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STUDIES OF PERUVIAN BIRDS. NO. 61

THE GENERA *AGLAEACTIS*, *LAFRESNAYA*,
PTEROPHANES, *BOISSONNEAUA*, *HELI-
ANGELUS*, *ERIOCNEMIS*, *HAPLOPHAEDIA*,
OCREATUS, AND *LESBIA*

BY JOHN T. ZIMMER

I am greatly indebted to Dr. J. Berlioz of the Museum d'Histoire Naturelle of Paris, Mr. Emmet R. Blake of the Chicago Natural History Museum, Mr. James Bond and Mr. Rodolphe M. de Schauensee of the Academy of Natural Sciences of Philadelphia, Dr. Herbert Friedmann and Mr. H. G. Deignan of the United States National Museum, Dr. William H. Phelps, Mr. William H. Phelps, Jr., and Mr. Ramón Aveledo y Hostos of Caracas, Venezuela, and Mr. W. E. C. Todd of the Carnegie Museum, Pittsburgh, for the loan of important critical material in their respective collections or for information concerning other specimens.

Names of colors are capitalized when direct comparison has been made with Ridgway's "Color standards and color nomenclature."

Aglaeactis castelnaudii castelnaudii
(Bourcier and Mulsant)

T[rochilus] Castelnaudii BOURCIER AND MULSANT, 1848, Rev. Zool., vol. 11,

kindly lent by Dr. Herbert Friedmann of the United States National Museum, and a female, possibly not fully adult but not certainly so. In addition there are two authentic plates—one of the type published by Des Murs (1856, *Oiseaux de l'Amérique du Sud*, pl. 11, fig. 3) and one (of the type, the paratype in the British Museum, or both) by Gould (1857, *Monograph of the Trochilidae*, vol. 3 [pt. 13], pl. 180)—and M. Berlioz has kindly sent me notes on the type specimen and other examples in the Paris Museum and in his own collection.

All these sources indicate a bird with the median tail-feathers broadly margined laterally with dusky olive, giving an appearance considerably resembling that of the tail of *A. cupripennis parvula*. The ventral coloration is relatively dull, though somewhat brighter than that of *A. cupripennis caumatonotus*, with the gular area more restricted than in that form, with dark terminal margins. The chin is quite blackish to the apex, and the same dark shading passes posteriad along the sides of the head and crosses the breast from side to side, enclosing the rufous gular patch, while the center of the breast is occupied by a tuft of elongated feathers, broadly white terminally and with violaceous black bases. The amethystine uropygial area in the single adult male I have seen is distinctly darker and more bluish (near Mulberry Purple) than in *caumatonotus* and is without the green patch on the upper tail-coverts. (The dark coloration of the uropygium may need confirmation by additional specimens.) The rufescent outer margin of the outermost primary is less extensive distad than in the members of the *cupripennis* group. The bill is nearly all blackish, but the base of the mandible is usually slightly yellowish or flesh-colored, and the mandibular tomia are pale on the narrow edge that is concealed under the maxillary tomia when the bill is closed.

A second specimen, presumably correctly sexed as a female, judging by the short furcation of the tail, is from Cachupata, from which locality I have also a number of specimens of *caumatonotus*, and is like the male in respect to the large and terminally pure white pectoral tuft, the limited gular patch with dusky margins, the dark sides of the head, connecting the dark chin and the pectoral band, and the extensively rufescent tail, although the latter member has a somewhat different pattern. The median rectrices are almost completely bronzy olive,

although the shafts have a touch of rufescence. The remaining rectrices are like those of the male except that the dark margins and tips are not so deeply colored. There is very little bright color on the uropygium, but what is there shows the upper tail-coverts to be amethystine and not green.

Several specimens from Cachupata appear to show hybridization between *castelnaudii* and *caumatonotus*. These supposed hybrids show the following characteristics. One male (the nearest approach to *castelnaudii*) has the whole ventral pattern of *castelnaudii*, with the blackish areas replaced by dark brown, the white pectoral tuft slightly tinged with ochraceous and somewhat smaller, and the rufous throat-patch clearer but equally restricted in extent; the uropygium is as light amethystine as in *caumatonotus*, while the green upper tail-coverts of that form are very weakly suggested by a slight greenish or golden tinge of the amethyst, visible in certain lights; the median rectrices have strongly rufescent bases, with the color carried distad along the shaft in a gradually narrowing stripe to near the tip, while the outer rectrices are largely rufescent with bronzy outer web and bronzy terminal bar on the inner web; the pattern is intermediate on the intervening rectrices; the bill is broadly pale at the base of the mandible.

A female is a little less like *castelnaudii*, having the rufous gular patch broader, extending laterally (somewhat shaded) over the sides of the neck; the chin and breast band browner and less blackish and with the whitish pectoral tuft a little more strongly tinged with ochraceous than that of the male just described but still stronger and more whitish than in *caumatonotus*; the upper tail-coverts show a little stronger tinge of green but are still not sharply and clearly of that color; the median rectrices have less rufous at the base and along the shaft, but the rest of the tail is as extensively rufous as in the male.

Another male is still closer to *caumatonotus* and may be no more than an extreme example of that form. It differs from other males of *caumatonotus* only by slightly less strongly and sharply green upper tail-coverts which, however, are still definitely green, while the rufous basal part of the median rectrices is no more extensive than is the case with some other males of *caumatonotus*. All three birds are from Cachupata.

I am not certain of the value of the rufous base of the tail as an indication of hybridization in the present case. Most of the specimens of *caumatonotus* from southeastern Perú show a certain amount of it, as is discussed in the account of that form. The supposed hybrids, however, show more rufous, either at the base of the median rectrices or on the remaining tail-feathers, than the specimens that, from other characters, appear to be of less mixed origin.

Birds from the central portion of Perú, from the Departments of Junín to Huánuco, are uniformly distinct from the southeast-Peruvian examples that represent typical *castelnaudii*, and I describe them hereunder.

The only locality of record for *c. castelnaudii* from which material has not been examined in the present study is Echaraté, the type locality.

***Aglaeactis castelnaudii regalis*, new subspecies**

TYPE: From Rumicruz, Department of Pasco (formerly part of Junín), Perú; altitude 9700 feet. No. 174007, American Museum of Natural History. Adult male collected February 28, 1922, by Harry Watkins.

DIAGNOSIS: Similar to *A. c. castelnaudii* of the Department of Cusco, Perú, but lower under parts more pronouncedly rufescent; gular patch similarly brighter and clearer rufous, without dusky tips on the feathers; tail more extensively rufous, with the bronzy olive or dusky marking on the median pair of feathers confined to a terminal bar as on the succeeding feathers and with dark lateral margins of the rectrices usually absent though sometimes present and minute except on the outer web of the outermost feather where they are more strongly developed. Bill shorter and entirely black except for the pale mandibular tomia visible only when the bill is opened.

RANGE: Highlands of central Perú in the Departments of Huánuco, Pasco, and Junín.

DESCRIPTION OF TYPE: Top of head and anterior part of mantle blackish, glossy on the head and velvety on the back; lower back shining Manganese Violet × Mathews' Purple, continued down the median upper tail-coverts; lateral upper coverts rufous. Chin, upper throat, and sides of head largely sooty, but with a rather weak rufescent superciliary stripe broadening over the lores except for a blackish preocular spot

and obsoletely continued behind the auriculars to join the Mahogany Red \times Burnt Sienna area occupying the lower throat; center of the upper breast with a tuft of elongated feathers broadly white on the distal half and basally purplish black; sides of breast sooty blackish; belly near Sanford's Brown; darker laterally and on flanks, Chestnut \times Burnt Sienna. Remiges with exposed portions of closed wing largely bronzy olive, with the basal half of the outer web of the outermost rectrix rufescent and with rufous basal areas on most of the feathers, concealed on the closed wing but exposed on the outer webs of the innermost feathers; upper wing-coverts bronzy olive; under wing-coverts and axillars like the flanks; carpal margin of wing similar. Tail near Sanford's Brown; rectrices narrowly (about 3 mm. on median pair) tipped with bronzy olive which is carried basad along the outer margin as a hairline border, broadening toward the base of the outermost pair to reach the shaft. Bill (in dried skin) blackish, with whitish or pale yellowish basal portions of the tomia that are normally concealed by the overlapping tomia of the maxilla when the bill is closed; feet blackish. Wing, 81 mm.; tail, 44; exposed culmen, 16.5; tarsus, 7.

REMARKS: Females like the males in subspecific characters, differing from the males by somewhat duller coloration, with presumably less development of the brilliant uropygial area, and by shorter furcation of the tail.

There is some variation in respect to the width of the terminal band on the rectrices, but there is no example at hand in which there is any marked approach to the pattern of *c. castelnaudii* which has the median rectrices entirely bronzy olive or with a shaft-stripe of rufous color quite broadly bordered with olive, and with broad olive outer margins on the remaining rectrices. Even obviously young examples of *regalis* show this distinction as well as the deeper rufescent throat and flanks, less pronounced than in the more adult birds but still different from the coloration of *castelnaudii*.

Additional records of *regalis* are from Acancocha, Department of Junín, and Hacienda Huarapa, Department of Huánuco.

***Aglaeactis cupripennis parvula* Gould**

Aglaeactis parvula GOULD, 1861, Introduction to the Trochilidae, p. 106—Perú or Bolivia; I suggest Leimebamba, Perú, as restricted type locality; British Mus. (cotypes).

The original specimens of this form were collected by Warszewicz whose itinerary is incompletely known (as has been noted in the accounts of various other species), but the restricted ranges of some of the birds he obtained have made it certain that he was in the highlands of northern Perú on both sides of the Middle Marañón, and Leimebamba may well have been one of his collecting localities. For this reason I have selected it as the restricted type locality for *parvula*.

From this region, which is near the southern end of the range of this subspecies, the form in question extends its distribution northward to southern Ecuador, on both sides of the Andes, and thence southward to the Western Andes of Perú at Chugur and Taulis in central Department of Cajamarca. Birds from these last-named localities show a tendency toward the form described under the next heading, but remain close enough to the rest of the present series to be retained with them. The variation they exhibit is discussed in the account of that other subspecies.

A word may be in order concerning typical *cupripennis*, although it does not reach Perú. Judging by the material at hand, most of which consists of "Bogotá-skins," this form has the bill longer than in *parvula*, ranging from 17 to 19.5 mm. as compared with 13.5 to 16 in the more southern form. The tail has a little less rufescence on the average, but there appears always to be some of it visible on the median rectrices beyond the tips of the upper tail-coverts, if only as an elongated, sagittate shaft-marking. Sometimes the exposed basal area is carried far toward the tip of the feather.

North-Ecuadorian birds, however, have the rufous basal area usually quite concealed beneath the upper tail-coverts. If it is slightly exposed, the border between it and the remaining greenish area is relatively truncate, although the shaft alone may be rufescent beyond the tips of the coverts. The bill averages a trifle longer than in Colombian birds, ranging from 18 to 20.5 mm. The distinctions appear to be constant and significant enough to warrant the recognition of *aequatorialis* (*A[glaeactis] aequatorialis* Cabanis and Heine, 1860, Museum Heineanum, vol. 3, p. 70, footnote—Chimborazo, Ecuador) as a north-Ecuadorian subspecies of *cupripennis*.

Additional records of *parvula* are from Paucal, Cutervo, Tamiapampa, and Atué.

***Aglaeactis cupripennis cajabambae*, new subspecies**

TYPE: From Cajabamba, Perú; altitude 10,000 feet. No. 483064, American Museum of Natural History. Adult male, collected April 8, 1894, by O. T. Baron.

DIAGNOSIS: Intermediate between *A. c. parvula* and *A. c. caumatonotus*, having the strong rufescence of the under parts shown by *parvula* but with the feathers of the center of the throat broadly tipped or subterminally barred with blackish. The elongated feathers in the center of the breast a little more prominent than in *parvula*; less so than in *caumatonotus*. Bill averaging longer than in *parvula* but shorter than in *caumatonotus*.

RANGE: Known only from Cajabamba (Department of Cajamarca) and Motil (Department of La Libertad), and presumably Huamachuco.

DESCRIPTION OF TYPE: Top of head and mantle blackish; rump Magenta × Light Rosolane Purple, passing into Light Sulphate Green on the median upper tail-coverts, which, basally, with the whole of the lateral coverts, are light rufescent. Lores, superciliary stripe, sides of head (except for dusky subterminal areas of the auriculars), chin, lower throat, upper breast, sides, and sides of neck Sanford's Brown × Burnt Sienna; center of throat with feathers broadly marked subterminally with dull blackish, finely tipped with rufous; center of breast with a tuft of elongated feathers light rufescent on the terminal half with a lighter buffy subterminal area on most of the feathers, and dull blackish on the basal half; belly and under tail-coverts near Cinnamon-Rufous, with an indistinct darker shading on the uppermost portion. Exposed portions of remiges and most of upper wing-coverts Citrine-Drab; outer web and outer half of shaft of outermost primary rufescent to near the tip; bases of most of the remiges and coverts, particularly on the inner webs, rufescent; bend of wing, an area on the carpal margin, and the under wing-coverts and axillars also rufescent. Median rectrices Apricot Buff on basal half, extending farther distad in a gradually narrowing shaft stripe; distal area shining Citrine-Drab; outermost rectrices with inner web light Burnt Sienna to near tip which, with the outer web, is Citrine-Drab; intervening feathers with transitional pattern. Maxilla (in dried skin) black; mandible with basal half dull yellowish, passing into blackish at tip; feet dark brown. Wing, 83.5 mm.; tail, 44.5; exposed culmen, 16.

