Bonn zoological Bulletin 72 (2): 201–208
2023 · Kirwan G.M. & Collar N.J.
https://doi.org/10.20363/BZB-2023.72.2.200

ISSN 2190–7307
https://www.zoologicalbulletin.de

Scientific note

urn:lsid:zoobank.org:pub:AFC76171-9BA7-478B-AEAB-0594A8806989

Lophornis melaniae Floericke, 1920 (Aves: Trochilidae), is a synonym of *L. stictolophus* Salvin & Elliot, 1873, not of *L. delattrei* (Lesson, 1839)

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Abstract. We re-evaluate the taxonomic status of a poorly known and largely ignored hummingbird taxon, *Lophornis melaniae* Floericke, 1920, which was described from two male syntypes. Reported to have been destroyed, these specimens survive in the Staatliches Museum für Naturkunde Stuttgart. None of the three commentators on this case inspected this material and only one read Floericke's original description. Comparison of the syntypes with specimen material and photographs available online of Rufous-crested Coquette *L. delattrei* (Lesson, 1839) and Spangled Coquette *L. stictolophus* Salvin & Elliot, 1873, suggests that, on the basis of its crest feathers being relatively densely packed and bushy rather than spiky, wiry and splayed, and on the broader distribution and greater number of dark spots on the crest, *L. melaniae* is a synonym of *L. stictolophus* rather than of *L. delattrei*, as had been postulated previously.

Key words. Trochilidae, *Lophornis*, *Lophornis melaniae*, hummingbirds, South America, Colombia.

In an illuminating commentary on the identity of an extremely little-known and largely ignored trochilid, *Lophornis melaniae* Floericke, 1920, Walters (1997) remarked that an accurate assessment of its taxonomic validity was impossible because the two male syntypes associated with this name "almost certainly no longer exist". On the authority of the mammalogist Dr Hans-Walter Mittmann, then employed by the Staatliches Museum für Naturkunde Karlsruhe, Walters (1997) reported that "Floericke's collection was stored at the Naturalienkabinett Stuttgart, and was completely destroyed during World War Two." However, this has proved to be incorrect: by speculatively interrogating the now defunct online database www.systax.org (originally at http://www.systax.org/de/details/tax/200311; now at GBIF: https://www.gbif.org/occurrence/1038115330 and https://www.gbif.org/occurrence/1038115306), in October 2021 GMK discovered that Floericke's types of *L. melaniae* are extant and held in the Staatliches Museum für Naturkunde Stuttgart (SMNS 30965 and SMNS 30966), where he examined and photographed them in May 2022 (Figs. 1–2).

Kurt (alternatively Curt) Floericke (1869–1934) studied natural sciences in Breslau and Marburg (1889–93) before commencing commercial trade in skins and live birds. He made a number of research and collecting trips, to the Balkans, Turkmenistan, Cyprus, Asia Minor, Morocco, Canary Islands and South America, some of them in the company of Otto Kleinschmidt (1870–1954), mainly in the period between 1898 and 1901 (Gebhardt 2006). To date, however, we have not found more specific details of these overseas expeditions, particularly to South America. From 1907 he was employed by the Stuttgart-based company Kosmos, and thereafter he was extraordinarily productive, writing several books and many hundreds of articles (not only on natural history topics) for popular magazines and specialist literature, including his Mitteilungen über die Vogelwelt [News about the Bird World], in which he published several descriptions of new taxa (Gebhardt 2006). SMNS holds 285 specimens from Floericke's collection (it is not clear if he took all of them himself or acquired them by other means), including the two *Lophornis melaniae* (F. Woog, Stuttgart, in litt., 2022). Additional material of his is also known to be held by museums in Bonn and Sarajevo, and was formerly also in Budapest prior to the 1956 fire (Roselaar 2003: 327).

The key passage in the original description of *Lophornis melaniae* reads as follows (translation from German by Isabelle Weiss and NJC, with our explanatory comments inserted in square brackets):

Received: 05.04.2023
Accepted: 13.11.2023

Corresponding editor: T. Töpfer
Published: 17.11.2023

Fig. 1. Dorsal view of male syntype of *Lophornis melaniae*, SMNS 30965, held at the Staatliches Museum für Naturkunde Stuttgart (Guy M. Kirwan).

