

y Abril, ofreciendo una mínima competencia a las especies residentes, las que en combinación con la estación de lluvias y aumento del habitat acuático, se mantienen, reproducen, y alimentan sus crías. Algunas aves de la puna pudieran migrar por la costa, desde Chile.

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**Relationship of *Veniliornis "cassini" chocoensis* and *V. "cassini" caquetanus* with *V. affinis*.**—In reviewing species of the genus *Veniliornis* for a forthcoming book on the world's woodpeckers I was able to reevaluate the status of *Veniliornis chocoensis* Todd (1919, Proc. Biol. Soc. Washington 32: 116; *chocoensis* is treated universally as a race of *V. cassini*) and of *V. cassini caquetanus* Meyer de Schauensee (1949, *Caldasia* 5: 640). Available for examination were: three specimens of *chocoensis*, including a male paratype (Carnegie Mus. 66522) from Potedo, Choco, Colombia; a male (Acad. Nat. Sci. Philadelphia 157856) from Bella Vista, Cauca, Colombia; and a male (see Norton et al. 1972, *Auk* 89: 891) from Esmeraldas, northwestern Ecuador (Mus. Comp. Zool. 298406); and two specimens of *caquetanus*, the male type (ANSP 152658) from Morelia, Caqueta, Colombia; and a topotypical male (AMNH 116145) very closely resembling the type. Comparisons were made using material in the American Museum of Natural History representing *V. c. cassini* (35 specimens), *V. affinis* (all races, more than 20 specimens of each),

and related species *V. maculifrons* and *V. kirkii*. I also had available on loan from the Phelps Collection 15 specimens of *V. c. cassini* and 28 specimens of *V. affinis orenocensis* all from Amazonas, southern Venezuela.

*Veniliornis affinis* is a widespread forest species of lowland South America, ranging from southern Venezuela, eastern Colombia, and Amazonian Brazil south to Espirito Santo, Mato Grosso, and Bolivia, with four races recognized currently. The nominate race of *V. cassini* is restricted to northeastern South America from southeastern Venezuela and the Guianas to northeastern Brazil (north of the Amazon). It overlaps in range narrowly with *V. affinis orenocensis* in the Rio Negro region of Brazil and in adjacent Venezuela (both species are represented at very few localities), but generally is parapatric with *V. affinis*. *V. c. cassini* differs from *V. affinis* in a number of ways. Two major points of difference are: 1) the spotlike rather than streaklike pale yellowish markings on the upper wing coverts of *V. c. cassini* (a few males and many females of *V. affinis orenocensis* have vague to clear but small, fine, pale shaft *streaks* on these coverts); and, 2) the even, black ventral barring on a white background in *V. c. cassini* compared with the irregular, wavy, olive barring on a buffy white background in *V. affinis orenocensis*. The latter difference especially is pronounced on the abdomen where the narrow, even black bars of *V. c. cassini* render that area very white; in *V. affinis* the irregular olive bars are less clear on the abdomen, and the buffy tone of the background makes the abdominal region duller, less white, and distinctly less boldly patterned than in *V. c. cassini*. Additionally, *V. c. cassini* has a pale bill, clearly lighter than the nearly black bill of *V. affinis*, even in old specimens. Other differences generally found, but not separating all birds of the two species are: (1) ear coverts two-toned, olive and white streaked in *V. c. cassini*, and obscurely patterned with strong buffy cast in *V. affinis*; (2) red tips lacking on upper wing coverts of *V. c. cassini*; (3) nape patch brighter, generally more gold in *V. c. cassini*, duller in *V. affinis*; (4) upperparts yellower in *V. c. cassini*, more bronzy in *V. affinis*; (5) upper tail coverts usually unbarred in *V. c. cassini*, but vague to strong bars in *V. affinis*; (6) shafts of primaries on underside whiter, tinged yellow in *V. c. cassini*, and varying from dusky rarely to fully whitish in *V. affinis*; and (7) tail proportionately longer with respect to wings in *V. c. cassini*, shorter in *V. affinis*.

