

DONAHUE

FRONTISPIECE. Members of the *Synallaxis ruficapilla* complex: *S. infusata* (top), *S. whitneyi* sp. nov. (middle), *S. ruficapilla* (bottom); shaded areas in map show the approximate limits of distribution of these taxa in eastern South America. From a mixed-media painting by Paul K. Donahue.

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A new species of *Synallaxis* of the *ruficapilla/infuscata* complex from eastern Brazil (Passeriformes: Furnariidae)*

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RESUMO. Uma nova espécie de *Synallaxis* do complexo *ruficapilla-infuscata* do leste do Brasil (Passeriformes: Furnariidae). *Synallaxis whitneyi* sp. nov. das montanhas do sul da Bahia provavelmente forma um grupo monofilético com *S. ruficapilla* do sudeste e *S. infuscata* do nordeste, todas emitindo um quase idêntico grito de zanga, aparentemente único dentro do gênero. *S. whitneyi* sp. nov. difere morfologicamente de *S. infuscata* pela presença de uma estria pós-ocular amarelada (vs. ausência de estria) e por possuir apenas oito retrizes (vs. dez retrizes), e de *S. ruficapilla*, que é considerada sua espécie-irmã, pela cor cinzenta escura das partes inferiores (vs. pardo-esbranquiçada). O "canto" (que funciona como um grito de contato emitido com frequência) de *S. whitneyi* sp. nov. é bipartido como o de *S. ruficapilla*, diferindo pelo menor número de notas na primeira parte (geralmente apenas uma, vs. seis ou mais) e muito menor duração da segunda, que resultam numa menor duração total do canto. A série-tipo de *S. whitneyi* sp. nov. (três exemplares taxidermizados, sendo um macho e duas fêmeas), depositada no Museu de Zoologia da Universidade de São Paulo, é procedente de 7 km a sudeste de Boa Nova (14°23'20"S, 40°08'46"W, elevação 1.000 m), Bahia, Brasil.

PALAVRAS-CHAVE: bioacústica, biogeografia, Furnariidae, leste brasileiro, Mata Atlântica, sistemática, suboscines, *Synallaxis*.

ABSTRACT. Bahia Spinetail *Synallaxis whitneyi* sp. nov. from the mountains of southern Bahia probably forms a monophyletic group with Rufous-capped *S. ruficapilla* from the south-east and Plain *S. infuscata* from the north-east, sharing with both a nearly identical scolding call, apparently unique within the genus. *S. whitneyi* sp. nov. differs morphologically from *S. infuscata* by having a yellowish post-ocular streak (vs. streak absent) and only eight rectrices (vs. ten rectrices), and from *S. ruficapilla*, which is considered to be its sister species, by the dark gray coloration of the underparts (vs. whitish-brown). The often delivered "song" (that serves as a contact call) of *S. whitneyi* sp. nov. is two-parted like that of *S. ruficapilla*, from which it differs by having less syllables in the first part (usually only one, vs. six or more) and a much shorter single syllable making up the second part, resulting in a shorter overall duration of the song. The type-series of *S. whitneyi* sp. nov. (three skins, including one male and two females), housed in the Museu de Zoologia da Universidade de São Paulo, came from 7 km south-east of Boa Nova (14°23'20"S, 40°08'46"W, elevation 1,000 m), Bahia state, Brazil.

KEY WORDS: Atlantic Forest, bioacoustics, biogeography, eastern Brazil, Furnariidae, suboscines, *Synallaxis*, systematics.

Recent exploration of the mountainous region of southern Bahia in eastern Brazil revealed the existence of a montane Atlantic Forest avifauna that had gone virtually unnoticed by earlier workers (Gonzaga *et al.* 1995). Our surveys of this region, particularly in the vicinity

of Boa Nova, allowed us to extend for several hundred kilometers north the range of birds previously known mainly from the serras in Espírito Santo and Rio de Janeiro southwards, and have led even to the discovery of unknown birds. One of these was recently described as a new species of *Phylloscartes*, that we named *P. beckeri*, the Bahia Tyrannulet (Gonzaga and Pacheco

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1995). Here we describe a new species of spinetail that we found, by the side of *P. beckeri*, in the vanishing patches of Atlantic Forest east of Boa Nova in the first of our surveys there, in July 1992. It is surprising that, even after this area had been discovered and surveyed for birds by other workers since 1989 (see, e.g., Forrester 1993), no one had so far realized and explicitly pointed out its distinctness and relevance (see Gonzaga *et al.* 1995).

When we had our first contact with this bird in the tangled undergrowth of forest near the summit (900–1,000 m) of the mountain we thought its song to bear a striking similarity to that of Plain Spinetail *Synallaxis infuscata* from extreme northeastern Brazil in Alagoas and Pernambuco, and the dark coloration of the bird's underparts added to the possibility that it was closely related to this species. Nevertheless, the birds observed near Boa Nova had a yellowish post-ocular streak reminiscent of that of Rufous-capped Spinetail *S. ruficapilla* from the south-east, and the capture of specimens further revealed that they possessed only eight rectrices. Both of these characters pointed to a relationship with this latter species instead.

