THE WILSON BULLETIN

A QUARTERLY MAGAZINE OF ORNITHOLOGY

Published by the Wilson Ornithological Society

VOL. 94, NO. 2 JUNE 1982 PAGES 105–240

Wilson Bull., 94(2), 1982, pp. 105–113

A NEW SPECIES OF ANTPITTA (*GRALLARIA*) FROM NORTHERN PERU

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Antbirds (Formicariidae) have a well-deserved reputation as shy, secretive birds. These attributes apply in particular to the poorly-known antpittas (*Grallaria* and allies). Although the cordilleras of the Eastern Andes of Peru have been a rich source of undescribed avian species, we were nonetheless surprised to encounter a distinctly different antpitta in 1978 during faunal surveys for the Louisiana State University Museum of Zoology (LSUMZ) in the Department of Amazonas, northern Peru. Additional specimens of this bird were obtained during further LSUMZ fieldwork in 1979 in the Department of La Libertad, Peru. This antpitta represents an undescribed species that we propose to call:

Grallaria carrikeri sp. nov.

PALE-BILLED ANTPITTA

HOLOTYPE.—Louisiana State University Museum of Zoology No. 88044; adult male from Cordillera Colán, SE La Peca, ca. 5°34′S, 78°19′W, 2450 m, Dept. Amazonas, Peru; 15 October 1978; collected by M. D. Williams; original number 2056.

DIAGNOSIS.—A medium-sized antpitta that most closely resembles *Grallaria nuchalis* (especially the nominate subspecies) in size and general color of the back, wings and underparts. Distinguished from all populations of *G. nuchalis* by the black face and throat, by the absence of rust on the nape, by the narrow black tips to the feathers of the back and breast, by the red iris, and by the strikingly pale, whitish bill, which appears to be unique in the family.

DISTRIBUTION.—Known from three localities in the Eastern Andes of northern Peru (see Fig. 1): Cordillera Colán, SE La Peca, ca. 5°34′S, 78°19′W, 2350–2550 m, Dept. Amazonas; 33 road km NE Ingenio on road to Laguna Pomacochas, ca. 5°52′S, 77°57′W, 2550 m, Dept. Amazonas; and Cumpang, above Utcubamba, on trail to Ongón, ca. 8°12′S, 77°10′W, 2750–2900 m, Dept. La Libertad. Probably occurs more or less continuously along the east slope of the Eastern Andes south of the Río Marañón at least to Cumpang,

Grallaria carrikeri (Pale-billed Antpitta), a new species from Peru.
Painting by John P. O'Neill

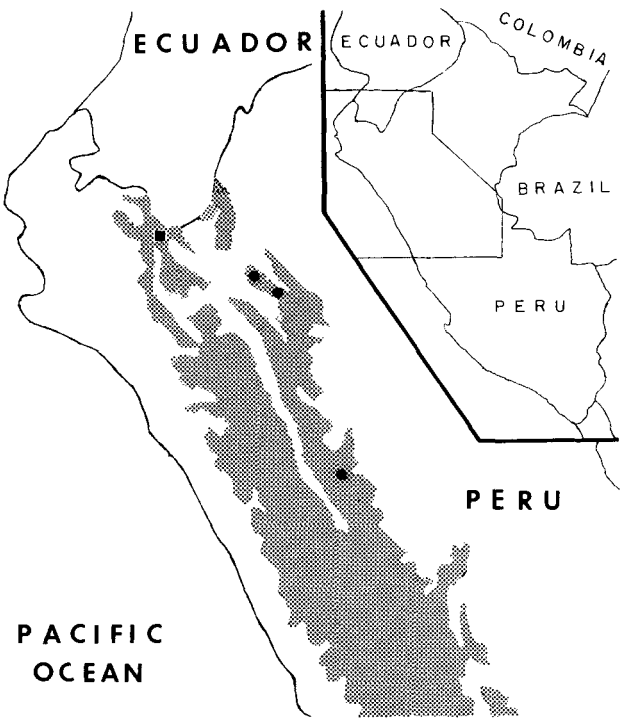

FIG. 1. The Andes of northwestern Peru (shaded within the 2000 m contour) showing the distribution in Peru of *Grallaria nuchalis* (square, upper left) and *G. carrikeri* (circles). Note that the two species are separated by the low, arid Río Marañón valley. The three localities for *G. carrikeri* are, from upper left to lower right: Cordillera Colán (type locality), northeast of Ingenio, and Cumpang.

and possibly farther south, as large areas of uninterrupted forest remain in this region at elevations inhabited by *G. carrikeri*.

