NOTES ON TWO NEOTROPICAL NIGHTJARS, *CAPRIMULGUS ANTHONYI* AND *C. PARVULUS*

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Recently while in the American Museum of Natural History in New York engaged in various matters pertaining to the operations of the Estación Biológica Henry Pittier (Rancho Grande), Venezuela, I had occasion to compare some specimens of the Little Nightjar, *Caprimulgus parvulus*, from Venezuela with those in the American Museum's collection.

As a matter of routine checking I also examined the type of the west Ecuadorean form listed by Peters (1940:202) as *Caprimulgus parvulus anthonyi* and was surprised to find that this form, although of similar size and proportions, is otherwise strikingly different from *C. parvulus*. In this paper I present reasons for considering it a separate species.

Peters (1940:202) recognized two other races of *C. parvulus*, including the nominate form, *parvulus* Gould, described from Santa Fé, Rio Paraná, Argentina, ranging over most of South America south of the Amazon to Argentina and Uruguay and west to eastern Perú, and *heterurus* (Todd), attributed to the the Santa Marta region of Colombia but known to occur also in Venezuela. So little has been published about the latter form that I include here additional data on its morphology and ecology, and also extend considerably its known distribution in Venezuela.

CAPRIMULGUS ANTHONYI (CHAPMAN)

Chapman (1923:4–5) described *anthonyi* as a distinct species based on a single adult male from southwestern Ecuador (Portovelo, in the upper Tumbez drainage at 750 m). There is another specimen sexed as a female bearing identification as this form which probably is correctly allocated. It too is from western Ecuador but at the northern end (Vaquería, at the mouth of the Rio Santiago, AMNH no. 477258 [ex Rothschild Coll.], collected 3 September 1901, R. Miketta). These seem to be the only two known specimens, but it is hoped that this paper may serve to uncover others.

Why Peters lumped *anthonyi* with *C. parvulus* is not clear. Perhaps he was following Meise (1938:144), who, in a long paper reviewing the species and genera of birds described as new between 1920 and 1934, "reclassified" Chapman's bird as "*Caprimulgus parvus anth.*" without giving any reason whatever. The misspelling of the specific name was doubtless a typographical error. Apparently neither Meise nor Peters ever examined any specimens of *anthonyi*. (No illustration of the bird has been published hitherto.) Probably they were influenced by the fact that Chapman (1923:4–5) in his original description compared the new bird with *C. parvulus* and later (1926:278) stated: "*This well-marked species*, known only from the type, is doubtless a representative of *Setopagis parvulus*" (emphasis mine).

Meyer de Schauensee (1964:126, 1966:151) evidently followed Peters, for he does not mention *anthonyi* but includes its range in that of the species *C. parvulus*.

Figure 1 shows the most striking differences among adult males of *C. anthonyi* and of the two races of *C. parvulus*. As the photograph can not show the major differences fully, I describe them as follows.

Tail. In *anthonyi* the two outer pairs of rectrices have the entire inner web white for its full length, except along the shaft on the subapical half. (Chapman stated only that the "outer pair" is so marked; either he overlooked the next outer pair or else he used the word "pair" in a sense different from that usually understood.) The inner three pairs of rectrices have no white areas. There is no barring on the two outer pairs, and relatively little, and that only marginally on the inner web on the next two pairs of rectrices; the middle pair is unbarred.

By contrast, in *C. parvulus* there is a roundish white "spot" (smaller in nominate *parvulus*, larger in *heterurus*) on the distal end of the four outer pairs of rectrices. Also the dark areas are barred, conspicuously on the outer rectrices, less conspicuously on the inner. Furthermore, the inner web of the outer rectrices in *C. anthonyi* is more tapered apically and the tip of the tail is thus somewhat square, slightly notched, rather than rounded as in *C. parvulus*.

Wing band. In *C. anthonyi* the five outer primaries are totally crossed by a broad white band. In *C. parvulus* the wing band is limited to the four outer primaries and usually does not cross completely the first, sometimes not the fourth; very rarely there may be a slight indication of it on the fifth primary (counting from the outside).