After extensive tape-recording and sound analysis of the voices of Boa Nova birds and comparisons made of these, as well as of skins, with those of *S. infuscata* and *S. ruficapilla*, we are convinced that, apparently forming with these species a monophyletic group, the Bahian bird is best treated as a separate species, that we name

Synallaxis whitneyi sp. nov.

Bahia Spinetail

Holotype. Museu de Zoologia da Universidade de São Paulo (MZUSP) no. 74.011; male (skull not fully pneumatized, testes 3 mm) from 7 km southeast of Boa Nova, eastern Brazil (14°23'20"S, 40°08'46"W), elevation 1,000 m; mist-netted 24 August 1993 by J. F. P. and L. P. G., prepared as a skin by L. P. G.; no molt, plumage fresh.

Paratypes. MZUSP no. 74.012; female (skull not fully pneumatized, ovary 5 mm, with the ova and the oviduct minute), same location, date, and collectors; paired with the holotype; no molt, plumage fresh.

MZUSP no. 74.013; female (skull destroyed, formed egg in the oviduct, plus two ova 9 and 4 mm), same location, shot 3 September 1992 and skinned by L. P. G.; no molt, plumage fresh.

Diagnosis-morphology. In the absence of a still much-needed satisfactory definition of *Synallaxis*, it is difficult to justify objectively the placement of *S. whitneyi* in this genus. In a more restricted sense (excluding *Schoeniophylax* and *Gyalophylax*, contra Vaurie 1971, 1980), this genus includes small arboreal furnariids with medium-sized graduated tails composed of less than 12 (10 or 8) rectrices, unstreaked backs and no yellowish spot on chin, which is clearly a rather imprecise combination of morphological features of unweighed sys-

tematic value. This notwithstanding, by its pattern of plumage coloration, proportions, voices, and behavior, *S. whitneyi* evidently stands among the close relatives of *S. ruficapilla*, the type of the genus. From *S. ruficapilla*, which may be considered its sister species, *S. whitneyi* differs morphologically by the dark gray coloration of the underparts (vs. whitish-brown), and from the more distantly related *S. infuscata* by having a yellowish post-ocular streak (vs. streak absent) and only eight rectrices (vs. ten rectrices).

Diagnosis-voice. *Synallaxis whitneyi* shares with *S. ruficapilla* and *S. infuscata* a nearly identical scolding call, apparently unique within the genus (see Vocalizations below). The often delivered "song" (that serves as a contact call) of *S. whitneyi* is two-parted like that of *S. ruficapilla*, from which it differs, however, by having less syllables in the first part (usually only one, vs. six or more) and a much shorter single syllable making up the second part, resulting in a shorter overall duration of the song. The song of *S. infuscata* is a repetition, one to three (most often two) times, of a single note apparently homologous to the second (more emphatic) part of the songs of *S. whitneyi* and *S. ruficapilla*.

Distribution. Known only from montane forest fragments in southern Bahia. These are more than 600 km away from the nearest patches of montane Atlantic Forest (in serras of eastern Minas Gerais and Espírito Santo) to the south, where *S. ruficapilla* has been recorded, and half-way between these and forests in Alagoas and Pernambuco to the northeast, where *S. infuscata* occurs (see Frontispiece).

Description of holotype. Forehead, crown and nape Amber (color 36; capitalized color names with numbers refer to closest colors in Smithe 1975, 1981). Post-ocular streaks (c. 2 mm wide and 11 mm long), bend of wings and under wing coverts Clay Color (color 123B). Mantle, rump and flanks Dark Brownish Olive (color 129). Uppersurface of tail-feathers (which are slightly stiffened, acuminate at the tips) Burnt Sienna (color 132), undersurface Raw Umber (color 23). Loes and auriculars (forming a dark mask through eyes) Blackish Neutral Gray (color 82). Throat Dark Neutral Gray (color 83), feathers with whitish borders and shafts. Center of belly Glaucous (color 79). Upper wing coverts and two-thirds of distal webs of remiges dark Amber (color 36). Tips of wing feathers Sepia (color 119). Soft part colors: irides reddish brown; bill dark gray; feet olivaceous.

Variation among female paratypes. No appreciable variation was found.

Measurements. The wing, tail and bill measurements of our few specimens of *S. whitneyi* fall within the range of variation found in a much larger series of *S. ruficapilla*; these measurements are slightly smaller in the holotype (male) of *S. whitneyi* than in any of a relatively small number of males of *S. infuscata*, but in the two paratypes (females) they fall within the range of variation of fe-

males of this species (table 1; also values in Vaurie 1980:89). No appreciable difference in mass between these three species seems to exist either (table 1), but samples are evidently too small. In spite of the apparent lack of difference in the length of wings and tails between these taxa, the ratio between the average lengths of the tail and the wing seems to be greater in *S. ruficapilla* (1.32-1.33) than in either *S. whitneyi* (1.17-1.20) or *S. infuscata* (1.13-1.17) (table 1; also calculated from values in Vaurie 1980).