DESCRIPTION OF THE HOLOTYPE.—Lores, forecrown, malar region and base of auriculars black; crown and tips of auriculars shading through blackish-brown to Claret Brown (capitalized color names are from Ridgway 1912) on nape. Back and rump Medal Bronze, feathers very narrowly tipped black. Remiges dusky-brown, outer webs of remiges Mahogany Red; upper wing coverts Mahogany Red. Rectrices dusky-brown. Chin black, shading to blackish-gray on throat. Underparts light gray, shading darker on sides of breast and paler posteriorly, to almost white in center of belly; feathers on breast and upper belly narrowly tipped black. Flanks and undertail coverts Buffy Citrine. Thigh feathers Mouse Gray. Soft-part colors in life: bill ivory; iris pale reddish brown; legs and feet blue-gray.

MEASUREMENTS OF HOLOTYPE.—Chord of wing 111.6 mm; tail 66 mm; culmen from base 30 mm; tarsus 59 mm; weight 111 g.

SPECIMENS EXAMINED.—*G. carrikeri*: Cordillera Colán, Peru, 4 ♂♂ (LSUMZ 88042–88045), 1 ♀ (LSUMZ 88046), 1 ♀ skeleton (LSUMZ 89957); NE Ingenio, Peru, 1 ♂

(DMNH 60082); Cumpang, Peru, 3 ♂♂ (LSUMZ 92456–92457, 92460), 3 ♀♀ (LSUMZ 92458–92459, 92461).

G. n. nuchalis: Cerro Chinguela, Peru, 2 ♂♂ (LSUMZ 88041, 97679), 2 ♀♀ (LSUMZ 97678, 97680); Oyacachi, Ecuador, 1 ♀ (AMNH 180253); Sumaco Arriba, Ecuador, 2 ♀♀ (AMNH 184379, 184381); Maspa, Ecuador, 1 ♂ (AMNH 173024); Baeza, Ecuador, 1 ♂ (AMNH 173023).

G. n. obsoleta: Verdecocha, Ecuador, 1 ♂ (AMNH 180254), 2 ♀♀ (AMNH 173304, 180255); Pichincha, Ecuador, 1 ♂ (AMNH 492198); below Mindo, Ecuador, 1 sex unknown (AMNH 156756).

G. n. ruficeps: Almaguer, Colombia, 2 ♂♂ (AMNH 116340, 116343), 2 ♀♀ (AMNH 116338–116339); Laguenta, Colombia, 2 ♂♂ (AMNH 111972, 111974), 1 ♀ (AMNH 111969); Cauca Valley, Colombia, 1 ♀ (AMNH 492197).

ETYMOLOGY.—We take pleasure in naming this species after the late M. A. Carriker, Jr., who, over a lifetime of fieldwork in South America, contributed enormously to the knowledge of Andean birds. It is particularly fitting to name this species in Carriker's honor, as he collected in both Amazonas and La Libertad, near the areas where the new species was discovered.

REMARKS

Variation in the type series.—Males average slightly larger than females (Table 1). There is only slight paratypic variation in plumage color, which does not appear to be related to sex. Variation is most evident in the color of the underparts; some individuals are darker gray on the breast than the holotype. The centers of the upper breast feathers of one female (LSUMZ 92461) are brown; other females do not exhibit this feature. Five specimens have from 1–3 white feathers on the head and nape. We have not detected a similarly high frequency for this minor plumage aberration in other species of antpitta. Descriptions of soft-part colors (as noted on specimen labels) vary somewhat. Descriptions of bill color vary from "ivory" (holotype) and "white" to "very pale yellow-green, base shaded light blue." Descriptions of iris color vary from "light brown" through "pale creamy-orange" to "crimson red." These differences may be due in part to rapid post-mortem changes in iris color; irides that are red immediately after death soon begin to pale and turn brown.

