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Hylopezus nattereri (Pinto, 1937) is a valid species (Passeriformes: Formicariidae)

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RESUMO. ***Hylopezus nattereri* (Pinto, 1937) é uma espécie válida (Passeriformes: Formicariidae).** Descrita em 1937 como espécie muito distinta, *Hylopezus nattereri* foi então inexplicavelmente relegada à condição de subespécie de *Hylopezus ochroleucus* desde 1939, embora sendo bem diferente em voz, hábitat, distribuição e morfologia. Recomendamos que *nattereri* seja reelevada ao status de espécie. É oportuno nesse momento dedicar mais atenção e recursos para a documentação sobre taxonomia e distribuição.
PALAVRAS-CHAVE: biogeografia, Brasil, caatinga, conservação, Formicariidae, *Hylopezus*, Mata Atlântica, taxonomia, vocalizações.

ABSTRACT. Described as a highly distinctive species in 1937 then inexplicably relegated to a subspecies of *Hylopezus ochroleucus* in 1939, *Hylopezus nattereri* is quite different from *ochroleucus* in voice, habitat, distribution, and morphology. We recommend that *nattereri* be reinstated to species status. The time has come for heightened attention to and greater availability of resources for the documentation of taxonomy and distribution.
KEY WORDS: Atlantic Forest, biogeography, Brazil, caatinga, conservation, Formicariidae, *Hylopezus*, taxonomy, vocalizations.

Olivério Pinto (1937) described *Grallaria nattereri* from Alto da Serra, São Paulo, as a species distinct from *Grallaria* [*Myioturdus*] *ochroleuca* (Wied 1831) from "Arrayal da Conquista" (= Vitória da Conquista), Bahia. Pinto (1937) was obviously convinced of the specific distinctness of the single São Paulo specimen, stating in the introductory paragraphs to his description of the new form, "right from the first inspection one would allocate them to different species" (his first sentence), and that it was "a species well-defined and perfectly distinct from" *G. ochroleuca*. In the text of his brief description of the holotype, however, he suggested, "in the future it might prove to be subspecifically related to *G. ochroleuca*". Naumburg (1939) relegated *nattereri* to a subspecies of *ochroleuca*, stating that it "seems to differ from the typical race" in a number of respects, but offered no explanation for her treatment of *nattereri* as a subspecies. Zimmer and Mayr (1943), in their review of species described from 1938 to 1941, concluded that the differences between *ochroleucus* and *nattereri* "seem to be of good specific value". Despite their judgement, Peters (1951) considered *nattereri* a subspecies of *ochroleucus*, which he included in the genus *Grallaria*. Even Pinto (1978) accepted "the point of view of various authors, beginning with Naumburg (1939)", although he again mentioned the striking differences that distinguish the two forms. Ridgway (1909) erected the genus *Hylopezus* with *perspicillatus* as the type, and Lowery and O'Neill (1969) transferred ochroleucus to this genus from *Grallaria*.

Morphological differences between the northeastern and southeastern populations of *Hylopezus* are indeed distinct, and were commented upon by authors well before Pinto's description of *nattereri*. Hellmayr (in Cory and Hellmayr 1924) recognized that the "two distinct forms... may not even be conspecific", and went on to describe plumage differences. He reported, however, that Wied's type from southern Bahia was lost, and based on the material available at the time, stated, "it is practically impossible to make out which of the two or three forms is entitled to the name *ochroleuca*.". The third form referred to was Snethlage's (1924) *Grallaria martinsi* from serra de Ibiapaba, Ceará, which Cory and Hellmayr (1924) tentatively placed in synonymy with *ochroleuca*. Likewise, Zimmer (1934) considered the northern and southern forms to be "of doubtful affinity". Naumburg (1939) apparently attached little importance to the obvious distinctions that had been highlighted by both Cory and Hellmayr (1924) and Zimmer (1934). More recently, differences

in the vocalizations of the populations were noted by Sick (1985, 1993) who, however, confused the application of the name *ochroleucus* with the form from the south ("including *nattereri*"), stating that the "voice of the northeastern form, *H. o. martinsi*, of Piauí, Ceará, and Bahia, distinctly different". This error stemmed perhaps from an incomplete reading of Hellmayr (1929), who identified specimens from Ceará (only) as *martinsi*, in the absence of comparative material from the type locality.