Vocalizations. *Synallaxis whitneyi* regularly delivers three kinds of vocalizations which we can define as (i) the song (figure 1b; this voice may actually function as a contact call, being constantly repeated back and forth by the members of a pair, as in other species of *Synallaxis*; nevertheless, we follow Vaurie and Schwartz (1972) in considering that these voices "seem to be homologous to the primary song of other groups of birds"), (ii) the scold (figure 2b, left and right sides) and (iii) the pair-contact call (figure 2b, middle).

The song is a doublet (two linked syllables) in which the first syllable is of much lower amplitude than the second. As shown in figure 1b, doublets are repeated at irregular intervals, although there seems to be a tendency for them to be given in pairs. The two elements

of the doublet are, however, consistently delivered about 0.09 second apart ($n=16$ unsolicited songs from 3 individuals). Individuals rarely deliver an additional one or two introductory syllables like the first (quieter) syllable of the doublet; we have documented this only in response to playback of recordings of the song of *S. whitneyi*. In response to playback, the interval between syllables in the doublet is shortened to about 0.07 second ($n=15$ songs from 3 individuals). The scold of *S. whitneyi* (see discussion of the significance of this voice below) consists of a sharp, relatively loud syllable followed immediately by a spitting series of very closely spaced syllables of level frequency and amplitude. The number of syllables in the series given by an individual *S. whitneyi* is highly variable, but the whole does not last more than about 0.3 second, and is almost always shorter than this, sometimes no more than two or three syllables. The pair-contact call is a simple, single syllable like the first emphatic note of the scold.

The song of *S. whitneyi* is structurally clearly similar to that of *S. ruficapilla*. In this species (figure 1c) it is also two-parted, but the first part, also of lower amplitude than the second part, consists of a "vibrating" series of closely spaced syllables. The length of this series shows much intra- and inter-individual variation, but it is not delivered consistently with fewer than about four syllables, and the majority of songs have six or more syllables in the series. The series is followed by a pause of approximately 0.14 second ($n=21$ unsolicited songs from four individuals from Espírito Santo, Rio de Janeiro, and Misiones) before the second part of the song, which is a single (occasionally two), emphatic syllable homologous to but considerably longer than the second (terminal) note of the song of *S. whitneyi* (compare insets in figures 1b and 1c). Thus, the similar, two-parted songs of *S. whitneyi* and *S. ruficapilla*, when several successive, unsolicited songs of any individual are considered, differ consistently and diagnostically in at least two characters: length of the series in the first part (almost always a single note in *S. whitneyi*), and length of the single syllable making up the second part.

The song of *S. infuscata* (figure 1a) differs diagnostically from those of *S. whitneyi* and *S. ruficapilla* by lacking an introductory part homologous to that of the songs of these taxa, instead repeating one to three (most often two) times a single note apparently homologous to the second (more emphatic) part of those songs. There is a significantly longer pause between the elements (about 0.21 second; $n=19$ unsolicited songs from four individuals) in these doublets (or triplets) than that between the two parts of the songs of *S. whitneyi* and *S. ruficapilla*. Additionally, *S. infuscata* may deliver a long and monotonous sequence of notes (total duration about one minute, notes delivered at a rate of about 5.7/second; $n=2$) that sounds unlike any voice we know of either *S. whitneyi* or *S. ruficapilla*. This voice has been recorded by A. G. M. Coelho in response to playback, but background noise in the available recordings precluded a spectrographic analysis.

Table 1. Measurements (mm) and mass (g) of the type specimens of *Synallaxis whitneyi* sp. nov. compared to mean values of *S. ruficapilla* and *S. infuscata*.

Specimen	sex	wing ^a	tail	bill ^b	mass
<i>S. whitneyi</i> sp. nov.					
MZUSP 74.011	m	58	70	9	16.0
MZUSP 74.012	f	60	72	9.5	16.5
MZUSP 74.013	f	60	69	9	20.5 ^c
mean	ff	60	70.5	9.3	18.5
s.d.		0	2.1	0.35	2.8
<i>S. ruficapilla</i>					
mean	m m	57.1	76.1	8.8	15.8
range		(52-62)	(69-85)	(7-9.5)	(14.5-17)
s.d.		6.3	9.7	0.4	1.0
n		68	58	55	5
mean	ff	56.9	75.0	8.6	17
range		(53-62)	(67-81)	(6.5-9.5)	-
s.d.		1.9	4.3	0.6	-
n		51	48	36	1
<i>S. infuscata</i>					
mean	m m	61.5	72.3	10.0	18.1
range		(60-63)	(69-76)	(9.2-10.5)	(16-20)
s.d.		1.0	2.7	0.3	1.7
n		9	8	9	4
mean	ff	59.8	69.4	9.6	18.3
range		(59-60)	(65-72)	(9.5-10)	(17.5-19.5)
s.d.		0.4	2.6	0.2	1.0
n		5	5	5	3

^a flattened; ^b from anterior edge of nostril to tip; ^c female with formed egg in oviduct.

