

A neo Z chromosome found in *Thamnophilus palliatus* (Thamnophilidae, Passeriformes)

Paulo Victor de Moraes Ferreira¹, Milla Andrade Machado¹, Ane Nobre Monteiro¹, Lucas Guilherme da Silva Tembra¹, Malcolm Andrew Ferguson-Smith², Fengtang Yang², Patricia Mary Caroline O'Brien², Cleusa Yoshiko Nagamachi¹, Julio Cesar Pieczarka¹.

1. Laboratório de Citogenética, Centro de Estudos Avançados da Biodiversidade –CEABIO, ICB, UFPA.

2. Cambridge Resource Centre for Comparative Genomics, Department of Veterinary Medicine, University of Cambridge, Cambridge, UK

INTRODUCTION & AIM

Chromosomal studies in birds have shown that this group has an extremely conserved karyotype compared to other lineages of vertebrates. Passeriformes is the most species-rich order within this class and is the most cytogenetically studied, presenting a karyotype similar to the ancestral avian karyotype ($2n=80$). The Thamnophilidae (antbirds) comprise a Neotropical passeriform family, which includes many insectivorous bird species. Different species occur in all Neotropical biomes, though the local species richness of this family is far higher in tropical forest sites. *Thamnophilus palliatus* (Fig 1) is a species native to the Amazon region, also found on the northeast and southeast coasts of Brazil. The objective of this study was to determine the karyotype of *T. palliatus*.



Fig 1. *Thamnophilus palliatus* male. Source: Author

METHODS

Field collection was carried out in Belém/ Pará using mist nets. A male and a female were caught. After euthanization, chromosomal preparation was obtained according to Ford & Hamerton (1956). The metaphasic chromosomes were stained with Giemsa for analyses. Chromosome painting was done using whole chromosome probes from *Gallus gallus* (GGA, $2n=78$) and *Burhinus oedicnemus* (BOE, $2n=42$).

RESULTS & DISCUSSION

We observed $2n=80$ and fundamental number (FN) of 84 chromosomes, with 10 pairs of macrochromosomes and 70 micro chromosomes (Fig 2). The BOE-1 and BOE-2 probes were marked in two pairs each, which is consistent with the results of other studies in this family, though BOE-2 marked only the long arm of pair THP-1; the remaining probes marked one chromosome each or micro chromosomes. GGA-Z marked the same pair as BOE-2, but on the short arm, an unusual pattern and the first time described for the order (Fig 3). A similar rearrangement has been described for the order Psittaciformes. More experiments are needed in other species populations for a better understanding of this new Z chromosome and how it impacts the species.