"…I have two male hummingbirds… which are more or less midway between *reginae* [*Lophornis reginae* Gould, 1847[1] = *L. stictolophus*] and *delattrei* as far as the formation of the 'cap' is concerned. Their crest feathers are narrow and pointed, but not nearly as ray-shaped or filiform as those of *delattrei*; they all or nearly all have the black terminal spot, but these are much smaller than in *reginae*, and they are about the size of a strong i-dot. Clearly one might think of these birds as hybrids between *reginae* and *delattrei* or as a colour aberration of one of them. However, this is contradicted by (1) the relatively frequent occurrence of this intermediate form, as I recall having had it in my hands several times before; (2) the colour of the crest feathers, which is not halfway between the two species but a shade paler than in *delattrei*, especially in the middle section, where it lightens to a pale isabelline-yellow; (3) the length of the bill, which is 9–9.5 mm in *reginae*, 9.5–10.5 mm in *delattrei*, but 11–12 mm in the intermediate form. Since all this argues for the latter's independence, I believe I must give it a new name and call it *Lophornis melaniae* in honour of my brave companion [his wife Melanie Reiß (1881–1971]. Types No. II, 2183 and 2184 of the collections of the Süddeutsche Vogelwarte [a private ornithological institute founded by Floericke]. I am not sure whether we are dealing here with three separate species or three local races (subspecies) of one and the same form. I tend to favour the latter view, and in this case all three forms would have to be called ternary. However, we cannot clarify this until we have precise information about the breeding ranges of the three forms. Nehrkorn's [1910] large catalogue, however, only lists eggs of *reginae* from Colombia."

From this description it is clear, as Floericke (1920) emphasises from the start, that the closest species morphologically to *L. melaniae* are the well-known species (Dickinson & Remsen 2013) Rufous-crested Coquette *L. delattrei* (disjunctly in Costa Rica and Panama; Central and East Andes of Colombia; and eastern Peru to northern Bolivia: Züchner 1999a) and Spangled Coquette *L. stictolophus* (northern Venezuela continuously south through eastern Colombia and Ecuador to northern Peru in the Marañón Valley: Züchner 1999b), but there has been no full review of either the specimen evidence

[1] *Trochilus reginae* von Schreibers, 1833, Collectanea ad Faunam Brasiliae, p. 1, Pl. 1, fig. 2, was thought to have potential priority over its synonym *Ornismya gouldii* Lesson, 1832, Les Trochilidées ou des Colibris et les Oiseaux-Mouches, p. 103, Pl. 36 = *Lophornis gouldii*, by Salvin & Elliot (1873), who thought both nomina dated from 1833 but nonetheless argued that the "established" name, *gouldii*, should take precedence. Their respective holotypes are in the Naturhistorisches Museum Wien (NMW 19.847, from Mato Grosso, Brazil: Schifter et al. 2007) and the Natural History Museum, Tring (NHMUK 1933.11.14.73, from Pará, Brazil: Warren 1966). In fact, whilst Lesson's plate dates from 1833, the name was first introduced in the text of the same work a year earlier, in 1832 (see Dickinson & Remsen 2013: 112, footnote 8). Because Schreibers' name is valid, to prevent homonymy in *Lophornis*, Salvin & Elliot (1873) introduced a new name, *stictolophus*, in place of *Lophornis reginae* Gould, 1847, Proceedings of the Zoological Society of London 1847: 95 – no type locality, although Gould (1861: lxiii) subsequently mentioned "New Granada" and a specimen from Zamora, in south-east Ecuador, but *stictolophus* was ascribed to "Columbia" (sic) by Salvin & Elliot (1873). Floericke (1920) evidently overlooked this or chose to ignore it. The holotype of Gould's name *reginae* appears to be lost. Authors of new hummingbird taxa were obviously scrabbling to invent new names during the era when large numbers of these remarkable birds started to reach Europe. Perhaps confusingly, Gould also named *Trochilus* (*Lophornis*) *regulus* Gould, 1846, Proceedings of the Zoological Society of London 1846: 89, but this name is a junior synonym of *Trochilus magnificus* Vieillot, 1817, Nouveau Dictionnaire d'Histoire Naturelle, Tome 7, p. 367; and *Lophornis regulus*, Gould, 1855, A monograph of the Trochilidae, Vol. 3, Pl. 120 and text, from Cochabamba, Bolivia, over which *Ornismya* (*Lophorinus*) *DeLattrei* Lesson, 1839, Revue Zoologique, par la Société Cuvierienne 2: 19, no type locality but probably from Peru, has priority (see Simon 1921: 285, Peters 1945: 32). Züchner (1999a) saw no rationale to treat Gould's name at subspecific rank, whereas Zimmer (1950) admitted this was a slight possibility.

