

ON THE VALIDITY AND CONFUSED IDENTITY OF *SERPOPHAGA GRISEICEPS* BERLIOZ 1959 (TYRANNIDAE)

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ABSTRACT.—Berlioz (1959) described *Serpophaga griseiceps* on the basis of four specimens from Cochabamba, Bolivia, housed at the Museum National d'Histoire Naturelle (Paris, France). Traylor (1979) subsumed the taxon, without justification, in *S. munda* after examining other specimens from Cochabamba at the Field Museum of Natural History (FMNH; Chicago, Illinois). Remsen and Traylor (1989) added that *S. griseiceps* represents the juvenal plumage of *S. munda*. Straneck (1993) presented new data from central Argentina to revalidate *S. griseiceps*, and although that account has methodological problems, numerous authors have endorsed its taxonomic conclusions. We re-evaluated the validity of *S. griseiceps* by examining the type series and specimens deposited at the Museo Argentino de Ciencias Naturales (Buenos Aires, Argentina) and our own field data from Cochabamba, and by critiquing Straneck's taxonomic conclusions. The type specimens of *S. griseiceps* clearly resemble juvenile *S. munda*. Photographs of those specimens were compared by T. S. Schulenberg with the FMNH specimens examined by Traylor, confirming that the former are referable to *S. munda*. Both "forms" differ consistently in plumage coloration from Argentine specimens considered by Straneck to be referable to *S. griseiceps*. The type series of *S. griseiceps* coincides with *S. munda* in wing chord, tail, and tarsus length, and both "forms" have significantly longer wings and tails than Straneck's birds from Argentina. Intensive field surveys in the Cochabamba basin documented the occurrence of only one species of *Serpophaga* tyrannulet, *S. munda*. *Serpophaga griseiceps* should therefore be considered a junior synonym of *S. munda*, whereas Straneck's *S. griseiceps* is apparently referable to an undescribed cryptic species of *Serpophaga* tyrannulet. Received 7 January 2003, accepted 8 December 2003.

RESUMEN.—Berlioz (1959) describió *Serpophaga griseiceps* con base en cuatro especímenes de Cochabamba, Bolivia, depositados en el Museum National d'Histoire Naturelle en Paris, Francia. Traylor (1979) incluyó al taxón en *S. munda*, sin justificativa, luego de examinar otros especímenes de Cochabamba en el Field Museum of Natural History (FMNH), Chicago, Illinois. Remsen y Traylor (1989) más tarde agregaron que *S. griseiceps* representaba el plumaje juvenil de *S. munda*. Straneck (1993) presentó nuevos datos del centro de Argentina para la revalidación de *S. griseiceps*, y si bien el trabajo posee problemas metodológicos, varios autores adoptaron sus conclusiones taxonómicas. Reevaluamos la validez de *S. griseiceps* con base en el examen de la serie tipo y especímenes depositados en el Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina, datos de campo propios de Cochabamba, y proveyendo una crítica a las conclusiones taxonómicas de Straneck. Los especímenes tipo de *S. griseiceps* claramente se asemejan al joven de *S. munda*. T. S. Schulenberg comparó fotografías de estos especímenes con los del FMNH examinados por Traylor, confirmando que los primeros son referibles a *S. munda*. La coloración del plumaje de ambas "formas" difiere de manera consistente de aquella de los especímenes argentinos que Straneck consideró referibles a *S. griseiceps*. La serie tipo de *S. griseiceps* coincide con *S. munda* en la longitud de la cuerda del ala, la cola, y el tarso, y ambas "formas" poseen alas y cola significativamente más largas que las aves de Straneck, de Argentina. Prospecciones de campo intensas en la cuenca de Cochabamba han documentado la presencia de sólo una especie de *Serpophaga*, es decir *S. munda*. *Serpophaga griseiceps* debe entonces ser considerado un sinónimo júnior de *S. munda*, mientras que el *S. griseiceps* de Straneck se refiere aparentemente a una especie críptica de *Serpophaga* aún no descripta.