Juvenal plumage.—D. G. Wysham collected a juvenile antpitta (DMNH 60082) northeast of Ingenio on 9 August 1976. Originally identified as a Chestnut-naped Antpitta (*G. nuchalis*), this specimen (the only one from this locality) is undoubtedly *G. carrikeri*. The bird weighed 90 g. Remiges are fully developed (wing chord 104 mm), although the rectrices are not fully grown. The head is blackish-gray with black lores. Feathers on the nape are tinged brown and tipped with cinnamon. Most of the rest of the body is brown, barred with black; barring becomes obsolete on the lower belly. The shade of brown varies from Auburn on the upper back to cinnamon-buff on the lower back and breast. The belly is buffy with a creamy-

TABLE 1

MEASUREMENTS OF *Grallaria nuchalis* AND *G. carrikeri*

Measurements	*G. n. ruficeps*			*G. n. obsoleta*			*G. n. nuchalis*			*G. carrikeri*		
	N	$\bar{x}$	Range	N	$\bar{x}$	Range	N	$\bar{x}$	Range	N	$\bar{x}$	Range
Wing (chord) (mm)	4 ♂♂	115.4	113.8–120.3	2 ♂♂	111.9	110.4–113.4	4 ♂♂	107.2	99.6–112.7	5 ♂♂	110.1	106.8–112.5
	4 ♀♀	117.7	116.0–118.6	2 ♀♀	109.9	108.9–110.9	5 ♀♀	105.5	100.8–109.9	2 ♀♀	105.4	103.7–107.1
				1 unk.	109.9							
Tail (mm)	3 ♂♂	67.5	65.7–70.7	2 ♂♂	63.0	60.1–65.8	3 ♂♂	64.2	59.8–67.7	4 ♂♂	64.6	62.6–66.0
	3 ♀♀	67.9	65.7–70.4	2 ♀♀	61.7	61.6–61.7	4 ♀♀	61.4	57.5–67.0	4 ♀♀	63.4	61.4–65.7
				1 unk.	57.8							
Culmen from base (mm)	2 ♂♂	31.4	—	2 ♂♂	27.8	27.7–27.9	3 ♂♂	28.9	25.9–30.8	5 ♂♂	30.1	29.6–31.3
	3 ♀♀	30.0	29.0–30.9	2 ♀♀	27.4	27.1–27.6	5 ♀♀	28.9	27.0–31.2	4 ♀♀	28.4	28.0–29.1
				1 unk.	27.7							
Tarsus (mm)	3 ♂♂	57.4	55.0–59.0	2 ♂♂	57.3	56.7–57.9	3 ♂♂	53.4	48.8–59.3	5 ♂♂	59.7	59.0–60.6
	4 ♀♀	59.4	57.3–60.9	2 ♀♀	53.7	52.9–54.4	5 ♀♀	54.3	51.2–57.4	4 ♀♀	57.7	56.4–58.9
				1 unk.	51.8							
Weight (g)	—	—	—	—	—	—	2 ♂♂	119	115–122	5 ♂♂	112	96–124
							2 ♀♀	116	110.0–122	5 ♀♀	107	97–112

white area in the center. There are a few gray feathers on the side of the breast. The primary wing coverts are tipped cinnamon-buff, with a black subterminal band. The iris color was not described; the bill was described as "orange flecked with black, basally orange"; the tarsi were "gray-flesh, scute edges darker."