Fig. 2. Left to right, dorsal, lateral and ventral view of male syntype of *Lophornis melaniae*, SMNS 30966, held at the Staatliches Museum für Naturkunde Stuttgart (Guy M. Kirwan).

or the arguments that Floericke furnished to justify the position he chose to take.

Peters (1945) maintained *L. melaniae* as a species with a query, noting that he had not seen the original description but daring to speculate, without explanation, that *melaniae* might not even be a *Lophornis*. Unsurprisingly, he was unable to ascribe a range to the taxon, although the label of SMNS 30966 mentions "Colombia" (see below and Fig. 2). We have searched the catalogue of Floericke's bird collection published in parts in Mitteilungen über die Vogelwelt (starting in 1919 with volume 18), as this routinely included general localities (countries/states) for his specimens, but Floericke seems never to have completed this endeavour and there is no mention therein of these two individuals. Meyer de Schauensee (1966) treated *melaniae* as a species but found it "very doubtful", speculating that it represented a melanistic form of another species of *Lophornis*. However, as Walters (1997) noted, this was evidently based on an erroneous assumption: Floericke named the form for his wife, not because the specimens were melanistic, so Meyer de Schauensee's coining of the vernacular "Dusky Coquette" was entirely misplaced. Despite the inclusion of *L. melaniae* in these two seminal works, the only subsequent commentary on Floericke's taxon is that of Walters (1997) and it needs to be stressed that none of these authorities had seen the specimens in Stuttgart and evidently only Walters ever read the original description.

Walters (1997) speculated that *melaniae* must represent unusually pale-crested, faded or aberrant individuals of Rufous-crested Coquette *Lophornis delattrei* (also with reduced black spotting), citing (but not identifying by register number) a specimen of the latter species with these characters at the Natural History Museum, Tring (NHMUK). His conclusions were repeated by Züchner (1999a) and, consequently, by Dickinson & Remsen (2013) and del Hoyo & Collar (2014). Our own examination of specimens at Tring strongly suggests that the individual Walters had in mind was one of two skins stored apart from other *Lophornis* species and tentatively attributed to *melaniae*. They are now registered as NHMUK 2002.3.209 and NHMUK 2002.3.216, although both are Spangled Coquettes *L. stictolophus* from "Colombia" with pale, short crests (Fig. 3).

Males of *L. delattrei* and *L. stictolophus* are not always easily distinguished in the field, especially in brief views; however, the rufous crest of *L. stictolophus* is bushy rather than spiky (tips less pointed) and more prominently speckled with larger black or very dark green dots, which are scattered from the centre of the crown backwards (well captured in Schulenberg et al. 2007; Herzog et al. 2016). *Lophornis delattrei* has two subspecies: the nominate in Peru and Bolivia, and *L. d. lessoni* in Panama and Colombia. The latter reportedly differs in its more pointed crest feathers with almost no dark tips (Züchner 1999a). The depth of the colour of the crest varies in both species including both subspecies of *L. delattrei* (see Fig. 4 and photographs online, notably Macaulay Library [ML], https://macaulaylibrary.org/). However, while some accounts state that male *L. d. lessoni* has no or almost no

Fig. 3. Two male specimens of *Lophornis stictolophus* (middle pair), NHMUK 2002.3.209 and NHMUK 2002.3.216, considered to be similar to *L. melaniae* by Walters (1997), compared to typical males of *L. delattrei* (left-hand two, NHMUK 1887.3.22.1254 and NHMUK unregistered; note variation in crest feather length) and *L. stictolophus* (right-hand two, NHMUK 2002.3.225 and NHMUK 2002.3.212) (Guy M. Kirwan, © Trustees of the Natural History Museum, London).

