

Field evidence for the validity of White-tailed Tityra *Tityra leucura* Pelzeln, 1868

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Tityra leucura (White-tailed Tityra) was described by Pelzeln (1868) from a specimen collected by J. Natterer, on 8 October 1829, at Salto do Girao [=Salto do Jirau] (09°20'S, 64°43'W) c.120 km south-west of Porto Velho, the capital of Rondônia, in south-central Amazonian Brazil (Fig 1). The holotype is an immature male and is housed in Vienna, at the Naturhistorisches Museum Wien (NMW 16.999). Subsequent authors (Hellmayr 1910, 1929, Pinto 1944, Peters 1979, Ridgely & Tudor 1994, Fitzpatrick 2004, Mallet-Rodrigues 2005) have expressed severe doubts concerning this taxon's validity, whilst others simply chose to ignore it (Sick 1985, 1993, 1997, Collar *et al.* 1992.). Almost 180 years have passed since its collection with the result that *T. leucura* has slipped into oblivion, and the majority of Neotropical ornithologists and birdwatchers are unaware of its existence.

Here, I review the history of *T. leucura* and then describe its rediscovery from the rio Madeira drainage of south-central Amazonian Brazil, providing details of my field observations of an adult male. I present the first published photographs of the holotype of *T. leucura*, and compare plumage and morphological differences with two similar races of Black-crowned Tityra *T. inquisitor pelzelni* and *T. i. albitorques*. *T. inquisitor* specimens were examined at two Brazilian museums for abnormal plumage characters. I also discuss the taxonomic history of *T. leucura* and the reasons that led to it being placed in the synonymy of *T. inquisitor*. Finally, I summarise my rationale for why *T. leucura* should be treated as valid.

History of *Tityra leucura*

Hellmayr (1910, 1929) was first to cast doubts on the validity of *T. leucura* stating that 'the type, a male molting from the juvenile into the first annual plumage, is most nearly related to *T. i. albitorques* and resembles it in the white cheeks and auricular region; but the upper parts and breast are much more strongly tinged with gray, without any white on the hind neck, and the tail lacks the black subterminal band. The rectrices are pale gray, with the base of the inner webs white for about twenty millimeters (as in *T. i. inquisitor*), and the tips broadly, although not abruptly, margined white. The outermost pair shows a narrow blackish shaft streak in the second third of the inner web, and a similar, but smaller spot exists near the base of the central rectrices. The coloration of the tail gives an abnormal impression, and may be due to the absence of melanin in the pigment cells during the process of growth. The bill, too, appears to have been retarded in its development. It is only one-third the size of the allied species and, instead of black, dark horn brown, paler below. The top of the head is mainly black, with slight metallic gloss, though on the forehead, superciliary region, and the hind crown a number of the hazel brown juvenile feathers may yet be seen. The second primary, as is also the case in the first annual plumage of the allied species, is fully developed and very nearly as long as the third. Concluding, additional material is required to establish the status of this alleged species.' Thereafter, the status of *T. leucura* was consistently regarded as dubious; J. T. Zimmer (*in* Traylor 1979) concluded 'Its described characters suggest the possibility of abnormality in a subadult that is intermediate between *T. i. albitorques* and *T. i. pelzelni*, whose ranges involve other sections of the rio Madeira and its effluents'. More recently, Ridgely & Tudor (1994) noted *T. leucura* as a dubi-

ous species, given the lack of field records and that geographic variation in the tail colour of *T. inquisitor* exists (the individual could be merely abnormal in showing a white tail). Fitzpatrick (2004) followed previous work in considering the type to be an abnormal subadult male, intermediate between *T. i. albitorques* and *T. i. pelzelni*, whose ranges apparently overlap in the area where the holotype was collected. Finally, Mallet-Rodrigues (2005) stated that either the type represents individual variation or is an intermediate between two geographical forms of *T. inquisitor*.

