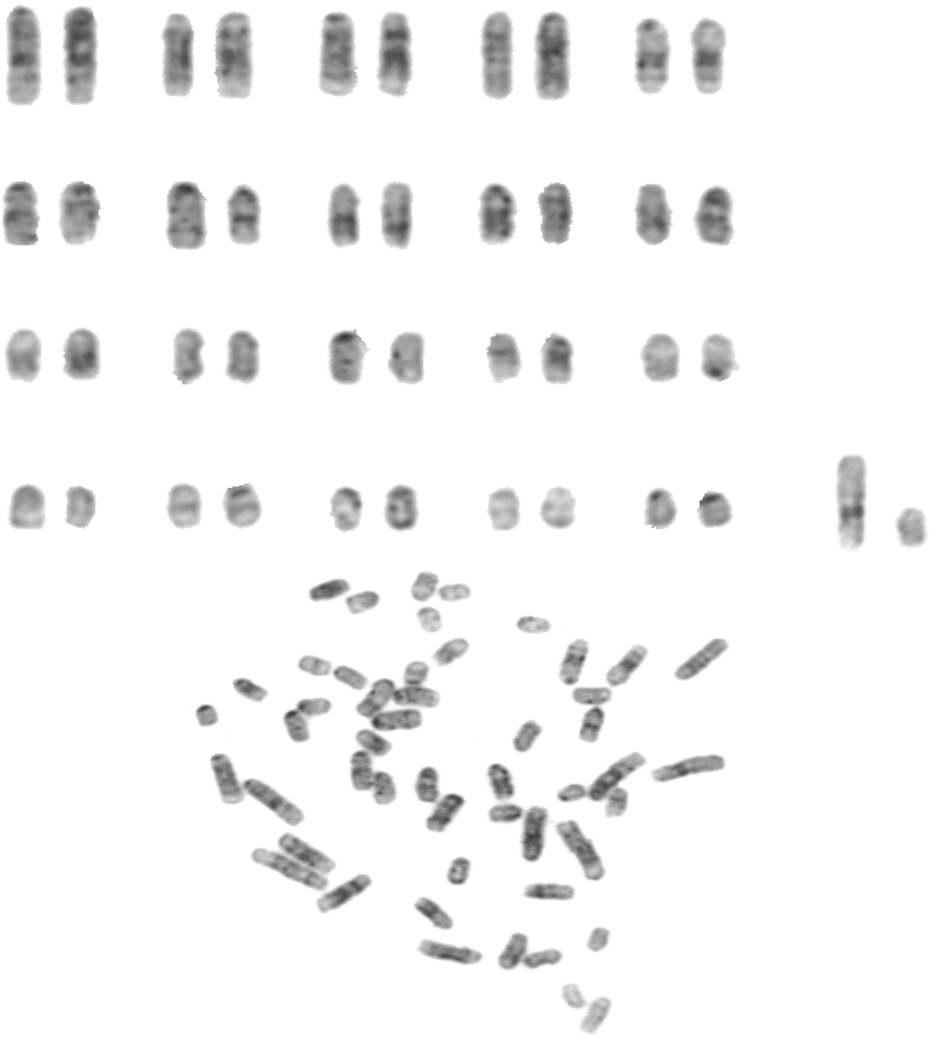

Fig. 1. – G-banded karyotype and metaphase of a male *Apodemus flavicollis* from Serandon (Corrèze, France) with 2 B-chromosomes (2n=48 + 2).

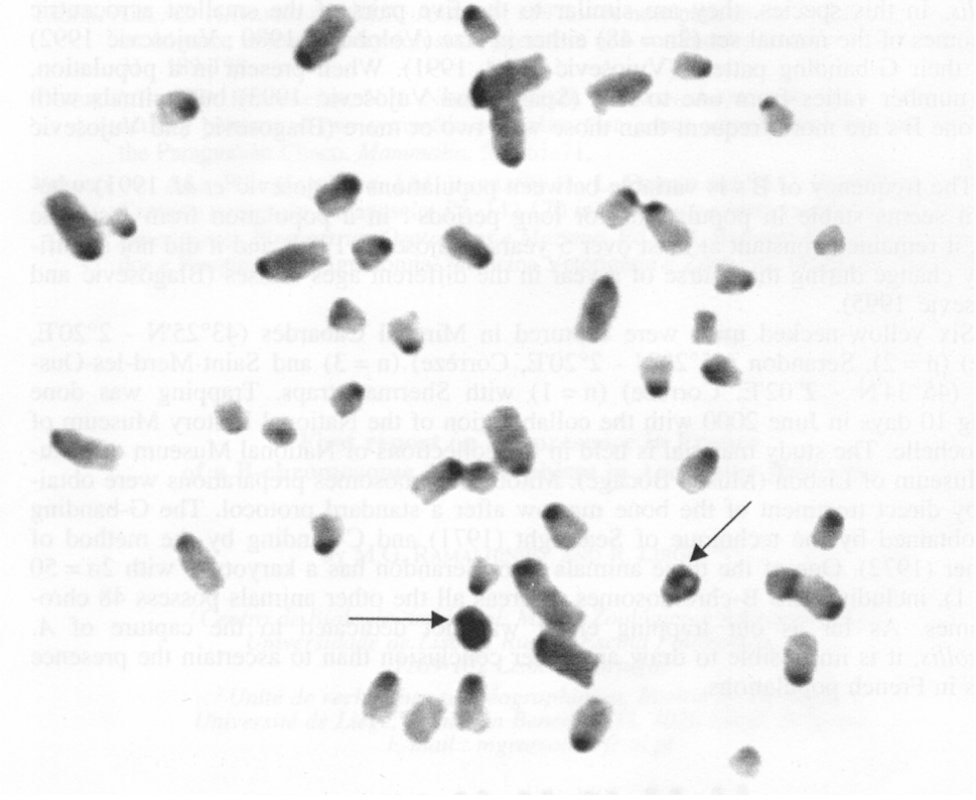

Fig. 2. – C-banding metaphase plate (arrows showing the two heterochromatic B-chromosomes).

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