Furthermore, this band in *C. anthonyi* is located

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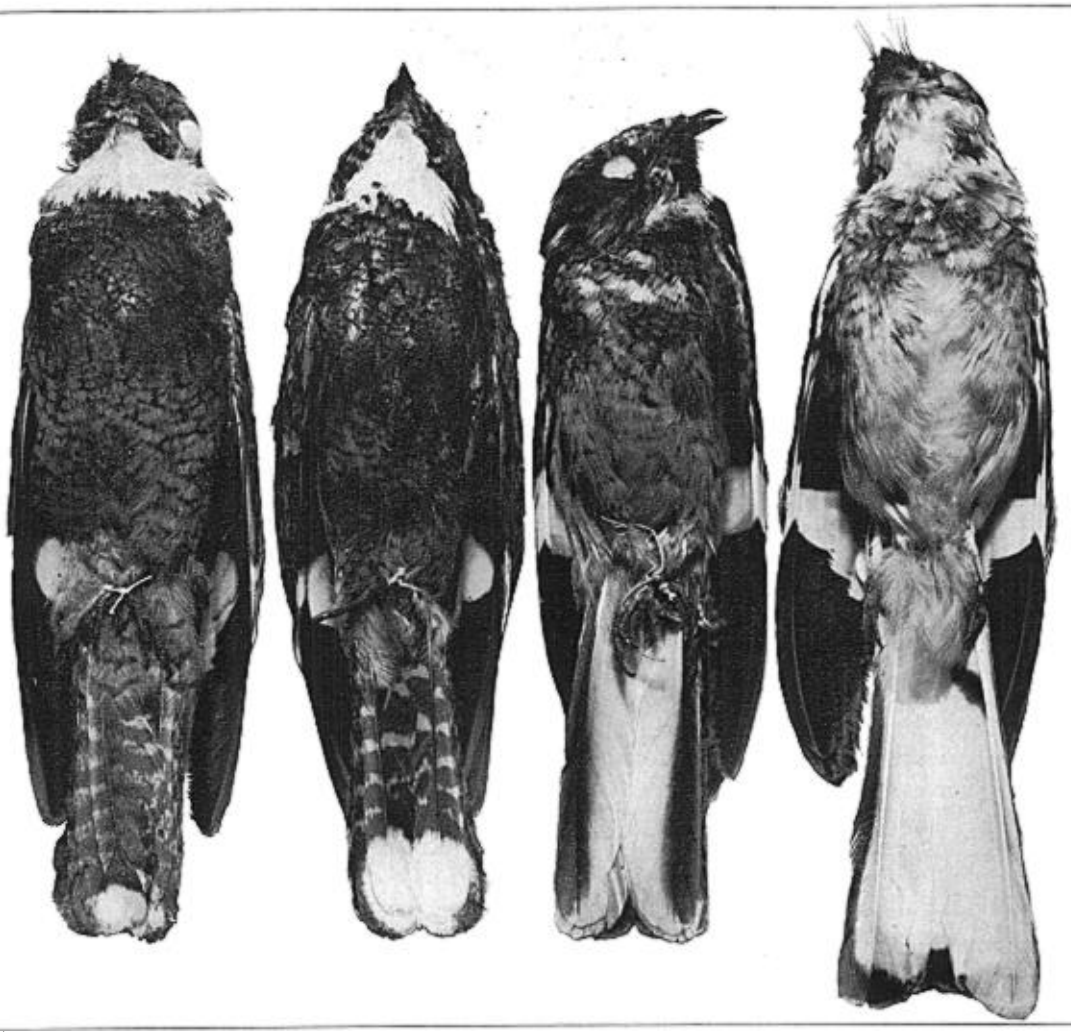

FIGURE 1, left to right. *Caprimulgus parvulus parvulus*, Corrientes, Argentina, Partridge no. 13640 (AMNH, uncatalogued); *C. parvulus heterurus*, Rio Aricuaisa, Zulia, Venezuela, EBHP no. 4709; *C. anthonyi*, Portovelo, Prov. del Oro, Ecuador, AMNH no. 166785, Type; *C. cayennensis insularis*, Curaçao, AMNH no. 477208. (The outermost tail feather of the bird's right side is missing, showing the pattern of the next outer, which has some resemblance to the outermost in *C. anthonyi*.) All specimens are adult males.

medially slightly more than 50 per cent from the tip of the folded wing, whereas in *C. parvulus* it is closer to the wing tip (less than 40 per cent from the tip).