Methods

I undertook 50 days of field surveys at Pousada Rio Roosevelt (08°29'S, 60°57'W; Fig. 1), during five visits, 10–21 April 2004, 7–17 September 2004, 12–20 March 2005, 1–9 April 2006 and 11–19 September 2007. Field work was concentrated in lowland humid forest c.10 km either side of the pousada along the rio Roosevelt and c.10 km upstream on the rio Maderinha. A single excursion was made to the mouth of the rio Machadinho. Observations were made along riverbanks (from boats), on foot in *terra firme* forest and at the edge of the lodge's airstrip. Results of this work will be published elsewhere (Whittaker submitted).

I examined specimens of *T. inquisitor* at the Museu de Zoologia da Universidade de São Paulo, Brazil (MZUSP) and Museu Paraense Emílio Goeldi, Belém, Pará, Brazil (MPEG), as follows: *T. i. inquisitor* (MPEG 18955–56, 27219–21, 38414, 41273, 41495, 43493–94, 44594–95, 45285–86, 47109, 49090–91, 51853–54, 52433; MZUSP 1624, 5420, 6314, 6710–11, 8190–92, 10079, 12119, 12125, 15089, 15091, 15773, 26075, 26201, 27817, 28242–43, 28686–87, 30394, 31262, 31907, 33475–76, 36954, 40998–99, 43237, 48085–87, 50089–90, 51163–64, 51238, 51895, 52723, 54562, 54582, 56923, 56925–27, 68681–84, 72286, 72288, 74054, 74711, 75325, 76076); *T.*

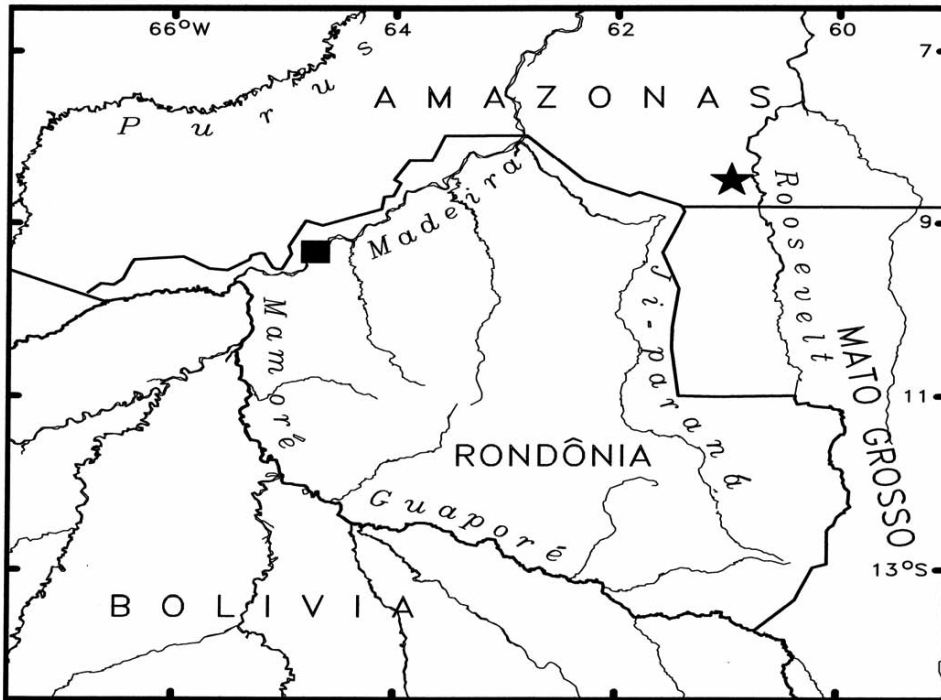


Figure 1. Map showing the type locality of *Tityra leucura* (square), at Salto de Jirau, Rondônia, and the rediscovery site (star), at Pousada Rio Roosevelt, Amazonas (prepared by Mort Isler).

i. erythrogegens (MPEG 2623–24, 9256, 15222, 27222, 46057–58); *T. i. pelzelni* (MPEG 27223; MZUSP 23393, 30393, 30395–96, 32688, 52722); and *T. i. albitorques* (MZUSP 5246, 23399).