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SERPOPHAGA GRISEICEPS (Gray-crowned Tyrannulet) was described by Berlioz (1959) on the basis of four specimens collected by F. Steinbach at 2,570 m elevation, in the city of Cochabamba, Cercado province, Bolivia, between 1954 and 1957. Mayr (1971) agreed with Berlioz that *S. griseiceps* represented a new taxon, but Traylor (1979) considered the species invalid and included it, without comment, under the synonymy of *S. munda* (White-bellied Tyrannulet). Remsen and Traylor (1989) added that *S. griseiceps* represents the juvenal plumage of *S. munda*, though references to Traylor (1982) as the source for that statement (e.g. Remsen and Traylor 1989, Herzog 2001) are erroneous. Subsequently, all mainstream literature (e.g. Ridgely and Tudor 1994) followed Remsen and Traylor's (1989) treatment.

Straneck (1993), however, published a revalidation of *S. griseiceps* based on new field and specimen data from the Argentine lowlands (>1,000 km from the Andean type locality) that he believed to be referable to the questionable taxon. Although Straneck's (1993) account has methodological problems (Herzog 2001), his conclusions have nonetheless been adhered to by at least 10 peer-reviewed publications (de la Peña 1996, 2001; Camperi 1997; Zapata 1998; Mezquida and Marone 2000, 2001; Haene et al. 2001; Bencke et al. 2002; Zyskowski et al. 2003; Mezquida 2004), four identification guides (Canevari et al. 1991, Yzurieta 1995, de la Peña and Rumboll 1998, Mayer 2000), and 14 avifaunal lists (Narosky and Di Giacomo 1993; Nellar Romanella 1993; Navas et al. 1995; Chebez 1996; Nores 1996; López Lanús 1997; de la Peña 1997, 1999; Volkmann and Heredia 1997; Chebez et al. 1998; Darrieu and Camperi 2001; Di Giacomo 2001; Mazar Barnett and Pearman 2001; Babarskas et al. 2003).

Personal correspondence of the authors with other Neotropical ornithologists has shown that a certain amount of confusion exists about the status of *S. griseiceps*. Our aims here are to elucidate the mysterious identity of this taxon by analyzing the holotype and paratypes housed in the Museum National d'Histoire Naturelle (MNHN) in Paris, France, and by providing a critique of Straneck's (1993) taxonomic conclusions.

METHODS

In July 2001, J.M.B. took several photographs of the four type specimens of *S. griseiceps* deposited at MNHN and compared them with series of *S. munda*

and of the taxon to which Straneck (1993) applied the name *S. griseiceps* (housed at the Museo Argentino de Ciencias Naturales [MACN], Buenos Aires, Argentina, and at the Colección Félix de Azara, Buenos Aires). Wing chord, tail length, tarsus length, and bill length of the four *S. griseiceps* type specimens, 27 specimens of Straneck's *S. griseiceps*, and 20 specimens of *S. munda* were measured—to the nearest 0.1 mm for wing chord, tarsus, and bill (from base of skull) length, and to the nearest millimeter for tail length. Only specimens whose sex was indicated on the label were measured. Statistical analyses were performed using STATISTICA for Windows (StatSoft 1997). Digital scans of the photographs taken were compared by T. S. Schulenberg to specimens at the Field Museum of Natural History (FMNH) in Chicago, Illinois.

DISCUSSION

Description of S. griseiceps.—The main plumage characters used by Berlioz (1959) to diagnose *S. griseiceps* included "upper parts of head and body entirely ashy-gray, tinged brownish on the back and rump," a "short crest, but with no signs of white marking on the head," "a well-marked white supra-ocular band," "wing-coverts broadly tipped pale, dull reddish," "remiges with fine external fringes reddish-white," and "underparts pale gray grading to white over mid-belly and all of the abdomen" (translated from the original account in French). No natural-history data were included in the description. Berlioz (1959) considered that *S. griseiceps* was quite similar to *S. munda* (which he was aware inhabited the same area), but that it differed from the latter by its uniform crown pattern and the tawny (not whitish) fringes of the wing coverts. Of the four specimens that Berlioz (1959) used to describe *S. griseiceps*, he considered three to be adults and one an immature, on the basis of its paler mandible.