A specimen (LSUMZ 88042; skull 40% ossified; 86 g; irides brownish-red; maxilla blackish, tomia salmon; distal culmen whitish; mandible dusky, base and tomia salmon; tarsi blue-gray) collected 21 October 1978 at the type locality shows about an equal mixture of juvenal and definitive plumage. The crown, nape, and wing coverts are entirely juvenal, and juvenal feathers are scattered throughout the back, rump, breast and belly. Another specimen (LSUMZ 88043; skull 50% ossified; 97.5 g; soft-part colors similar to the last specimen) collected at the same locality on 19 October 1978, retains juvenal wing coverts, the juvenal crown and nape feathers and two juvenal breast feathers. Two additional specimens from this locality, both with fully ossified skulls and adult bill color, retain juvenal wing coverts, but otherwise exhibit typical definitive plumage.

Breeding and molt.—Juvenile *G. carrikeri* were collected in August 1976 and October 1978 in Dept. Amazonas, suggesting that the species breeds primarily during the drier part of the year. A nest with recently-hatched young, however, was discovered at Cumpang in October 1979 (Wiedenfeld, in press). Three adult females collected at Cumpang in October did not show enlarged follicles, brood patches, or other evidence of breeding. Likewise, testes of adult males collected in October are only slightly enlarged (largest 7 × 3 mm). Half of the adult specimens show light to moderate body molt. Light tail molt is apparent on three specimens, and one specimen is molting two primaries.

Habitat and ecology.—All three localities from which the new species is known are in cloud forest. At these localities the forest is up to 30 m tall, the canopy is broken and epiphytic growth is lush. Forest undergrowth is typically dense, and bamboo often forms large thickets. *G. carrikeri* were often noted in or near such bamboo thickets, usually on or within a meter of the ground.

The elevational distribution of *G. carrikeri* overlaps the lower elevational limits of two sympatric species of *Grallaria*: Undulated Antpitta (*G. squamigera*) and Rufous Antpitta (*G. rufula*), and overlaps the upper elevational limits of yet two more species: Chestnut-crowned Antpitta (*G. ruficapilla*) and Rusty-tinged Antpitta (*G. przewalskii*). At each locality where *G. carrikeri* is known, it is syntopic with two or three of these species: *G. squamigera* (Cumpang, $\bar{x}$ = 144.3 g, N = 4); *G. ruficapilla* (northeast of Ingenio, $\bar{x}$ = 88 g, N = 2); *G. przewalskii* (Cordillera Colán, northeast of Ingenio, Cumpang; $\bar{x}$ = 68.5 g, N = 13); *G. rufula* (Cordillera

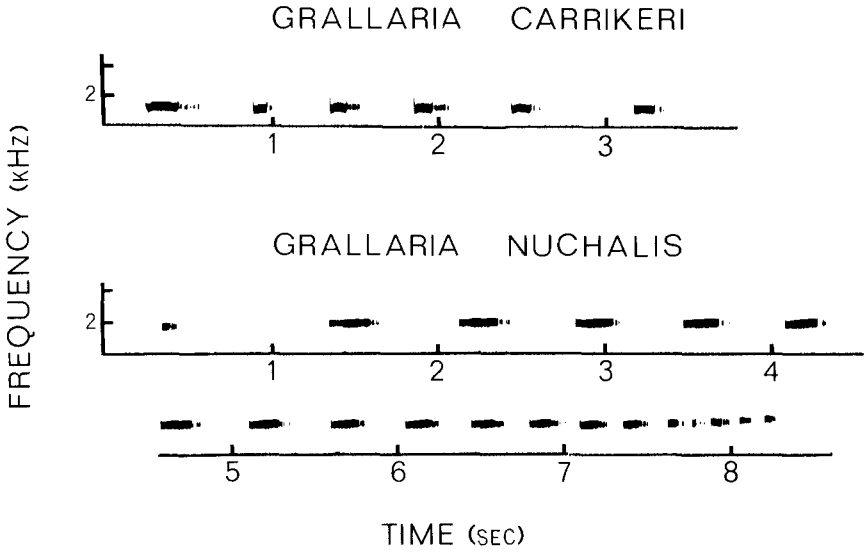

FIG. 2. Songs of *Grallaria carrikeri* (Cumpang, Dept. La Libertad, Peru) and *G. nuchalis* (Cerro Chinguela, Dept. Cajamarca, Peru). The two species differ in the length and pattern of the song. Both species recorded by T. A. Parker, III.

