

Observations on the vocalisations and behaviour of Black-chested Tyrant *Taeniotriccus andrei* from the Serra dos Carajás, Pará, Brazil

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Apresentamos as primeiras observações detalhadas da utilização de habitat e comportamento de forrageamento de *Taeniotriccus andrei*, acompanhadas pelos primeiros sonogramas publicados de suas vocalizações, com base em observações de dez casais na Floresta Nacional de Carajás, Pará, Brasil. Examinamos a escassa literatura sobre *Taeniotriccus* e fizemos um resumo de sua área de distribuição a partir dos registros anteriores. Constatamos que localmente *Taeniotriccus andrei* é razoavelmente comum, mas facilmente escapa a detecção, no sub-bosque rico em cipós da região de Carajás. Nossas gravações de sua voz e as observações de suas características morfológicas apoiam a retenção do gênero monotípico *Taeniotriccus* e fornecem argumentos contra sua fusão com *Poecilatriccus*.

The Black-chested Tyrant *Taeniotriccus andrei* is a distinctive and strikingly plumaged tyrannid that has remained an enigma to Neotropical ornithologists and birders. It occurs locally in eastern

Venezuela and northern and south-east Amazonian Brazil, with one record (published without details) from Suriname⁴. The holotype was collected at La Prisión, on the right bank of the lower río Caura



Figure 1. Male Black-chested Tyrant *Taeniotriccus andrei* with its crest erected. Floresta Nacional de Carajás, Pará, Brazil (Kevin J. Zimmer)

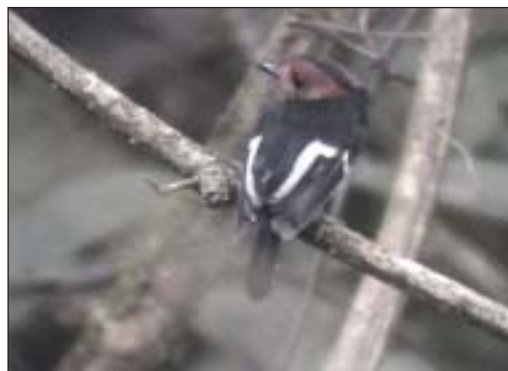


Figure 2. Male Black-chested Tyrant *Taeniotriccus andrei*, Floresta Nacional de Carajás, Pará, Brazil (Kevin J. Zimmer)



Figure 3. Male Black-chested Tyrant *Taeniotriccus andrei*, Floresta Nacional de Carajás, Pará, Brazil (Kevin J. Zimmer).



Figure 4. Male Black-chested Tyrant *Taeniotriccus andrei*, Floresta Nacional de Carajás, Pará, Brazil (Kevin J. Zimmer).

(Bolívar, Venezuela) near Trincheras², but most Venezuelan records are from swampy mangrove- and-palm-dominated tidal forests in the Orinoco Delta of Delta Amacuro⁷. There are additional Venezuelan specimens from the middle río Caura and the upper río Paragua, and a 13 March 1995 sight record from Caño Colorado, Monagas⁸. North of the Amazon in Brazil, the species is known from northern Amazonas and Roraima, and south of the Amazon from various sites in Pará and northern Maranhão^{12,14}. Specimens at the Museu Paraense Emílio Goeldi, Belém, Brazil (MPEG), are from the left bank of the rio Tocantins at Tucuruí, Pará (MPEG 32814); the right bank of the Tocantins at Igarape Saude, 20 km from Jacundá, Pará (MPEG 36108), Peixe-Boi, Pará (MPEG 50995, 50996), Ananindeua, Pará (MPEG 29628, 29629) and the rio Gurupi, Maranhão (MPEG 34823); the right bank of the Tapajós at Novo Fazenda, Jaburu, Santarém, Pará (MPEG 49278); and from the Serra dos Carajás, in the highlands of southeastern Pará, on the left bank of the Rio Xingu (MPEG 37287). We know of published specimen records from the following additional sites south of the Amazon: Belém¹⁴, the left bank of the rio Tapajós at Itaituba, Pará^{14,15}; and the right bank of the lower rio Xingu, upriver from Altamira, Pará⁵.

