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COMENTÁRIO

The Brazilian species complex *Scytalopus speluncae:* how many times can a holotype be overlooked?

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The genus *Scytalopus* Gould, 1837 (Rhinocryptidae), which as currently recognized comprises c.40 species (Krabbe and Schulenberg 2003, Cuervo *et al.* 2005, Krabbe *et al.* 2005, Raposo *et al.* 2006), is one of the most confusing amongst Neotropical suboscines, as it presents a strong tendency to respond morphologically and vocally to geographical barriers. Nevertheless, these morphological and vocal responses are usually very subtle, making attempts to understand the evolution of different populations, as well as their taxonomy, highly complicated. To understand such a complex genus, strong methodological and conceptual parameters are required from the phenomenological point of view (species concept, careful study of geographical variation etc.), as well as from a nomenclatural perspective, following a strict interpretation of the International Code of Zoological Nomenclature (ICZN 1999).

This commentary focuses on some recently described species that comprise the species complex *Scytalopus speluncae* (Ménétriés, 1835) (Given that several alternative spellings exist in the ornithological literature for Ménétriés, namely the present spelling, as well as Ménétries and even Ménétriès, and that we have already been 'accused' once, by Bornschein *et al.* 2007, of misspelling his name, we take the opportunity to record that the international library standard spelling is Ménétriés, as followed here and our earlier publication, Raposo *et al.* 2006.). In writing a single commentary, we are motivated by the fact that virtually all of these descriptions share the same weakness, namely that they have singularly failed to compare their purported new taxa with the holotype that bears the senior name of the complex. Despite this, our commentary does not deal with the validity of those species per se; thus we do not seek to discuss the relative importance of the vocal, morphological and molecular characters used to support the erection of these new taxa. Instead, we seek to demonstrate that the lack of comparison with the relevant holotype has led to serious problems in the nomenclatural basis underlying the diagnoses of three new species belonging to the *speluncae* complex.

Scytalopus speluncae was described from a specimen collected at São João del Rei, Minas Gerais, Brazil. The holotype is housed in St. Petersburg (Zoological Institute, Russian Academy of Sciences, Figure 1A), and the plate accompanying the type description depicts a pale grey bird with a whitish throat ("devident blanchâtre vers le milieu de la gorge et de la poitrine"). Subsequently, Chrostowski (1921) analyzed the holotype and amplified the type description by mentioning the presence of brown-fringed feathers in the rump region, a feature that was thereafter confirmed by an analysis of the same specimen by Raposo *et al.* (2006).

In 1958, Helmut Sick, without having the opportunity to analyze the holotype of Ménétriés, described *Scytalopus indigoticus novacapitalis,* which is nowadays considered a separate species (Krabble and Schulenberg, 2003) and is part of the *S. speluncae* complex. Sick (1958, 1960) admitted doubts as to which species to assign his new taxon. *S. novacapitalis* is light grey with brown-fringed feathers in the rump and flanks, being, in fact, morphologically almost identical to *S. speluncae,* according to the posterior analysis of Raposo *et al.* (2006, based on holotype and topotypes). But, at the time, Sick was able to compare *S. novacapitalis* only with the White-breasted Tapaculo *S. indigoticus* and with the dark gray Mouse-colored Tapaculo of the Brazilian coastal ranges (the Serra do Mar), referred by him, and most other authors, to *Scytalopus speluncae* but since described as a distinct species, *Scytalopus notorius* Raposo *et al.* 2006. In addition to being uniform dark grey, *S. notorius* lacks any trace of brown in the rump and flanks in adult males.

At the time (1958), no topotype of *S. speluncae* was available to Sick, nor was such material in existence two years later when he prepared a second publication reviewing Brazilian Rhinocryptidae (Sick 1960), in which he elevated *S. i. novacapitalis* to specific status for the following reasons: morphology close to *indigoticus* (much less to *speluncae,* though with some elements of intermediacy), but nevertheless with important differences (some of which, such as the slightly shorter bill and shorter rump

feathers, Sick noted for the first time in 1960); biology, chiefly vocalizations, of which the song of *novacapitalis* recalls more that of *speluncae,* whilst what Sick described as the courtship call is different; and finally the apparently very isolated range of *novacapitalis,* in Goiás. In respect of the latter point, Sick noted, however, that dispersal capabilities of *Scytalopus* had been underestimated, referring to Emilie Snethlage's discovery of *S. indigoticus* in Minas Gerais, in 1926, from where (at that time) the bird had subsequently gone unrecorded, as well as the 'astonishing' case of *S. speluncae* which had been originally collected in the same state, but never since, leading Pinto (1952) to doubt the identification. However, Sick (1960) then noted how easy it could be to overlook these tapaculos, given that Snethlage had assembled a large collection in 1927 in the relevant part of Goiás from which he had described *S. novacapitalis,* without encountering