dark spots in its crest (e.g., Hilty & Brown 1986; Züchner 1999a), a review of photos on ML suggests that c.10% of birds in Panama and Colombia possess visible spots (e.g., ML416172491, ML141020241). Conversely, an apparently much smaller percentage of individuals of the nominate subspecies have no (ML63329011) or almost no (ML205184961) visible spots (such that the validity of *lessoni* might be questioned: compare Figs. 4 and 5). A specimen of *lessoni* with many dark (green) tips to the crest feathers (Leibniz Institute for the Analysis of Biodiversity Change, Museum Koenig, Bonn, ZFMK Coll. Kl. 9845) came to Kleinschmidt via Graf von Berlepsch, and was originally in Floericke's hands, but it seems hard to consider the morphology of this individual as any way 'intermediate' (i.e., one of the specimens Floericke recalled handling in the past; see the original description). In both subspecies the dark is nearly always confined to the extreme tips (as specified and illustrated for the nominate by Schulenberg et al. 2007), but occasionally (e.g., ML284502131) with some additional small dark spots on the distal third of these feathers (based on specimens, field observations, and photographs of live birds on publicly accessible databases). Some illustrations (e.g., in del Hoyo et al. 1999) might suggest that there are differences in the tail pattern of males when viewed from below, but examination of specimens and photos, for example, ML506539681 (*delattrei*) and ML204920551 (*stictolophus*), does not support this.

The two syntypes of *Lophornis melaniae*, SMNS 30965 and SMNS 30966, are both males and more or less damaged, especially around their heads and bills, with 30965 now completely lacking feathers on the crown; they also lack multiple tail feathers, especially 30966 (Figs. 1–2). However, the bills are intact and measure respectively 13.3 and 13.5 mm, almost identical to the lengths of both *L. delattrei* and *L. stictolophus* (respective means of 10 and 12 males [including the two *melaniae*-like specimens] in NHMUK 12.5 and 13.2 mm: see Table 1), contra Floericke's own (and frankly baffling) finding quoted above from his original description. Given the damaged plumage of SMNS 30965, we have to trust Floericke's testimony, which clearly indicates that the two specimens were similar. Consequently, in the absence of a molecular analysis, the identity of *melaniae* must rest on the morphology of SMNS 30966, which is now labelled *stictolophus*. The crest feathers of this specimen are rather pale rufous but within the spectrum of variation shown by both species (e.g., ML204127541, *L. delattrei*; ML204103721, *L. stictolophus*). The dark spots are not profuse but some, especially in the centre of the crown, are rather large and bold, being twice the size of others (c.1.5 mm long; most are <1 mm), and a few are as close

Fig. 4. Male specimens of *Lophornis d. delattrei* (Bolivia, at the Leibniz Institute for the Analysis of Biodiversity Change, Museum Koenig Bonn), from left to right ZFMK 10.080, ZFMK 10.076, ZFMK B¹.I.66.e.α and ZFMK 10.079 (Guy M. Kirwan).

to the base as to the tip of the relevant feather. Somewhat inconsistent with either *delattrei* or *stictolophus*, SMNS 30966 shows very few spots, even small ones, on the tips of the crest feathers, but two of them are adorned with comparatively large dark markings. We have not seen a specimen of either *delattrei* or *stictolophus* with an identical pattern of dark spots, but ML413454891 shows a *L. stictolophus* with relatively few dark-tipped feathers and perhaps equally sparse spotting across the rest of the crest, although none of the visible spots appears as large as in SMNS 30966. The crest feathers of SMNS 30966 form a rather densely packed mass (Fig. 2 left), without the typically wiry quality and splayed formation (even at rest, including in specimens) of *L. delattrei* (see, by contrast, Fig. 6).