Despite the number of localities from which the species has been collected, *Taeniotriccus* has proven remarkably elusive in life. Aside from the aforementioned specimen records, we are aware of only a few additional sight records from Brazil: a female seen in 1996 by A. Aleixo at Pinkaiti, within the Kayapó Indigenous Reserve, between the rio Xingu and the rio Araguaia, Pará¹; and a male seen by J. Minns, G. M. Kirwan and D. Beadle along the rio Parauapebas in the Serra dos Carajás, Pará in February 2001 (J. Minns pers. comm.). J. F. Pacheco (in Sick 1997) stated, without elaboration, that the species 'also exists in the region of the Serra dos Carajás in the formations of the lowlands of the rivers Parauapebas and Itacaiúnas'.¹⁴ Graves & Zusi¹² also reported occasional encounters at their aforementioned collecting site near Altamira. Almost nothing is known of the natural history of the species, and there has been only a single published qualitative description of any of its vocalisations^{7,8}.

In February 2003, we conducted a ten-day avifaunal survey in the Floresta Nacional de Carajás, Pará, Brazil. We were aware of two previous records of *Taeniotriccus* from the Carajás region: the specimen collected at 'Carajás Serra Norte, Manganes' and housed at the MPEG (MPEG 37287); and the aforementioned sight record from the rio Parauapebas. Given this precedent, finding *Taeniotriccus* was high on our list of objectives in our exploration of the Carajás region.

On the morning of 1 February, and again on the afternoon of 5 February, we worked the floodplain forest along the rio Parauapebas (elevation 190 m), near the locality of the previous sight record by Minns *et al.*, but without success. We returned to the area at dawn on 7 February and, this time, split up to cover more ground. Shortly after 07h00, KJZ followed an unfamiliar, frog-like note through the *várzea* understorey to near the river edge, and soon succeeded in locating a pair of *Taeniotriccus*, and in tape-recording the male. We believe this to represent the first tape-recording of the species. He immediately radioed AW, and upon his arrival on the scene, we continued to follow the birds, obtaining extensive video and audio recordings in the process. Continued search, this time using tape playback, yielded a second territory of *Taeniotriccus* along the river.

Now familiar with the voice, on the following day, whilst working *terra firme* forest (267 m elevation) more than 35 km from the rio Parauapebas, we encountered another *Taeniotriccus*, this one in a completely different habitat. Over the next few days we conducted systematic searches of several km of roadside forest, and succeeded in locating an additional seven territories, bringing our total for the region to ten. In the process, we obtained audio and video recordings of several individuals, made extensive observations on habitat, and more limited observations of foraging behaviour.

Habitat

Published information on habitat utilised by Brazilian populations of *Taeniotriccus* is limited. Novaes¹⁰ cited a mist-netted pair of *Taeniotriccus* taken from secondary woodland near Belém, Brazil. G. Graves and R. Zusi, whilst working the east bank of the lower rio Xingu, reported (in Ridgely & Tudor¹²) that *Taeniotriccus* was 'occasionally observed in bamboo-dominated understorey in *terra firme* forest, and in rank understorey of *Cecropia*-dominated second-growth near the river'. The Monagas, Venezuela, sight record was of an individual 'in bamboo within *várzea* forest, below the canopy in an area where bamboo was admixed with a small, former banana plantation'⁸.