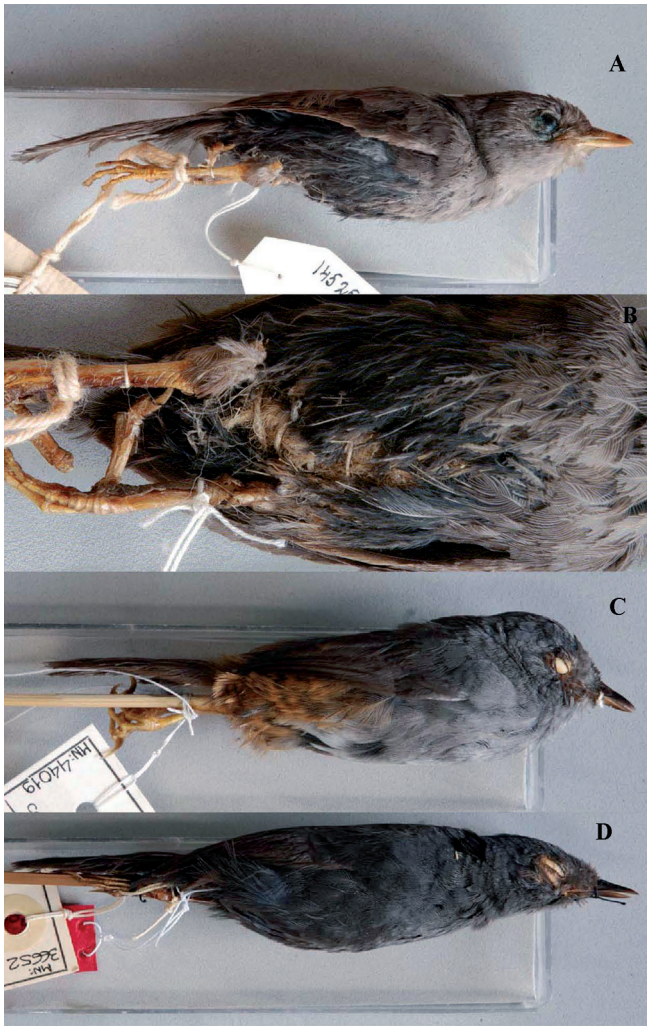

FIGURE 1: A: *Scytalopus speluncae* (holotype, ZISP 145251), lateral view; B: *Scytalopus speluncae,* detail of the abdominal feathers, heavily damaged, showing only the blackish base (ground) colour contrasting with the original pale gray breast feathers, although careful analysis of the flanks and thighs revealed the presence of some remnant buff feathers. C: Topotype (MNRJ 44019) of *Scytalopus speluncae* from São João del Rei, showing the buff feathers lost in the holotype; D: dark gray *Scytalopus notorius* (holotype, MNRJ 36652).

any *Scytalopus.* As an aside, Sick, who admitted to having neither studied the type or type description of *S. speluncae,* speculated that it was either wrongly labelled as to locality or might represent a 'mix-up' with *S. indigoticus,* given that he understood the specimen to be juvenile. As we demonstrated in our earlier publication (Raposo *et al.* 2006), the holotype of *speluncae* is an adult and as also dealt with earlier, but to be reiterated herein, the type locality does not seem doubtful but is corroborated by separate evidence.