Table 1. Bill length data (measured from tip of culmen to skull; i.e., measurement 'Bsk' per Eck et al. 2011) from specimens of *Lophornis stictolophus* and *L. delattrei* (subspecies combined) held in the Natural History Museum, Tring, compared with data for the syntypes of *L. melaniae* held at the Staatliches Museum für Naturkunde Stuttgart, all taken by GMK. Data (in mm) are presented in the format: mean with standard deviation (range, number of specimens). The specimens of *L. stictolophus* include the two individuals thought by Michael Walters to be similar to Floericke's types.

Lophornis stictolophus	***Lophornis delattrei***	***Lophornis melaniae*** **SMNS 30965**	***Lophornis melaniae*** **SMNS 30966**
13.22 ± 0.74 (12.3–14.5, n = 12)	12.53 ± 0.96 (11.7–14.8, n = 10)	13.3	13.5

Fig. 5. Male specimens of *Lophornis d. lessoni* (left and middle, Colombia; Staatliches Museum für Naturkunde Stuttgart and Leibniz Institute for the Analysis of Biodiversity Change, Museum Koenig Bonn; and right, Panama; Natural History Museum, Tring): SMNS 30974, ZFMK Coll. Kl. 9876, and NHMUK unregistered (Guy M. Kirwan).

As a result, contra Walters' (1997) text but consistent with the NHMUK specimen that Walters apparently thought might be similar to those Floericke had described, we believe that *melaniae* can be referred to *L. stictolophus*, not *L. delattrei*. Three further considerations support this conclusion. First, the possibility that *melaniae* was collected in Colombia, where *L. delattrei lessoni* typically shows no or very little dark spotting on the crest, significantly reduces the chance of it being referable to this latter taxon. Second, Walters' (1997) speculation (repeated by Züchner 1999a), that the Stuttgart skins might have been unusually faded is not borne out by our investigation. Third, with the availability of many more specimens and photographs of live birds, Floericke's suggestion that *melaniae* was somewhat "intermediate" can also be discounted, as the characters of the crest (which is the only feature useful to separate males of the two species) fit within the range of variation exhibited by *L. stictolophus*, albeit perhaps only rarely; thus although the possibility that *melaniae* is of hybrid origin (already mentioned on the oldest labels attached to both syntypes) cannot entirely be excluded, it seems very remote. This is because known areas of overlap between the two relevant species are at most very few, for example, none has been found in northern Peru, despite the apparent proximity of the two species' ranges there (Schulenberg et al. 2007) and there appear to be no localities in Colombia with records of both species, for example, on eBird (https://ebird.org/), despite some distributional overlap on the maps in Hilty & Brown (1986) and Hilty (2021). Both these latter works emphasise that the distribution of *L. stictolophus* is largely restricted to elevations below that of *L. delattrei* in Colombia. Indeed, the only specific locality we have discovered with 'records' of both species is Jatun Sacha Biological Reserve, Napo province (01°04'S, 77°36'W), in eastern Ecuador,