Rediscovery

I observed a presumed adult male *T. leucura*, at 15.15 h on 6 April 2006, in low-stature (c.20–30 m) *terra firme*, while following a huge midstorey mixed-species flock of insectivores. My initial impression was of an odd-looking *Tityra* with a striking all-white tail. It was immediately obvious that the bird was unlike any other *tityra* species (i.e. Black-tailed *Tityra T. cayana*, Masked *Tityra T. semifasciata* and Black-crowned *Tityra T. inquisitor*), all of which I know extremely well, and I therefore strongly suspected that my observation might represent the rediscovery of the *T. leucura* phenotype.

I carefully observed the bird for seven minutes as it followed the flock, the sunny conditions affording perfect viewing conditions, at c.50–70 m. Close observation of the tail at various angles confirmed that all of the rectrices were white, with no trace of black. I also noted the following distinct plumage characters. The bird most closely resembled *T. inquisitor*, but the black crown appeared reduced and did not reach the nape, running from the lores to just below the eye, then wrapping around the pure white ear-coverts (as in *T. i. albitorques*) and onto the rear crown. The upperparts were whitish grey, whilst the black flight-feathers offered a sharp contrast. I also gained the strong impression of the bird possessing a smaller bill, making its jizz somewhat more reminiscent of a *Pachyramphus* becard. The bill was dark above with a distinctly paler maxilla; the legs were dark and irides dark brown or black. For a couple of minutes, I followed the *tityra* with my microphone and tape-recorder switched on, in the forlorn hope of recording its voice. Once the bird was lost from view, I swiftly returned to the lodge to round up my birding group, whereupon we returned to the area of the sighting with cameras. However, we were unsuccessful in relocating the bird.

Behaviour.—The *tityra* associated with a huge mixed-species flock, which included Violaceous Trogon *Trogon violaceus*, Squirrel Cuckoo *Piaya cayana*, White-fronted Nunbird *Monasa morphoeus*, Buff-throated Woodcreeper *Xiphorynchus guttatus*, Cinnamon-throated Woodcreeper *Dendrexetastes rufigula*, Olivaceous Woodcreeper *Sittasomus griseicapillus*, Chestnut-winged Foliage-gleaner *Philydor erythropterus*, Slender-billed Xenops *Xenops tenuirostris*, Sclater’s Antwren *Myrmotherula sclateri*, Chestnut-shouldered Antwren *Terenura humeralis*, Grey Elaenia *Myiopagis caniceps*, Forest Elaenia *M. gaimardii*, Yellow-margined Flycatcher *Tolmomyias assimilis*, Grey-crowned Flycatcher *T. poliocephalus*, Ruddy-tailed Flycatcher *Terenotriccus erythrurus*, Tooth-billed Wren *Odontorchilus cinereus*, Red-eyed Vireo *Vireo olivaceus*, Buff-cheeked Greenlet *Hylophilus muscicapinus*, White-

TABLE 1
Comparison of bill sizes of *Tityra leucura* with *T. i. pelzelni* and *T. i. albitorques*.
Length = exposed culmen (in mm). All measurements taken by E. Bauernfeind.

Taxon	specimen no.	sex	length	gape
<i>T. i. pelzelni</i>	NMW 16.996	male	21.5	13.6
	NMW 16.997	female	21.5	11.9
	NMW 16.998	juvenile female	20.4	11.6
<i>T. i. albitorques</i>	NMW 16.994	male	21.4	13.4
	NMW 16.995	female	[19.2]*	12.4
<i>T. leucura</i>	NMW 16.999	juvenile male	14.6	10.2

* tip broken

winged Shrike-Tanager *Lanio versicolor* and Paradise Tanager *Tangara chilensis*. The tityra behaved typically, being sluggish, perching (often on open horizontal boughs) essentially motionless, albeit moving its head to slowly peer around. It hopped lethargically along horizontal branches, sometimes searching denser clumps of leaves or along larger branches for prey. The bird spent most time in the midstorey, and only once ventured to the subcanopy.