Sick's misinterpretation of the name *Scytalopus speluncae,* based on the doubts expressed by Pinto (1952) as to its type being labelled correctly (because of the lack of subsequent records from Minas Gerais), was unsurprisingly followed by almost all subsequent literature including Maurício (2005), who also described another new species within the complex, which is also characterized by being pale gray with a brown rump and flanks. This species, named Planalto Tapaculo *Scytalopus pachecoi,* which occurs in southern Brazil and extreme northeastern Argentina, was also compared principally with the dark gray Mouse-coloured Tapaculo, and not with the holotype of *Scytalopus speluncae.* Maurício reported, based on some photographs of the type of *S. speluncae,* that he was unable to see the whitish throat referred to [i.e. 'referred to by'] Ménétriés (1835) in his description, or the brown ("reddish") fringed rump feathers first noticed by Chrostowski (1921). Accordingly, Maurício (2005) considered that the specimen matched the dark gray specimens from the Brazilian coastal ranges (Mouse-coloured Tapaculo), and further suggested that Ménétriés (1835) must have collected the specimen somewhere other than São João del Rei, basing this comment on the remarks of Pacheco (2004), who had earlier noted problems with a number of Menetries's Brazilian type localities. Nonetheless, this problem does not appear 'live' in the present case (see Raposo *et al.* 2006 and below).

Subsequently, together with our collaborators (Raposo *et al.* 2006), we analyzed carefully and redescribed the light grey holotype of *Scytalopus speluncae.* Even though the holotype is damaged in the abdominal area (Figure 1B), we demonstrated the still-evident presence of brown feathers in the flanks and rump (see Fig. 5 in Raposo *et al.* 2006), and also pointed out that the specimen possesses the whitish throat that was figured in the type description. After analyzing the material available to Maurício (2005), it became clear to us that he had erred in his analysis due to the poor quality of the photographs he had relied upon (vide Raposo *et al.* 2006).

We also included a description of the first topotypes (Figure 1C) from São João del Rei and defended that they match the holotype and the original plate of Ménétriés. We also uncovered information from the Langsdorff diaries (Mikulinskii 1995) that confirmed the presence of Ménétriés in São João del Rei on the relevant dates,

thereby discarding any notion concerning the potential for mistakes in the determination of the type locality by Ménétriés. As noted above, on that occasion we also described, as a new species (*Scytalopus notorius,* Figure 1D), the dark gray populations that are confined to the coastal ranges of southeast Brazil, which taxon is now known to be phylogenetically distant from the clade comprised by the pale gray populations (Bornschein *et al.* 2007).

At that point, three species, all morphologically characterized by being light gray with brown-fringed rump and flanks, had been described: *Scytalopus speluncae* (sensu Raposo *et al.* 2006), *S. novacapitalis* and *S. pachecoi.* The two latter were not adequately compared with the populations that bear the older name, or with the holotype. Our paper (Raposo *et al.* 2006) also demonstrated some striking similarities in the vocalizations of *S. speluncae* and *S. pachecoi.* It was clear at that point that those taxa should be reanalyzed on the basis of current nomenclatural knowledge.

Nevertheless, just one year later, Bornschein *et al.* (2007) described yet another new species *(Scytalopus diamantinensis),* also broadly characterized as being light grey with brown flanks and rump. This new species occupies the northeastern portion of the geographical range of the complex (Chapada Diamantina, Bahia). Compared to *Scytalopus pachecoi,* the authors pointed out that immatures (n = 2) have different markings on the greater wing coverts, whilst also presenting molecular and (less convincing) vocal evidence for species status.

Despite also failing to analyze the holotype of *S. speluncae,* Bornschein *et al.* (2007) argued that Raposo *et al.* (2006) were incorrect, yet presented no evidence to support this hypothesis. They further contended that the name *S. speluncae* must continue to be applied to the dark gray *Scytalopus notorius.*

Adding to this confusing situation, Bornschein *et al.* (2007) also noted that they intend to describe a new species from the type locality of *S. speluncae.* This is clearly verified by an analysis of their text and the legend to their Figure 9, where they state that the vocalizations from São João del Rei refer to a new species. This statement presupposes that the type locality (from the original description), the specimen's label, Langsdorff's diary, the plate and original description (that specifically describe and illustrate a pale gray bird with a whitish throat) of *S. speluncae* are all erroneous, despite the clarifications proffered by Raposo *et al.* (2006). The holotype would also have to be extremely modified over time, from a dark grey specimen to one that is now pale gray with brown flanks and rump, yet there is no evidence in any of the, albeit limited (because so few ornithologists interested in Brazilian birds have visited the relevant museum), literature that supports this view.

If we accept the view of Bornschein *et al.* (2007), four new species (one still undescribed), all of which are light gray with brown flanks and rump, and none of which has been compared with the senior holotype (the fifth species), are extant in the serras of Brazil's interior. *S. novacapitalis* occupies the northwestern part of the overall range (from Brasília south to western Minas Gerais), *S. pachecoi* the southern part (Rio Grande do Sul, Santa Catarina and northeastern Argentina); *S. diamantinensis* the northernmost part; and two species, *S. speluncae* and *Scytalopus* sp. nov. occupy the central area.