REMARKS: Females like the males except for a shorter furcation of the tail and rather duller uropygial area. The rufous nuchal collar that is present in the males is present also in the adult females at hand and may be a regular feature of this sex.

An occasional example of *parvula* shows a certain amount of dark marking on the throat, but it is rarely more than a dark tone of rufous, not the definitely blackish maculation of *cajabambae*. A nearer approach is seen in certain individuals of *aequatorialis*, which, however, is longer billed and has less rufous color at the base of the tail than *cajabambae* and is geographically separated from it by the interposition of *parvula*.

The nearest approach to *cajabambae* in the series of *parvula* is to be noted in the specimens from Chugur and Taulis in which, however, the trend is not uniform. Several examples have the blackish markings on the throat slightly developed but others do not. The bill is that of *parvula*, shorter than that of *cajabambae*.

It is interesting to note that *cajabambae* is found on both sides of the Western Andes, at localities a little distance apart, while specimens from Cochabamba, Department of La Libertad, not far from Cajabamba and on the same eastern side of the cordillera, are not referable to this subspecies but rather to *caumatonotus*. There is no immediately obvious barrier for this species between Cochabamba and Cajabamba, although they are on different minor tributaries of the Marañón. The nearest locality from which I have seen other *caumatonotus* is Yánac, some distance away on the opposite side of the Western Andes, thus matching the bilateral distribution of *cajabambae*. *A. aliciae* is curiously restricted in its distribution in a similar way, occupying another spur of the Western Andes in close proximity to that on which *caumatonotus* occurs.

Specimens from Cajabamba and Motil have previously been recorded as "*cupreipennis*" and *parvula*. In addition, it is probable that the record from Huamachuco also belongs to *cajabambae*. The locality lies almost on a direct line between Cajabamba and Motil.

***Aglaeactis cupreipennis ruficauda* Carriker**

Aglaeactis cupreipennis ruficauda CARRIKER, 1933 (March 24), Proc. Acad. Nat. Sci. Philadelphia, vol. 85, p. 7—Patás, Department of La Libertad, Perú; ♂; Acad. Nat. Sci. Philadelphia.

This form is characterized by an increase in the amount of rufous color on the tail. The median rectrices have from one-half to three-quarters of the basal part of both webs clear rufous, with a farther extension along the shaft distad, while the greenish color of the tips is not carried very pronouncedly basad along the margins. The outer feathers are sometimes entirely rufous but sometimes with weak shading near the tip or even along the outer web, less pronounced than in *parvula*, the nearest affine. The bill length is about that of *parvula*, shorter than that of *cajabambae*.

The form is known only from the type locality but may possibly occur elsewhere in the Central Andes of La Libertad or even Huánuco.

***Aglaeactis cupripennis caumatonotus* Gould**

Aglaeactis caumatonotus GOULD, 1848, Proc. Zool. Soc. London, pt. 16, p. 12—Perú; British Mus.; I suggest Maraynioc, Department of Junín, as restricted type locality.

Aglaeactis olivaceocauda LAWRENCE, 1867, Ann. Lyc. Nat. Hist. New York, vol. 8, p. 470—Matará, Department of Ayacucho [= Matará, Department of Apurímac], Perú; ♂; U. S. Natl. Mus.; paratype from Moyabamba, "Dept. Cuzco" [= Department of Apurímac] in Amer. Mus. Nat. Hist.

This subspecies, the duller-colored form of the species, ranges widely in Perú, from the mountains of the northern part of the Department of Ancash southward to the eastern side of the Andes in the Department of Cusco. There is little variation throughout this range, as nearly as I can determine, although I have no fully adult males from the northernmost region, and not all the northern females are fully adult. At any rate, the observed differences may be due to age or, equally possibly, to individual variation.

The fully adult birds from the southern part of the range are more warmly colored than most of the northern examples, but younger birds from the south match the paler northern specimens fairly closely. Some of the southern specimens have an appreciable amount of rufescence at the base of the median rectrices; others do not, nor is there more than a suggestion of this color on the paler northern examples, but it is well developed on three examples from Cochabamba, Department of La Libertad, one of which is young. This basal rufescence is marked in all the adult southern males and the single adult female.

In the central-Peruvian series, the single adult male and one young female show this rufous color; a young male and adult and young females do not. It is doubtful, therefore, if there is any taxonomic significance in this character within the sub-specific limits. In all cases where it occurs in *caumatonotus* it remains basal, sometimes nearly or quite concealed by the upper tail-coverts but at other times extending farther along the shaft. In a male that appears to show admixture with *A. castelnaudii castelnaudii*, the rufous base is broader than in any of these other specimens. A good series of fully adult birds is needed to show the extent of variation as well as that of hybridization with *castelnaudii*.

Records of *caumatonotus* are from Vilcabamba (Department of Cusco), Pomayaco (Apurímac), and Pariayacu (Junín).

SPECIMENS EXAMINED

A. castelnaudii castelnaudii.—

PERÚ:

- Pumamarca, Ollantaytambo, Cusco, 1 ♂;
- Cachupata, 1 ♀.

A. castelnaudii regalis.—

PERÚ:

- Maraynioc, 1 [♀];
- Rumicruz, 2 ♂ (including type), 3 ♀, 1 [♀];
- mountains above Huánuco, 2 ♂¹, 4 ♀¹.

A. cupripennis cupripennis.—

COLOMBIA:

- Coast range west of Popayán, 1 "♀?" [= ♂];
- Valle de los Papas, 2 ♀;
- "Bogotá," 15 [♂], 3 [♀], 1 (?);
- "New Granada," 2 ♂.

A. cupripennis aequatorialis.—

ECUADOR:

- Pichincha, 5 ♂, 1 [♂];
- Province of Pichincha, 2 ♂, 1 ♀;
- Yanacocha, 3 ♀;
- El Cinto, Pichincha, 1 ♂;
- Oyacachi, 2 ♂, 2 ♀;
- El Corazón, 1 ♂;
- Papallacta, 2 ♀;
- Mojanda Mountains, 1 ♂;
- Chimborazo, 1 ♀;
- Urbina, 1 ♀;
- Mt. Cayambe, 1 ♀;

¹ Specimens in Chicago Natural History Museum.

Cayambe, 1 ♂, 1 ♀ ;

Lloa, 1 ♂ ;

between Cuenca and Loja, 1 (?) ;

"Quito" and "Ecuador," 1 ♂, 8 [♂], 1 ♀, 6 [♀] .

A. cupripennis parvula.—

ECUADOR:

Guachanamá, 2 ♂, 2 ♀ ;

Taraguacocha, 3 ♂, 1 ♀, 1 (?) ;

Loja, 1 ♂ ;

Bestión, 6 ♀ .

PERÚ:

El Tambo, 3 ♀, 1 (?) ;

Chugur, 4 ♂, 1 [♂], 1 ♀ ;

Taulis, 3 ♂ ;

La Lejía, 5 ♂ ;

Chachapoyas, 1 ♂ ;

Leimebamba, 2 ♂ .

A. cupripennis cajabambae.—

PERÚ:

Cajabamba, 4 ♂ (including type), 3 ♀, 2 ♂¹ ;

Motil, 3 [♂] .

A. cupripennis ruficauda.—

PERÚ:

Patás, 1 ♂, 1 ♀, 1 ♂¹, 4 ♀¹ .

A. cupripennis caumatonotus.—

PERÚ:

Cochabamba, La Libertad, 1 ♂¹, 2 ♀¹ ;

Yánac, 1 ♂¹, 7 ♀¹ ;

Chipa, Pasco, 1 ♂, 1 [♂], 3 ♀ ;

Rumicruz, 1 ♀ ;

Maraynioc, Junín, 1 ♂, 1 ♀ ;

Matará, "Ayacucho" [= Apurímac], 1 [♂]² (type of "*olivaceocauda*") ;

Moyabamba, "Cuzco" [= Apurímac], 1 [♂] (paratype of "*olivaceocauda*") ;

Cachupata, Cusco, 2 ♂, 1 [♂], 2 ♀ ;

Marcapata, 1 ♂, 1 [♂] .

A. cupripennis caumatonotus × *A. castelnaudii castelnaudii*.—

PERÚ:

Cachupata, 1 ♂, 1 ♀ .

Aglaeactis aliciae Salvin

Aglaeactis aliciae Salvin, 1896 (Feb. 29), Bull. Brit. Ornith. Club, vol. 5, p. xxiv—Suecha [= Succha], northern Perú, 10,000 feet; ?British Mus.

Succha, 6 ♂, 2 ♀ .

This species is one of those with an exceedingly limited dis-

¹ Specimens in the Academy of Natural Sciences of Philadelphia.

² Specimen in the United States National Museum.

tribution and has been recorded only from the type locality where it appears to be the only member of its genus present.

Simon (1921, *Histoire naturelle des Trochilidae*, p. 357) gives the locality as "Huamachuco," even in citing the original description, possibly abbreviating Hartert's earlier (1900, *Das Tierreich*, Lief. 6, Trochilidae, p. 140) citation of "Huamachuco (Succha)." Both Huamachuco and Succha are in the Province of Huamachuco, Department of La Libertad, but they are separated enough in the present case to maintain distinct populations. *Aglaeactis cupripennis* occurs at Huamachuco but not at Succha, judging by available records and specimens.

It is possible that *aliciae* may eventually prove to be no more than an extremely well-marked subspecies of *cupripennis*, a suggestion that comes to mind principally on account of the interpolated distribution that it possesses. At present there is no positive evidence of interchange of characters, and it appears best to retain it as a distinct species.

Lafresnaya lafresnayi saül (DeLattre and Bourcier)

T[rochilus] Saül DELATTRE AND BOURCIER, 1846 (after Nov. 11), *Rev. Zool.*, [vol. 9], p. 309—"Equateur, environs de Quito"; ♂, ♀ cotypes in Amer. Mus. Nat. Hist.

? *T[rochilus] Gayi* BOURCIER AND MULSANT, 1846, *Ann. Sci. Phys. Nat., Soc. Roy. d'Agr. Lyon*, vol. 9, p. 325—no locality; ♂.

I have already (1930, *Field Mus. Nat. Hist.*, zool. ser., vol. 17, p. 281) commented on the improbability that the name "*Gayi*" was originally applied to a bird from Venezuela, as was implied by Brabourne and Chubb (1913, *The birds of South America*, p. 131) in their proposed restriction of the name to the population in question. There is no assurance, however, that it belongs to the Ecuadorian form; the type may have come from some place in Perú. The impossibility of identifying it with certainty makes the use of the name problematical, and it is best left in synonymy. The fact that Bourcier was co-author of both "*Gayi*" and "*Saül*" suggests, though it does not certify, that two different forms are involved. All that is fairly certain is that the type of "*Gayi*" had the basal part of the tail white, not buff as in *lafresnayi lafresnayi*.

Ecuadorian males (*saül*) have the pectoral area usually bluer green than the central Peruvian *rectirostris* and, as noted in the account of that form, the bill in both sexes is appreciably more

strongly arcuate in *sauil*. The adult males of *sauil* also have the bill averaging longer and the wing averaging shorter than in *rectirostris*, but the distinction is not constant. In the females, it appears to be less definitive. In addition the males of *sauil* have the dark tip of the outer rectrices usually considerably broader than in males of *rectirostris*—at least 5 mm. at the shaft (one example) and usually 7 or 8 mm. as opposed to no more than 3.5 or 4.5 mm. in the central Peruvian birds. This last distinction is small but may be significant in view of the more pronounced nature of the character in northern Perú, as discussed below in the account of the population of that region.

One male from Chugur, Perú, is somewhat equivocal. It has the strong curvature of the bill of *sauil*, and the apex of the white marking on the outermost rectrix is 8 mm. from the tip of the feather, but the throat and breast are not so bluish in tone as in most Ecuadorian examples, agreeing in this single respect with *rectirostris*. Several Ecuadorian examples, however, show the same hue which thus appears to be somewhat variable. In any case, the preponderance of resemblance is to *sauil*, and the locality, on the western side of the Western Andes, is in uninterrupted zonal continuity with the Ecuadorian range of that form. Assignment of the Chugur specimens (a female is at hand from the same place) to *sauil* appears justifiable, and a record from San Pablo, a little to the southward on the same side of the cordillera, undoubtedly belongs with it.

Of more uncertainty is a record from Cutervo, on the eastern side of the Western Andes, but the Porculla Pass, at 7000 or 8000 feet elevation, supplies a zonal (Subtropical Zone) connection between Chugur and Cutervo that would permit a continuous distribution of *sauil*. For the present, therefore, I believe the Cutervo record should remain with *sauil*.

Lafresnaya lafresnayi rectirostris Berlepsch and Stolzmann

Lafresnayea [sic] *sauil rectirostris* BERLEPSCH AND STOLZMANN, 1902, Proc. Zool. Soc. London, p. 24—Pariayacu, Maraynioc, Perú; ♂; Warsaw Mus.

Contrary to my earlier belief (1930, Field Mus. Nat. Hist., zool. ser., vol. 17, p. 281), I find that there is definite justification for the name given to the central-Peruvian population of this species. With a larger series of *sauil* than was available in 1930, and with additional Peruvian specimens, I am able to agree with Berlepsch and Stolzmann that the central Peruvian birds have

more feebly arcuate bills than the Ecuadorian series—without exception as far as the American Museum material is concerned, as well as three males in the Chicago Natural History Museum, reexamined in the present study. The bill of *rectirostris* is not perfectly rectilinear but is sensibly, although relatively weakly, curved, and thus differs from the more strongly arcuate bill of the other subspecies of *lafresnayi*.