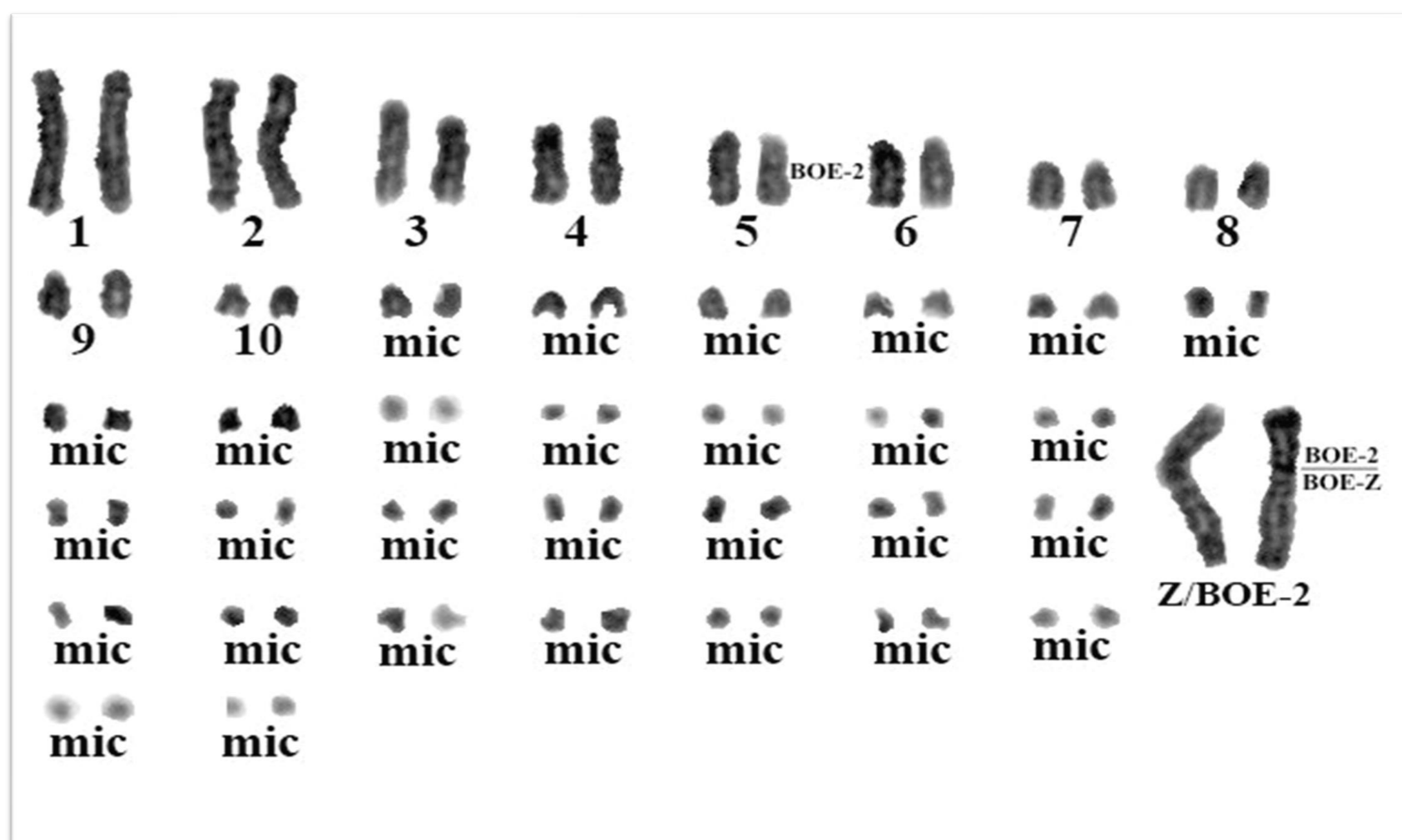


Fig. 2. Conventional Giemsa staining. Karyotype of a male *Thamnophilus palliatus*, $2n = 80$. The numbers below correspond to the chromosomes in *T. palliatus*. On the right side is the chromosome number correspondent on BOE.

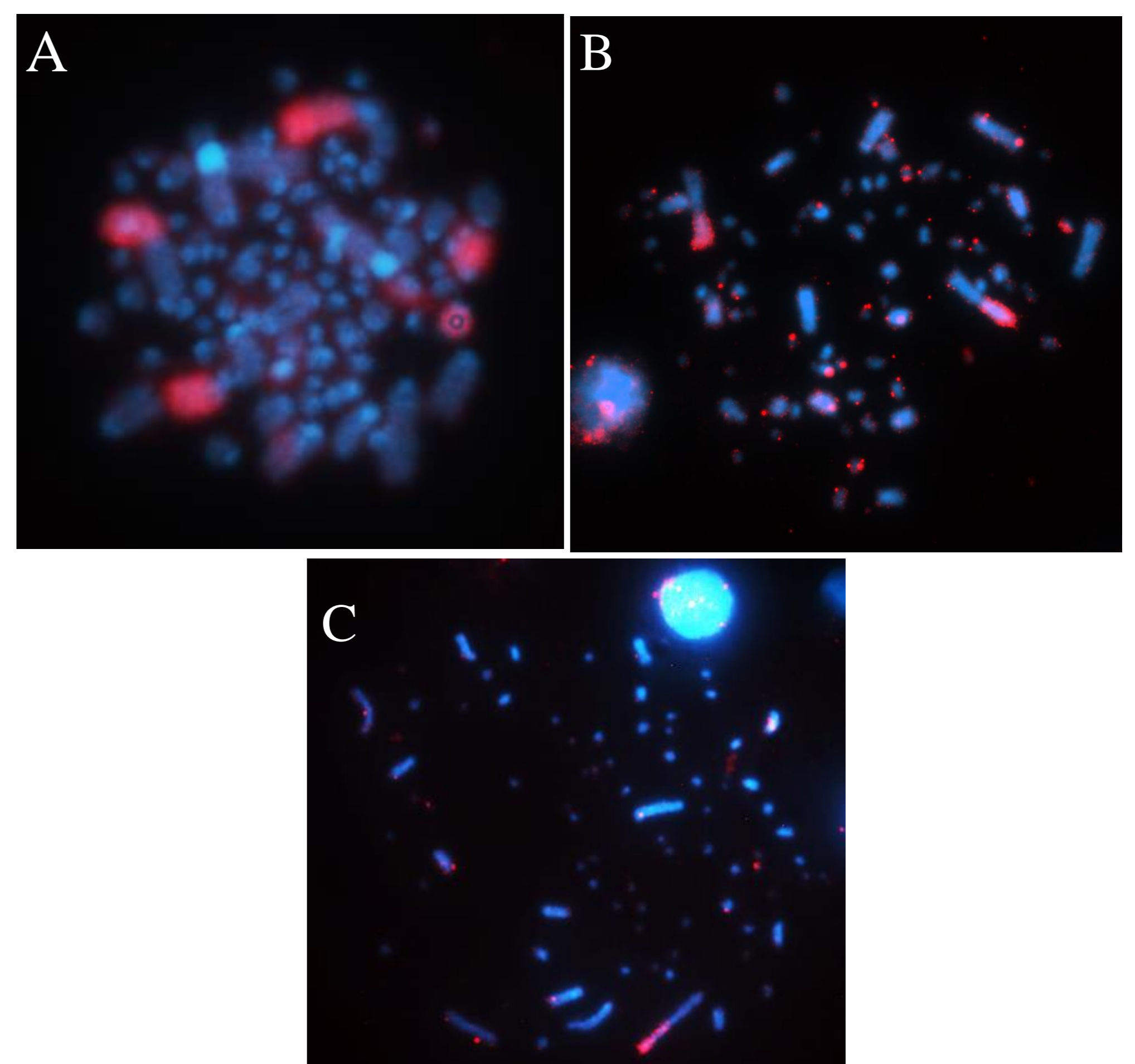


Fig. 3. A) BOE-2 probe. B) BOE-Z probe. C) BOE-Z probe. A and B in the male karyotype and C in the female karyotype of *Thamnophilus palliatus*.

REFERENCES/ ACKNOWLEDGMENTS



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