Throat patch. One of the conspicuous features of the adult male *C. parvulus* is the proportionately large white throat patch composed of dense, silky textured feathers. Meyer de Schauensee's (1964:126) failure to mention the white throat patch is obviously an oversight.

In the only adult male *C. anthonyi* available for comparison, the white throat patch is less extensive, not so profusely feathered, and the feathers much less dense.

Back. In *C. anthonyi* the back, especially the interscapular area and the rump, is finely barred with black and ochraceous, with little or no suggestion of streaking. In *parvulus* these areas are speckled and conspicuously streaked; only occasionally is there a suggestion of barring.

The other specimen thought to be *C. anthonyi*, sexed as female, is similar to the male type in having the back barred and a broad band crossing the five outer primaries, midway up the folded wing, although this band is buffy rufous rather than white. The outer primaries are otherwise immaculate brownish-black as in the male. The females of *C. parvulus* have the primaries broadly mottled or brokenly barred (usually mostly basally) with buffy rufous and lack a wing band.

The tail of this bird differs from that of female *C. parvulus* by having a large, dull buffy patch extending about 20 mm up the inner web of the outer pair of rectrices. This inner web also has a dull buffy edge about 1.5 mm wide running from the tip almost halfway up the feather. Otherwise the rectrices are mottled and barred as in *C. parvulus*. The differences between this specimen and the type of

TABLE 1. Measurements (range and mean) of specimens of *Caprimulgus* spp.

Taxon[a]		Wing (chord), mm	Tail, mm	Ratio wing/tail
C. anthonyi	♂ (type)	135	98	1.38
	♀ (1)	132	95	1.39
C. p. parvulus	♂ (20)	134–143 (138.5)	94–105 (97.5)	1.33–1.49 (1.42)
	♀ (13)	128–141 (135.8)	93–105 (98.1)	1.32–1.44 (1.38)
C. p. heterurus	♂ (10)	135–146 (140.8)	89–98 (93.2)	1.46–1.56 (1.51)
	♀ (3)	134–137 (136)	87–93 (90)	1.48–1.54 (1.51)
	subadult (3)	134–137 (136)	87–93 (89)	1.48–1.58 (1.53)
C. c. cayennensis	♂ (12)	133–148 (140)	111–126 (117)	1.16–1.24 (1.2)
	♀ (11)	132–144 (139)	94–108 (102)	1.28–1.47 (1.36)

[a] Number of specimens in parentheses.

C. anthonyi tend to follow the pattern of sexual differences usual in the genus. However, the specimen shows signs of immaturity, and consideration should be given to the possibility that it is a young male, improperly sexed.

In these respects the male *C. anthonyi* resembles adult males of the widely distributed *C. cayennensis*: white running the full length of the rectrices (although in *C. cayennensis* this is on the four outer pairs and the outermost pair is also white on the outer web with a diagonal dark bar toward the base), square-tipped tail (in *cayennensis* it is even more square), type and position of wing band (but in *cayennensis* it crosses only the four outer primaries), and fine barring of the back. However, there is a very great difference in general color pattern and tail length, as can be seen from figure 1 and table 1.

An occasional subadult male *C. cayennensis* does have white restricted to the inner web of the outer rectrices, but such individuals can easily be distinguished from *C. anthonyi* by having the outer web barred, by the longer tail, and by the absence or reduction of the wing band (outer primaries barred).

