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Taxonomic status of *Geotrygon linearis trinitatis* Hellmayr & Seilern, 1912

(Aves, Columbidae)

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The metapopulation of *Geotrygon* quail-doves inhabiting the island of Trinidad and the nearby part of continental Venezuela was treated as a subspecies of *Geotrygon linearis* (Prévost) or as a synonym of *Geotrygon linearis linearis* (Prévost). A revision of the holotype of *G. linearis* and the study of further specimens from Trinidad showed that *Geotrygon trinitatis* Hellmayr & Seilern, new rank, deserves a status of a full species.

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Introduction

Quail-doves of the genus *Geotrygon* Gosse (1847: 316) are plainly coloured ground doves of Central and South America. Some 16–17 species are currently recognized (Baptista et al. 1997, Gibbs et al. 2001, Dickinson & Renssen 2013). However, the genus may be polyphyletic (Johnson & Weckstein 2011, Banks et al. 2013) and the species-level taxonomy requires restudy (Blake et al. 1961, Peterson 1993, Garrido et al. 2002, Donegan & Salaman 2012). Here I revise the taxonomic status of *Geotrygon linearis trinitatis* Hellmayr & Seilern, 1912, a form rarely represented in museum collections.

Johnson & Weckstein (2011) suggested that the genus *Geotrygon* is polyphyletic, and Banks et al. (2013) thus transferred the lineage with the *linearis* complex in the new genus *Zentrygon* Banks et al., 2013. However, the molecular classification disagrees with morphological data (see also Banks et al. 2013). I retain the *linearis* complex in the genus *Geotrygon* until the disagreement between molecular and morphological data is resolved.

Material and methods

Nomenclatural issues follow the currently valid code of zoological nomenclature (ICZN 1999, 2012a,b).

Museum acronyms are as follows: NHMW = Naturhistorisches Museum, Wien, Austria; NMP = National Museum, Praha, Czech Republic; SMF = Senckenbergmuseum, Frankfurt am Main, Germany; ZSM = Zoologische Staatssammlung, München, Germany.

Results and discussion

Hellmayr & Seilern (1912) observed that specimens of *Geotrygon linearis* (Prévost in Knip & Prévost, 1843: 104) from the islands of Trinidad and Tobago are smaller (expressed as wing length) than conspecific birds from northwestern Venezuela and separated this island metapopulation at the subspecific level as *Geotrygon linearis trinitatis* Hellmayr & Seilern (1912: 13). They designated the specimen ZSM 1912.2006 (ad. ♀, collected by Samuel Klages on 4 December 1912 in the Aripo Massif, island of Trinidad) as the holotype.

Hellmayr & Conover (1942: 616, footnote) confirmed this and added that continental birds from northeastern Venezuela also belong to *trinitatis*.



Fig. 1. *Geotrygon linearis* from western Venezuela (two left specimens) and *Geotrygon trinitatis* (two right specimens). From left to right: NMP P6V-003198 (ad. ♂, collected on 26 January 1914 at Silla de Caracas), NMP P6V-003194 (ad. ♂, collected on 11 January 1911 at Cumbre de Valencia), NMP P6V-003196 (ad. ♂, collected on 26 August 1912 in Aripo Mountains, island of Trinidad) and NMP P6V-003208, ad. ♀, collected on 5 September 1912 in Aripo Mountains, island of Trinidad). Lateral view. Photo: Jiří Mlíkovský.

Their treatment was followed e. g. by Junge & Mees (1961: 42–43). However, Baptista et al. (1997: 175) and Gibbs et al. (2001: 382–383) lumped *trinitatis* with the nominotypical *linearis* without any comment. Dickinson (2003: 169) and del Hoyo & Collar (2014: 174) followed them, but Dickinson & Remsen (2013: 62) tentatively resurrected *trinitatis*, noting that it “may not be diagnosable” with a reference to Baptista et al. (1997).