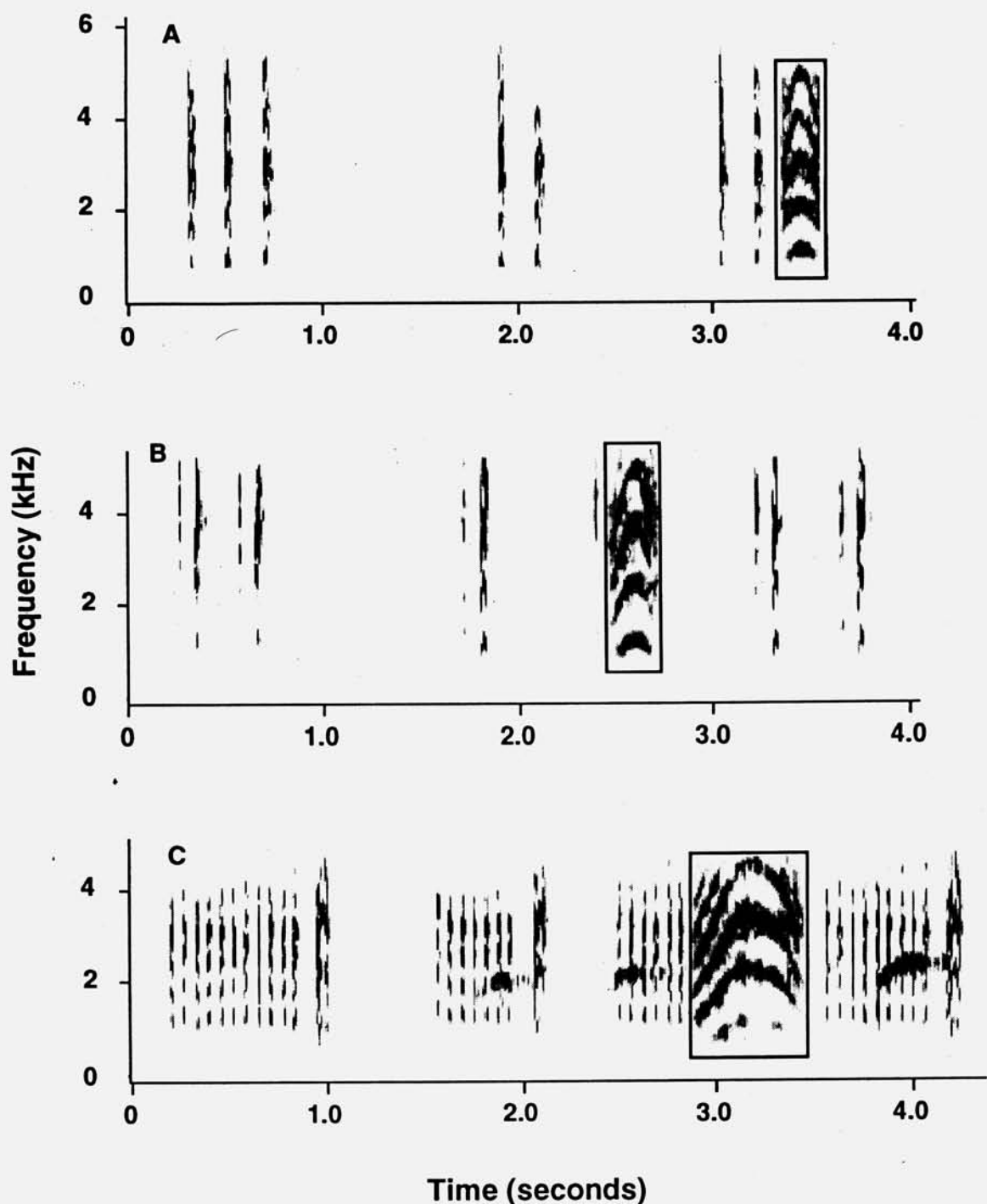


Figure 1. Typical "song" phrases of three members of the *Synallaxis ruficapilla* complex in eastern Brazil. Inset in each sequence is an enlargement on the time scale (same scale for all) of the final syllable of the phrase, to show more comparative detail. (A) *S. infuscata*, 2 three-syllable and 1 two-syllable (successive) phrases; inter-syllable interval is approximately 0.21 s (B. M. Whitney, 26.XI.1994, Murici, Alagoas); (B) *S. whitneyi* sp. nov., 6 two-part phrases; interval between parts approximately 0.09 s (L. P. Gonzaga, 25.VIII.1993, Boa Nova, Bahia); (C) *S. ruficapilla*, 4 two-part phrases; interval between parts approximately 0.14 s. The enlarged syllable hides from view 4 additional quiet syllables of the first part of the song (B. M. W., 29.IX.1991, Leopoldina, Espírito Santo). *S. infuscata* lacks the quieter introductory note(s) of the other two taxa, and repeats the same note 1-3 times. *S. whitneyi* sp. nov. usually gives only one quiet note in the first part of the song; the second part is nearly identical to the syllables of the song of *S. infuscata*. *S. ruficapilla* almost always delivers a close, "vibrating" series of notes in the first part of the song, followed by a terminal syllable (occasionally two) considerably longer than in the other taxa.