The ranges of *V. c. cassini* and *V. affinis*, as mentioned above, place the former geographically far removed from Colombian *caquetanus* and *chocoensis*. In contrast, *V. affinis* is sympatric with *caquetanus* in eastern Colombia, and is of course much closer to *chocoensis* (gap from eastern to northwestern Colombia) than is *V. c. cassini*.

*Veniliornis cassini chocoensis* was described (Todd loc. cit.) as "nearest apparently to *Veniliornis cassini* . . . but more heavily barred beneath, the black bars predominating; breast strongly washed with ochraceous tawny; wing-coverts plain, without any wash of red" (this is the complete description). Of these features only the black ventral bars seem to be a characteristic of *V. c. cassini* (but see below), whereas the heavy barring, the tawny wash, and lack of red in the wing coverts all occur in *V. affinis*. *V. cassini caquetanus* was described (Meyer de Schauensee loc. cit.) as differing "from typical (i. e., nominate) *cassini* by having the back somewhat darker olive, and by completely lacking the yellow spots on the wing coverts." These stated differences do not distinguish *caquetanus* from *V. affinis*.

The three available specimens of *chocoensis* closely resemble one another. Al-

though I did not study Todd's type of *chocoensis*, K. C. Parkes (letter of 4 December 1972) described the paratype I examined as "another male, almost identical to the type but very slightly brighter dorsally." The back color of *chocoensis* is strongly tinged with bronze. Most specimens of *V. affinis* show some bronze above, and some even match *chocoensis*, whereas *V. c. cassini* shows no bronze tone. The nape patch is dull yellow-gold as in *V. affinis*. The shafts of the primaries are dusky as in some *V. affinis* and unlike *V. c. cassini*. The throat is spot-barréd as in *V. c. cassini*, but fully one-third of the specimens of *V. affinis* (all races) resemble *V. c. cassini*, hence this feature is of no taxonomic significance. The ventral barring of *chocoensis* is indeed black, as in *V. c. cassini*, but occasional individuals of *V. a. ruficeps* and of *V. a. hiliaris* are black-barréd. Furthermore the barring on the underparts of *chocoensis*, although black, is wavy and irregular, and the background color ventrally is tawny washed, suggesting that *chocoensis* is a dark form of *V. affinis*. Likewise, *chocoensis* lacks the pale upper wing covert spots of *V. c. cassini*, and has some red-tipped feathers in those coverts; such tipping is absent in *cassini*, but occurs in populations of several races of *V. affinis*. The upper tail coverts are barréd in *chocoensis*, as in *V. affinis*. The ear coverts of *chocoensis* are suffused with ochraceous buff, as in *V. affinis* and unlike *V. c. cassini*. Bill color is blackish, identical with that of *V. affinis*, and in contrast to pale-billed *V. c. cassini*.

Measurements of *V. c. cassini* and of *V. affinis* overlap, although *cassini* tends to be larger. Wing (chord) measurements for 32 males of *V. c. cassini* range from 91 to 101 mm, tail length varies from 52 to 65 mm, and the tail/wing ratio ranges from 0.56 to 0.67. Measurements of *V. a. orenocensis* and *V. a. hiliaris* (20 males of each) range from 88 to 99 mm in wing length, and 46 to 61 mm in tail length, and the tail/wing ratio varies from 0.51 to 0.66. Measurements of the four specimens of *chocoensis*, including those of the type given by Todd (1919), are as follows, with the type presented first: wing 94, 92, 90, 89 mm; tail 48, 51, 46, 45 mm; and tail/wing ratio, 0.51, 0.55, 0.51, 0.51. Thus tail measurements and tail/wing ratios of *chocoensis* all fall below those of *V. c. cassini*, as does one of the wing measurements, but *chocoensis* measurements are within the range of *V. affinis*.

I conclude that *chocoensis* represents an isolated western race of *V. affinis*, and not a distant isolate of *V. cassini*, which thereby becomes monotypic. Racial features of *V. a. chocoensis* chiefly are its very bronzy upperparts and black ventral barring.