In addition, as noted in the discussion of *saül*, *rectirostris* lacks the bluish tinge on the throat and breast that is present in most male *saül*, and the median rectrices may have a little more trace of bronzy reflection. Females and young males are not certainly recognizable by any character except the curvature of the bill.

Records from Pariayacu, Higos, Hacienda Huarapa, and Maraynioc, and probably one record from Cachupata, are assignable to *rectirostris*. Several records from "Peru" without definite locality are of uncertain assignment without examination of the critical specimens.

The population inhabiting the Central Andes of northern Perú, above the Río Utcubamba, in the neighborhood of Chachapoyas, resembles *saül* in respect to the curvature of the bill and *rectirostris* in respect to the lighter, less bluish, green of the throat and breast in the adult males, but the pattern of the tail in the adult males is even more noticeably distinct from that of *saül* than is that of *rectirostris*. Since there appears to be stability in the characters of this population, as far as material at hand shows, the recognition of a distinct subspecies is indicated. It may be known as follows:

***Lafresnaya lafresnayi orestes*, new subspecies**

TYPE: From San Pedro, south of Chachapoyas, Perú; altitude 8600–9400 feet. No. 235458, American Museum of Natural History. Adult male, collected January 24, 1926, by Harry Watkins; original no. 10030.

DIAGNOSIS: Similar to *L. l. saül* of Ecuador and northwestern Perú but with the dark band at the tips of the outer rectrices of the males narrower, allowing the basal white area to reach within 2 or 3 mm. of the tips of the outermost pair, forming a sagittate projection distad and leaving the dark tip of the inner web reduced to little more than a narrow border. Similar also to *L. l. rectirostris* of central Perú but with the bill more

strongly arcuate and with the terminal markings on the outer rectrices only slightly narrower (less than in comparison with *sauil*); median rectrices possibly darker, very slightly less bronzy.

RANGE: North-central Perú in the Chachapoyas region.

DESCRIPTION OF TYPE: Dorsum shining Grass Green \times Scheele's Green; top and sides of head darker, Grass Green \times Cossack Green; a small whitish postocular patch; upper tail-coverts similarly dark. Chin, throat, and breast bright Meadow Green; sides and flanks like the back; belly black; anal region restrictedly white; under tail-coverts with broadly white bases and rather dull shining green distal portions, finely margined with whitish; longest coverts with the basal white reduced and an extensive median area of brown present. Remiges slightly purplish brown; outermost with basal portion of outer web inconspicuously pale; primary-coverts dusky greenish, with brighter green tips; remainder of upper wing-coverts green like the back; under primary-coverts blackish; remainder of under coverts green. Median rectrices near Bice Green; remainder largely white, with narrow, dark, terminal margins, increasing in width from submedian to outermost feathers, particularly on the outer webs where the dark marking reaches a length of 12 mm. on the outermost rectrix; on the inner web of this feather, the length of the dark marking is 8 mm., but it is only 2 mm. wide at its upper end and less terminally, allowing the white portion of the feather to follow the shaft distad, narrowing to a point 2 mm. from the tip of the feather. Bill moderately arcuate; (in dried skin) with maxilla black, mandible brownish but with basal part of the mandibular tomia yellowish (concealed when bill is tightly closed). Feet pale brown. Wing, 63 mm.; tail, 39; exposed culmen, 24.5.

REMARKS: Females and young males not certainly distinguishable from those of *sauil* but distinguishable from *rectirostris* by the more strongly arcuate bill. The pattern of the tail appears to be the same in all three forms, being a distinguishing character only in the adult males.

There is a record of "*gayi*" from Cutervo that may possibly belong to *orestes*, but the occurrence of *sauil* at Chugur makes the zonal connection between these two localities significant. Connection with the highlands above the Utcubamba Valley, the home of *orestes*, is broken by the canyon of the Marañón. It is

probable, therefore, that the Cutervo record belongs with *saül*. This leaves *orestes* without any earlier records assignable to it.

SPECIMENS EXAMINED

L. l. liriopae.—

VENEZUELA:

(Mérida, Culata, Nevados, Tambor, and Conejos), 6 ♂, 1 ♀, 3 (?).

L. l. lafresnayi.—

COLOMBIA:

(Subia, El Peñón, Río Toché, El Eden, Santa Isabel, and Chipaque), 5 ♂,

1 "♀" [= ♂], 2 ♀;

Bogotá, 6 ♂, 6 [♂], 4 ♀, 1 [♀], 4 (?).

"ECUADOR": (*Errore*), 1 ♂.

L. l. saül.—

COLOMBIA:

(Popayán and Coast Range west of Popayán), 2 ♀.

ECUADOR:

(Loja, Verdecocha, Taraguacocha, Ambato, and Baeza), 5 ♂, 2 ♀, 1 (?);

("Quito" and "Ecuador"), 11 ♂, 5 ♀, 2 [♂], 3 (?);

"Ecuator," 1 ♀ (cotype of *saül*);

[no locality, presumably Quito as described], 1 ♂ (cotype of *saül*).

PERÚ:

Chugur, 1 ♂, 1 ♀;

"Perú," 1 ♂.

L. l. orestes.—

PERÚ:

La Lejia, 3 ♂, 2 ♀, 1 (?);

San Pedro, 3 ♂ (including type);

Leimebamba, 1 ♀.

L. l. rectirostris.—

PERÚ:

Rumicruz, 2 ♂ (imm.), 4 ♀;

mountains above Huánuco, 1 ♂¹, 2 ♀¹;

Panao, 2 ♂¹, 3 ♀¹.

***Pterophanes cyanopterus peruvianus* Boucard**

Pterophanes peruvianus BOUCARD, 1895, Genera of humming birds, p. 263 (in text)—Perú and Bolivia; I suggest Cachupata, Perú; cotypes in Paris Mus. and Amer. Mus. Nat. Hist.

In 1930 (Field Mus. Nat. Hist., zool. ser., vol. 17, p. 283), with a limited number of specimens, I reported that an immature male and two females of this species from "Bogotá" were in agreement with a young male and two females from Perú and a young male from Ecuador, and that an adult male from Perú

¹ Specimens in Chicago Natural History Museum.

and one from Bolivia showed similar agreement. Todd (1942, Ann. Carnegie Mus., vol. 29, p. 341) misinterpreted this statement as a broad claim that "Peruvian and Colombian birds are alike," with which claim (not mine) he disagreed. He, in turn, found certain Colombian specimens to be recognizably distinct from Ecuadorian and Bolivian birds and adopted the name *peruvianus* for the population from this latter region, and *cyanopterus* for his Colombian examples.

Mr. Todd has kindly lent me his Colombian birds and Mr. de Schauensee has equally generously lent other material from the collections of the Academy of Natural Sciences of Philadelphia. This material, together with 59 specimens in the American Museum of Natural History, has made it possible to examine the situation in more detail than was feasible in 1930. Nevertheless, my earlier conclusions are supported today. Five females and seven young males from "Bogotá" are not certainly distinguishable from Ecuadorian, Peruvian, and Bolivian birds of comparable age and sex. Such differences as exist in the various populations mentioned are found in adult males of which I had no Bogotá specimens at the earlier date.

Todd noted that his Colombian birds of all plumages were bluer than the specimens he had from Ecuador and southward, but, with the exception of a single young male, his Colombian material was all from the Central and Western Andes, while the type of *cyanopterus* was a "Bogotá-skin." The material at hand shows the "Bogotá" birds to be as green as the Peruvian specimens, and in the female and young male plumages, certain distinction is not clear. Adult males, however, have one character that appears to be diagnostic. This is the extent of blue color on the inner webs of the outer primaries. In Ecuadorian, Peruvian, and Bolivian males in fully adult plumage, this brilliant color goes well toward the tips of all the primaries, reaching within 12 to 20 mm. of the tip of the outermost feather. It also occupies the full width of the inner web, although it is occasionally duller next to the shaft but still with bluish lights. The adult male "Bogotá" specimens usually have the blue color withdrawn to 35 to 40 mm. from the tip of the outermost primary and usually separated from the shaft by a narrow sooty stripe. Since these features show no overlap in the series at hand, I am prepared to recognize *peruvianus* for the birds from Ecuador, Perú, and Bolivia and restrict *cyanopterus* to the

Bogotá population, to which a young male from Páramo Guerrero, Santander, eastern Colombia, also belongs, giving a definite locality in the Eastern Andes to that subspecies. The central and western Colombian birds are not assignable to either of the forms mentioned.

Young males of *peruvianus*, as do those of *cyanopterus*, differ from the adult males by even less strongly bluish color above; by having the blue of the primaries restricted to a short, basal stripe on the inner margin of the outermost few feathers or quite lacking (as in the females), although the under primary-coverts are always narrowly tipped with blue; by having the tail a little less deeply forked (but more deeply than in the females) and with some development of the pale stripe on the outer web of the outermost feather, usually crossing to the tip of the inner web but rarely invading that web toward the base as it commonly does in the females. The under parts in the youngest birds are nearly as broadly rufescent as in the females, although the lateral green areas are a little broader, while, with the acquisition of adult plumage, the rufous areas are replaced by green. The wings and tail, however, appear to molt last; at any rate, all the males with the blue on the wings restricted to the basal area also show traces of the stripe on the outer rectrices and some traces of ventral rufescence, however limited. One example from "Quito" has very slight traces of abdominal brown and has rather more blue on the primaries than other young *peruvianus* (or *cyanopterus*) though less than adults of either, but its tail is that of a young bird and the wings undoubtedly are also immature. Another bird without locality (but possibly a "Quito" skin) is in nearly adult male plumage but has a few remains of brown on the under parts and a hardly apparent trace of the light stripe on the outer tail-feather. The amount of blue edging on the outermost primaries is greater than in young west-Colombian males but less than in adult *cyanopterus*. A young male from "Ecuador" in the Chicago Natural History Museum has about the same amount. One young male from southern Perú and one from Bolivia have none at all, like most of the young "Bogotá" males. The constancy of this character in young males is thus open to further study, but the greater amount of blue on the primaries in the Ecuadorian specimens may indicate approach to the west-Colombian population, as is noted below.

In any case, the recognition of both *cyanopterus* and *peruvianus* still leaves the west-Colombian bird without a name, since it is different from either of the others. It is, accordingly, described below.

Boucard described *peruvianus* from a number of specimens from Perú and Bolivia without specifying (in his text) any single example as type. Jouanin (1950, Bull. Mus. Natl. Hist. Nat., Paris, ser. 2, vol. 22, suppl. 2, p. 20) identified a male from Cachupata, Perú, in the Paris Museum, as the type, but I have at hand two Bolivian examples from the Boucard collection, both labeled "*Pterophanes peruvianus* . . . type." It appears probable that all three (and perhaps other of the original specimens) are entitled to recognition as cotypes. In view of the name "*peruvianus*," chosen by Boucard on account of the prior collection of his Peruvian birds, I suggest the restriction of type locality to Cachupata, Perú.

Records of *peruvianus* are from Cutervo, Pariayacu, Maraynioc, Cedrobamba, Limbani, and Cajamarquilla (as well as Cachupata, from which material has been examined).

***Pterophanes cyanopterus caeruleus*, new subspecies**

TYPE: From Páramo Guamues, Nariño, Colombia. No. 161977, Academy of Natural Sciences of Philadelphia. Adult male, collected August 15, 1950, by Teodomiro Mena.

DIAGNOSIS: Similar to *P. c. cyanopterus* of the Bogotá region, eastern Colombia, but in all plumages distinctly bluer green in general coloration; top of head darker; adult males with the blue color of the primaries extending farther distad (as in *P. c. peruvianus* of Ecuador, Perú, and Bolivia); young males with more blue edging on the inner margins of the primaries at their bases; females bluer and with darker cap and possibly with more weakly developed pale stripe on the outer rectrices than in *cyanopterus*.

From *peruvianus*, *caeruleus* is distinguishable by the bluer general coloration and possibly, in young males, by greater development of blue at the bases of the inner margins of the primaries; in adult males, the extent of blue on the remiges is similar in both forms.

RANGE: Central and Western Andes of Colombia.

DESCRIPTION OF TYPE: (Colors in parentheses are those shown when the bird is held toward the light.) Top of head Duck

Green (blackish with a faint, dark greenish tinge); back more strongly greenish, passing into Anthracene Green on rump and upper tail-coverts (uropygium Myrtle Green). Sides of head, chin, and throat Myrtle Green \times Sorrento Green (Dusky Greenish Blue); belly the same but rather brighter; under tail-coverts a little duller. Remiges, in dorsal aspect, changeably Marine Blue, Paris Blue, and Prussian Blue (at deepest, Azurite Blue), margins all around blackish, broadest on the tips; in ventral aspect, Methyl Blue (Spectrum Blue \times Bradley's Blue), reaching to about 20 mm. from the tip of the outermost primary; upper primary-coverts near the blue color of the primaries; remaining upper coverts greener, like the back; under primary-coverts Cyanine Blue (Azurite Blue); remaining under coverts somewhat more greenish. Tail forked (20 mm.); median rectrices Cedar Green (Dark Yellowish Green); remaining feathers very little duller. Bill (in dried skin) black; feet brown. Wing, 109 mm.; tail, 70; culmen, 28.5; tarsus, 8.5.