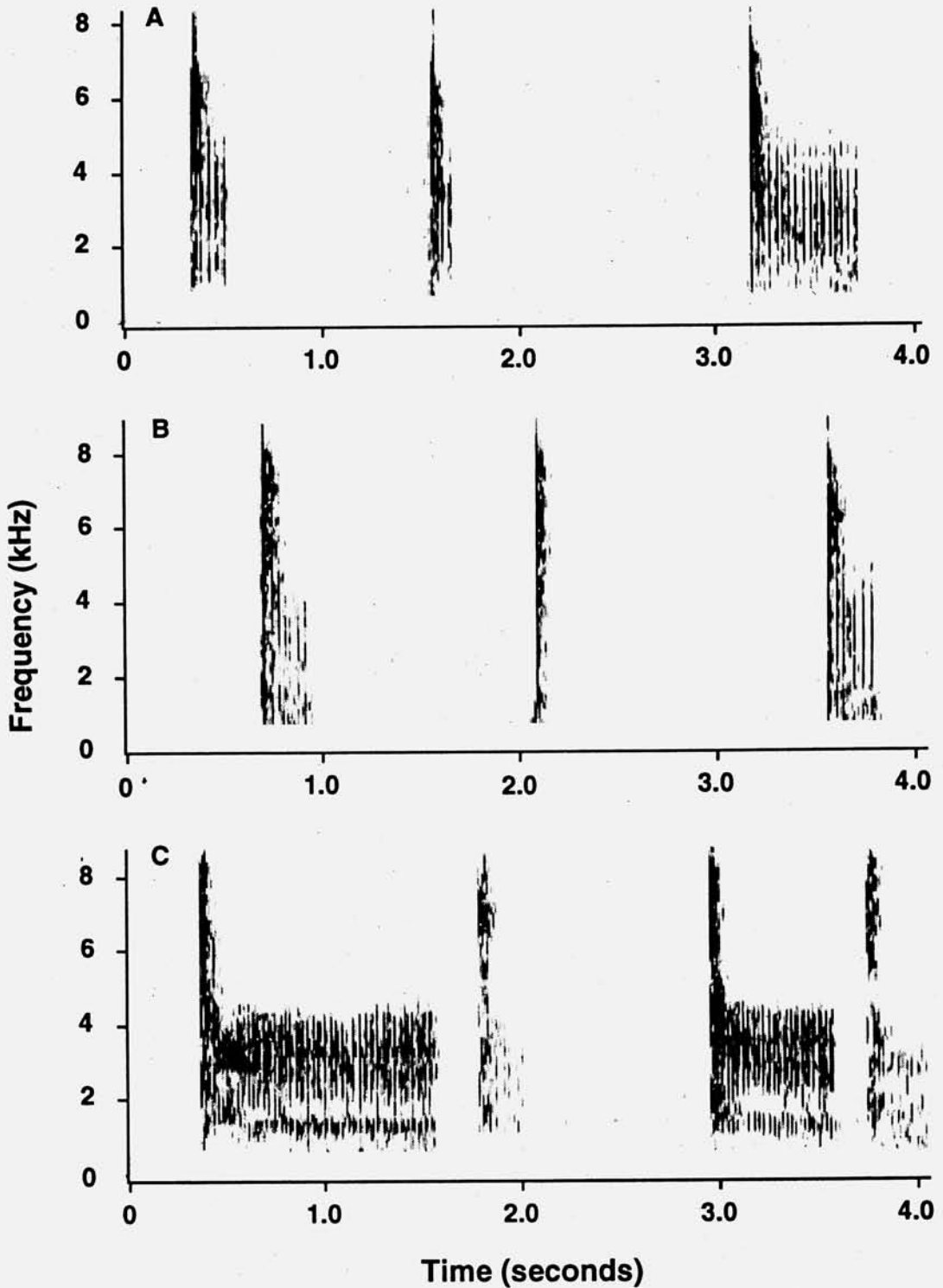


Figure 2. Typical scolds of three members of the *Synallaxis ruficapilla* complex in eastern Brazil. (A) *S. infusata*, 3 successive scolds (B. M. Whitney, 26.XI.1994, Murici, Alagoas; different individual than figure 1a); (B) *S. whitneyi* sp. nov., 3 successive scolds (J. F. Pacheco, 30.VIII.1992, Boa Nova, Bahia); (C) *S. ruficapilla*, scolds of both members of a presumably mated pair (sex and age unknown); both long scolds are of one individual, both short scolds of the other (B. M. W., 24.XII.1986, Itatiaia, Rio de Janeiro). We consider scolds of these taxa to be indistinguishable, although the scold of *S. ruficapilla* is generally longer than that of the others, and the notes in the first part tend to be delivered more closely together.

The notes of the songs of these three species (and others of the genus; see sound spectrograms in Vaurie and Schwartz 1972) show a clear harmonic structure and a rapid ascending-descending frequency modulation (see insets in figure 1). There is appreciable difference in the principal frequency of vocalizations between the sexes. Judging from a single recording of a mated pair of birds (both in definitive plumage, female with formed egg in oviduct collected) vocalizing quite close together, female songs of *S. whitneyi* are approximately 1 kHz higher in frequency than those of males.