The synonymization of S. griseiceps.—In the two decades following its formal description, only a few authors incorporated *S. griseiceps* in their work (Meyer de Schauensee 1966, 1970; Smith 1971). Meyer de Schauensee had examined Berlioz's type series (Mayr 1971) and concluded that *S. griseiceps* was a valid form. In contrast, Traylor (1979) synonymized *S. griseiceps* in *S. munda*, without details, and only later was it suggested that the former represented the juvenal plumage of the latter (Remsen and Traylor 1989). Again, no details were provided, and the statement was referenced to Traylor (1982), who did not treat this taxon.

Traylor (1979) did not base his synonymization on an examination of the type series of *S. griseiceps* (M. A. Traylor pers. comm.). Rather, he examined three FMNH specimens (181394, 181396, 181397; collected by F. Steinbach at Cercado in 1940). During an examination predating Berlioz's (1959) account, those specimens appeared to Traylor to correspond to the juvenal plumage of *S. munda*, and they were among a larger series of that species (M. A. Traylor pers. comm.). The original labels indeed read "*Serpophaga munda*," but it is unclear who labeled them (T. S. Schulenberg pers. comm.). When Berlioz (1959) published his description of *S. griseiceps*, Traylor re-examined the three FMNH specimens and found them to match Berlioz's description "so well" that they undoubtedly represented the same taxon. Nonetheless, M. A. Traylor (pers. comm.) was still convinced that those specimens were juvenile *S. munda* and thus expanded his earlier conclusion to the whole of *S. griseiceps*. In addition, he had examined a specimen housed at the Louisiana State University Museum of Natural Science (LSUMZ 37995; also collected by F. Steinbach at Cercado in 1961). That specimen was originally labeled "*Serpophaga munda* [?]"—perhaps by F. Steinbach himself—and later annotated "*griseiceps*?" (J. V. Remsen pers. comm.).

In spite of the brief nature of that sinking of *S. griseiceps*, and the lack of a detailed published justification, all subsequent authorities (e.g. Vuilleumier et al. 1992, Ridgely and Tudor 1994, Parker et al. 1996, Sibley 1996) followed Traylor (1979) and Remsen and Traylor (1989) in considering *S. griseiceps* synonymous with *S. munda*. Certainly, Berlioz's previous errors in identifying species-level taxa in the Neotropics may have influenced other authors in ignoring Berlioz's *griseiceps* as a species-level taxon (J. V. Remsen pers. comm.).

Straneck's (1993) attempt to revalidate the taxon.—In his analysis of three tyrannulet taxa, Straneck (1993) assigned the name *S. griseiceps* to a species almost identical to *S. subcristata* that he found to be sympatric with *S. munda* in the lowlands of western Argentina. Straneck (1993) seemingly overlooked the earlier views of Traylor (1979) and Remsen and Traylor (1989), because no mention is made of the issue, and the original source (Traylor 1979) is not cited. Straneck also did not provide convincing evidence why he considered the Argentine birds referable to *S. griseiceps* in the first place. His

only justification for that association was that "the body measurements and coloration [of the Argentine birds that he studied] coincide with *S. griseiceps*." That conclusion, however, was apparently not based on any type of analysis, and relevant quantitative comparisons are missing from the paper. Furthermore, Straneck (1993) even acknowledged differences in coloration of the lower underparts between the birds he studied in Argentina and the *S. griseiceps* specimens from Cochabamba (yellowish versus whitish, respectively), yet he considered those differences taxonomically insignificant, implicitly (but not explicitly) assuming a certain degree of geographic variation.