REMARKS: Female (one specimen) with cap dark Mummy Brown; back light Cossack Green (Meadow Green), passing into Meadow Green (Anthracene Green) on the uropygium. Chin, throat, breast, and belly Verona Brown \times Mikado Brown; sides and flanks, in a limited lateral area, tipped with the green of the mantle; under tail-coverts near Hay's Green. Remiges Dark Grayish Brown, with a slight trace of green on the margins of the inner secondaries and a greater amount on the tertials; upper primary-coverts with inner webs dusky and outer webs bluish; greater coverts bright Meadow Green (Jouvence Blue); remaining upper coverts like the back; under primary-coverts dark brown, with narrow bluish tips; rest of under wing-coverts Dark Cinnabar Green. Tail less deeply forked than in the adult male (11 mm.); two median pairs of rectrices brighter green than the remainder and the outermost with a whitish stripe adjoining the shaft (which is also white) on the outer web, crossing to the tip of the inner web but becoming shaded with dusky somewhat before reaching the tip of the outer web; most of inner web and outer margin of outer web on this feather blackish.

Young males are somewhat similar to the female in general coloration, but the lateral areas of green on the under parts are broader and more bluish green, sometimes involving most of the ventral feathering; top of the head, at least after a certain

stage of development, with a greenish tinge. The tail resembles that of the female in color and pattern, although the pale stripe on the outermost rectrices is less strongly developed and sometimes nearly obsolete; the depth of fork (16–18 mm.) is greater than that of the female and nearer that of the adult male. The outermost primary has a fairly strong bluish stripe along the inner margin at the base, about 15 mm. in length, which is lacking in the female. There are sometimes similar markings on other adjacent primaries.

North-Ecuadorian birds show an approach toward this new subspecies, but those I have examined are, I believe, best assigned to *peruvianus*. None of them is quite so strongly bluish as any of the new form, but some of them can be matched in the south-Peruvian and Bolivian series. Of two north-Ecuadorian males that are not fully adult, one has little or no blue on the margin of the outer primaries; the other has as much blue as the young males of *caeruleus*. Both are slightly less bluish green than *caeruleus* in corresponding plumage.

Although I have seen no fully adult males of *cyanopterus* other than "Bogotá" examples of uncertain age as specimens, I am confident that the broader dark tips on the primaries in this subspecies are not due to postmortem change. Some of the specimens of *peruvianus* are also ancient, and, while they show a certain amount of change in the hue of blue on the wings also shown by the "Bogotá" examples, most pronouncedly in a specimen that has been mounted for many years, there is no observable alteration in the extent of blue. This is constant throughout the series of each form, within certain limits and without overlap between adult males of *cyanopterus* and those of the other forms.

I am grateful to Mr. de Schauensee for permission to describe this new form from material in his charge in the Academy of Natural Sciences, necessitated by the fact that the only specimen in the American Museum collection is immature and in damaged condition.

SPECIMENS EXAMINED

P. c. cyanopterus.—

COLOMBIA:

Páramo Guerrero, Santander, 1 ♂ juv.¹;

¹ Specimens in Carnegie Museum, Pittsburgh.

Choachi, 1 [♀];

"Bogotá," 4 ♂, 7 [♂ juv.], 1 ♂ juv.¹, 5 [♀], 2 ♀¹.

P. c. cyaneus.—

COLOMBIA:

Santa Isabel, 1 ♂ juv.;

La Leonera, Caldas, 2 ♂², 1 ♂³, 2 ♂ juv.³;

Santa Ignacia, Tolima, 1 ♂², 1 ♂ juv.²;

Páramo Guamues, Nariño, 1 ♂³ (type), 1 "♀" [= ♂ juv.]³;

Cumbal, Nariño, 1 ♂³, 1 ♂ juv.³

P. c. peruvianus.—

ECUADOR:

Pichincha, 3 ♂, 1 ♀;

Cordillera Oriental, 1 ♂;

upper Sumaco, 1 ♂;

Llanganati, 1 ♀;

Corazón, 2 ♀;

Papallacta, 1 ♂;

"Quito," 4 [♂], 1 ♀;

"Ecuador," 1 ♂ juv.¹

PERÚ:

Taulis, 1 ♂;

San Pedro, 1 ♂;

mountains above Huánuco, 1 ♂¹, 1 ♂ juv.¹, 2 ♀¹;

Cachupata, 1 ♂, 1 ♂ juv.;

Marcapata, 1 ♂, 1 [♀].

BOLIVIA:

Yungas, ridge of Cillutincara, 1 ♂, 1 "♀" [= ♂ juv.], 1 "♂ juv." [= ♀];

"Bolivia," 2 ♂ (cotypes), 1 ♂¹.

No LOCALITY: 1 [♂].

Boissonneaua mathewsii (Bourcier)

Troch[ilus] Matthewsii BOURCIER, 1847 (May 17), Proc. Zool. Soc. London, pt. 15, p. 43—"Le Pérou"; I suggest Chachapoyas; ♂; Loddiges Coll., presumably in the British Mus.

Taulis, 1 ♂, 2 ♀; Lomo Santo, 1 ♀; Chugur, 1 ♂; Chaupe, 3 ♂, 1 [♂], 1 ♀, 1 [♀]; La Lejia, 4 ♂, 2 ♀; San Pedro, 2 ♂, 1 ♀; Levanto, 1 ♂, 1 [♂]; Utcubamba, 1 [♂], 1 [♀]; Nuevo Loreto, 1 [♂]; Cushi Libertad, 1 ♂; Rumicruz, 1 ♂, 1 ♀; Chilpes, 1 ♀; Utcuyacu, 6 ♂, 1 ♀, 1 "♀" [= ♂]; Idma, 1 ♂, 1 ♀; San Miguel Bridge, 1 "♀" [= ♂]; Huaisampillo, 1 ♂, 3 ♀, 1 [♀]; "Peru," 1 [♀].

Compared with 26 birds from Ecuador and four without

¹ Specimens in Chicago Natural History Museum.

² Specimens in Carnegie Museum, Pittsburgh.

³ Specimens in the Academy of Natural Sciences of Philadelphia.

locality. No regional distinctions are evident. The deeper furcation of the tail of the males appears to be evident in young birds when compared with adult or young females and furnishes a relatively reliable clue to the sexes, which are otherwise very similar. Females, in adult plumage, may average a trifle lighter rufous below and have the green of the throat a little weaker, while their measurements average less than those of the adult males, but none of these characters is at all constant.

I have adopted an emended spelling for the specific name of this bird, as permitted by the International Code of Zoological Nomenclature. The type was collected by Andrew Mathews, whose name appears to have been consistently misspelled by most of the contemporary ornithologists who worked with his material, although the botanists (notably Hooker) managed to spell his name correctly, as it also appears on papers written by Mathews. Taczanowski, in all of his references, spelled the specific name of the present species with one "t" but erred in making the emendation in quoted references to papers where it was not used, including the original description.

Mathews visited many localities in Perú in the course of his travels, one of which was Chachapoyas which I have, accordingly, selected as the restricted type locality of this bird. Records include Chachapoyas, Cutervo, Callacate, Tamia-pampa, Tambillo, "Banks of the Marañón," Paltaypampa, Pumamarca, Garita del Sol, Culumachay, Moyocucha, Churái (Churay), and Huiro. Baer's supposed locality "Utembamba" is, of course, Utcubamba misinterpreted by the recorder; one of his specimens is before me, correctly labeled.

Cabanis and Heine (1860, *Museum Heineanum*, pt. 3, p. 74) record two specimens of the allied *Boissonneaua flavescens* as from Perú, but no exact locality is given, and the Peruvian origin is questionable if the identification was correct. It is just possible that immature examples of *mathewsii*, with their greater extension of green color over the pectoral region, were mistaken for *flavescens*.

***Heliangelus amethysticollis decolor*, new subspecies**

TYPE: From Rumicruz, Department of Pasco, central Perú; altitude 9700 feet. No. 174024, American Museum of Natural History. Adult male, collected March 22, 1922, by Harry Watkins.

DIAGNOSIS: Similar to *H. a. laticlavus* of southeastern Ecuador, but differs in the male sex by lighter, less bluish, green frontal patch; less blackish sides and back of the head; more violaceous, less purplish, gorget; breast band with slightly stronger tinge of buff; less bronzy rump; and lighter and less grayish belly; bill averaging shorter. Males differ from those of *H. a. amethysticollis* of northern Bolivia and southeastern Perú by more whitish, less brownish buffy, breast and more grayish, less brownish buffy, belly; slightly darker green sides; and shorter bill; frontal plate less bluish than in most *amethysticollis*; gorget usually more violaceous, less purplish; sides and back of head darker, more blackish in some lights.

RANGE: Highlands of central Perú from the Department of Pasco to the Urubamba Valley, and apparently north to the Moyabamba region.

DESCRIPTION OF TYPE: Frontal patch glittering Cendre Green; rest of the upper parts of head and body bright Cossack Green \times Grass Green; sides of head and the crown and back of the head appearing black in some lights; chin narrowly blackish, with the shading extending posteriad along the malar region where, however, there are greenish reflections in certain positions; remainder of throat occupied by a broad gorget of Mathews' Purple, showing even more violaceous lights; breast crossed by a broad band of whitish, tinged lightly with pale brown; sides of breast below the band dark Grass Green, extending down the flanks; middle of belly light grayish Drab; under tail-coverts with broad whitish margins enclosing a central spot of dull brownish gray faintly tinged with green. Remiges Fuscous; outer margin of outermost feather narrowly pale; upper primary-coverts blackish, with dark green outer margins; rest of upper wing-coverts like the back; under primary-coverts dusky; remainder of under wing-coverts like the sides; median rectrices Empire Green; remainder blackish (faintly purplish), with small whitish tips on outer two pairs. Bill (in dried skin) black, with concealed edges of mandible whitish; feet dull blackish. Wing, 65 mm.; tail, 42; exposed culmen, 14; tarsus, 5.5.

REMARKS: A female from Rumicruz is slightly smaller than any of the males, has the upper parts a little lighter green, and lacks all trace of violaceous purple on the throat which, with the chin, is light Snuff Brown. In the gular pattern, therefore, it

agrees with females of *amethysticollis*. Another female, from considerably farther north (kindly lent by Mr. de Schauensee of the Academy of Natural Sciences of Philadelphia), agrees in the possession of brown color on the throat, but it is confined to the lower part, while the upper throat is violaceous as in the males, preceded by a blackish chin. It is almost as small as the other female, but matched in that respect by the smallest males. A specimen of *laticlavus* that may possibly be a female (it is not sexed) has an amethystine central area on the throat, with narrow lateral and broader posterior borders of Hazel and a chin spot, also Hazel, in the center of which is a single blackish feather. The specimen, as are the females of *decolor*, is smaller than the rest of the series of *laticlavus*, all of which presumably are males, although they are not sexed. They show different degrees of development of the gorget, but have none of the brown plumes exhibited by the supposed female. This last-named bird, in addition, shows a small, but definite, whitish subterminal bar on the amethystine feathers of the gorget as do the females of *clarisse* and *strophianus*. (Traces of this feature are occasionally shown by males but not so prominently as in the females.) Female *laticlavus* thus shows an intermediate condition between those forms and *decolor*.

A male from northern Perú (kindly lent by Mr. Emmet R. Blake of the Chicago Natural History Museum) at first glance appears to represent a still different subspecies as, indeed, a good series from the region may sometime show to be the case. However, in the light of the northern female, mentioned in a preceding paragraph, such distinction is not certain. The specimen in question has the pectoral band as strongly ochraceous as that of *amethysticollis*, but the middle of the belly is without such color, being about as dark and grayish as in *laticlavus*. The gorget is as strongly violaceous as in central-Peruvian *decolor*, while the frontal plaque is also as in *decolor*, being a little lighter green than in *laticlavus*. The sides and back of the head approach the blackness of *laticlavus*, but the back and rump are as in *decolor*, without the bronzy lights of *laticlavus*. The median rectrices are bluish green as in *decolor*.

The specimen, therefore, is intermediate between *laticlavus* and *decolor* as, indeed, the geographical position of the locality would suggest, but the strongly ochraceous pectoral band belongs to neither of the adjacent forms but is to be matched only

in extreme southeastern Perú and Bolivia. If the northern female shared the distinctions of this male, the existence of a separable form could be more strongly suspected. Possibly the presence of violaceous feathers on the upper throat in the north-Peruvian female and not in the central-Peruvian bird of that sex indicates intermediacy between *decolor* and *laticlavus*, but it does not suggest subspecific distinction from both. Until more adequate material is available, assignment of the north-Peruvian birds to *decolor* is indicated.

I believe that *clarisse* belongs in the *amethysticollis* group, and it is possible that *strophianus* of western Ecuador should go there also, but it has certain features that may serve to keep it apart. The general pattern is shared by various species of *Helianthus*, but the greatest resemblance is to *clarisse*. Nevertheless, the pronounced fork of the tail; the strong steel blue color (with violaceous lights) of the rectrices, more pronounced, even, than in *a. amethysticollis* and usually including the median feathers; the contrasting, dark bronzy color of the upper tail-coverts; and the short bill all serve to identify *strophianus* without hesitation. The females have a stronger green band behind the amethystine gorget than do females of *clarisse*, and the amethystine feathers themselves have more pronounced white subterminal bars, while the chin is either sooty blackish or with sooty shaft-stripes bordered by white—a pattern barely suggested by some *clarisse* but shared with females of still other species. The uncertainty as to which of the diagnostic characters are those showing affinity and which are no more than parallel developments makes it advisable at this point to retain *strophianus* as a species distinct from *amethysticollis* and its conspecifics. There is also some uncertainty concerning the possible occurrence of both in eastern Ecuador.

