

Proposal (#276) to South American Classification Committee

Transfer the genus *Paroaria* to the Thraupidae

Effect on SACC: This would move *Paroaria* from Emberizidae to Thraupidae.

Background & New information: Here's what we have in the Notes at our SACC website:

"The genus *Paroaria* has been placed traditionally in the Emberizidae, sometimes with the cardinal grosbeaks (e.g., Hellmayr 1938, Meyer de Schauensee 1966, 1970), which in this classification are considered a separate family, Cardinalidae. Tordoff (1954) concluded that it was not a cardinaline but an emberizine genus, based on <> skeletal data. Genetic data indicate that the genus *Paroaria* belongs in the Thraupidae (Yuri & Mindell 2002, Burns and Naoki 2004), as suspected long ago by Paynter (1970a)."

Yuri and Mindell (2002) analyzed about 3200 base-pairs of at least four mitochondrial gene regions and found that *Paroaria* was embedded in their very limited group of tanagers including *Tangara* and *Buthraupis*. Their analysis of a cyt-b sequences for a much larger set of taxa found that *Paroaria* was embedded in tanagers, and clustered with *Cissopis*, *Schistochlamys*, and *Neothraupis*, but with low support. Burns & Naoki (2004) analyzed DNA sequences of about 1475 base pairs of two mitochondrial genes. They found that *Paroaria* (*P. coronata*) was deeply embedded within core tanagers, with 100% Bayesian support for a group that includes it, *Neothraupis*, *Cissopis*, and *Schistochlamys*, and 98% Bayesian support for the inclusion of that group within a much larger group of genera that includes *Thraupis*, the type genus for the family.

Paroaria has always been recognized as enigmatic. The bright spectral red coloration is unlike that of any other members of the traditional Emberizidae other than *Rhodospingus* and *Coryphospingus*, themselves also probably tanagers. Unlike the latter, however, *Paroaria* has bright monomorphic plumage, something unknown in true Emberizidae or Cardinalidae (except perhaps for *Piranga rubriceps*), but a routine plumage theme in true tanagers.

Analysis and Recommendation: With the impending dismantling of Emberizidae and likely transfer of many genera to Thraupidae, we could simply wait until additional genetic data appear from the labs of Burns, Klicka, and colleagues. The reason to go ahead with this one is that we have two independent data sets that already say the same thing, namely definitely within core Thraupidae and definitely not within core Emberizidae. Maintaining it in Emberizidae does not reflect current knowledge of its relationships, so I favor moving forward with a YES on this one.

References:

BURNS, K. J., AND K. NAOKI. 2004. Molecular phylogenetics and biogeography of Neotropical tanagers in the genus *Tangara*. *Molecular Phylogenetics and Evolution* 32: 838-854.

YURI, T., & D. P. MINDELL. 2002. Molecular phylogenetic analysis of Fringillidae, "New World nine-primaried oscines" (Aves: Passeriformes). *Molecular Phylogenetics & Evolution* 23: 229-243.

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