My measurements of the wing length support the opinion of Hellmayr and Seilern: Wing length was 140–150 mm in specimens from the islands of Trinidad and Tobago (n=8; sexes combined; specimens in NMP and ZSM, including the holotype and three paratypes) and 149–160 mm in specimens from northwestern Venezuela (n=8; sexes combined;

specimens in NHMW, NMP and SMF). Hellmayr & Conover (1942: 616–617, footnote) gave wing length = 138–148 mm for the birds from Trinidad, Tobago and the nearby continent (sexes combined, number of specimens not given) vs. 153–160 mm for the birds from northwestern Venezuela (sexes combined, number of specimens not given). Junge & Mees (1961: 43) gave wing length 143–152 mm for the birds from Trinidad (n=4, sexes combined). Individual measurements (mine and those by Junge & Mees 1961) show that females tend to have shorter wings than males and that wing length ranges of the birds from Trinidad and Tobago and those from western Venezuela, controlled for sex, almost do not overlap: males = 140–150 (n=5) vs. 150–156 (n=4), females = 139–146 (n=3) vs. 149 (n=1).



Fig. 2. *Geotrygon linearis* from western Venezuela (two left specimens) and *Geotrygon trinitatis* (two right specimens). Same specimens as in Figure 1. Dorsal view. Note the difference between *G. linearis* and *G. trinitatis* in nape coloration. Photo: Jiří Mlíkovský.

Visual inspection of NMP specimens showed that birds from Trinidad and Tobago (male and female, $n=2$) have shorter and somewhat more slender bills than the birds from western Venezuela (males, $n=3$): length (exposed) = 14.0–14.4 mm vs. 15.8–17.7 mm, depth (measured in front of operculum) = 4.2–4.6 mm vs. 4.6–5.1 mm (Fig. 1).

Hilty (2003: 324) noted that back is glossed purple in the birds from western Venezuela, while it is glossed bronzy green in the birds from Trinidad and Tobago, but I could not confirm this on the basis of three specimens from western Venezuela and two specimens from Trinidad in NMP. However, I found that nape is bronze in both NMP specimens from Trinidad, while it is dark grey in all three NMP specimens from western Venezuela (Fig. 2).

Chapman (1914: 194), who did not know the paper by Hellmayr & Seilern (1912), described

Geotrygon pariae from two specimens collected in the Paria Peninsula, Sucre Province, Venezuela. Its description and size (wing length of the holotypical ad. F = 143 mm) agree with *trinitatis*. Undoubtedly, *Geotrygon pariae* Chapman, 1914 is a junior synonym of *Geotrygon linearis trinitatis* Hellmayr & Seilern, 1912 (Hellmayr & Conover 1942: 616, footnote).

Gibbs et al. (2001: 383) and Hilty (2003: 324) showed that the range of *Geotrygon linearis* is disjunctive. The highlands of the island of Trinidad and the nearby continent (mainly the province of Sucre, Venezuela), which are inhabited by the “small-bodied” form, are geographically separated from the main range of the species (northern Cordilleras). The “small-bodied” form differs from the “large-bodied” form in having (1) wing shorter, (2) bill shorter, (3) bill less massive, and (4) nape bronze, not grey.

Conclusions

On the basis of the comparisons presented above I recommend recognizing *trinitatis* as a valid form. Moreover, considering that it is geographically separated from *linearis*, and that it differs from *linearis* in body size, bill size and shape, and nape coloration I recommend recognizing *trinitatis* as a full species, *Geotrygon trinitatis* Hellmayr & Seilern, 1912. Full synonymy of this species is as follows:

Geotrygon trinitatis Hellmayr & Seilern
Geotrygon linearis trinitatis Hellmayr & Seilern, 1912:
 13 [Island of Trinidad, Trinidad and Tobago].
Geotrygon pariae Chapman, 1914: 194 [Paria Peninsula, Venezuela].

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