Ridgely and Tudor (1994) again treated *nattereri* as a species based on plumage and habitat differences, its distribution "so widely disjunct" from *ochroleucus* (they include no records for either form from Minas Gerais), and a written description of the voice of *ochroleucus* provided to them by Whitney and Pacheco (Ridgely and Tudor 1994: 388). Tudor also illustrated the striking plumage differences between the two (pl. 28 in Ridgely and Tudor 1994), although we have observed that *ochroleucus* has a distinctly gray crown and a somewhat more streaked effect in the underparts than is illustrated, and that *nattereri* is generally deeper orangish through the posterior underparts (approaching the color of the breast of *Conopophaga lineata vulgaris* [figure 12a] as shown on the same plate).

In this paper we map all documented (published or unpublished specimens, tape-recordings) or well-corroborated sight records of *H. ochroleucus* and *nattereri* of which we are aware, and compare their principal vocalizations. We searched the major museums in the United States and Brazil, and located specimens of one or both taxa in the following: American Museum of Natural History, New York (AMNH: 1 *ochroleucus*, 2 *nattereri*); Field Museum, Chicago (FM: 3 *ochroleucus*); Museu Nacional do Rio de Janeiro, Rio de Janeiro (MNRJ: 2 *ochroleucus*, 4 *nattereri*), and the Museu de Zoologia da Universidade de São Paulo (MZUSP: 1 *ochroleucus*, 6 *nattereri* including holotype).

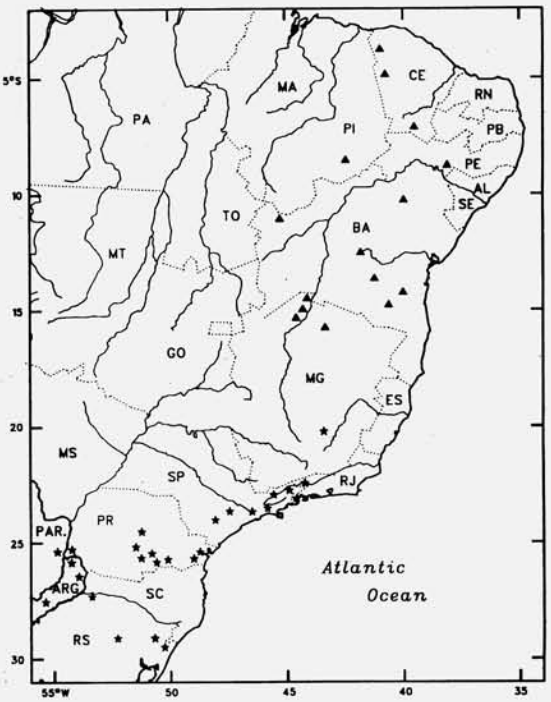

Figure 1. Known localities for *Hylopezus ochroleucus* (triangles) and *H. nattereri* (stars). Localities and sources are provided in Appendix I.

RESULTS AND DISCUSSION

Distribution and habitat. Hylopezus ochroleucus inhabits vine-rich, semi-deciduous and, more locally, deciduous woodland, including caatinga woodland ("caatinga arbórea"), from near Januária in extreme northern Minas Gerais north to the serra de Ibiapaba of western Ceará (figure 1) between about 400 and 950 m elevation. In the northern portion of its range, *H. ochroleucus* is most common in semi-humid pockets of woodland on isolated serras, such as the serra de Ibiapaba; the chapada do Araripe, southern Ceará; and serra Negra in Pernambuco. Farther south, it seems to occur somewhat more sparingly in any undisturbed or lightly disturbed woodland with abundant, tangled vines in the understory.

H. nattereri occurs from far eastern Paraguay and Misiones, Argentina north through the uplands of Rio Grande do Sul and the serra do Mar of southeastern Brazil through the serra da Mantiqueira of southern Rio de Janeiro state to Parque Natural do Caraça near Santa Bárbara, Minas Gerais (figure 1). Sick *et al.* (1981) included *H. ochroleucus* in their list of the birds of Santa Catarina based upon a field observation without details; we have no further information on its status in that state. *H. nattereri* inhabits a radically different biome from *ochroleucus*: humid forest with dense, tangled understory, often in places with an abundant growth of bamboo. In the far southern part of its range, *nattereri* occurs at less than 300 m elevation, much lower than in the north where its elevational spread in the serra da Mantiqueira is approximately 1200 to 1900 m, in the same manner as a number of other birds sharing a similar geographic distribution, such as *Veniliornis spilogaster*, *Stephanoxis lalandi*, *Mackenziaena leachii*, *Drymophila rubricollis*, *D. malura*, *Scytalopus speluncae*, and *Pyrrhocoma ruficeps*. In Minas Gerais, *ochroleucus* and *nattereri* occur within approximately 525 km of each other, but are separated by the cerrado-covered serra dos Gerais and the serra do Cabral in the north-central part of the state, with *ochroleucus* thus far known only from north of these ranges and west of the serra do Espinhaço, in the valley of the rio São Francisco.