As we mentioned at the outset, this commentary is concerned only with the nomenclatural question governing this species complex. It is to be expected that each one of these pale gray populations (and indeed perhaps others yet to be discovered) will possess their own morphometric characters, vocal singularities and molecular make-up. Some of them might represent new taxa but it is important that their descriptions are made parsimoniously.

Scytalopus novacapitalis, S. pachecoi and *S. diamantinensis* were described without comparison to the name-bearing holotype of *Scytalopus speluncae. Scytalopus* sp. nov. (from Bornschein *et al.* 2007) is in the process of being described at least in part based on specimens from the type locality of *S. speluncae.* The authors involved in those descriptions have used as a springboard the bizarre assumption that all that is known, or has been published, concerning the holotype of *Scytalopus speluncae* is incorrect, but to date have consistently failed to present a single incontrovertible piece of evidence to support this belief, other than that of Pacheco (2004) who demonstrated that some of Ménétriés's Brazilian type localities must be incorrect, yet did not specifically bring into question the issue posed by *Scytalopus speluncae.* Yet, Maurício (2005) and Bornschein *et al.* (2007) persist in dismissing the shared conclusion of six authors that have personally examined the holotype (namely Ménétriés, Chrotowski and the four authors of Raposo *et al.* 2006).

To our knowledge, only three other authorities have taken the trouble to examine the holotype of *S. speluncae.* The first to do so was Burmeister (1856), who remarked on the pale coloration of the bare parts ('whitish' lower mandible and flesh-coloured legs), a comment which Sick (1960) suggested might indicate that the specimen was a misidentified *S. indigoticus,* but these are features that would, of course, also apply (given some level of fading) to virtually any of the eastern Brazilian *Scytalopus* identified to date, other than the all-dark grey population in the Serra do Mar. The second was C. E. Hellmayr (in Cory and Hellmayr, 1924), who, despite having analyzed the specimen, furnished only a general description of the species, based on a mixed series that he had to hand, and he made no specific commentary on the holotype. Apparently, Helmut Sick also analyzed, later in his life (Sick 1997), the holotype, but also made no direct commentary on the plumage of that specimen.

Bornschein *et al.* (2007) argued that the unpublished paper (by Maurício, one of his collaborators in the paper) would support their conclusions, but it is difficult to understand how they already can possess clear thoughts as the holotype's identity, given that none of these authors has analyzed this specimen. Should conclusion presage analysis? It remains intangible to us how these authors can insist that the holotype lacks a whitish throat or brown feathers in the rump region without having performed such an analysis, and in clear contradiction of everyone who ever has published the results of such an examination. We are also unable to divine why they persist in contesting the type locality (and the evidence of the topotypes), when label data from the relevant specimen support its identification, as well as the type description and supporting historical data (see Raposo *et al.* 2006 for further details).

We earlier noted (with no pretence to originality) that the genus *Scytalopus* constitutes one of the most taxonomically problematic in the Neotropics. Such complexity is easily verified when considering the distribution, morphology and vocals of these pale gray populations inhabiting the Brazilian interior. But, from a purely nomenclatural perspective, this complex should prove quite simple to elucidate, given the small number of older descriptions and disposable names relevant to the case. It seems that we must reiterate that the oldest name of the group possesses a solid description (and plate) and an extant holotype, complete with its original label, which is considerably more than we might expect in the case of many avian taxa described in the first third of the 19th century. A careful reading of the International Code of Zoological Nomenclature, particularly those sections (Arts. 72, 73, 76) concerning the importance of the holotype and its type locality, would avoid many problems.

In conclusion, the names *Scytalopus novacapitalis, S. pachecoi* and *S. diamantinensis* all demand review and appropriate comparison with the holotype and topotypes of *Scytalopus speluncae,* as well, of course, as the molecular and vocal work already being undertaken. The *Scytalopus* sp. nov. (of Bornschein *et al.* 2007), which apparently includes specimens from São João del Rei (and other localities in Minas Gerais) will otherwise be "born" in synonymy, if its authors do not concern themselves more than they have done previously with the most basic precepts of the Code (ICZN 1999).

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