Comparison with the holotype

My field description of a tityra with a pure white tail, white cheeks and proportionately smaller bill than congeners, which was not entirely dark, clearly matches the diagnostic features of *T. leucura* described by Pelzeln (1868). After reviewing photographs of the holotype (Figs. 2–7), I was in no doubt that my observations referred to a male *T. leucura*. However, unlike the holotype, (an immature male), my observation clearly involved an adult male.

Biometrics.—The bill of *T. leucura* is strikingly different in size to allied taxa (Table 1), but wing- and tail-lengths are similar. The bill of *T. leucura* is dark reddish brown (upper mandible) and pale amber, mottled darker brown on the edges (lower mandible) (E. Bauernfeind *in litt.* 2007). Compared to *T. i. pelzelni* and *T. i. albitorques*, the bill of *T. leucura* is much paler, although the base of the lower mandible in one *T. i. pelzelni* (presumably an immature; NMW 16998) was slightly paler, as in *T. leucura*. In *T. i. pelzelni* and *T. i. albitorques* the hook at the bill tip is stronger and very well defined in adults.

Plumage diagnostics.—Compared to *T. leucura*, in *T. i. pelzelni* the black crown extends slightly further onto the nape, as well as onto the cheeks and ear-coverts, which are white in *T. leucura* (Fig. 6). The rectrices are white basally with a broad black bar and very distinct white apical margin, but are all white in *T. leucura* (Fig. 5). *T. i. pelzelni* has a proportionately larger, darker bill than *T. leucura* (Fig. 6). *T. i. albitorques* has a white tail with a broad black subterminal band of c.20 mm, and white apical margin, as well as a more extensive black crown than *T. leucura*, whilst its bill is again proportionately much larger and all dark (Figs. 5–7).

Status.—The lone record of *T. leucura* at Pousada Rio Roosevelt was made during four separate research trips, totalling 50 days. If *T. leucura* is a valid taxon then this tityra must be a very low-density inhabitant of the midstorey and canopy of Amazonian forest, as is *T. inquisitor* (Stotz *et al.* 1997, Zimmer *et al.* 1997; AW unpubl.).

Taxonomic doubts

I summarise the reasons put forward for doubting the validity of *T. leucura*, and explain my rationale for contradicting each theory and for considering *T. leucura* as probably worthy of taxonomic status.

Hybrid theory.—This theory proposed that *T. leucura* represents a hybrid between *T. i. albitorques* and *T. i. pelzelni*, with an all-white tail. It is difficult to comprehend how such a pairing would result in a bird with a pure white tail, given that both races possess broad black tail-bands with smaller amounts of white. Although there is variation in tail patterns of those taxa in *T. inquisitor*, each tail pattern appears constant, with no variation (AW pers. obs.). For instance, my comparison of specimens at MZUSP, involving 56 *T. i. inquisitor*, six *T. i. pelzelni* and two *T. i. albitorques* revealed consistent patterns with no signs of abnormality or intra-taxon variation. Furthermore, *T. i. pelzelni* has all-black ear-coverts, making it even harder to explain why a supposed hybrid would possess both white auriculars and a white tail.



Figure 2 (left). Lateral view of the holotype of White-tailed Tityra *Tityra leucura* (E. Bauernfeind)

Figure 3 (middle). Dorsal view of the holotype of White-tailed Tityra *Tityra leucura* (E. Bauernfeind)

Figure 4 (right). Ventral view of the holotype of White-tailed Tityra *Tityra leucura* (E. Bauernfeind)



Figure 5. Dorsal view of males and females of Black-crowned Tityra *T. inquisitor pelzelni* (A and B) and *T. i. albitorques* (D and E), compared to the male holotype of White-tailed Tityra *T. leucura* (C) (E. Bauernfeind)



Figure 6 (left). Head views of the holotype of White-tailed Tityra *T. leucura* (top) and Black-crowned Tityra *T. inquisitor pelzelni* (middle) and *T. i. albitorques* (bottom) (E. Bauernfeind)

Figure 7 (right). Lateral view of the holotype of White-tailed Tityra *Tityra leucura* (left) compared to male (middle) and female Black-crowned Tityra *T. i. albitorques* (E. Bauernfeind)

Lack of melanin in the tail.—That I was unable to find any unusual variation in the tail pattern of the 64 tityra specimens studied at MZUSP, combined with the fact that no such variation appears to have been documented elsewhere, does not support this theory. Of course, any bird species could lack melanin in its tail, but the probability of this event occurring twice in a tityra in the same biogeographical region, and apparently nowhere else, appears extremely unlikely.

