The most comprehensive,
original and comparative cytogenetic study
of vertebrates ever performed

Cytogenetic and Genome Research

The Chromosomes of Terraranean Frogs

Insights into Vertebrate Cytogenetics

Editors

M. Schmid, Würzburg

J.P. Bogart, Guelph, Ont.

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The Chromosomes of Terraranan Frogs is the most comprehensive, original and comparative cytogenetic study of vertebrates ever performed, presenting results obtained over a 36-year period of more than 70 expeditions to the Neotropics (Central and South America and the Caribbean) and from several laboratories (Canada, Costa Rica, Cuba, Germany, USA, and Venezuela). The karyotypes and genomes of 227 recognized species and 2,548 individual specimens of *Terrarana* were examined using a variety of staining techniques, molecular probe in situ hybridization, and genome size measurements. Furthermore, all previously published data on the cytogenetics of *Terrarana* have been included. The karyotype characters were mapped onto the molecular phylogeny obtained by analyses of several mitochondrial and nuclear genes. This allowed reconstruction of the various karyophylogenies as well as calculation of the chromosomal mutation rates.

The results were always interpreted in context with the cytogenetic data published for other amphibian taxa or vertebrates. The general properties of eukaryote chromosomes, the rules governing structural and numerical chromosome repatterning as well as the principles of chromosome evolution are explained. An extensive 'Material and Methods' section was compiled with the intention of providing the necessary guidance for everyone interested in studying amphibian chromosomes.

This monograph provides detailed current and archival information on terraranan karyotypes and genomes to colleagues who are already recognized specialists in amphibian or vertebrate cytogenetics. It is also valuable reading for herpetologists involved in the evolution of neotropical amphibians and provides comprehensive insights into vertebrate cytogenetics for students.

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