The scolds of all three taxa (figure 2) are very similar, differing only, and probably not diagnostically, in duration. The scold of *S. ruficapilla* ($n=5$ individuals) is the most distinctive, being generally longer (often in excess of 0.5 second) and in having the individual syllables spaced more closely together. Figure 2c shows scolds of two individuals close together (age and sex unknown), one of which is considerably shorter than the other. Additionally, some long scolds of *S. ruficapilla* fall in frequency toward the end. The scolds of *S. whitneyi* ($n=3$ individuals) and *S. infuscata* ($n=2$ individuals) are, judging from our small samples, almost always considerably less than 0.5 second duration, and appear to be indistinguishable.

This vocalization is delivered by all three taxa when a potential threat is detected, and we have interpreted it as a scold because attention appears to be directed at the threatening source (e.g., the observer) when it is given. Sick (1993) described this voice as "a loud, low *tschrrr*", and considered it to be diagnostic of *S. ruficapilla*. As far as we know (B. M. Whitney pers. comm., pers. obs.), such a scold is indeed uniquely uttered by *S. ruficapilla*, *S. infuscata* and *S. whitneyi*, and we therefore hypothesize that it is a truly homologous, derived character within the genus and thus may indicate a close relationship between these taxa, rather than being a homoplastic character evolved independently as a result of selection.

Sound spectrograms in figures 1 and 2 were produced by B. M. Whitney on a Macintosh IIsx computer with "SoundEdit" of Farallon Computing, Emeryville, California, and "Canary" 1.1 of the Bioacoustics Research Program of the Cornell Laboratory of Ornithology, Ithaca, New York.

Material examined – skins (specimens housed in MZUSP except otherwise specified). *Synallaxis ruficapilla* (142). BRAZIL. *Espírito Santo*: Chaves, Santa Leopoldina, 2; Santa Teresa, 4 (UFMG). *Minas Gerais*: Mariana, 1; São José da Lagoa, 2; serra do Caraça, 3 (UFMG). *Rio de Janeiro*: Teresópolis, 4; Itatiaia, 3; Mauá, 1. *São Paulo*: serra da Bocaina, 2; rio Guarauá, 3; rio Ipiranga, 8; rio Ribeira de Iguape, 3; Ribeirão Fundo, 3; barra do rio das Corujas, 5; barra do Icapara, 3; Icapara, 2; Iguape, 2; Avaré, 1; Interlagos, 1; Nazaré Paulista, 1; Costão dos Engenheiros, 1; Quadro Penteado, 4; Onça Parda, 1; barra do ribeirão Onça Parda, 5; Rocha, 1; Terra Preta, 3; serra da Cantareira, 9; Estação Engenheiro Ferraz, 3; Itapetininga, 7; Mogi das Cru-

zes, 3; Cananéia, 1; Monte Alegre, 2; Ituverava, 3; Boracéia, 1; Itatiba, 1; Salesópolis, 2; São Sebastião, 2; Anhembi, 2; Itararé, 1; Juquiá, 1; Embura, 1; Alto da Serra, 1; Silvânia, 1; rio Juquiá, 3; Porto Epitácio, 1; Campo Grande, 1; Lins, 1; Ibiti, 2; Bauru, 1; reservatório Ipiranga, 1; São Miguel, 1; Alvarenga, 1; Iporanga, 1; unspecified locality, 2. *Paraná*: Tijuco Alto, 3; ilha do rio Cubatão, 1; Castro, 2. *Santa Catarina*: Caçador, 2. *Rio Grande do Sul*: Farroupilha, 3; Nova Wurttemberg, 1. Unspecified localities: 4. PARAGUAY. Puerto Bertoni, 1. *Synallaxis infuscata* (15). BRAZIL. *Pernambuco*: Rio Formoso, 1 (UFPE); Vitória de Santo Antão, 2 (including holotype); Caruaru, 9 (UFPE). *Alagoas*: Quebrangulo, 1; Rio Largo, 1; São Miguel dos Campos, 1. *Synallaxis whitneyi* (3). BRAZIL. *Bahia*: Boa Nova, 3.

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(UFMG)= Departamento de Zoologia, Universidade Federal de Minas Gerais, Belo Horizonte, MG.

(UFPE)= Departamento de Biologia Geral, Universidade Federal de Pernambuco, Recife, PE.

Material examined – tape recordings (copies archived at ASEC and LNS except otherwise specified). *Synallaxis ruficapilla* (23). BRAZIL. *Espírito Santo*: Santa Teresa, 2; Chaves, Santa Leopoldina, 1. *Minas Gerais*: Santa Bárbara, 2; Monte Belo, 3. *Rio de Janeiro*: Santa Maria Madalena, 1; Teresópolis, 1; Petrópolis, 1; Mangaratiba, 2; Itatiaia, 4. *São Paulo*: Ubatuba, 1; Capão Bonito, 2. *Rio Grande do Sul*: Pelotas, 1 (G. N. Mauricio). ARGENTINA. *Misiones*: Urugua-í, 1; unspecified locality, 1 (Straneck 1990). *Synallaxis infuscata* (8). BRAZIL. *Pernambuco*: Caruaru, 2 (A. G. M. Coelho). *Alagoas*: Murici, 6. *Synallaxis whitneyi* (14). BRAZIL. *Bahia*: Boa Nova, 14.