The crux of Straneck's (1993) account rests on qualitative analyses of vocalizations. Although those comparisons clearly demonstrated species-level differences between the Argentine birds and both *munda* and *subcristata*, they did not include recordings of birds referable to known *S. griseiceps* from Cochabamba. Straneck provided the following justification for considering the taxon that resembles *S. subcristata* and coexists with *S. munda* to be referable to Berlioz's *S. griseiceps*: "...the geographic distribution, habitat, measurements, and juvenal plumage coincide with *S. griseiceps*..." (translated from Spanish). That statement, however, is not correct. First, the geographic distributions of the two "forms" certainly do not coincide, and Straneck was aware of this, stating that *S. griseiceps* is known only from the type locality in Bolivia. Second, although their habitat may be similar, Straneck did not specifically compare the environment of the type locality of *S. griseiceps* with that of his study sites in Argentina. Third, it appears that Straneck did not measure Bolivian specimens referable to Berlioz's *S. griseiceps*, but that is difficult to judge because no list of specimens examined was provided. Also, Straneck's analysis of measurement data did not provide standard deviations or ranges, and most data were not analyzed separately for males and females (see Herzog 2001). Fourth, Straneck contradicted himself when stating that the juvenal plumages of the two "forms" are the same, because it is clear from page 53 of his account that a difference exists in the color of their underparts (see above). Hence, it appears that Straneck based his conclusions on comparison of only the juvenal plumages of the "forms," even though

Berlioz (1959) clearly stated that he considered three of his study specimens adults.

Reanalysis of S. griseiceps.—In our opinion, *S. griseiceps* represents the juvenal plumage of *S. munda*. Despite the lack of published details, Traylor's analysis of the FMNH specimens was careful, and it seems beyond doubt that those specimens are attributable to Berlioz's *S. griseiceps*. That point is further confirmed by T. S. Schulenberg (pers. comm.), who compared the pictures taken of the *S. griseiceps* type series housed at MNHN to the FMNH specimens. A direct examination of the type specimens at MNHN (1959-1237, 1959-1238, 1959-1239, 1959-1240) by J.M.B. has given no reason to contradict Traylor (1979) and Remsen and Traylor (1989). Those specimens have grayish breasts that grade into whitish bellies, gray backs with a slight brownish tinge, and broad buff to pale cinnamon wing bars, with paler edgings to the inner remiges. That wing pattern is typical of the juvenal plumages of Tyrannidae, and the type specimens clearly resemble juvenal *S. munda* (J. Mazar Barnett pers. obs.; also see footnote in Ridgely and Tudor 1994). On the basis of an examination of the LSUMNS specimen that had been analyzed by Traylor (see above), J. V. Remsen (pers. comm.) reached the same conclusion.

A summary of morphometric measurements of *S. griseiceps* from Cochabamba, Straneck's *griseiceps*, and *S. munda* is presented in Table 1. Statistical comparisons were restricted to males because only a single female specimen of *griseiceps* is available. Significant differences between *S. griseiceps* and Straneck's birds were

found in wing chord (t -test = 4.73, $P = 0.0003$) and tail length (t -test = 2.31, $P = 0.036$), but not in tarsus or bill length. By contrast, average measurements of the type series of *S. griseiceps* were similar to those of *S. munda*, except for bill length (t -test = 3.42, $P = 0.004$). A similar trend is evident when comparing measurements of female specimens. Wing chord and tail length of the single female *griseiceps* specimen fall above the measurement ranges of Straneck's birds and roughly coincide with those of *munda*, whereas tarsus and bill length are inconclusive (Table 1). Male *S. munda* differed significantly from Straneck's birds in all four parameters (t -test = 8.29, $P < 0.0001$ for wing chord; t -test = 7.20, $P < 0.0001$ for tail length; t -test = 3.69, $P = 0.001$ for bill length; Mann-Whitney U -test, $Z = 3.11$, $P = 0.002$ for tarsus length). Thus, in wing chord and tail length, both of which are frequently used as indicative measurements in taxonomic analyses at the species level (e.g. Schulenberg and Stotz 1991, Aleixo and Whitney 2002), the type series of *S. griseiceps* coincides with *S. munda*, and both "forms" have significantly longer wings and tails than Straneck's birds.