Abnormally small bill.—This factor could be due to the type being juvenile and the bill retarded in its development. Admittedly, some juveniles fledge with smaller bills than adults, making this theory not instantly dismissible, but my field observation also suggested that the bill (of an adult male) is smaller than other tityras. The smaller bill of *T. leucura* is obvious (Fig. 6) when compared directly with *T. i. albitorques* and *T. i. pelzelni*, and mensural data confirm this (Table 1). Since Hellmayr (1910, 1929), this striking morphological feature has been overlooked or missed by all subsequent commentators.

Remarks

The type locality of *T. leucura* lies in the same biogeographical area as the rediscovery site, which is c.420 km to the east-northeast. The rio Roosevelt flows north into the rio Aripuaná, which drains into the rio Madeira, one of the four major south-bank tributaries of the lower Amazon. The Madeira forms a major biogeographical barrier to many birds, animals and plants (Haffer 1992). Some 300–350 km further to the east is the rio Tapajós, which constitutes another major barrier to species distributions. The area of land between them, the Madeira/Tapajós interfluvium (where *T. leucura* occurs) is well known as one of the main centres of endemism (in birds) in the southern Amazon basin, being located within a proposed Pleistocene refugium, known as the ‘Rondônia area of endemism’ (Haffer 1974, Cracraft 1985). This area is still producing a wealth of scientific discoveries, including the recently described Rondônia Bushbird *Clytoctantes atrogularis* (Lanyon *et al.* 1990) from Cachoeira Nazaré, Rondônia, just c.120 km south-west of Pousada Rio Roosevelt.

Despite this, very little ornithological collecting, or research, has been undertaken in the Madeira/Tapajós interfluvium, leaving the region’s avifauna extremely poorly known. Natterer collected along the rios Madeira and Guaporé (Pelzeln 1868–70), the Hoffmanns worked the lower rio Jiparaná and rio Madeira (Hellmayr 1910), and, recently, MZUSP and Field Museum of Natural History (FMNH), Chicago, staff made a major collection on the middle rio Jiparaná (Stotz *et al.* 1997). Reviews of avian collecting in the Brazilian Amazon, by Haffer (1974) and Oren & Albuquerque (1991), have confirmed its highly uneven pattern, with most localities, unsurprisingly, being along major rivers, and little penetration of the vast interfluvial interiors. Detailed analysis of all Brazilian Amazonia collecting sites (>100 specimens) by Oren & Albuquerque (1991) confirmed that areas of thousands of square kilometres are completely unsampled, and well over 50% of the region is still a major priority for collecting work. Concluding, Oren & Albuquerque (1991) stated ‘the entire southern tier of the Brazilian Amazon from Acre and Rondônia remains virtually unknown’.

Conclusion

There are no scientific grounds or strong reasons to consider *T. leucura* a synonym of *T. inquisitor*. Given that the entire region remains extremely poorly known ornithologically, it is scarcely surprising that a forest canopy inhabitant like *T. leucura* should have gone overlooked for 177 years. My observation of an adult male tityra matching the description of *T. leucura* strongly suggests that *T. leucura* is a valid taxon, presumably restricted to the Madeira/Tapajós interfluvium and a Rondônia endemic, and should promote immediate

research into its taxonomy. Fortunately, a more detailed study of possible leucism and a comparison of the type with allied taxa are underway (Bauernfeind in prep.), whilst a genetic comparison of *T. leucura* and other *Tityra*, especially *T. inquisitor*, if possible, is also much-needed. For now, *T. leucura* should be considered Data Deficient on the IUCN/BirdLife International Red Data list.

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