(ASEC)= Arquivo Sonoro Prof. Elias P. Coelho, Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ.

(LNS)= Library of Natural Sounds, Cornell Laboratory of Ornithology, Ithaca, NY.

Etymology. We are pleased to name this species after our friend Bret M. Whitney in recognition of his various insightful contributions toward the study of neotropical birds and their conservation. We have benefitted greatly over the years from Bret's constant companionship and collaboration in our studies of Brazilian birds.

Habitat and behavior

Synallaxis whitneyi inhabits the undergrowth of humid forest, especially dense tangles of vines, ferns and bamboo near the forest edge, between about 750 m and 1,000 m elevation. Members of a pair usually forage within a few meters of each other, ranging from practically on the ground to as high as about 5 m, most often within about 2 m of the ground. Heights in excess of about 2 m are usually attained as birds ascend vine tangles surrounding tree trunks.

All foraging is accomplished with near-perch maneuvers (terminology follows Remsen and Robinson 1990), almost entirely rather methodical gleanings and short reaches, as the birds hop and sometimes "crawl" through closed vegetation. Much foraging is directed at dead, often curled leaves suspended above ground in tangled vegetation. Individuals approach dead leaves or leaf clusters selectively, and often tap and probe them with the bill, occasionally hopping on to them and poking the head into crevices in search of arthropod prey hiding within. They also pay close attention to the woody stems and trunks of thin vines and branches, gleaning small prey items from these places.

The stomachs of three specimens (the type series) contained remains of arthropods that are usually found among vegetable debris, in places such as under the bark of dead trees and in rotten wood (J. Becker pers. comm. 1995). These included two species of Hemiptera Aradidae, three species of ants, at least five species of Coleoptera (including one probably Cucujoidea and one Curculionidae Cryptorhynchinae, plus campodeiform larvae of Coleoptera Adepaga), one species of Hymenoptera (probably Ichneumonidae), oothecae of an orthopteroid (probably Blattaria), and a small millepede.

Although *S. whitneyi* is common in bamboo thickets, it is not restricted to bamboo, and thus seems to differ from *S. ruficapilla*, which is almost exclusively found in association with bamboo (B. M. Whitney pers. comm. 1995), and from *S. infuscata*, usually not in bamboo (see Collar *et al.* 1992:602). It is possible that the observed differences in the ratio between the average lengths of the tail and the wing (see *Measurements* above) prove to be constant and associated to the movements of these birds in their preferential habitats. In this case, the relatively greater tail/wing ratio of *S. ruficapilla* might be linked with its preference for bamboo, with *S. whitneyi* being intermediate between this species and *S. infuscata* in both tail/wing ratio and preference for bamboo.

Systematics and biogeography

Synallaxis whitneyi is geographically very isolated from *S. ruficapilla* and *S. infuscata*, and easily diagnosable from these species both in morphological and vocal characters without recourse to geographic data; apparently no ecophenotypic variation is involved in the consistently observed differences between them. We have followed Wiley (1981:67) in considering that allopatric populations with these characteristics should be treated as distinct species. *S. whitneyi* is clearly closely related to *S. ruficapilla* and both may be considered to form a superspecies with *S. infuscata*. This treatment is supported primarily by vocal characters shared by these taxa, at least one of them (the structure of scolds) being apparently unique in the genus (see *Vocalizations* above). The inclusion of *S. superciliosa* from the Colombian/Argentinian Andes in a superspecies with *S. ruficapilla* was suggested by Nores (1992), on the basis of morphological features.

The apparently close phylogenetic relationship and

the zoogeographical pattern of *S. infuscata/whitneyi/ruficapilla* from the mountains of eastern Brazil is paralleled by tyrannulets of the genus *Phylloscartes* (Tyrannidae) that have similar ranges in extreme northeastern Brazil (*P. ceciliae*), the mountains of southern Bahia (*P. beckeri*), and mountains of southeastern Brazil (*P. v. ventralis*) (see Gonzaga and Pacheco 1995). Although the relationship between *S. ruficapilla/infuscata* and *S. superciliosa* was suggested by Willis (1992), Willis and Schuchmann (1993) expressed an alternative view, that *S. ruficapilla* and *S. brachyura* form a "congener pair" of zoogeographical representatives from the cloud forests of southeastern Brazil and western Colombian Andes. B. M. Whitney (pers. comm. 1995) has suggested that *S. cabanisi* may prove to be most closely related to *ruficapilla/infuscata*.

