

Karyotype of dormice *Eliomys quercinus* from Tirol (Austria)

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A karyotype of $2n = 52$ chromosomes was found in two *Eliomys quercinus* (Linnaeus, 1766) specimens from two different localities of Tirol (Austria). The karyotype is similar to the one described in the Italian Alps, suggesting that these mountains were not a barrier to the northern expansion of this chromosomal race.

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In the recent atlas of European mammals (Filippucci 1999), the information on the presence of the garden dormouse *Eliomys quercinus* (Linnaeus, 1766) in Austria seems very limited, the species being present in Vorarlberg and Tirol. It is therefore not surprising that the karyological data are nearly lacking for that country. Six individuals from Laterns (Vorarlberg) are reported to have a karyotype of $2n = 50$ chromosomes (Filippucci *et al.* 1988). This karyotype was also found in nearby Germany (Filippucci *et al.* 1990) and Czech Republic (Sumava mountains, Zima *et al.* 1997). However, these places are located far away from the Tirolian border (approximately 180 and 200 km, respectively) whereas the $2n = 52$ race lives in northern Italy, in the vicinity of the southern Austrian boundary (Filippucci *et al.* 1988). As the Alps is not a barrier to the northern (Filippucci *et al.* 1990) or western (M. G. Ramalhinho and R. Libois, unpubl.) extension of the $2n = 54$ race of the garden dormouse, it may be assumed that Tirol could be colonised by the northern Italian race. However, evidence is still lacking and that is the reason why we here report our analyses.

Two specimens, one from Pfunds (Kobler Alp, 1850 m a.s.l., 46°57'32"N, 10°29'16"E) and one from Bodeneegg (Ventetal, 1530 m a.s.l., 46°55'23"N, 10°59'42"E) (Fig. 1) caught in September 2002, were cytologically analysed. Microscope slides for analysis of the chromosomes in somatic metaphases were prepared by treatment of peripheral blood lymphocyte cultures (Davisson and Akesson 1987) obtained after a 44 hours incubation of whole blood aseptically taken

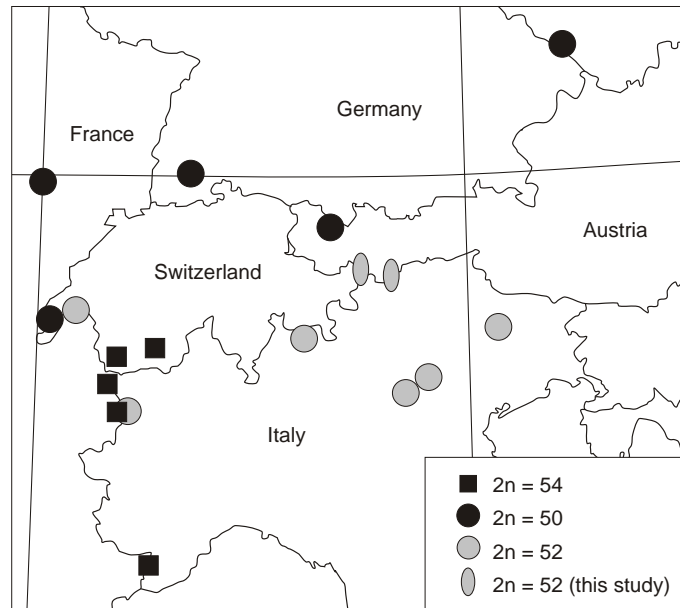


Fig. 1. Distribution of the chromosomal races of the garden dormouse in the Alps and regions nearby (after Renaud 1938, Cristaldi and Canipari 1976, Filippucci *et al.* 1988, 1990, and Zima *et al.* 1997). Black squares: $2n = 54$, black circles: $2n = 50$, grey circles: $2n = 52$, grey ellipses: this study $2n = 52$.

by retro-orbital venipuncture using a heparinized Pasteur pipet. G-banding was obtained under the technique of Seabright (1971). The diploid number ($2n$) and chromosomes morphological characteristics were analysed using a Leica Q500 image analyser and Leica Chantal and Qwin software.