It may be noted, however, that, although the steel blue rectrices are present in every specimen of *strophianus* I have examined, the median feathers sometimes show a definite greenish color, across the basal portion or on the basal part of the margins and, in some cases, over the entire feather. This suggests that intergradation with *clarisse* may sometime be demonstrable in other characters. Of particular interest in this connection are two females of the characteristic "Bogotá-make" that have the median rectrices decidedly green but all other characters those of *strophianus*. It would be interesting to

know their exact origin, since *strophianus* has never been reported from any exact locality in Colombia.

Three specimens are labeled "Rio Napo" but, being dealer's skins (H. Whitely), are of doubtful origin. The locality of "*violicolis*" (a probable aberration of *strophianus*) was given originally as "Sarayacu," eastern Ecuador, but there is no confirmation of the occurrence of *strophianus* east of the Andes. Gould (1855 [May 1], Monograph of the Trochilidae, [pt. 9], vol. 4, text to pl. 243) included "Northern Peru" in the range of this species, but he omitted later reference to this assertion and presumably had no actual specimens from Perú. Even in western Ecuador, the range of the species does not closely approach the Peruvian boundary.

There is also doubt concerning the origin of one of the cotypes of *laticlavius*—that from "Intac," which is on the western side of the Andes, far from the eastern localities where this form is known to occur. In view of this situation, I recommend acceptance of Jima, not Intac, as type locality of *laticlavius*.

I am unable to agree to the inclusion of *Helianthus spencei* in the *amethysticollis* group. There is some resemblance, but the texture of the gorget is different and a new color note is introduced, which seem to warrant specific distinction, as does the spotted gular pattern of the females.

The present new subspecies, *decolor*, may claim the records of "*amethysticollis*" and "*laticlavius*" from Maraynioc, Huacapistana, and Chilpes and probably those from Cusco and Torontoy. A single young male from Cedrobamba is somewhat intermediate between *decolor* and *amethysticollis* but appears to be a little closer to *decolor*.

***Helianthus amethysticollis amethysticollis* (D'Orbigny and Lafresnaye)**

O[rthorhynchus] amethysticollis D'ORBIGNY AND LAFRESNAYE, 1838, Mag. Zool., vol. 8, cl. 2, "Synopsis avium," p. 31—Yuracares, "rep. Boliviana."

The frontal plaque in this southernmost member of the species is variable, according to the series before me. In two males, both from Huaisampillo, Perú, it is as bluish green as in *laticlavius*. In the rest of the males it is lighter in tone, as in *decolor*. In the three females, the color is as in the single female of *decolor*, lighter than in the female of *laticlavius*.

The only Peruvian records clearly assignable to *amethysticollis amethysticollis* are from Huaisampillo, from which locality material is recorded hereunder.

SPECIMENS EXAMINED

H. spencei.—

VENEZUELA:

Mérida (Mérida, Escorial, Culata, Conejos, Nevados, "Sierra," and "Páramo"), 27 ♂, 4 [♂], 1 "♂" [= ♀], 14 ♀, 3 [♀].

H. amethysticollis clarisse.—

COLOMBIA:

"Bogotá," 39 [♂], 15 [♀], 1 "♂" [= ♀], 1 [♀] (type of "*claudia*"), 1 [♀] (type of "*dubius*").

H. a. laticlavus.—

ECUADOR:

Near Loja, 5 [♂], 1 [♀].

H. a. decolor.—

PERÚ:

Molinopampa, 1 ♂¹;
Leimebamba, 1 ♀²;
Rumicruz, 3 ♂ (including type);
Utcuyacu, 2 ♂;
Huacapistana, 1 ♂²;
Maraynioc, Pariayacu, 1 ♂;
Maraynioc, Sarnapaycha, 1 ♂;
Cedrobamba, 1 ♂.

H. a. amethysticollis.—

PERÚ;

Limbani, 1 ♂, 2 ♀;
Huaisampillo, 3 ♂, 1 ♀.

BOLIVIA:

Cillutincara, 1 ♂;
Cocapunco, 1 [♂];
Chaco, Yungas, 1 ♂.

No LOCALITY (probably Huaisampillo, Perú): 1 ♂.

H. strophianus.—

ECUADOR:

(Gualea, Nanegal, Pichincha, Paguasique, "Quito," and "Ecuador"), 11 ♂, 5 [♂], 12 ♀, 5 [♀];
"Rio Napo," 1 ♂, 1 [♂], 1 "♂" [= ♀].

No LOCALITY: 1 [♂], 2 [♀].

?COLOMBIA:

"Bogotá-skins," 2 [♀].

¹ Specimen in Chicago Natural History Museum.

² Specimens in the Academy of Natural Sciences of Philadelphia.

***Heliangelus exortis cutervensis* (Simon)**

H[eliotrypha] micraster cutervensis Simon, 1921, Histoire naturelle des Trochilidae, pp. 182, 369—Cutervo, Perú; cotypes (?) in Berlioz Coll., Paris.

I have only a single pair of this Peruvian subspecies which is known only from the type locality. Simon notes the bill as 16.5 to 17 mm. in length in the cotypes, but in the specimens at hand it is only 15 mm., the maximum reached in the series of *micraster*. There are other characters, however, that justify the recognition of this form.

The ground color of the abdomen is brighter, more warmly hued, than in *micraster*; the upper parts, including the median rectrices, are lighter green as are the breast and lateral under parts; the gorget of the male is a little deeper red than it is on any of the males of *micraster* at hand, but the female does not show the same distinction. The fine border of the carpal margin of the wing is browner in both sexes.

I believe that *micraster* and *cutervensis* are conspecies of *exortis*. The principal distinctions are the deeper fork in the tail of *exortis*, somewhat more steely black rectrices (except the median ones), slightly longer bill, a deeper hue of green above and below (including the median rectrices), a lack of pronounced bronzing of the rump and upper tail-coverts (sometimes suggested), and purple instead of flame-colored or golden gorget. The general pattern is the same in all three forms, and there is a slight suggestion of intermediacy in the distinguishing features as shown by certain extreme examples in a long series of *exortis*. The color of the gorget, for example, at first glance is strikingly distinct in *exortis*, but it varies considerably. At one extreme of the scale, the lower border of the black chin-spot appears bright blue in certain lights and the adjacent upper border of the throat-patch correspondingly violaceous, while the general color of the gorget is rich, deep Mallow Purple. At the other extreme there are specimens in which the color of the gorget, while it does not quite match that of *micraster*, is more like it than it is to the color in the average *exortis*. Even if these specimens represent aberrations of *exortis*, they indicate that the transition from one color to the other by a slight alteration in surface structure is not so profound as the final effect might suggest. The other characters mentioned vary also and show approach to those of *micraster* without actual overlap.

The differences that remain appear to be of no more than sub-specific value.

I am puzzled by a number of females of *exortis* from Laguneta, Colombia, already discussed by Chapman (1917, Bull. Amer. Mus. Nat. Hist., vol. 36, p. 304). The strong spotting of the throat is pronounced and in its greatest development is not matched by any of the specimens from other parts of Colombia, including 43 "Bogotá" females. Unfortunately, I can find no distinctions in the males from Laguneta nor in females with purplish gorget. The significance of the apparent distinction shown by these particular specimens is, therefore, not clear. It is possible that a separable form exists in the region of Laguneta recognizable only in one type of female plumage, but such distinction leaves much to be desired and may await more satisfactory evidence.

SPECIMENS EXAMINED

H. e. exortis.—

COLOMBIA:

(Laguneta, Almaguer, Cerro Munchique, Coast Range west of Popayán, La Florida, Torné, Santa Isabel, "Antioquia," Santa Elena, Sabanalarga, El Roble, Fusagasugá, El Peñón, and "Bogotá"), 23 ♂, 60 [♂], 19 ♀, 49 [♀].

ECUADOR:

(Upper Sumaco, below Baeza, Cuyuja, Ambato, Baños, below Papallacta, "Río Napo," and "Ecuador"), 14 ♂, 2 [♂], 7 ♀, 1 [♀].

H. e. micraster.—

ECUADOR:

(Loja, near Loja, "Río Napo," and "Ecuador"), 1 ♂, 6 [♂], 1 "♂" [= ♀], 1 [♀].

No LOCALITY: 1 ♂.

H. e. cutervensis.—

PERÚ:

Cutervo, 1 ♂, 1 ♀.

Heliangelus viola (Gould)

Heliotrypha viola GOULD, 1853 (May 1), Monograph of the Trochilidae, vol. 4 (pt. 5), pl. 241 and text—banks of the Marañón (Warszewicz); I suggest Chachapoyas, Perú; cotypes in British Mus.

El Tambo, 8 ♂; Chugur, 2 ♂; Taulis, 1 ♂, 3 ♀; Chachapoyas, 3 ♂; San Pedro, 3 ♂, 1 ♀; La Lejía, 5 ♂, 2 ♀; Leimebamba, 1 ♂; Levanto, 1 ♂; Cutervo, 1 ♀.

Since this species nowhere reaches the actual banks of the Río Marañón, it is advisable to alter the type locality somewhat, and

since Warszewicz, who was the original collector, visited Chachapoyas where the species does exist, I suggest Chachapoyas as restricted type locality. It is quite possible that the type specimens actually came from that place.

Forty-seven additional specimens from Ecuador show no distinctions from the Peruvian series. The species has no obviously close relatives. I am unable to see any affinity to *H. exortis* suggested by Chapman (1926, Bull. Amer. Mus. Nat. Hist., vol. 55, p. 316).

Additional Peruvian records are from Tamiapampa, Tambillo, Nancho, and Paucal.

***Eriocnemis luciani catharina* Salvin**

Eriocnemis luciani catharina SALVIN, 1897 (Feb. 27), Bull. Brit. Ornith. Club, vol. 6 (no. 42), p. 30—Leimebamba, Perú; ♂, ♀ cotypes in British Mus.

This subspecies has been found only in the neighborhood of the type locality. I have specimens both from Leimebamba and from San Pedro, near by. All show the characters of the form to good advantage. They lack the strong blue frontal patch of *l. luciani*, although the top of the head has a slight bluish tinge in comparison with the mantle, while the males have the belly notably blue in certain lights; the female has the belly more bluish green than the throat, but does not have the pronounced blue of the males. In addition, the single female at hand has a prominent white stripe down the middle of the belly and has the whitish subterminal bars on the throat and breast stronger than in the males. The white abdominal stripe is not mentioned in the description by Salvin but was noted by Hartert (1900, Das Tierreich, Lief. 6, p. 144). It is a character that appears to be lacking in the females of *l. luciani*, but is found in the central and southern Peruvian populations.

***Eriocnemis luciani sapphiropygia* Taczanowski**

Eriocnemis sapphiropygia [sic] "Jelski MS" TACZANOWSKI, 1874, Proc. Zool. Soc. London, p. 139—Maraynioc, Perú; ♂; Warsaw Mus.

The central-Peruvian subspecies is of a lighter green coloration than *catharina* and lacks the tinge of blue in the green of the cap, while the back of the head shows bronzy or coppery reflections. The uropygium lacks the bluish tinge of *catharina*, and the belly in the male is green, hardly deeper in tone than the throat and

without any of the blue of the north-Peruvian form. In the females, also, the general color is lighter green and the belly not tinged with the deeper hue found in female *catharina*. The under tail-coverts are about the same as in *catharina*, bluer and less violaceous than in *luciani*.

As far as I can learn, the female of *sapphiropygia* has not been characterized. It may briefly be noted as lighter and more yellowish green than the male, with more prominent white subterminal bars on the throat and with a white median stripe on the belly. The tail is less deeply forked than in the male sex, which I am unable to find is the case consistently in either *luciani* or *catharina*, although it may average so with considerable overlap.

A male from Machu Picchu, previously recorded by Chapman (1921, Bull. U.S. Natl. Mus., no. 117, p. 68) and kindly lent by Dr. Herbert Friedmann of the United States National Museum, approaches the form next to be described, having the under parts a little darker green than the central-Peruvian specimens, but the under tail-coverts are relatively bluish and the anterior upper parts are strongly coppery. Its assignment to *sapphiropygia* is indicated.

Records from Maraynioc and Pariayacu also belong to *sapphiropygia*.

***Eriocnemis luciani marcapatae*, new subspecies**

TYPE: From Marcapata, southeastern Perú. No. 483248, American Museum of Natural History. Adult male, collected in 1905 by G. Ockenden.

DIAGNOSIS: Similar to *E. l. sapphiropygia* of central Perú, but general coloration darker blue; back of head and hind neck less strongly coppery; under tail-coverts more violaceous, with less bluish admixture. Female apparently with more strongly developed white subterminal areas on the anterior under parts than the male.

RANGE: Extreme southeastern Perú in the Department of Puno; possibly adjacent areas in eastern Cusco.