The first two territories that we found were in *várzea* forest along the rio Parauapebas. In each case, the birds were never more than 20 m from the river edge, and remained mostly within shaded, dense cover. The first pair foraged mostly within dense vine thickets and tangles in a partially flooded area adjacent to the riverbank. They did not venture into the more open *várzea* understorey. All subsequent territories that we located were in low-lying *terra firme* forest many km from any major river. This forest was not typical upland forest: portions of it were somewhat swampy, and the

canopy was broken and fairly low, with an abundance of *Cecropia*, palms and small leguminous trees and shrubs, with trees of the family Lecythidaceae (seemingly mostly Brazil nut *Bertholletia excelsa* trees) as the primary scattered emergents. This forest is probably best characterised as vine forest¹¹. The broken canopy and general absence of large trees are probably anthropogenic in origin. The remainder of the forest is in a seemingly arrested state of perpetual second growth, perhaps partially maintained by the lush blanket of vines that overtop most of the smaller trees. Within this forest, *Taeniotriccus* was found almost exclusively in dense, shrubby borders with abundant vines and often with bamboo intermixed. The species seemed to prefer settings in which light penetration allowed dense foliage and vine tangles to form a fairly solid canopy that shaded open perches below. In several cases, territories of *Taeniotriccus* coincided with those of Peruvian Recurvebill *Simoxenops ucayalae*, Chestnut-crowned Foliage-gleaner *Automolus rufipileatus*, Black-and-white Tody-tyrant *Poecilotriccus capitalis*, and/or Rose-breasted Chat *Granatellus pelzelni*.

Morphology and geographic variation

We noted some aspects of morphology that have not attracted comment in the popular (i.e. field guide) literature. Most noteworthy is the nature of the crest. KJZ observed and videotaped a male that momentarily erected its crest following tape playback (Fig. 1). The feathers involved were the elongate black and rufous feathers of the median crown, and these were erected to a near-vertical position. Aside from this single instance, we did not see another individual with its crest erected. We suspect however, that during intraspecific displays, males may erect their crest in much more dramatic

fashion than that witnessed by KJZ. The black feathers of the nape and neck-sides, and to a lesser extent the rufous feathers comprising the ear-coverts, were all clearly elongate compared to surrounding feathers, and appeared as a lax ruff or mane surrounding the back and sides of the head (slight indication of this can be seen in Figs. 2–3). These feathers clearly had some erectile capability, as evidenced by individuals that would partially elevate the feathers, momentarily lifting and separating them from the feathers of the back and lower neck. It is not hard to imagine that these feathers, along with those of the median crown, could be erected as a ruff that encircles the face.

We also noted that the feathers immediately above and in front of the eyes appeared to be longer and somewhat bristly compared to surrounding feathers, and that they seemed to project outward somewhat, almost like an eye comb. This had the effect of making the relatively large eyes appear even larger (Figs. 1–4). At our request, R. Restall examined ten specimens of *Taeniotriccus* held in the Colección Ornitología Phelps, Caracas, Venezuela (COP), and found the feathers above the eyes of all specimens to be as described here. Restall described the effect as ‘if you splayed the fingers of your hand as widely as you could, with the tips forming a three-quarter circle [= around the eye].’ Similar bristly feathers in the loreal region of some other sally-gleaning species (e.g. *Thamnomanes* antshrikes, Speckled Antshrike *Xenornis setifrons* and Pale-faced Antbird *Skutchia borbae*) have been hypothesised as protecting the eye of the bird as it makes darting sallies into dense vegetation^{13,18,20}. We can find no mention of these unique feathers in any of the scant literature on *Taeniotriccus*. Hellmayr⁶, in comparing *Taeniotriccus* to *Poecilotriccus*, did note that the rictal bristles of the former were ‘much more