In ecological preferences too it appears that *C. anthonyi* may differ from *C. parvulus*. Of the type of *C. anthonyi* Chapman (1923:5) wrote: "the specimen . . . was shot . . . on a trail running through open, grassy, arid country. . . ." According to my experience with *C. parvulus heterurus* throughout Venezuela, it is not a bird of open, grassy country but rather inhabits the more sparse parts of scrubby or deciduous woodlands, together with the adjacent or included clearings, either natural or man-made. It is interesting to note that in its apparent ecological preference, *C. anthonyi* again seems to resemble *C. cayennensis*, a bird of completely open areas. However, I do not suggest by this or previous statements that I consider *anthonyi* more closely related to *C. cayennensis* than to *C. parvulus*.

Our knowledge of the nightjars as living birds is still too incomplete to permit sweeping generalizations, but from many field observations of a number of species I have come to the conclusion that in the activity of the male birds of this group there are two outstandingly important factors serving signal functions for territory and mating. One is the primary song (as distinguished from other vocal or mechanical sounds); the other is the pattern and location of the white areas. The white areas include "steady flags" and "flash patches." White throat areas are primarily "steady flags"; broad, white wing bands may work either way; white tail areas are primarily "flash patches" and as such must show a distinctive pattern if they are to serve a function in species recognition. That they do is suggested by the variety of such patterns within the caprimulgids. Even some tail patterns that may appear quite similar in inert museum specimens will be found to appear quite different as flash patterns in life.

There is no doubt that the more important of the two factors is the voice. Unfortunately, we know nothing of the voice of *C. anthonyi*, so that factor must be omitted from present considerations. (For those who may be interested, the songs of both *C. parvulus heterurus* and *C. c. cayennensis* have been published in a recording: "Bird Songs from the Tropics," Naturaleza Venezolana No. 1, Instituto Neotropical.)

However, as pointed out previously, the white areas of *C. anthonyi* are quite different from those of *C. parvulus*, especially in the tail pattern. Actually in this character there is a radical morphological difference of a type basic to this group. Also, in this and other features *C. anthonyi* differs from any other known form of nightjar. Therefore, in spite of the inability to make comparisons of voice at present, it seems best that we consider *Caprimulgus anthonyi* a valid, distinct species and not a race of *C. parvulus*. After examination of the specimens in question, Eugene Eisen-

mann has indicated his agreement with this opinion.

C. PARVULUS HETERURUS (TODD)

This form was described as differing from nominate *parvulus* chiefly in the greater extent of white on the tail, based on one adult male specimen from the Santa Marta region of Colombia. Except for distributional data, the only other information about this race that I have found in the literature refers to this same specimen (Todd and Carriker 1922:220), so it has hardly been possible to judge fairly the differences between *heterurus* and the nominate form.

I have examined a number of specimens of *heterurus*, among them 10 adult males including the type, as well as no less than 40 nominate *parvulus*. There is much individual variation in size in this species, as is true with many caprimulgids. There is less variation in color than in some other species, but *heterurus* does display a considerable range between the darkest and lightest individuals, even within a given population.

The one character that serves unquestionably to separate the two races is the much greater extent of the white tipping of the rectrices in *heterurus*. This form has the outermost pair completely (or almost so) white tipped; the second and third pairs from the outside usually have at least some white on the outer web, in addition to that normally expected on the inner web; the fourth outer pair has white only on the inner web. In the nominate form the white is usually restricted to the inner web throughout, although it is not too unusual to find birds that also have some white on the outer web of the outermost rectrices. The middle pair has no white in either form. Furthermore, in *heterurus* the white extends 14–20 mm along the shaft of the outer two pairs of rectrices, whereas in nominate *parvulus* it is 12 mm or less, so that the total area of white is conspicuously greater in *heterurus* (see fig. 1).

There are other slight differences between the two races, but they are so masked by overlapping variation that they have little usefulness for identification.

Some individuals of *heterurus* do have larger white wing bands, and there is a tendency in this race for some individuals to have the band extend to the outer web of the outer primary (sometimes only on one wing, as in fig. 1). Rarely it may be partially present on the fifth outer primary.