Behavior and vocalizations. Foraging behavior, as far as we have been able to determine, is similar for *ochroleucus* and *nattereri*. Both are primarily terrestrial, performing short hops punctuated by abrupt stops, sometimes with the head lowered and an ear cocked toward

the ground. They forage with reaches to the leaf litter and occasional probes in leaves or apparently in the soil (terminology for foraging behavior follows Remsen and Robinson [1990]). Individuals sometimes probe at a site for several seconds, and we have observed *ochroleucus* tossing dry, dead leaves to the side. Both species usually sing from elevated perches inside dense vegetation, ranging from logs on the ground to horizontal branches about 2 m above ground, mostly from perches within 1 m of the ground. In response to tape playback, either species may sing while on the ground, and agitated individuals often rock and roll the body from side-to-side without moving the head or legs, like some other antpittas, especially *Grallaricula* species (B. M. W., pers. obs.).

Figure 2 shows the songs of *H. ochroleucus* (2A) and *H. nattereri* from Rio de Janeiro (2B) and Rio Grande do Sul (2C). The song of *ochroleucus* (N = 8) is distinctly and consistently two-parted, the first part almost always comprising four notes in the pattern low-high-low-high with the initial two notes slightly quieter. The first part is followed by two transition notes that lead into the second part, a series of 6-8 (rarely fewer) evenly spaced, short, sharply downslurred, whistled notes. The song of *nattereri* is an evenly paced series of whistles that steadily increases in amplitude and, after the first few notes, rises in frequency. The notes change shape through the series, beginning flat and ending downslurred. The differences in these songs are most readily appreciated when they are actually heard. Interested readers are referred to the publication *Loudsongs of the Antbirds* (Isler and Whitney in press) for a direct auditory comparison.

Songs of *H. nattereri* appear to vary geographically. Songs from Rio de Janeiro and northern São Paulo (N = 19) are faster (4.5-5.6 notes/sec; mean 5.0) than those (N = 7) from Rio Grande do Sul (3.3-4.2 notes/sec; mean 3.3), and those from Rio de Janeiro generally comprise more notes (8-14; median 11) than those from Rio Grande do Sul (5-10; median 8). The single recording we have listened to from Misiones, Argentina (Straneck 1990) is paced like the Rio Grande do Sul recordings, but each of the three songs presented contains 11 notes. Notes of songs from Rio de Janeiro become progressively longer throughout the song, but in those from Rio Grande do Sul the terminal note is shorter and often quieter than the one preceding it. We have recordings of calls only for *nattereri*. The call of birds from Rio de Janeiro (figure 2D, N = 2) does not seem to differ from the call of the Rio Grande do Sul birds (figure 2E, N = 3).

Localities for recordings and recordists are provided in Appendix II. It is important to note that we lack recordings from the extensive region between northern São Paulo and northern Rio Grande do Sul. The apparent north-south geographic variation in the song of *H. nattereri* certainly merits further investigation, which requires documentation of the distribution of the two song types with voucher skin specimens, especially in the region where the two seem to come closest together.

Relationships and conservation considerations. Together with established morphological characteristics, the well-differentiated vocalizations and habitats of *H. ochroleucus* and *H. nattereri* demonstrate that the two forms should be considered distinct species. We suggest the Portuguese names "torom-do-nordeste" for *H. ochroleucus* (White-browed Antpitta) and "torom-malhado" (following Willis and Oniki [1991]) for *H. nattereri* (Speckle-breasted Antpitta). We prefer to reserve judgement on the taxonomic status of *martinsi* pending examination of tape recordings from the type locality which, at present, do not seem to exist. Intergeneric relationships in *Hylopezus* are complex, and will be discussed in a future paper.