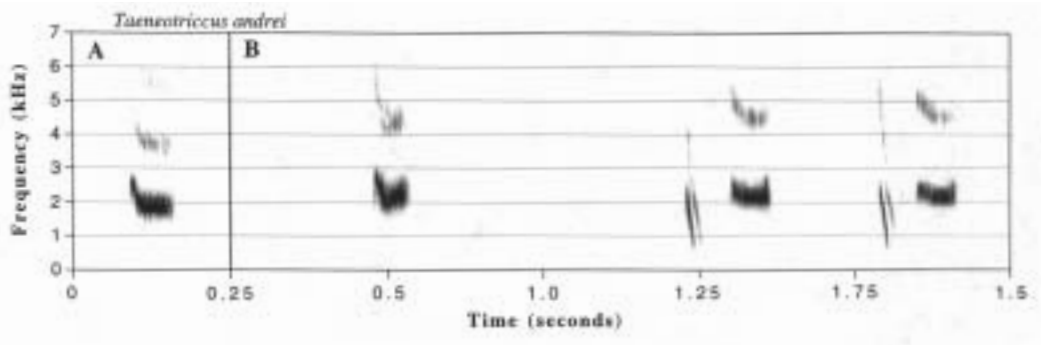


Figure 5. Sonograms of vocalisations of Black-chested Tyrant *Taeniotriccus andrei* from Floresta Nacional de Carajás, Pará, Brazil: (a) single-noted CHEWP call, and (b) single-noted CHEWP followed by K'DINK K'DINK call (recordings by Kevin J. Zimmer)

numerous, less rigid and longer, reaching to about the middle of the bill', but did not mention any stiffened feathers above the eye. Hellmayr, however, was working with only two specimens (an adult female and an immature male), and it is

possible that specimen preparation could have affected the prominence of the feathers above the eye. Restall (pers. comm.) noted that preparation had apparently flattened these feathers on some of the COP specimens.

No mention is made of geographic variation in the popular literature^{7,12}, but there are two described subspecies of *Taeniotriccus*. Nominate *andrei* was formally described from a single immature male, collected in Venezuela². This holotype was essentially female-plumaged, but with a number of black feathers scattered throughout the chest, indicating it was in transition to adult male plumage⁶. Todd¹⁵ described *Taeniotriccus klagesi* on the basis of an adult female collected from Itaituba, on the left bank of the rio Tapajós (Pará, Brazil). This individual was considered similar to the immature male of *andrei* (minus the scattered black feathers), except for the coloration of the breast (olive-grey versus medal bronze) and abdomen (whitish versus pale yellowish with olivaceous flanks). Hellmayr⁶ expressed doubts about the validity of *klagesi*, stating 'I have hardly any doubt that this will prove to be the female of the preceding species [=andrei].' J. T. Zimmer subsequently examined 13 specimens of nominate *andrei* from various localities in Venezuela and north-west Brazil¹⁹. After comparing the female specimens in the series to Todd's type description of *klagesi*, it was Zimmer's opinion that the two were conspecific and possibly even identical. However, he opted to retain subspecific recognition for the two forms, in part because of an absence of male specimens of *klagesi*, and also because of the geographic separation between the known ranges of the two. Subsequent authors^{3,17} have typically maintained *klagesi* as a subspecies of *T. andrei*.

If *klagesi* is a valid subspecies, then our birds from Carajás would presumably be assignable to that form. The few females that we observed were all olive-backed, with a conspicuously contrasting grey nape. The latter feature is not mentioned in any field guide literature that we have seen, nor is it mentioned in the type descriptions of *andrei* or *klagesi*, or in Hellmayr's⁶ comparison of the two forms. J. T. Zimmer's analysis¹⁹ of the plumage of nominate *andrei* did not mention nape colour in the female specimens, but he described the males as having a rufous nape and a black crest, whilst later describing the adult females as having 'the head pattern of the males but the black crest is a little shorter.' This implies that nape colour in female *andrei* is rufous. In three of four females in the COP (all without subspecific designation, but from Venezuela, and therefore presumably nominate *andrei*), nape colour was considered indeterminate due to poor specimen preparation (but probably not contrastingly grey) and definitely was not grey in the remaining specimen from Bolívar (R. Restall

pers. comm.). R. Panza of the Carnegie Museum of Natural History (Pittsburg, Pennsylvania, USA) examined the type specimen of *klagesi*, and found it difficult to determine the nape colour due to specimen preparation, but related that it appeared to be 'sooty' (pers. comm.). This suggests that the contrasting grey nape may be a distinguishing character of females of *klagesi*; one that was overlooked due to nuances of preparation of the holotype. Females that we observed also varied in the degree of colour saturation of the rufous head and face. Some individuals were notably pallid and dull, whereas others were nearly as bright rufous in these areas as were the males.