DESCRIPTION OF TYPE: Top of head and anterior part of mantle Peacock Green \times Meadow Green, with a moderate bronzy tinge on the back of the head and nape; posteriorly the color darkens and acquires a bluish tinge, approaching Anthracene Green on the upper tail-coverts. Throat and sides of head

deep Emerald Green, with a small dusky spot in front of the orbit and a whitish one behind it; breast and lower under parts darker, near Meadow Green; under tail-coverts sooty in most positions but showing Dark Violet lights in others; thighs with cottony white tufts strongly developed; a small white patch concealed under the wings. Wings dark brown, with a weakly developed pale outer margin of the outermost primary; upper primary-coverts brown, with a tinge of green on the outer webs; remaining upper coverts green like the upper mantle; under primary-coverts blackish; remainder green. Tail Indigo Blue. Bill and feet black. Wing, 73 mm.; tail, 46 (depth of fork, 15 mm.); culmen, 21.

REMARKS: Supposed female similar to the male in diagnostic features but a little lighter in general coloration and with the feathers of the entire throat and breast having a prominent white subterminal bar; center of belly clearer white; anterior part of lores white, with small green terminal spots; fork of tail a little shallower (11.5 mm.). The characters of this bird in comparison with definitely sexed females of *sapphiropygia* are such that there is no doubt that it, also, is of that sex.

It is of interest to note that the color of the under tail-coverts in *marcapatae* matches that of *luciani*, from which it is separated distributionally by *catharina* and *sapphiropygia*. Records are from Marcapata and "Lambaen" [= Limbani], both represented in the material at hand.

SPECIMENS EXAMINED

E. l. luciani.—

ECUADOR:

(Mt. Pichincha, "Ibera," Llanganati, Guala, El Corazón, and Yanacocha),

9 ♂, 7 ♀, 7 (?);

"Quito," 4 ♂, 1 ♀, 30 (?).

NO LOCALITY: 2 ♂, 1 (?).

M. l. catharina.—

PERÚ:

Leimebamba, 5 ♂, 1 ♀;

San Pedro, 4 ♂.

M. l. sapphiropygia.—

PERÚ.

Maraynioc, 3 ♂;

Rumicruz, 1 ♂, 2 ♀;

Machu Picchu, 1 ♂¹.

¹ Specimen in the United States National Museum.

M. l. marcapatae.—

PERÚ:

Marcapata, 1 ♂ (type), 2 [♂], 1 [♀]; Limbani, 1 [♂].

***Eriocnemis alinae dybowskii* Taczanowski**

Eriocnemis dybowskii TACZANOWSKI, 1882, Proc. Zool. Soc. London, p. 39—Ray-Urmana, Perú; ♂; Warsaw Mus.

I have little to add to the available information concerning this form except that the female, in addition to having a shorter wing and tail and a shallower fork in the tail than the males, is somewhat lighter green in general coloration and does not show the strong bluish color on the belly and under tail-coverts that is visible in the males when held in certain positions.

Simon (1921, *Histoire naturelle des Trochilidae*, p. 370) was in error in citing Chirimoto as type locality of this bird, although that locality is close to Ray-Urmana, where the type was obtained. Chirimoto, however, should be in the range of the subspecies. The only other locality of record is Uchco, to which I am able to add three others.

In this connection, it should be noted that *E. a. alinae* has been recorded as occurring in extreme northern Ecuador, but it appears likely that this assertion has been based on specimens from Pasto and the Río Patía, "Ecuador" [= Colombia]. I have been unable to find any definite Ecuadorian records.

SPECIMENS EXAMINED

E. a. alinae.—

COLOMBIA:

"Bogotá," 29 [25 ?♂, 4 ?♀].

E. a. dybowskii.—

PERÚ:

Chachapoyas, 3 ♂, 1 ♀;

La Lejia, 3 ♂;

Cushi Libertad, 1 ♂;

"Perú," 1 ♂.

***Haplophaedia aureliae assimilis* (Elliot)**

Eriocnemis assimilis ELLIOT, 1876, Bull. Soc. Zool. France, vol. 1, p. 227—"Apollo" [= Apolo] and Tilo-tilo, Bolivia; ♀♀ type and paratype in Amer. Mus. Nat. Hist.

No distinctions are apparent in the series from southeastern Perú and Bolivia.

Two of Elliot's original specimens are at hand, one marked as "type" and the other as "a type." Elliot (1878, Smithsonian Contrib. Knowledge, no. 317, pp. 189-190) wrote "(Type in my collection)," from which it may be accepted that the two birds are, respectively, the holotype and a paratype. Both are females, judging by the measurements, including the shallow fork of the tail and the general coloration, in which respects they agree with examples of that sex.

A record from Huaisampillo adds a locality to those in the list of specimens examined.

I include the form *lugens* as a conspecies of *aureliae*, although it has been consistently treated as a distinct species by other authors. Its distinctive characters are certainly of no more than subspecific value, and the only reason for keeping it apart appears to be that it has been recorded from eastern Ecuador, which is the range of *aureliae russata*. The east-Ecuadorian records, however, are quite untrustworthy. One was made by Buckley and the other by Goodfellow and Hamilton, and material obtained by these collectors has repeatedly been found to have hopeless confusion in respect to eastern and western Ecuador, as I have had other occasion to note. This has been due both to the employment of native collectors who ranged on both sides of the cordillera and to labeling of specimens after receipt in London. Neither practice is conducive to accuracy. In the Colombian part of the range of *lugens* recorded occurrences are restricted to the western side of the Andes, and I believe the same will be found true in Ecuador. At present, except for the dubious records mentioned, all known Ecuadorian specimens are "Quito" trade-skins.

The Goodfellow and Hamilton records present another debatable point. Oberholser (1902, Proc. U. S. Natl. Mus., vol. 24, p. 330) noted that the six specimens [supposedly] from Papallacta showed the males to have the tibial tufts pure white and the females in part rufous, and thereby he concluded that Hartert (1900, Das Tierreich, Lief. 9, p. 148) was incorrect in ascribing these characters in reverse. I have at hand 10 specimens, all of "Quito" preparation, without sexing by the collectors. Four of these birds have the light rufous area on the white tufts and six of them do not. In addition, the four birds in question are larger than the other six, have more deeply forked tails and darker general coloration, with the front more dusky in certain

lights, and have less or no white on the middle of the lower belly. All of these characters are definitive of the males of the other subspecies of *aureliae*, and it would be incredible if all of them were exactly reversed in *lugens*. It must be concluded, therefore, that Hartert was correct and that Goodfellow and Hamilton's birds were all incorrectly sexed.

Haplophaedia aureliae affinis (Taczanowski)

Eriocnemis affinis TACZANOWSKI, 1884, Ornithologie du Pérou, vol. 1, p. 396—Chirimoto and Ray-Urmana, Perú; I suggest Chirimoto as restricted type locality; cotypes in Warsaw Mus.

Vestiapedes domaniewskii SZTOLCMAN, 1926 (Dec. 31), Ann. Zool. Mus. Polonici Hist. Nat., vol. 5, p. 211—Chirimoto, Perú; ♂; Warsaw Mus.

Vestiapedes aureliae tibialis CARRIKER, 1933 (March 24), Proc. Acad. Nat. Sci. Philadelphia, vol. 85, p. 8—Río Jelashte, Department of San Martín, Perú; ♂; Acad. Nat. Sci. Philadelphia.

This subspecies is unusually well marked, having the leg-puffs entirely cinnamon-buff or with a little whitish basally, especially in the female. The under parts are darker than in *russata*, with the throat and middle of the belly sooty, although the tips of the throat-feathers are green in certain lights. The under tail-coverts also are blackish. The upper parts are as in *russata*.

Peruvian records are from Chirimoto, Ray-Urmana (near Chirimoto), Río Jelashte, and Utcubamba.

There is some uncertainty concerning the proper name to apply to this form, and different authors have reached different conclusions. It appears from Sztolcman's account (cf. synonymy above) that Taczanowski sent a Chirimoto specimen to Salvin and received it on return with "*E. affinis* Elliot" penciled on the label. This notation must certainly have been an error for *assimilis*, since Elliot never named any hummingbird "*affinis*," and there is no specimen of the present form in Elliot's collection. Furthermore, Salvin himself (1892, Catalogue of birds in the British Museum, vol. 16, p. 371) cites Taczanowski's "*affinis*" in the synonymy of *assimilis*.

Nevertheless, there is no evidence of any error in Taczanowski's original description, and although he cites Elliot in the synonymy of "*affinis*" it is without any bibliographic reference. It seems probable that he assumed that it was a manuscript name of Elliot's which identified his Chirimoto specimen and accordingly used it, adding, as he did for all the Peruvian species,

a description of what he had in hand. He had already (1882, Proc. Zool. Soc. London, p. 39) used the name (credited to Elliot) in recording the north-Peruvian specimens, but without any description, so it is clear that he had no intention of describing a new form. Consequently, I believe we are justified in accepting the name *affinis* for the present subspecies, credited to Taczanowski.

SPECIMENS EXAMINED

H. a. caucensis.—

COLOMBIA:

East side of Mt. Tacarcuna, 3 ♂, 1 ♀;
 San Antonio, 2 ♂, 2 ♀, 1 "♂" [= ♀], 3 [♂], 1 [♀];
 east of Palmira, 1 ♂, 2 ♀, 1 [♀];
 Antioquia, 2 [♂];
 Coast Range west of Popayán, 1 "♂" [= ♀];
 Cerro Munchique, 1 ♂, 1 [♀];
 Santa Elena, 1 [♀];
 Barro Blanco, 1 [♂].

H. a. aureliae.—

COLOMBIA:

"New Grenada," 4 [♂] (including type);
 La Candela, 2 ♂, 3 ♀, 1 "♀" [= ♂];
 El Peñón, 1 ♂;
 near San Agustín, 1 ♀;
 El Roble, 1 ♀;
 Sabanalarga, 1 [♀];
 "Bogotá," 3 ♂, 11 [♂], 7 [♀], 1 (?).

H. a. lugens.—

ECUADOR:

"Quito," 1 ♂, 3 [♂], 1 "♂" [= ♀], 5 [♀].

H. a. russata.—

ECUADOR:

Río Oyacachi below Chaco, 4 ♂;
 lower Sumaco, 5 ♂, 3 ♀;
 Río Pastaza, 2 [♂], 3 [♀].

H. a. affinis.—

PERÚ:

Río Jelashte, 1 ♂¹, 1 ♀¹.

H. a. assimilis.—

PERÚ:

Oconeque, 2 ♂, 1 ♀;
 Santo Domingo, 4 ♂, 3 ♀;
 Inca Mine, 1 ♂, 2 ♀;
 Camp 1, below Limbani, 1 [♀].

¹ Specimens in the Academy of Natural Sciences of Philadelphia.

BOLIVIA:

"Bolivia," 2 [♀] (type and paratype);
Chaco, Yungas, 1 ♂.

***Ocreatus underwoodii peruanus* (Gould)**

Spathura peruana GOULD, 1849 (June 1), Monograph of the Trochilidae, vol. 3 [pt. 1], pl. 164 and text (in part)—"Moyabamba" [= Moyobamba, Department of San Martín], northern Perú; "Loddiges collection, Hackney," England; now probably in the British Mus.

Spathura cissiura GOULD, "1853" [= 1854], Proc. Zool. Soc. London, pt. 21, p. 109—Perú.

Spathura (or *Steganurus*) *solstitialis* GOULD, 1871, Ann. Mag. Nat. Hist., ser. 4, vol. 8, p. 62—Ecuador.

It is necessary to restrict the application of Gould's name, *peruanus*, to the specimen from the Loddiges collection, secured by Mathews, since Gould mentions other specimens obtained by Tschudi that belong to another form. One of these was said to have been obtained by Tschudi also at "Moyabamba." However, Tschudi did not visit the locality of that name in northern Perú, and Gould supplied the further information that Tschudi's locality was between latitudes 11° and 12° S. I can find no "Moyabamba" within the latitudinal limits cited, but there is a "Monobamba" in that area which Tschudi is known to have visited, and I strongly suspect that Gould misinterpreted its spelling as, indeed, he did with Mathews' locality and three other geographical names from Tschudi. In any case, Tschudi's localities for his specimens of *Ocreatus* are all in the Department of Junín, while the type locality of *peruanus* is in San Martín.

I can find no distinctions between north-Peruvian and east-Ecuadorian birds by which to recognize a "*solstitialis*." The character sometimes cited of grayish outer webs of the outer rectrices (basally) in *solstitialis* (also cited as identical with *cissiurus*) and steel blue in *peruanus* has no validity. Males of *peruanus* can be distinguished by this character from those of *annae*, at least in many cases, but it is overshadowed by other more significant criteria.

Reichenbach (1853, Jour. f. Ornith., Jahrg. 1, Beilage zu Extraheft, p. 24) described "*Steganura remigera*" ostensibly from northern Perú. The characters mentioned there are indeterminate, but the figure of the supposed form given by the same author in the Vollständigste Naturgeschichte (1855, pl. 708, figs. 4601–4602) shows the male with white leg-puffs that do not

occur in the Peruvian forms of the species. Presumably *remigera* is a synonym of *underwoodii* where, indeed, it was placed, after examination of the type, by Mulsant and Verreaux (1877, *Histoire naturelle des oiseaux-mouches*, vol. 3, p. 257).

Additional records of *peruanus* are from Tambillo, Cocochó, Chirimoto, Chachapoyas, Huambo, and Perico, with a sight record from Ray-Urmana.

Ocreatus underwoodii annae (Berlepsch and Stolzmann)

Spathura annae BERLEPSCH AND STOLZMANN, 1894 (July), *Ibis*, ser. 6, vol. 6, p. 398—La Gloria, Chanchamayo, Garita del Sol, and Vitoc, Perú; cotypes in Warsaw Mus. and Berlepsch Coll., Frankfurt; I suggest La Gloria as restricted type locality.