Hylopezus nattereri is not particularly threatened with habitat loss over most of its montane distribution, but forest clearance in the southern, lower-elevation portion of its range has been extensive and is spreading steadily. *H. ochroleucus* is relatively poorly known. Its habitat has been highly disturbed over most of its range, especially the lower-elevation, caatinga forests in the valley of the rio São Francisco. A prolonged dry season sees significant areas burned each year, and pressure from firewood gathering and from sheep and goats, which consume any seedlings that may sprout, is constant. Quite literally, much of the "sertão", or dry interior, of northeastern Brazil seems destined to become a vegetationless desert in the future. There are very few reserves in the "caatinga", not nearly enough to encompass the many vegetation communities that contribute to the complex mosaic of seasonally dry habitats in this vast region. The "mata-de-cipó", or liana forest, which forms a transition between the arid caatinga to the west and the humid Atlantic Forest to the east, and in which *H. ochroleucus* is most common, is completely vulnerable: not a single protection area exists to safeguard this unique and highly endangered habitat. The strongholds for *H. ochroleucus* are several reserves in the serras in the northern part of its range, especially the Parque Nacional Ubajara in the serra de Ibiapaba, the Parque Nacional da Serra da Capivara, the Floresta Nacional da Chapada do Araripe, and Reserva Biológica Serra Negra.

Closing remarks. It is remarkable that such distinctive taxa as these two *Hylopezus* antpittas could be described as separate species and then for decades up to the present, and without supporting evidence of any kind (in fact, contrary to studied opinion), be considered conspecific. As taxonomy and knowledge of distribution are the foundation for all manner of organismal study and all conservation efforts, it seems the time has come to devote more attention and resources to studies of systematics (as recommended by Willis [1988]), and documentation of distribution right down to the "subspecies" level, with no preconceptions as to the taxonomic status