Observed bare-part colours for both sexes were as follows: iris dark brown, possibly with reddish tint; bill black; tarsi and toes pale grey. We did note some variation in bill colour. The maxilla of all individuals was black. In most males the entire mandible was black as well, but in some individuals the basal portion of the mandible was contrastingly pinkish. Whether this simply reflects individual variation or is age-related is unknown.

Vocalisations

We heard only two types of vocalisations from *Taeniotriccus*, both of which were given spontaneously and in response to tape playback. The most commonly heard vocalisation (particularly among spontaneously calling individuals) was a reedy, single-noted *CHEWP* or *CHERT*, repeated at regular intervals of c.3–4 seconds for up to five minutes or more at a time (Fig. 5a). Much less frequently heard was a pair of couplets (Fig. 5b), the components of which were not distinctly two-syllabled, but sounded more diphthongal, with the first part of the couplet sounding sharper, the second part sounding clearer but with some of the reedy, wood-on-wood quality of the single-noted call. This vocalisation could be transcribed as *K'DINK K'DINK*. These paired couplets were rarely delivered consecutively in sequences, but rather, were inserted into sequences of the single-noted *CHEWP* calls (Fig. 5b). They were given more frequently by individuals responding to tape playback, and were only occasionally given by spontaneously vocalising birds. Functional differences between the two types of vocalizations (i.e. song versus call) were not obvious. Males responded to tape playback by approaching the sound source and delivering one or both types of vocalisations. Females only occasionally approached in response to tape playback, and usually remained silent when doing so. A few responded to persistent calls of their presumed mates with occasional single-note calls similar to the *CHEWP* calls of the males, but never persisted in vocalising, and were not heard to deliver the paired couplet vocalisation.

The only spontaneously vocalising bird that was seen without tape playback was the first male found by KJZ along the rio Parauapebas. It was on a bare, angled stem c.1 m above the ground and shaded by overtopping foliage. The bird remained on this perch and called continuously for c.3 minutes, giving only the single-noted vocalisation. Other individuals called from perches up to 7 m above ground, but these song-perch heights may have been influenced by tape playback.

The only previously published description of vocalisations for *Taeniotriccus* was from Venezuela⁸. The observers were unable to tape-record any vocalisations, but described a 'contact call' as 'reminiscent of a *Hemitriccus* tyrant or *Pipra* manakin, being moderately loud, short and high-pitched⁸. This description appears to us to be consistent with the single-noted call described above.

Behaviour

All individuals selected open, shaded perches, usually on bare horizontal or diagonal branches or vines. Typical posture was three-quarters upright, with the back slightly hunched and the tail somewhat drooped. Birds remained on a single perch anywhere from five seconds to more than one minute before flying to another perch. During this time, they actively scanned for prey by constantly turning the head. Most individuals periodically shallowly flicked both wings simultaneously, although this was not done habitually. Wing-flicks were sometimes accompanied by a shallow up-and-down twitch of the tail. Vocalising birds gave a slight upward jerk of the head with each note; this was accompanied by a slight visible twitch of the entire body and by a more noticeable slight twitch of the tail.

Birds foraged mostly from 1–3 m above ground, but occasionally ascended to 12 m. Most of our observations of birds more than 3 m above ground were of individuals that initially responded to tape playback by flying in above our heads, but then settled down to forage, remaining at greater heights for several minutes after ceasing to vocalise. The 1995 sighting of *Taeniotriccus* by G. M. Kirwan *et al.*, from Caño Colorado (Monagas, Venezuela), was of an individual that was 4–5 m above ground⁸.