Colán, Cumpang; $\bar{x}$ = 41.6 g, N = 15). Little is known yet about possible microhabitat segregation or other ecological differences among these species. Stomachs of seven *G. carrikeri* were examined and contained arthropods, especially caterpillars (in four stomachs, lengths 12–34 mm), and beetles (in four stomachs). Qualitatively similar food items have been identified in stomachs of *G. squamigera*, *G. nuchalis*, *G. przewalskii* and *G. rufula* (specimen tag data, LSUMZ).

Voice.—Tape recordings and sonograms of the songs of *G. n. nuchalis* and *G. carrikeri* were made available to us by T. A. Parker, III, who recorded both species in Peru (tapes deposited at the Library of Natural Sounds, Cornell University Laboratory of Ornithology). Songs of both species are shown in Fig. 2. The song of *G. carrikeri* contains six notes. The spacing between the notes is not even, as there are slight pauses between the first and second, and fifth and sixth notes. The song is 3 sec long. The song of *G. nuchalis* is longer (ca. 8 sec), and consists of a gradually accelerating series of notes. The individual notes of the songs of both species are structurally similar, but the songs are quite different in the pattern of notes. The song of *G. nuchalis* is about 0.5 kHz higher in pitch than is the song of *G. carrikeri*. The songs of the two species also

differ qualitatively; the song of *G. carrikeri* sounds staccato, while the song of *G. nuchalis* has a ringing quality.

Songs of these two species are sufficiently different to suggest that they could function as a reproductive isolating mechanism. Support for this hypothesis comes from playback experiments on *G. nuchalis* conducted by Parker and M. J. Braun in June and July 1980 at Cerro Chinguela, 2800 m, Dept. Cajamarca, Peru. In a series of trials, tapes of *G. carrikeri* recorded at Cumpang elicited no response from *G. nuchalis*. These same *G. nuchalis* responded to playbacks of *G. nuchalis* songs by approaching the experimenters, sometimes hopping into the open, and singing. The initial vocalization of some *G. nuchalis* responding to playback tapes was a high-pitched *chee-chee-chee-chee-chee* (Parker, pers. comm.). This type of vocalization is not known from *G. carrikeri*. Unfortunately, reciprocal playbacks (testing *G. carrikeri* with *G. nuchalis* tapes) have not been performed.

Systematic relationships.—Morphologically *G. carrikeri* bears a close resemblance to *G. nuchalis* (see Table 1), which occurs at similar elevations from Colombia to northern Peru. Differences in plumage and soft-part colors (see Diagnosis) and song (above) suggest that *G. carrikeri* has achieved species status. These two species are completely isolated from one another by an area of unsuitable habitat formed by the arid Río Marañón valley. Several other probable allospecies pairs, which differ on the basis of plumage characters to about the same degree as these two antpittas, are also separated by this Marañón discontinuity, e.g., Neblina Metaltail (*Metallura odomae*)/Coppery Metaltail (*M. theresiae*) (see Graves 1980), Flammulated Treehunter (*Thripadectes flammulatus*)/Buff-throated Treehunter (*T. scrutator*), and Black-headed Hemispingus (*Hemispingus verticalis*)/Drab Hemispingus (*H. xanthophthalmus*).