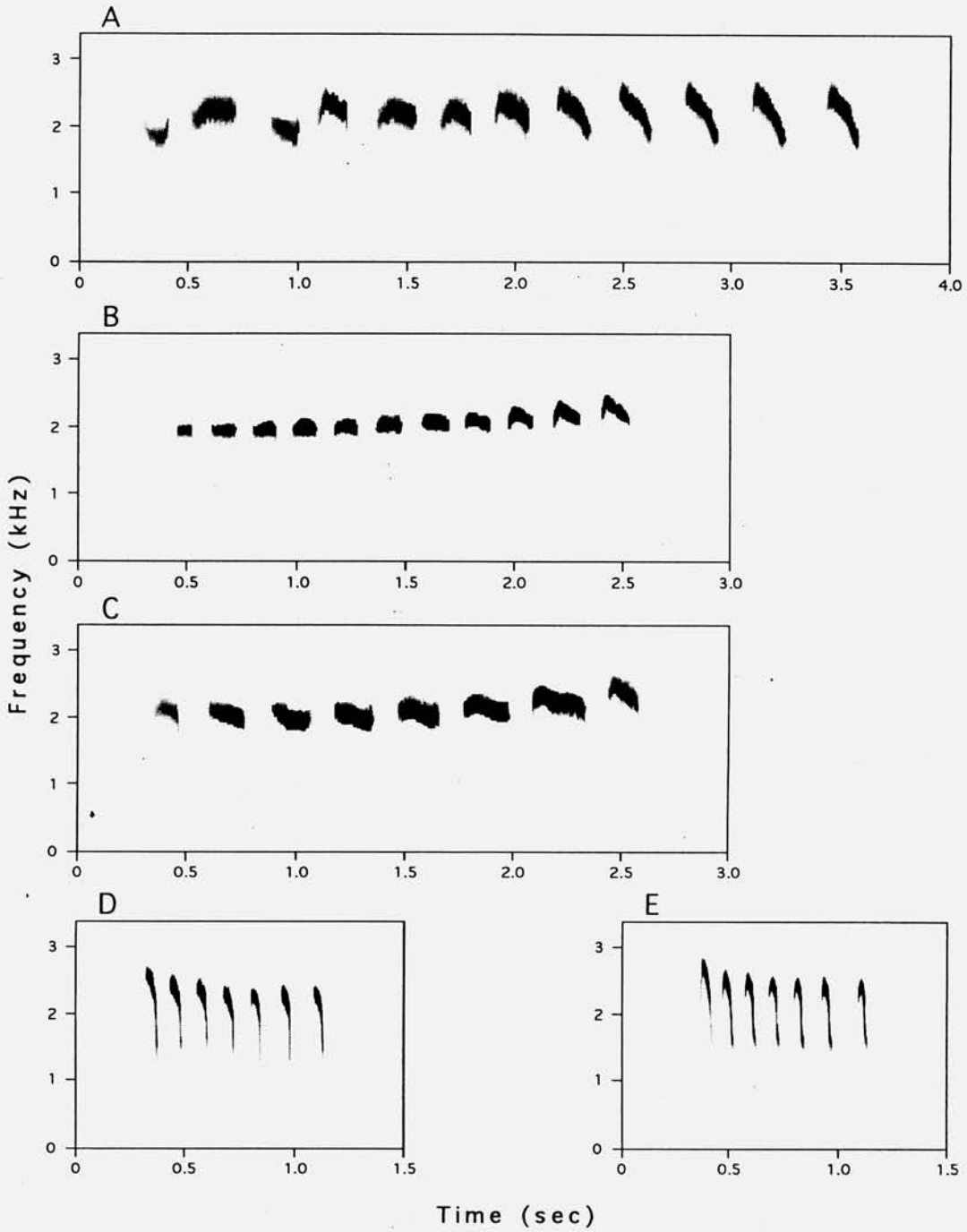

Figure 2. Sound spectrograms of vocalizations of *Hylopezus ochroleucus* and *H. nattereri*. A: typical song of *ochroleucus* from Itacarambí, Minas Gerais, 10 Nov. 1994 (Whitney). B: typical song of *nattereri* from Parque Nacional do Itatiaia, Rio de Janeiro, 22 Oct. 1994 (Whitney). C: typical song of *nattereri* from São Francisco de Paula, Rio Grande do Sul, 26 Jan. 1979 (LNS #20069; W. Belton). D: call of *nattereri* from P. N. do Itatiaia, Rio de Janeiro, 22 Oct. 1994 (Whitney). E: call from Morro Pelado, Rio Grande do Sul, 20 Nov. 1971 (LNS #19244; P. Schwartz). Spectrograms produced with "Canary" 1.1 of the Bioacoustics Research Program of the Cornell Laboratory of Ornithology, Ithaca, New York. Whitney recordings will be archived at the Library of Natural Sounds (LNS), Cornell Laboratory of Ornithology, and the Arquivo Sonoro Prof. Elias P. Coelho (ASEC), Universidade Federal do Rio de Janeiro, Rio de Janeiro.

of populations of birds that are any distance from the type locality of their (apparent) closest relatives. This *Hylopezus* situation, in which *ochroleucus* is revealed as a species threatened with habitat loss, but which has been neglected as a "subspecies", is a case in point, in perfect parallel with the circumstances surrounding the conservation status of *Neopelma aurifrons*, as described by Whitney *et al.* (1995).

In November, 1994, *H. ochroleucus* was still present at the type locality, Vitória da Conquista, in southeastern Bahia (in fragments of liana forest around the edges of the city; B. M. W. and J. F. P.). As the type of *ochroleucus* is lost, collection of a neotype is recommended by the International Code of Zoological Nomenclature (1985). This specimen should be tape-recorded well, tissue and other biochemical specimens should be obtained for genetic analysis, and any parasites should be preserved. The institutions in which these specimens are deposited and their accession numbers should be published promptly.

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APPENDIX I

Localities are listed by species and lati/long from north to south, and are shown on the map (figure 1). A few localities in close proximity are mapped as a single point. An * indicates a sight record; occurrence at all other localities is documented with a specimen or tape recording. Abbreviations are: AMNH (American Museum of Natural History, New York); MZUSP (Museu de Zoologia da Universidade de São Paulo, São Paulo): MNRJ (Museu Nacional do Rio de Janeiro, Rio de Janeiro); B. M.W. and J. F. P. (authors); BA (Bahia); CE (Ceará); MG (Minas Gerais); ES (Espírito Santo); PE (Pernambuco); PI (Piauí); PR (Paraná); RJ (Rio de Janeiro); RS (Rio Grande do Sul); SP (São Paulo).