All attack manoeuvres that we witnessed were sally-gleans, mostly to bare branches, stems or vines, but also to live foliage. Sallies varied from 30 cm to 2.5 m, and included upward-and-downward-directed diagonal sallies, horizontal sallies and occasional looping sallies, in which the bird returned to near its original perch. In most instances, sallying birds followed through to a new perch, where smaller prey were swallowed immediately, and larger prey were bashed against a

branch several times prior to swallowing. The first female observed by KJZ sallied from 2 m down to the ground and returned to its original perch with a medium-sized, unidentified arthropod. Rather than immediately consuming the prey, the female engaged in the practice known as 'anting', by holding the arthropod in the bill, and rubbing it vigorously through various feather groups, notably those under each wing, on the flanks and belly, and on the crissum. These motions were repeated several times over the course of perhaps two minutes, before the bird eventually consumed the arthropod. We were unable to identify most prey items; those that were identified were small orthopterans. Perch changes were typically accompanied by an audible wing-whirr sound that was comparable to sounds made by many species of tody-tyrants *Hemitriccus* spp. Most prey captures were accompanied by an audible bill snap.

Discussion

The apparent rarity of *Taeniotriccus* throughout its range is no doubt a partial artefact of the behavioural inconspicuousness of the species. In our experience, the species vocalises only intermittently and the most commonly given vocalisation (single-noted) is neither far carrying nor particularly distinctive; it could be easily overlooked as the call of a frog. Although the species tends to select open perches, these are typically beneath the 'umbrella' of dense, vine-covered thickets, a tendency that further contributes to it being overlooked. We know of several experienced and highly capable Brazilian and North American birders, tour leaders and ornithologists who have spent considerable time in the Carajás region (even at the same season) without finding *Taeniotriccus*, and yet the species is at least locally not uncommon. However, we believe that it must have a very patchy distribution within its range. Were it uniformly distributed, we would expect researchers and birders to at least stumble onto it with some regularity. This would seem particularly true with respect to its distribution in *várzea* forests, which are often the most readily surveyed habitats in Amazonia. Our own survey of the avifauna of Carajás covered many roads and stretches of river in which no *Taeniotriccus* were found, even after we were familiar with its voice and habits. It seems likely that as-yet-undefined specific microhabitat requirements of the species restrict its presence to habitats which are themselves patchily distributed through Venezuela and Brazil.

Our tape-recordings have taxonomic implications. *Taeniotriccus* was subsumed within *Poecilotriccus* by Traylor^{16,17}, a move supported by subsequent research on internal morphology⁹. However, Ridgely & Tudor¹² argued for retention of *Taeniotriccus* on the basis of its crest, different bill

shape, larger size, and distinctive wing and facial patterns. Our data on vocalisations would further support the distinctiveness of *Taeniotriccus*. For comparison, KJZ listened to his recordings of Black-and-white Tody-tyrant *Poecilatriccus capitalis*, White-cheeked Tody-tyrant *P. albifacies*, Rufous-crowned Tody-tyrant *P. ruficeps* and Lulu's Tody-tyrant *P. lulae*, as well as recordings of all species in the *sylvia*-group of *Todirostrum* (placed in *Poecilatriccus* by Lanyon based on morphology of the syrinx⁹). Excluding *Taeniotriccus*, which is not similar vocally to any of the others, the aforementioned species form a cohesive grouping with obvious vocal similarities. The distinctiveness of *Taeniotriccus* is further supported by the unusual comb-like feathers above the eyes, and by the ruff-like nature of the feathers of the head and nape, features not present in members of *Poecilatriccus*. Tape-recordings of nominate *Taeniotriccus andrei*, along with a thorough morphological analysis of existing specimens from throughout the species' range, will allow a more informed assessment of the validity of *klagesi* as a distinct taxon, and of the nature of its relationship to *andrei*.

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