The karyotype of both specimens has a diploid number of $2n = 52$ (Fig. 2). It is composed of 4 pairs of large-sized subtelocentric chromosomes, 2 pairs of small-sized subtelocentric, 14 pairs of meta- and submetacentric chromosomes, and 5 pairs of acrocentric chromosomes. The X chromosome is a large metacentric and Y is punctiform. The karyotype of specimens belonging to this race has already been described by Filippucci *et al.* (1988) from the Italian Alps (central and eastern). The number of submetacentrics is the same (4) but the number of meta- and acrocentric chromosomes does not correspond to the one found here, due probably to some pericentric inversions already referred by Zima *et al.* (1995). The G-banding pattern is similar in all chromosomes.

These findings confirm those of Renaud (1938) in Switzerland showing that the $2n = 52$ race of the garden dormouse has a distribution ranging also on the northern slopes of the Alps and is not limited to the southern part of the chain. They suggest that a contact zone with the $2n = 50$ race exists between Vorarlberg and Tirol on the one side and between Tirol and southern Bavaria/Sumava

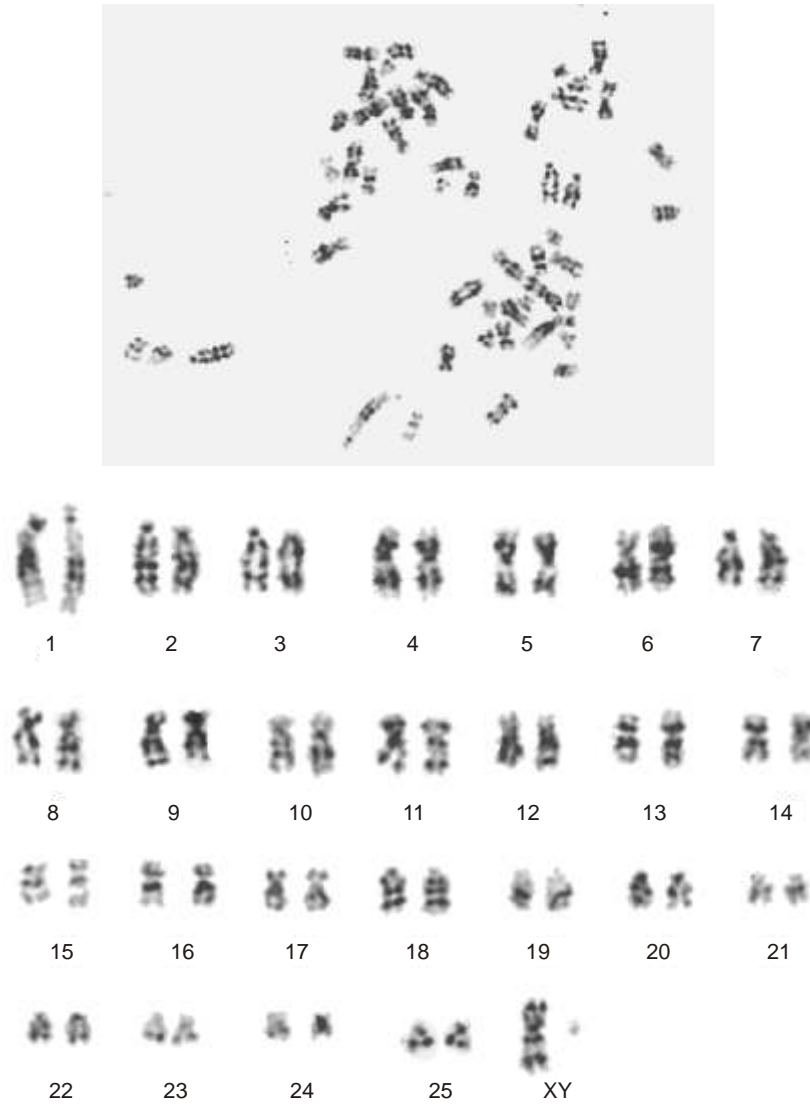


Fig. 2. The G-banded karyotype of a male garden dormouse *Eliomys quercinus* from Bodeneegg (Austria). The chromosomes are numbered according to size.

mountains on the other side. In either case, this contact zone hardly matches any clear geographic barrier.

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