




# Chromosome Analysis of Maroon Bellied and Green Cheeked Conures

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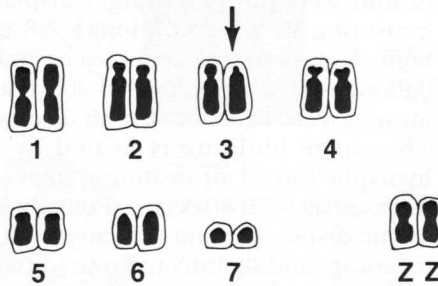
The genus *Pyrrhura* is composed of 18 recognized species of medium sized neo-tropical parrots. Two members of this genus have recently been the subjects of chromosome analysis. These two species are *Pyrrhura frontalis*, the maroon bellied conure, and *Pyrrhura molinae*, the green cheeked conure. These two species possess identical karyotypes, which is not surprising since intragenetic chromosomal variability in birds usually consists of very minor changes. One striking finding, however, was the discovery of an identical inversion of one chromosome three in five maroon bellied conures and two green cheeked conures. No individuals having an inversion of both chromosomes three have yet been identified. This observation as well as the fact that animals which are heterozygous for inversions may have reduced fertility due to the production of genetically unbalanced gametes would suggest that the origin of this inversion has been relatively recent.

## Range Map of Maroon Bellied and Green Cheeked Conures

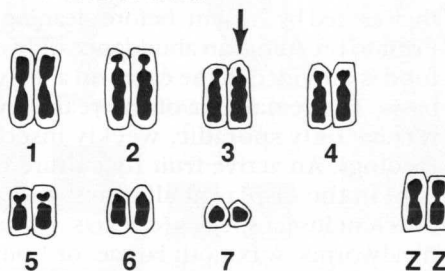


-  Distribution of *Pyrrhura molinae*
-  Distribution of *Pyrrhura frontalis*
-  Zone of sympatry

The maroon bellied conure and green cheeked conure do occur sympatrically (their geographic ranges overlap one another) in at least part of their ranges. Since they also share an identical derived chromosomal condition, it would seem likely that the inversion seen in these two groups has a common



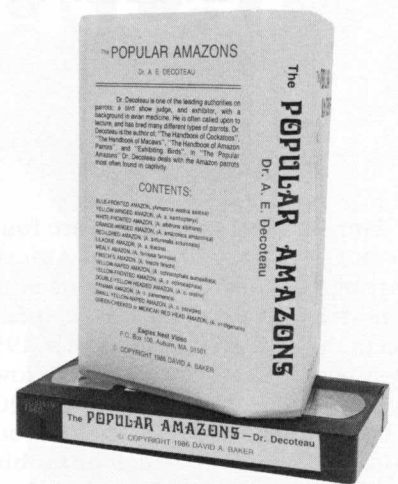
Karyotype of a male maroon bellied conure. The arrow points out the inverted chromosome three.



Karyotype of a male green cheeked conure. The arrow points out the inverted chromosome three.

origin. This being the case, then there must be gene flow between these two species.

In the classic interpretation of the species concept, it is necessary for two animal populations to be reproductively isolated and evolving separately if they are to warrant species status. If the interpretation of the chromosomal data for the maroon bellied and green cheeked conures presented here is correct, then these two groups do not fulfill the requirements for species status, they may, in fact, be only subspecies of the same species. This idea is quite plausible since these two groups occupy adjacent ranges with an area of overlap, they are very similar in external appearance, and now there is evidence for gene flow between the two populations. Collectively, these data would seem to indicate that *Pyrrhura frontalis* and *Pyrrhura molinae* are, in fact, conspecific. ●



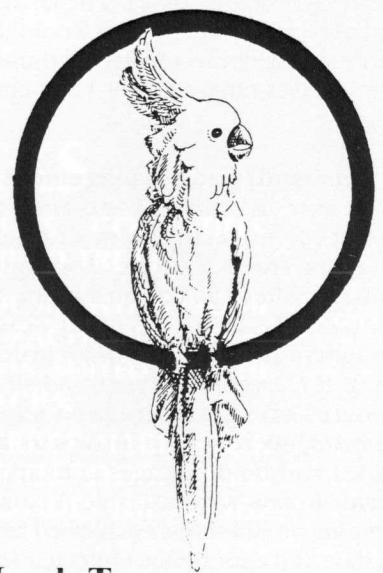
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