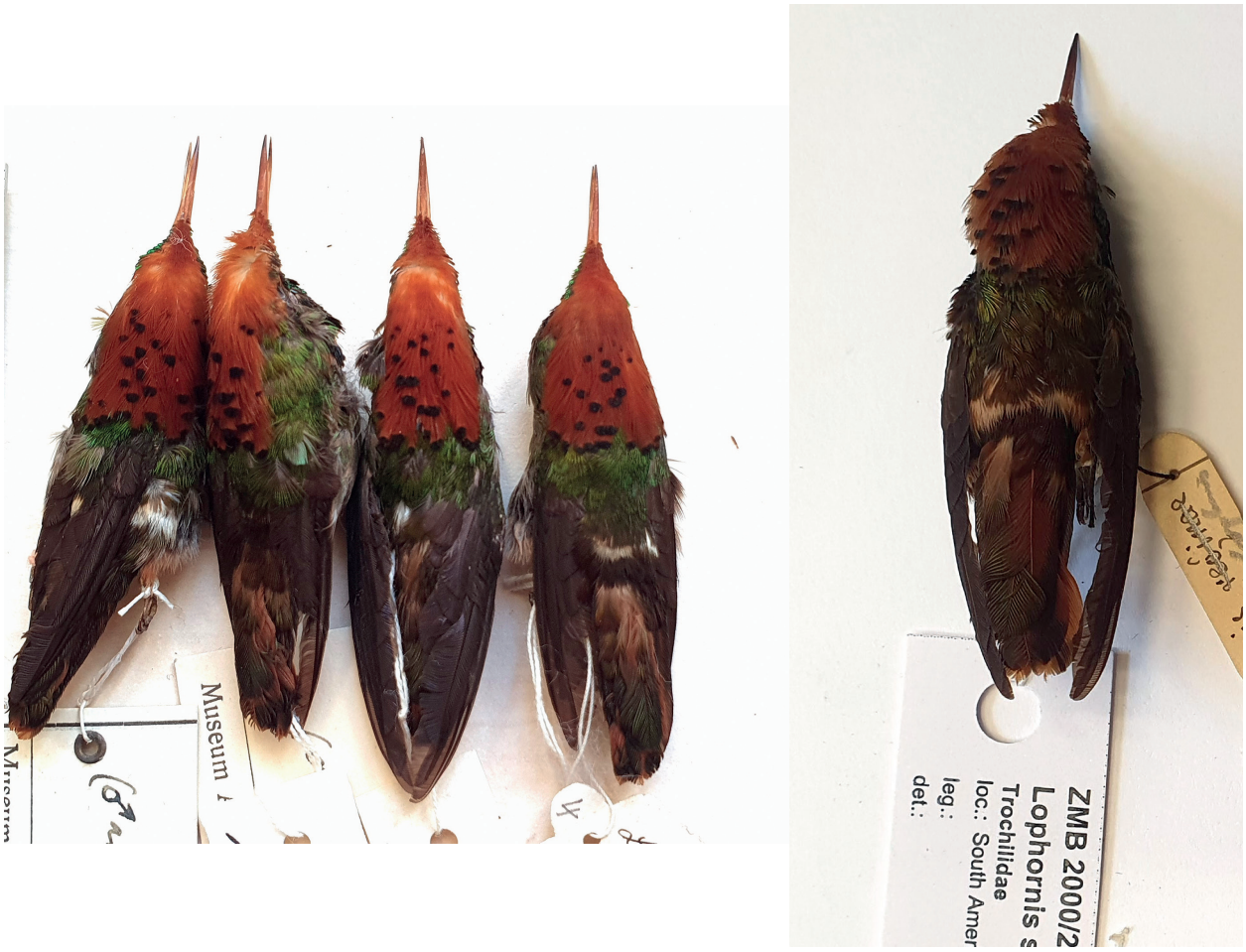

Fig. 6. Male specimens of *Lophornis stictolophus* (left-hand four at Leibniz Institute for the Analysis of Biodiversity Change, Museum Koenig Bonn; right-hand bird at Museum für Naturkunde, Berlin) (Guy M. Kirwan).

where *delattrei* has been claimed once, in April 1992, and *stictolophus* has been observed at least a few times (Ridgely & Greenfield 2001). *Lophornis delattrei* is still treated as of only hypothetical occurrence in Ecuador, based on the uncorroborated sighting at Jatun Sacha (Freile & Restall 2018), which at 400 m is below the usual elevational range of that species (Hilty & Brown 1986; Züchner 1999a; Schulenberg et al. 2007; Herzog et al. 2016). Our identification accords with the museum's own attribution to SMNS 30966.

Inevitably in cases like this where the identity of a museum specimen cannot be completely resolved by examination and comparison with other material, we recommend that a molecular study be undertaken on Floericke's two *melaniae* in the hope of a more certain conclusion.

Acknowledgements. We are grateful to Friederike Woog for providing access for GMK to study specimens at the Staatliches Museum für Naturkunde Stuttgart. Comparative material of other *Lophornis* taxa was examined at the Natural History Museum, Tring, thanks to Mark Adams and Hein van Grouw; at the Museum für Naturkunde, Berlin, due to the help of Pascal Eckhoff; and at the Leibniz Institute for the Analysis of Biodiversity Change, Museum Koenig, Bonn, through the kindness of Till Töpfer. Isabelle Weiss kindly assisted with translating the original description of *Lophornis melaniae*. Cat O'Carroll assisted with access to Mitteilungen über die Vogelwelt. Two referees and the subject editor, Till Töpfer, critiqued the submission.

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