This well-marked form is distinguishable from the more northern *peruanus* in the male sex by having the tail notably shorter and with smaller racquets on the outermost feathers which are incurved and cross each other in the closed tail. The outer webs of these feathers are basally steel blue-black like the inner webs, whereas in *peruanus*, as in other more northern forms, they are inclined to show a paler, grayish tone. The distinction in the basal color of the outer rectrices appears to hold also in the females and is the only character by which I have been able to separate that sex of the two forms in question.

Records of *annae* are from La Gloria, Chanchamayo, Garita del Sol, Vitoc, Paltaypampa, Amable Maria, "Moyabamba" [? = Monobamba], road from Santa Maria de Cruces to Andamarca, and probably Huiro. The Huiro record (Sclater and Salvin, 1876, *Proc. Zool. Soc. London*, p. 16) was made under the name *addae*, but there is no evidence that *addae* occurs anywhere but in Bolivia, while all southeast-Peruvian specimens examined belong to *annae*. Since *annae* was not recognized in 1876 and since its resemblance to *addae* is greater, in some respects, than that to *peruanus*, the mistaken identification is understandable.

Study of the northern forms of the species has shown that it is possible to recognize three subspecies in place of the conglomerate *underwoodii underwoodii*. Males from the Bogotá and Mérida regions appear to be indistinguishable from each other, but the females separate rather readily into two groups. Those from the Bogotá region have the under parts nearly completely speckled with green, although the chin or even

the upper throat may be clearer. The Mérida females have the chin, all but the sides of the throat, and often the middle of the breast unspotted. In addition, these latter birds have the upper parts darker and more bluish green than the Bogotá specimens. Heine (1863, Jour. f. Ornith., Jahrg. 11, p. 210) proposed the name *discifer* for the Mérida birds, while Hartert (1899, Novitates Zool., vol. 6, p. 72) described his *bricenoi* from Mérida on some of the same characters I have mentioned. Since Heine's proposal antedates that of Hartert, the name *discifer* must be used for this population which occurs in adjacent parts of Venezuela as well as near Mérida, as can be seen from the list of specimens examined. For the loan of much of this material, I am deeply indebted to Dr. William H. Phelps of Caracas.

Farther east in the northern mountains of Venezuela, the males are again indistinguishable from those of both *underwoodii* and *discifer*, but the females are perhaps distinct, making it possible to recognize *polystictus*, described from the Caracas region. They are as heavily spotted below as those of *underwoodii* or perhaps more so, but the spots are larger, while the bill, according to the limited material available, is longer than in the Bogotá birds of the same sex. That of the males averages a little longer than in males of *underwoodii* but does not exceed the maximum of that form as is the case with the females I have examined. In females of *underwoodii* the exposed culmen is 12–13.4 mm. (average 12.7); in *polystictus*: 14–14.3 (14.2).

One of the females of *polystictus* at hand has the anterior under parts less strongly spotted than the others, agreeing in that respect with the more weakly spotted examples of *underwoodii* but still more strongly marked than the females of *discifer*. Another specimen, originally sexed as a male, agrees rather exactly with the specimens sexed as females; at any rate, it is very little if any more strongly marked than the females, as young males of the various forms of this species usually are. Its bill is longer (14.2) than that of any of the adult males of *polystictus* at hand, of which the longest is 13.4 and the average 12.9. This specimen thus may be a wrongly sexed female. At any rate, these birds sustain Todd's belief (1942, Ann. Carnegie Mus., vol. 29, p. 347) that the type and other supposed females of *polystictus* were not wrongly sexed young males, since in the number now known it would be incredible if all were erroneously

sexed. The stronger spotting is, therefore, a character of female *polystictus*. Young males, when definitely found and determined, may well be found to have even more pronounced markings.

Birds from the Central and Western Andes of Colombia, however, are markedly different from a long series of "Bogotá" specimens of *underwoodii* (excepting three or four of the latter that may have come from west of the eastern mountains). The males have the tail as long as that of the "Bogotá" birds, but the terminal spatules are smaller, while the females are as unspotted on the anterior and median lower under parts as those of *melanantherus* of western Ecuador. I am unable to refer this population either to *melanantherus* or to *underwoodii*, and since it occupies a fairly extensive area I believe it should bear a distinctive name. Accordingly it may be known as follows:

***Ocreatus underwoodii ambiguus*, new subspecies**

TYPE: From Salento, western Quindio Andes, Colombia; altitude 7000 feet. No. 116643, American Museum of Natural History. Adult male, collected September 28, 1911, by A. A. Allen and L. E. Miller; original no. 660.

DIAGNOSIS: Similar to *O. u. underwoodii* of the Eastern Andes of Colombia in the Bogotá area, but males with the spatules of the tail distinctly smaller; females with the anterior under parts clearer, less speckled, and the crown more decidedly coppery, resembling the females of *melanantherus* of western Ecuador. Males differ from those of *melanantherus* by larger caudal spatules that, in addition, are duller and darker than those of *melanantherus*, while the length of the tail is decidedly greater as in *underwoodii*.

RANGE: Central and Western Andes of Colombia.

DESCRIPTION OF TYPE: Upper parts shining Grass Green, with some more golden lights, particularly on the top of the head. A small white spot at the upper posterior border of the orbit; chin and a broad subocular stripe blackish, with faint greenish reflections in certain lights; throat and breast glittering Cendre Green; belly and flanks duller, near Spinach Green; under tail-coverts green, with pale bases and traces of grayish edges; tibiae clothed with elongated white feathers. Remiges dark Vinaceous-Slate; upper and under wing-coverts like the back. Tail strongly graduated and with the outermost feathers de-

nuded subterminally and ending in an oval spatule; median two pairs green like the back but with some coppery reflections toward the tip; next two pairs duller and darker, with some green in evidence on the outer webs; outermost pair blackish, with the outer webs (before the subterminal constriction) somewhat grayish; spatules shining blackish, with Dull Blue-Green Black lights. Bill (in dried skin) black; feet flesh colored. Wing, 41 mm.; tail, 83; exposed culmen, 12; length of caudal spatules 15.

REMARKS: Females indistinguishable from those of *melanantherus*, having the anterior under parts and the mid-belly pure white, with some fine speckling of green along the extreme sides of the throat, increasing in size on the sides of the breast and the flanks, and with a slender white malar stripe separated from the throat by a bronzy stripe, even narrower; under tail-coverts buff. Forehead and crown usually decidedly coppery; occiput and rest of upper parts as in the males. Tail deeply furcate; outer feathers slightly shorter than next pair and not spatulate but basally grayish, subterminally green (sometimes steel blue in ventral aspect) and broadly tipped with white; subexternal pair with smaller white tips, and occasionally the third pair also.

I am unable to distinguish young males from females unless some of the glittering feathers of the gorget or the spatulate outer rectrices have appeared.

The males are easily distinguishable from those of *discifer* and *polystictus* of Venezuela by the smaller spatules on the tail, and the females by the more extensively white under parts, lighter green back, and usually more coppery crown.

Although *O. u. melanantherus* occurs not far from the Peruvian boundary and may exist on the Peruvian side, there are no records to date. Among the specimens of *melanantherus* from Ecuador are some collected by Baron and labeled "Pogio, near Loja." There is also a specimen of *peruanus* with the same label. In a report on these birds and others obtained by Baron, Hartert indicated the locality "Pogio" as being on the western side of the Andes near the Río Pescado. Loja is far distant to the southeast on the eastern side of the range. It is possible, therefore, that the specimens of *melanantherus* were obtained at Pogio and the skin of *peruanus* at Loja, but little likelihood that all were collected at the same place.

Two of the "Pogio" birds, presumably young males, have the white under parts of the females combined with racquet-tipped outer rectrices, but these terminal racquets are tipped, in turn, with a rather prominent white spot. One specimen of *underwoodii* (labeled "Ecuador" but an undoubted "Bogotá-skin") shows the same marking. As a matter of fact, one of the two "Pogio" birds has only one of the outer rectrices lengthened and racquet tipped, while the other is that of the normal female or young male plumage. Still another specimen of *melanantherus* shows this asymmetrical tail, but the racquet on the single lengthened plume is without a white apex. I have seen no specimens of any of the subspecies with the broadened sub-terminal portion of the outer rectrices such as led to the description of the supposed "*cissiura*."

I am unable to explain the inclusion of *Trochilus caligatus* Gould (1848, Proc. Zool. Soc. London, pt. 16, p. 14) in the synonymy of *Ocreatus u. underwoodii* as was done by Hartert, Salvin, and Simon. Since the authors placed the same *caligatus* also in the synonymy of one or other members of *Amazilia* (under that name or *Saucerrottea*), some confusion is evident. Gould's description, however, cannot possibly refer to an *Ocreatus* but appears to indicate *Amazilia saucerrotei warscewiczii*.

SPECIMENS EXAMINED

O. u. polystictus.—

VENEZUELA:

- Galipán, 1 ♂;
- Cumbre de Valencia, 4 ♂;
- Curupáo, Miranda, 1 ♂, 1 ♂¹;
- San Casimiro, Aragua, 1 ♂¹, 1 ♀, 1 ♀¹;
- Caracas, 1 ♂;
- Junquito, Caracas, 1 ♂¹;
- Guarenas, Miranda, 1 ♀¹.

O. u. discifer.—

VENEZUELA:

- Mérida, 1 ♂ (type of "*bricenoi*"), 2 [♂], 1 ♀, 2 [♀];
- Montañas, Sierra, 5 ♂, 1 ♀, 1 "♀" [= ♂], 1 [♀];
- Nevados, 3 ♂, 1 ♀, 1 [♀];
- Pinos, 1 ♂, 1 ♂¹;
- El Valle, 1 ♂;
- Capás, 1 "♀" [= ♂];
- Sierra Nevada, 1 ♂;

¹ Specimens in the Phelps Collection, Caracas, Venezuela.

Conejos, 1 ♂¹, 1 ♀, 2 "♂" [= ♀]¹;
 Culata, 2 "♂" [= ♀]¹, 1 [♀];
 Escorial, 2 ♂, 1 ♂¹;
 Los Durainos, 1 ♀;
 Carbonera, 1 ♂¹;
 Chama, 1 ♂¹;
 Delicias, Páramo de Tamá, 1 ♂¹;
 Villa Paez, Páramo de Tamá, 1 ♂¹, 1 ♀¹;
 Bramón, Táchira, 1 ♂¹;
 Seboruco, Táchira, 1 ♂¹;
 Altamira, Barinas, 1 ♂¹;
 Curimagua, Falcón, 1 ♂¹;
 Tamuipejocha, Perijá, 1 ♀²;
 "Venezuela," 2 ♂.

O. u. underwoodii.—

COLOMBIA:

Buenavista, 1 ♂;
 Aguadita, 1 ♂;
 "Bogotá," 38 [♂], 18 [♀].

O. u. ambiguus.—

COLOMBIA:

Salento, 1 ♂ (type), 1 ♀;
 El Roble, Quindío Andes, 2 ♂, 1 ♀;
 Miraflores, east of Palmira, 1 ♂, 1 "♀" [= ♂], 2 ♀;
 San Antonio, 3 ♂, 1 "♀" [= ♂], 1 ♀;
 La Candela, 1 ♂, 1 ♀;
 Cerro Munchique, 1 "♀?" [= ♂];
 near San Agustín, 1 ♂;
 Santa Elena, 1 [♂];
 Las Lomitas, 1 ♀;
 La Florida, 1 ♂;
 Coast Range west of Popayán, 1 [♀];
 "Bogotá," 4 ♂, 1 [♀];
 "Río Napo" (*errore*), 1 ♀.

O. u. melanantherus.—

ECUADOR:

Nanegal, 1 [♂];
 Paramba, 1 [♀];
 El Chiral, 2 ♂, 2 ♀, 1 (?);
 Alamor, 2 ♂, 2 ♀;
 above Bucay, 4 ♀;
 Salvias, 1 ♀;
 Punta Santa Ana, 1 ♂, 1 [♂], 1 ♀;
 Guallea, 4 ♂, 8 ♀, 1 "♀" [= ♂];
 San Bartolo, 1 ♂, 1 ♀;
 Zaruma, 1 ♀;

¹Specimens in the Phelps Collection, Caracas, Venezuela.

²Specimen in the collection of Adolfo Pons, Caracas, Venezuela.

Naranjo, 1 ♂;
 Las Piñas, 1 ♂;
 Pichincha, 1 (?);
 "Quito," 5 ♂, 1 [♂], 2 ♀;
 "Ecuador," 2 ♂, 3 [♂], 6 ♀, 1 (?);
 "Pogio, near Loja," 3 [♂], 3 (?).

O. u. peruanus.—

ECUADOR:

Baeza, 2 ♂;
 Sabanilla, 5 ♂, 1 ♀, 1 [♀];
 Río Oyacachi below Chaco, 2 ♀;
 below San José de Sumaco, 2 ♂;
 Zamora, 1 ♂, 1 ♀;
 "Guayaquil" (*errore*), 1 ♀;
 "Napo," 1 ♂, 1 ♀;
 "Ecuador," 3 [♂], 2 [♀];
 "Pogio, near Loja," (*errore*), 1 [♀].