On the basis of either voice or plumage characters, *G. nuchalis* and *G. carrikeri* do not appear to be particularly closely allied to any other members of the genus. Zimmer (1934) considered *G. nuchalis* to have a "definite relationship" to the White-throated Antpitta (*G. albigula*) of southeastern Peru and Bolivia on the basis of shared similarities in coloration and structure. We tend to agree more with Chapman (1923), who described *G. albigula*, that the details of coloration of *G. albigula* show greater resemblance to *G. ruficapilla* (dorsally) and *G. hypoleuca* (ventrally), and we see no particular plumage similarities to *G. nuchalis*. Zimmer (1934) noted that *G. albigula* did not share the stout, strongly decurved bill of *G. nuchalis* [and *G. carrikeri*], but apparently did not assign much importance to this feature; we would interpret this difference as further evidence that *G. albigula* is not closely related to *G. nuchalis* and *G. carrikeri*. The

song of *G. albigula* is a mellow, whistled *hoo-hoo*, with the second syllable higher in pitch than the first. This song bears similarities to the songs of *G. ruficapilla* and *G. przewalskii*, but is completely unlike the songs of *G. nuchalis* and *G. carrikeri*.

As noted above, the distribution of *G. carrikeri* is limited to the north by the Río Marañón valley. Surprisingly, *G. carrikeri* has not been found in the now comparatively well-known Cordillera Carpish in Dept. Huánuco, only 180 km south of Cumpang, despite the presumed availability of suitable habitat in the intervening areas. The same distributional pattern (southern Dept. Amazonas south to Dept. La Libertad, but not to Dept. Huánuco) is shared in whole or in part by at least one mammal, the yellow-tailed woolly monkey (*Lagothrix flavicauda*) (Parker and Barkley 1981) and several other birds: Yellow-browed Toucanet (*Aulacorhynchus huallagae*), Russet-mantled Softtail (*Thripophaga berlepschi*), Rusty-tinged Antpitta (*Grallaria przewalskii*), Tawny Antpitta (*G. quitensis atuensis*) and Crowned Chat-Tyrant (*Ochthoeca frontalis orientalis*). We do not know what factors, historical or ecological, determine the southern limit of distribution of *G. carrikeri*. We believe, however, that the distribution of this species, and of the other taxa mentioned above, suggests that a Pleistocene refuge of montane forest may have existed somewhere in what is now Dept. Amazonas, Dept. San Martín, or Dept. La Libertad.

ACKNOWLEDGMENTS

Many people worked very hard under strenuous field conditions during the expeditions that obtained the new species. In particular we acknowledge contributions by P. J. Barbour, L. J. Barkley, P. L. Brown, J. W. Eley, G. L. Graham, T. A. Parker, III, M. B. Robbins, D. A. Wiedenfeld, and our perennial and indispensable field assistants, Reyes Rivera A., Manuel Sánchez S. and Klaus Wehr. Arturo and Helen Koenig, Manuel and Isabel Plenge, and Gustavo del Solar R. helped make us feel at home in their country, and provided logistical support for our operations. We appreciate the valuable criticisms of the manuscript by E. Eisenmann, G. R. Graves, T. A. Parker, III, K. C. Parkes and J. V. Remsen, Jr. We are especially grateful to T. A. Parker, III, for permission to use his tapes and notes on the new species, and to J. P. O'Neill for the color plate. Sonograms were prepared by J. L. Gulledge of the Cornell University Laboratory of Ornithology. D. M. Niles, Delaware Museum of Natural History (DMNH), and W. E. Lanyon, American Museum of Natural History (AMNH) loaned comparative material. Ing. Eric Cardich Briceño and his staff of the Dirección General Forestal y de Fauna of the Ministerio de Agricultura, Lima, Peru, continue their support of the LSUMZ field studies. We are most grateful to John S. McIlhenny, H. Irving and Laura R. Schweppe and Babette M. Odom for their continued interest in and support of the LSUMZ fieldwork. Comparative studies of antpittas at the American Museum of Natural History were aided by grants to the authors from the Frank M. Chapman Memorial Fund in 1979.

We dedicate this paper to the late Eugene Eisenmann in recognition of his many contributions to neotropical ornithology.

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MUSEUM OF ZOOLOGY, LOUISIANA STATE UNIV., BATON ROUGE, LOUISIANA 70893. ACCEPTED 23 OCT. 1981.

COLORPLATE

The colorplate Frontispiece of Pale-billed Antpitta (*Grallaria carrikeri*) has been made possible by an endowment established by George Miksch Sutton.