New, negative field evidence corroborates these findings. The Bolivian type locality of *S. griseiceps*, Cercado province, is situated entirely within the city of Cochabamba. S. K. Herzog (unpubl. data) studied the avifauna of the greater Cochabamba area, a rain-shadowed, intermontane basin at approximately 2,550–2,700 m elevation in the central Bolivian Andes, while residing in the city from 1998 to 2000 (he has also studied the bird communities of other rain-shadowed valleys in the Bolivian Andes since 1995; see Herzog and

TABLE 1. Descriptive statistics of wing, tail, tarsus, and bill measurements (in millimeters) of the type series of *Serpophaga griseiceps*, Straneck's *S. griseiceps*, and *S. munda*.

	<i>S. griseiceps</i> type series		Straneck's <i>S. griseiceps</i>		<i>S. munda</i>	
	Male	Female	Male	Female	Male	Female
Wing	51.5 ± 3.0	49.7	46.4 ± 1.4	45.7 ± 1.2	50.1 ± 0.8	47.9 ± 1.2
	48.6–54.5		44.1–48.5	43.4–47.9	48.6–51.4	46.1–49.7
	$n = 3$	$n = 1$	$n = 14$	$n = 13$	$n = 14$	$n = 6$
Tail	46.5 ± 0.7	49	42.4 ± 2.4	43.0 ± 2.5	48.3 ± 1.9	46.2 ± 1.5
	46–47		37–46	39–46	44–51	44–48
	$n = 2$	$n = 1$	$n = 14$	$n = 13$	$n = 14$	$n = 6$
Tarsus	16.2 ± 1.7	18.6	16.2 ± 0.6	16.8 ± 0.7	17.0 ± 0.7	16.7 ± 0.5
	14.3–17.3		15.1–16.9	15.7–18.1	15.5–18.2	15.8–17.1
	$n = 3$	$n = 1$	$n = 14$	$n = 13$	$n = 13$	$n = 6$
Bill	10.2 ± 0.6	10.5	10.2 ± 0.4	10.5 ± 0.3	11.1 ± 0.4	10.8 ± 0.3
	9.5–10.7		9.8–11.1	10.0–11.0	10.5–11.8	10.6–11.2
	$n = 3$	$n = 1$	$n = 14$	$n = 12$	$n = 13$	$n = 6$

Kessler 2002). The only species of *Serpophaga* tyrannulet that he found in the Cochabamba basin was *S. munda*, which was fairly common in areas with at least some taller trees.

Thus, neither recent museum nor field studies have provided any evidence that Berlioz's *S. griseiceps* is an existing, valid taxon, and instead reconfirm the observation of Remsen and Traylor (1989) that it represents the juvenal plumage of *S. munda*.

Conclusion.—In the analysis presented here, *S. griseiceps* Berlioz 1959 is shown to represent the juvenal plumage of *S. munda*, and it should therefore be considered a junior synonym of *S. munda* Berlepsch 1893, as originally suggested by Traylor (1979) and Remsen and Traylor (1989). Furthermore, Straneck's (1993) treatment of an Argentine tyrannulet taxon as referable to *S. griseiceps* and the resulting revalidation of *S. griseiceps* are not confirmed. Several recent authors, especially in the Argentine literature, erroneously followed that revalidation. This case thus contains an important lesson on how lack of critical evaluation of published data can lead to blind acceptance of taxonomic changes.

Naturally, our conclusions raise questions about the identity of the taxon that Straneck (1993) considered referable to *S. griseiceps*. Straneck (1993) presented a brief plumage description, sonograms of vocalizations, and morphometric data of the taxon and, after a comparison with *S. subcristata*, concluded that the two forms are specifically distinct. Therefore, Straneck's (1993) analysis strongly suggests that a species-level taxon might be involved. Consequently, Straneck's *S. griseiceps* is apparently referable to an undescribed cryptic species of *Serpophaga* tyrannulet. Further analysis and a formal description of the taxon by the authors are currently underway and will be published elsewhere.

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