Although both *S. ruficapilla* and *S. infuscata* have been recorded from Maranhão (Oren 1991), there is uncertainty at least on the identity of the five specimens on which the record of the latter is based (Collar *et al.* 1992:603), especially because they all have eight rectrices and some of them show a weak post-ocular supercilial streak, thus being morphologically more like *S. ruficapilla* and *S. whitneyi* (B. M. Whitney pers. comm. 1994). Documentation and analysis of the vocalizations of both of these spinetails in Maranhão is a necessity for clarification of their taxonomic status and relationships. Whether *S. ruficapilla* extends farther northwest of its documented distribution in southeastern Brazil and whether the bird identified as *S. infuscata* in Maranhão might prove to be a distinct member of this complex remain open to further investigation.

Taxonomy and nomenclature

Synallaxis ruficapilla has been traditionally listed near *S. superciliosa*, *S. azarae* and *S. frontalis* (Cory and Hellmayr 1925, Peters 1951, Meyer de Schauensee 1966). Vaurie (1980) included *S. elegantior* (elevating it to full species status separated from following Vaurie 1971, Vaurie and Schwartz 1972) in this subgroup of species within his "group one" (a total 16 species "with a well-defined rufous crown that are not rufous on the underparts"), that he considered "to be a single phylogenetic assemblage", within *Synallaxis*. More recently, Sibley and Monroe (1990), following Remsen *et al.* (1988), lumped *S. elegantior* and *S. superciliosa* together with *S. azarae*, placing *S. frontalis*, *S. azarae* and *S. courseni* immediately after *S. ruficapilla* in their classification. *S. courseni*, which had been considered as closely related to *S. brachyura* by other authorities, was placed near *S. azarae* by Sibley and Monroe (1990) following the opinion of Fjeldså and Krabbe (1986). The number of tail feathers in these species varies from eight in *S. ruficapilla* and *S. azarae* (including *elegantior* and *superciliosa*) to ten in *S. frontalis* and *S. courseni* (Vaurie 1980).

Synallaxis infuscata from northeastern Brazil was originally described as a subspecies of *S. ruficapilla* (Pinto 1950) and has been so treated by subsequent authorities (e.g. Meyer de Schauensee 1966, Pinto 1978;

Sick 1985). Vaurie (1980) considered the coloration of the tail of *S. infuscata* (rufous as in *S. ruficapilla*) "aberrant", and grouped this species with *S. brachyura*, *S. hypospodia* and *S. courseni* (all with dark gray underparts) in his "subgroup three", stressing that *S. infuscata* was "a distinct species" that shared "little similarity" with *S. ruficapilla*, having (as the other species in this subgroup) ten rectrices. The splitting of *S. ruficapilla/infuscata*, based on morphological features, has more recently gained support also from the evidence that these birds have strikingly different voices (Collar *et al.* 1992). Sibley and Monroe (1990) essentially followed Vaurie in keeping *S. infuscata* near *S. hypospodia* and *S. brachyura*. Ridgely and Tudor (1994) noted close plumage similarity between *S. ruficapilla* and *S. infuscata*, placing both in their "group B" of *Synallaxis*.

While searching for an available name that could be applied to the spinetail we had found in southern Bahia, we came across *Synallaxis cinereus* Wied, 1831 put among the junior synonyms of *Synallaxis ruficapilla* Vieillot, 1819 by Allen (1889; also Hellmayr in Cory and Hellmayr 1925). Wied (1831) stated that this bird was found on the "Capitao Filisberto road". Although this locality remains untraced (see, e.g., Bokermann 1957, Paynter and Traylor 1991; also M. LeCroy *in litt.* 1995), it is certainly in southern Bahia, as one can deduce from Wied's (1831:1140) statement under his account for *Campylorhamphus trochilirostris*: "Cap. Filisberto road, which links Ilheos to inland of Bahia".

Several species recently recorded at Boa Nova (see Introduction) were known then from Bahia only from single or a few nineteenth century records. Among these were those based on trade skins shipped to European Museums from "Bahia" with no specified localities (mostly probably collected in the vicinity of the capital Salvador), and those of Wied (1820-1821, 1831-1833), who travelled through this region in 1815-1817. Some of the specimens collected by Wied (including the types of new species that he described, such as *Conopophaga lineata*, *Cranioleuca pallida* and *Chiroxiphia caudata*) certainly came from the upland region of southern Bahia, but several of his records have been subject to question owing to the lack of modern evidence from this region.

The "male" of *S. cinereus* was described by Wied as having the "side of the head and all underparts dark ash gray" (emphasis added), which in our opinion does not apply to *S. ruficapilla*, but could match the spinetail we found in Bahia. This notwithstanding, Allen's conclusion was objectively based on the study of Wied syntypes, that included three specimens of *S. ruficapilla* and three specimens of "*S. azarae*" (= *S. frontalis* Pelzeln, 1859). A re-examination of this material in the American Museum of Natural History by M. LeCroy (*in litt.* 1994) led to the same conclusions. In any event, other than Wied's description of a "dark ash gray" spinetail, there exists no objective basis that allows us to apply the name *S. cinereus* to the birds we found in Bahia. In fact, should it be revived following the designation of a

lectotype, this name could only be applied (in part) to the species named twenty-eight years later by Pelzeln as *S. frontalis*, but we recommend instead that *Synallaxis cinereus* Wied be considered inapplicable, in order to preserve this already well established name.

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