The problem presented by *V. cassini caquetanus* is more difficult. This form was known from the type specimen until I found another topotypical specimen resembling it in the American Museum of Natural History. This latter specimen, and another representing *V. affinis* (an intergrade of *V. a. orenocensis-hiliaris*), were collected at Morelia, the type locality of *caquetanus* in July 1912. Thus two species would seem to be sympatric at Morelia. All three Morelia birds are within the range of overlap in size between *V. cassini* and *V. affinis*, except that the specimen definitely of *V. affinis* has too short a tail (53 mm) for *cassini*. The two *caquetanus* specimens are greener above than *V. a. chocoensis* with no bronzy color evident. They are less buffy below, and the ventral barring is blacker than in most *V. affinis* specimens, but the barring below is wavy as in *affinis*. Their wing coverts are unmarked (AMNH specimen), or (type specimen) bear faint pale shaft streaks and narrow red edges. Thus the upper wing coverts resemble those of *V. affinis*, not *V. cassini*. Bills of the two *caquetanus* are blackish, as in *V. affinis*. The one specimen (type) having upper tail coverts present shows barring,

as in *V. affinis*. The dorsal coloration of the two *caquetanus* specimens is greener and less bronze than in most specimens of *V. affinis*, but is not yellowish as in *V. cassini*. Their nape is dull yellow-gold, resembling *V. affinis*.

The two *caquetanus* specimens differ from most specimens of *V. affinis* in their blacker ventral barring, the whiter and less buffy underparts, and their greener upperparts. These features are found in at least two specimens of *V. a. ruficeps*, and another two specimens of that form approach *caquetanus*, but are buffier below. Significantly, the *affinis* specimens resembling *caquetanus* are definitely (two cases) or possibly (other two cases) immature specimens. Both *caquetanus* specimens seem to have a thin, pliable cranium, and the AMNH specimen, at least, is an immature bird (plumage fluffy owing to weakly interlocking barbs, outer primary very long and broad).

Two years prior to describing *caquetanus*, Meyer de Schauensee (1947, Proc. Acad. Nat. Sci. Philadelphia 99: 116) discussed the future type specimen of *caquetanus*, concluding "As we have but a single specimen, apparently in adult plumage, but with the skull still soft, I hesitate to describe it." It seems likely that the two specimens of *caquetanus* will prove to owe their differences from *V. affinis* to their being in subadult plumage. The plumages of *Veniliornis* are poorly known, requiring study with as yet inadequate material. At present I must conclude that no single characteristic or group of traits exhibited by *caquetanus* warrants considering it to represent *V. cassini*. Rather, the likelihood that the specimens of *caquetanus* are subadults and their resemblances to *V. affinis* prompt me tentatively to consider them subadult specimens of *V. affinis orenocensis* >< *hilaris*, and I therefore treat *caquetanus* as a synonym of *V. affinis orenocensis*. The presence or absence of spotting in the wing coverts and the color of the bill are characters that might be important in species recognition where *V. cassini* meets *V. affinis orenocensis*. It seems most unlikely that a population of *V. cassini* isolated within the range of *V. affinis*, as is "*caquetanus*," would resemble *V. affinis* in bill color and in the condition of the wing covert markings, without differing substantially from *V. affinis* in other ways.

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**Loud vocalizations by Pileated Woodpeckers on approach to roosts or nest holes.**—The loud stream of "cuks" given by Pileated Woodpeckers (*Dryocopus pileatus*) flying to roost for the night is a dramatic performance. While the woodpeckers are likely to be silent if disturbed, the "cuks" occurred on 19 of 27 occasions when I was watching a pair roosting at Cabin John, Maryland between October 1958 and February 1959. In a typical example on 29 November, the male flew silently to a tree about 50 m from his roost. He waited a few minutes, then at 16:40 (sunset at 16:39), flew to his hole, 16 m up in a sycamore, uttering a barrage of "cuks." These ceased the moment he reached the hole and popped inside. The "cuks," which may be given at a rate of 3 per second, constitute a veritable stream of sound, audible at a considerable distance. On 16 November both members of the pair had flown to their roost holes in this manner, the holes being 30 m apart. I have seen other Pileated Woodpeckers perform similarly from Florida to New Hampshire.

Why should these woodpeckers advertise where they are going in such a striking