Hylopezus ochroleucus (White-browed Antpitta)

Serra de Ibiapaba, CE	0400 / 4100	Snethlage 1924
Várzea Formosa, CE	0443 / 4052	Hellmayr 1929
Chapada do Araripe, CE	0720 / 4000	B.M.W. and J.F.P.
Serra da Capivara, PI*	0830 / 4220	Olmos 1993
Serra Negra, PE*	0840 / 3800	Coelho 1987
Bomfim, BA	1027 / 4011	Pinto 1937
Formosa do Rio Preto, BA	1102 / 4512	MNRJ
Palmeiras, BA*	1230 / 4133	R. Parrini
Lençois, BA*	1234 / 4123	R. Parrini
Giguy = Novo Acre, BA	1327 / 4106	Naumburg 1939
Boa Nova, BA	1422 / 4010	Forrester 1993, B.M.W.
Manga, MG	1434 / 4356	B.M.W. and J.F.P.
Arraial da Conquista, BA	1451 / 4051	Wied 1831, B.M.W.
Itacarambi, MG	1505 / 4407	B.M.W. and J.F.P.
Januária, MG*	1529 / 4422	Mattos *et al.* 1991
Janaúba, MG*	1548 / 4319	R. Parrini

Hylopezus nattereri (Speckle-breasted Antpitta)

Serra do Caraça, MG*	1958 / 4329	B.M.W. and J.F.P.
Visconde de Mauá, RJ*	2220 / 4433	JFP
Maromba, Itatiaia, RJ	2223 / 4438	Pinto 1951
Sertão das Cobras, SP	2241 / 4419	MNRJ
Campos do Jordão, SP*	2244 / 4535	Willis and Oniki 1981
Vale dos Veados, SP	2245 / 4445	J.F.P. and P.S.M. Fonseca
Road Parati-Cunha, SP/RJ	2310 / 4500	B.M.W. and J.F.P.
Serra da Cantareira, SP	2325 / 4639	MZUSP
Ipanema, SP	2326 / 4736	Pelzeln 1868
Salesópolis, SP	2331 / 4551	Höfling and Lencioni 1992, MZUSP
Itapecerica da Serra, SP	2343 / 4650	MZUSP
Alto da Serra, SP	2347 / 4619	Ihering and Ihering 1907
Carlos Botelho, SP*	2404 / 4758	Willis and Oniki 1981
Cara Pintada, PR	2508 / 5126	Sztolcman 1926
Vermelho, PR	2509 / 5120	Sztolcman 1926
Corvo, Sa. Graciosa, PR	2518 / 4856	Naumburg 1939
Banhado, PR	2533 / 5119	Sztolcman 1926
Puerto Iguazu, Misiones	2534 / 5434	Dabbene 1914
Puerto Bertoni, Paraguay	2538 / 5440	Bertoni 1904
Faz. Durski, PR	2540 / 5114	Sztolcman 1926
Faz. Firmiano, PR	2542 / 5112	Sztolcman 1926
Faz. Guaricana, PR*	2545 / 4855	Straube 1990
Faz. Ferreira, PR	2546 / 5108	Sztolcman 1926
Arroio Urugua-i, Misiones	2554 / 5434	Partridge 1954
Marechal Mallet, PR	2555 / 5050	Sztolcman 1926
Rio Claro, PR	2603 / 5038	Sztolcman 1926
Tobuna, Misiones	2628 / 5354	Partridge 1954
Iraí, RS	2711 / 5315	Belton 1985
Santa Ana, Misiones	2722 / 5534	Dabbene 1914
Faz. Santa Rita, Palmeira, PR*	2818 / 4948	Anjos and Graf 1994
São Francisco de Paula, RS	2927 / 5035	Naumburg 1939
Sete Léguas, RS	2921 / 5224	Belton 1985
Aparados da Serra, RS	2909 / 5005	Belton 1985
Morro Pelado, Canela, RS	2922 / 5047	MNRJ

APPENDIX II

Recording locations and recordists. *H. ochroleucus*. MINAS GERAIS: Itacarambi, Whitney 1; Manga, Whitney 1. BAHIA: Formosa do Rio Preto, P. S. Fonseca 1, Boa Nova, Whitney 2. CEARÁ: chapada do Araripe, Whitney 3. *H. nattereri*. RIO DE JANEIRO: P. N. do Itatiaia, Behrstock 1, P. Isler 1, Parker 2, Whitney 10, K. Zimmer 3; road Parati-Cunha, Whitney 1. SÃO PAULO: P. N. da Bocaina, P. S. Fonseca 1. PARANÁ: serra da Graciosa, R. Parrini 1. RIO GRANDE DO SUL: Morro Pelado, Belton 5, Schwartz 1; São Francisco de Paula, Belton 1; P. N. de Aparados da Serra, Belton 1. MISIONES, ARGENTINA: R. Straneck 1.