The slight differences in wing and tail lengths are hardly significant as absolute measurements, although the combination of slightly longer wing and somewhat shorter tail does result in wing/tail ratios that are significantly larger in *heterurus* (see table 1).

The published distribution of *heterurus* indicates its presence in the north-central region of Venezuela (Distrito Federal, Aragua, and Miranda) as well as in the Santa Marta and Cúcuta regions of Colombia (Phelps and Phelps 1958:171; Meyer de Schauensee 1964: 126, 1966:151). In the last-mentioned citation, where only species are treated, *heterurus* is not definitely specified as the form inhabiting the Cúcuta region of Colombia, but I have examined specimens from Villa Felisa, Norte de Santander, Colombia, in the United States National Museum, and find that they correspond to this race.

I now add the following new localities which extend the range of *heterurus* both west and southeast in Venezuela, based on specimens in the collection of the Estación Biológica Henry Pittier (EBHP): Rio Aricuaisa, Zulia (1♂); Calle Larga, Zulia (2♂♂, 1♀); Cumboto, Aragua (1♀); Santa Maria (Upata), Bolivar (2♂♂).

In addition there is an adult male from San Pedro, Caura, Bolivar, Venezuela, in the AMNH. In the USNM an immature female from Valle, Merida, Venezuela, bears an identification as *heterurus*.

From personal experience, I know *C. parvulus* to be more widely distributed in Venezuela than the few specimen localities indicate. I have not so far encountered it in the vast *llano* country, and the indications are that it prefers at least slightly hilly terrain, shying away from extensive flatlands. I do not doubt that in the proper habitat it may be found throughout the entire northern part of Venezuela. Also it is probably more widely distributed in Colombia than presently thought, and very likely is to be found throughout northern South America east of the Andes in ecologically suitable areas, connecting with the known range south of the Amazon River. However, there is a tremendous gap with no available specimens between about 7.5° N latitude and the Solimoes-Amazon River; neither are there specimens recorded from the Guianas.

An adult male from Amorin, Igarape, lower Rio Tapajoz, Brazil (AMNH no. 288296), seems to have a bit more white on the tail than normal nominate *parvulus* and may represent a tendency toward *heterurus*. If so, it is the only indication we have that these two forms may actually intergrade, although with the information available and considering their extreme similarity morphologically, there is

certainly no reason at this time to question their conspecific relationship.

SUMMARY

On the strength of basic morphological differences, the Ecuadorian Nightjar, *Caprimulgus anthonyi* (Chapman), seems to be a valid species and not a race of *C. parvulus* as currently treated by Peters and others. It is here illustrated for the first time, in comparison with its allies.

With more material than has been previously available, *C. parvulus heterurus* (Todd) is compared with the nominate form and found to differ from it principally in the amount of white tipping of the rectrices. Additional specimen localities are cited, extending considerably its range in Venezuela.

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LITERATURE CITED

CHAPMAN, F. M. 1923. New South American birds. Amer. Mus. Nov. no. 67.

CHAPMAN, F. M. 1926. The distribution of bird-life in Ecuador. Bull. Amer. Mus. Nat. Hist. 50.

MEISE, W. 1938. Fortschritte der ornithologische Systematik seit 1920. Proc. VIII Intern. Ornithol. Congr., Oxford Univ. Press.

MEYER DE SCHAUENSEE, R. 1964. The birds of Colombia. Livingston Publishing Co., Narberth, Penn.

MEYER DE SCHAUENSEE, R. 1966. Birds of South America. Livingston Publishing Co., Narberth, Penn.

PETERS, J. L. 1940. Check-list of the birds of the world, vol. 4. Harvard Univ. Press, Cambridge, Mass.

PHELPS, W. H., and W. H. PHELPS, JR. 1958. Lista de las aves de Venezuela con su distribución. Tomo 2, Parte 1, Passeriformes. Bol. Soc. Ven. de Ciencias Nat., 19, no. 90.

TODD, W. E. C., and M. A. CARRIKER, JR. 1922. The birds of the Santa Marta region of Colombia. Ann. Carn. Mus. 14.

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