PERÚ:

Huayabamba, 3 ♂, 1 ♀;
 Uchco, 5 ♂;
 Chaupe, 4 ♂, 3 ♀;
 Nuevo Loreto, 4 [♂], 1 [♀];
 Huachipa, 1 ♂¹;
 Chinchao, 2 ♂¹ 1 ♀¹.

O. u. annae.—

PERÚ:

Utcuyacu, 4 ♂, 1 [♂], 2 ♀;
 Chilpes, 1 ♀;
 Idma, 1 ♂, 2 [♂], 3 ♀;
 Guadalupe [Río Tono], 1 ♀;
 Río Huacamayo, 1 ♂;
 Marcapata, 1 [♂];
 Huaisampillo, 1 ♂.

O. u. addae.—

BOLIVIA:

"Bolivia," 2 ♂ (including type);
 Yungas, 2 ♂;
 Chaco, Yungas, 1 ♂;
 Calabatea, La Paz, 1 ♀;
 Bellavista, 1 ♂;
 Roquefalta, Cochabamba, 1 ♂.

***Lesbia nuna pallidiventris* (Simon)**

Psolidoprymna pallidiventris SIMON, 1902 (July), *Novitates Zool.*, vol. 9, p. 182—Province of "Cojabamba" [= Cajabamba]; "Algamarca," Araqueda . . , "Cojabamba" [= Cajabamba]; I suggest Cajabamba as restricted type locality; cotypes in Berlioz Coll., Paris, and Amer. Mus. Nat. Hist.

¹ Specimens in Chicago Natural History Museum.

P[salidoprymna] gracilis labilis SIMON, 1921, Histoire naturelle des Trochilidae, pp. 194, 377—"Pérou," Province of "Cochabamba" [= Cajabamba]: "Cochabamba" [= Cajabamba], "Leimabamba" [= Leimebamba] . . . Chota; Berlioz Coll., Paris.

P[salidoprymna] gracilis longicauda SIMON, 1921, Histoire naturelle des Trochilidae, pp. 194, 378—"Pérou," Province of Otusco: Chitahuara; Berlioz Coll., Paris.

A series of 50 birds from northern Perú shows no distinguishing characteristics among them. They are separable from the Ecuadorian *gracilis* by lighter, less bluish, green upper parts and by a slightly, on the average, longer bill. The exposed culmen of the adult males ranges from 9 mm. (one specimen) to 10.5 (average 10), while in *gracilis* it ranges from 7.5 to 9.5 (two specimens) (average 8.5). Nine of 23 *gracilis* have the bill 9 mm. or over; seven of 31 *pallidiventris* show the measurement of 9 or 9.5 mm. The overlap is, therefore, considerable, being nearly 30 per cent.

It is somewhat difficult to interpret Simon's localities in view of the misspellings, but the gazetteer included in the paper where *pallidiventris* was first described indicates that the place there called "Cojabamba" and later (1921, *loc. cit.*), "Cochabamba" is really Cajabamba. There is no "Province Cochabamba" in the region, but a locality Cochabamba exists in the Province of Huamachuco, although this does not agree with the data given in the gazetteer. In the second account (1921) the spelling is changed to "Cochabamba" and some of the specimens are credited to Baron's collection. Part of the original material is at hand, on the labels of which the correct "Cajabamba" is written. Cajabamba is in the province of the same name, Department of Cajamarca.

In addition to the specimens examined, records of *pallidiventris* (under one name or another) are from Tabaconas, Leimebamba, Chitahuara, and Chota.

I have been unable to discover any certain distinctions between young males and females in this species. At a certain period in their development, even before the elongated outer rectrices appear, the young males begin to acquire the glittering gorget feathers, and if any of these are in place it is reasonably certain that the bird is a young male. Prior to that time, however, the two sexes appear to be alike.

***Lesbia nuna eucharis* (Bourcier and Mulsant)**

T[rochilus] Eucharis BOURCIER AND MULSANT, 1848, Rev. Zool., vol. 11, p. 274—no locality; I suggest the mountains southeast of Huánuco, Perú; [♂]; Amer. Mus. Nat. Hist.

Lesbia chlorura GOULD, 1874, Proc. Zool. Soc. London, p. 504—supposed to be Perú; I suggest the mountains southeast of Huánuco, Perú; type lost.

The form described under the name "*Eucharis*" by Bourcier and Mulsant has been misidentified by numerous authors, possibly misled by confusion as to the type specimen. Salvin (1892, Catalogue of birds in the British Museum, vol. 16, p. 147) claimed as type a specimen from "San Buenaventura, Colombia," a Bourcier specimen obtained from Gould. Gould, however, although he had examined the true type, never claimed to possess it, but stated that it had "New Granada" written on the label (1860, Monograph of the Trochilidae, vol. 3, text to pl. 171). Mulsant and Verreaux (1877, Histoire naturelle des oiseaux-mouches, vol. 3, p. 290) said that the type was (then) in Elliot's collection, and Elliot (1878, Smithsonian Contrib. Knowledge, no. 317, p. 148) also claimed the type as in his possession. No. 38104, American Museum of Natural History, from Elliot's collection, is marked as the type of *eucharis* and bears the written locality "New Grenada," thus agreeing (except for a minor variation of spelling) with Gould's statement regarding the locality. In any case, Bourcier and Mulsant would hardly have found the locality uncertain if the specimen had been labeled "San Buenaventura, Colombia." "New Grenada" (or "New Granada") was a somewhat generalized locality a century ago, usually synonymous with "Bogotá" but sometimes of no more significance than "South America," and specimens may be found from widely scattered South American localities labeled "New Grenada."

In any case, the type of *eucharis* is not a "Bogotá-skin" nor does it agree with any Colombian form of the genus *Lesbia*, although it belongs to that genus. Who first accredited the bird to Colombia I have not discovered. Mulsant and Verreaux (*loc. cit.*) accepted Colombia as merely the probable range, but subsequent authors appear to have adopted the suggestion without the question. Hartert (1900, Das Tierreich, Lief. 9, p. 182) still further restricted it to western Colombia, but Hellmayr (1915, Verhandl. Ornith. Gesellsch. Bayern, vol. 12, p. 211) eased the restriction by identifying Bogotá birds as *eucharis* as other authors have done.

Nevertheless, after Elliot (1878, *loc. cit.*) redescribed the type, nobody appears to have studied the specimen critically. Instead, various authors have identified, as *eucharis*, various unusual specimens from Colombia that were either *Lesbia victoriae victoriae* with an exceptional amount of green on the middle rectrices, or, as suggested by Berlioz (1944, L'Oiseau et Rev. Française d'Ornith., vol. 14, p. 28) hybrids between *victoriae* and *L. nuna gouldii*.

One of the characters of *eucharis*, included in the original description as well as in Elliot's account, is the existence of green centers on the under tail-coverts. The type of *eucharis* confirms this feature. It occurs in all the forms of *nuna* (although sometimes weakly or obsoletely), but it is always poorly developed or lacking in the members of the *victoriae* group. Furthermore, the green gorget of the type is relatively deep in tone, but is not posteriorly acute as has been claimed by some authors, and in certain lights is only moderately well defined from the breast which, in turn, is clear green without the buffy tips that are found in *victoriae*. The bill has, unfortunately, lost its tip, but is clearly straighter, less arcuate, than in *victoriae*. Elliot's measurement of this member (11 mm.) appears to have been taken after the bill was broken, while the figure given by Mulsant and Verreaux (17 mm.) rather certainly was taken from the gape, not along the culmen. Even in its broken condition, however, the bill shows evidence of resemblance to that of *nuna*, not of *victoriae*, and was certainly longer than the bills of *nuna gouldii*, *gracilis*, and *pallidiventris* (the remaining portion equals the full bill-length in those forms), but perhaps not so long as the bills of *nuna nuna* and *boliviana*. In every respect, therefore, the type is clearly a member of the *nuna* group.

Identity with *chlorura* seems equally clear. I have already (1930, Field Mus. Nat. Hist., zool. ser., vol. 17, pp. 285-286) commented on the characters of *chlorura*. These, briefly, comprise a bill longer than that of *pallidiventris* but shorter than that of *nuna* or *boliviana*, and an appreciable amount of pale coloration on the outer webs of the outermost rectrices exposed beyond the tips of the subexternal pair, a condition found in *pallidiventris* and *gracilis* (and sometimes weakly in *gouldii*) but not in *nuna* or *boliviana*. These same characters are found in the type of *eucharis*.

It may be noted that the specimens from near Huánuco that I

recorded in 1930 had the tails of the adult males only 100 and 105 mm. in length, within the limits of variation in *pallidiventris*. Gould reported the type of *chlorura* to have the tail 5-3/8 inches long [= 136.5 mm.]; the type of *eucharis* shows 140 mm., an unusually long dimension most nearly approached by Gould's figure for *chlorura*.

Gould describes the under tail-coverts of the type of *chlorura* as pure buff, whereas the type of *eucharis* shows broad green centers, as I have noted above. In some examples of several members of the *nuna* group, however, these green centers are weak or obsolete, and their absence is not evidence of relationship to *victoriae*, as their presence is of assignment to the *nuna* group. Although Gould had seen the type of *eucharis*, it was 14 years later that he described *chlorura*, by which time he may have adopted the misconception as to the identity of *eucharis* with the abnormal *victoriae*; he compared his "*chlorura*" with *gouldii* and *gracilis* but did not mention *eucharis*. Elliot placed *chlorura* in the synonymy of *gouldii*, and Hartert recognized it as the north-Peruvian form, later named *pallidiventris* (q.v.). I believe, as I reported in 1930, that "*chlorura*" is the central Peruvian form of *nuna*, but for this form the name *eucharis* should now be used.

It is strange that no specimen of the species *nuna* is known to have been collected in the Junín highlands. The material I secured above Huánuco came from north of Junín, and specimens from a little south of it, in Huancavelica, have been recorded as typical *nuna*. It is quite possible, however, that the types of *eucharis* and "*chlorura*" both came from the Junín region, but in the absence of certain evidence of the occurrence of *eucharis* other than in the Huánuco region, I suggest the mountains above Huánuco as restricted type locality for both *eucharis* and "*chlorura*."

The only definite record other than of the material here recorded is from Hacienda Huarapa, near Huánuco.

Psalidoprymna chionura Sharpe (1900, Hand-list of the genera and species of birds, vol. 2, p. 136—"N. Perú") is obviously a *lapsus calami* for *chlorura* and not a proposed change in nomenclature. It is only indirectly identifiable by a reference to the "Catalogue of birds in the British Museum" (vol. 16, p. 149), where the name *chlorura* appears only as a synonym of "*Lesbia gouldii*," although reference to its original description is supplied.

***Lesbia nuna nuna* (Lesson)**

Ornismya nuna LESSON, 1831, Histoire naturelle des colibris, supplément des oiseaux-mouches, p. 169, pl. 35—"Chili" (in text "le Pérou"); I suggest Cusco, Perú, as restricted type locality.

Lesbia boliviana BOUCARD, 1891 (June), Humming Bird, vol. 1, p. 43—Bolivia; ♂; Paris Mus.

The southeast-Peruvian subspecies of *nuna* is distinguishable from all the more northern forms by longer bill (adult males: 12.3–15 mm.; average, 13.4), average longer tail (110–127), broader rectrices (as a rule), with more restricted green coloration at the tips of the outer three pairs, and with the outermost pair more purplish and without any of the basal whitish area on the outer web exposed beyond the tips of the subexternal pair.

At one time (1931, Field Mus. Nat. Hist., zool. ser., vol. 17, p. 284) I accepted "*boliviana*" as a possibly valid form on the basis of a supposedly longer bill (15 mm.) in the single Bolivian skin available for examination, although I only indirectly indicated the reason for my conclusions. Boucard did not use the bill as a character but gave the length of that member as "1/2" [inch], but he noted his *boliviana* as being "golden instead of grass green," which the Bolivian bird I examined did not show. Hartert (1900, Das Tierreich, Lief. 9, p. 182) did not recognize *boliviana* as distinct but noted one Bolivian bird as having a longer tail (dimension not given) than other specimens of *nuna* from southeastern Perú and northwestern Bolivia, but this character, likewise, is not shown by the bird I examined. As far as the length of bill is concerned, one of the Peruvian specimens now at hand has the bill as long as the Bolivian specimen in question. I believe, therefore, that the case for *boliviana* is too weak to justify continued recognition of it as a separable subspecies.

DeLattre and Lesson (1839, Rev. Zool., vol. 2, p. 19) state that DeLattre indicates "Moyabamba, au Pérou" as the native country of *nuna*. This probably means no more than that DeLattre had a specimen which he supposed came from some such place and which he identified as *nuna*. Lesson originally stated that his specimens came to him from M. Canivet. At any rate, it is impossible to specify the "Moyabamba" DeLattre had in mind. Lesson's figure shows a bird with a bill decidedly too long to have come from Moyabamba, Department of San Martín, northern Perú, the home of *pallidiventris*, but since the northern birds were long included in *nuna*, DeLattre's bird (but

not Lesson's) may well have come from this northern locality. On the other hand, there is a Moyobamba, or Moyabamba, in the Department of Apurímac, not far from Cusco, where De-Lattre's bird may have been secured. The exact origin of Lesson's type is not known, for which reason I have selected Cusco as being unlikely to cause further confusion.

Cynanthus bifurcatus Swainson (1827, Phil. Mag., new ser., vol. 1, p. 441—"Table land?" [of México]) is sometimes cited tentatively as a possibly earlier name for *nuna*. I can find no justification for the assumption which appears to have been instigated by Reichenbach (1855, Die vollständigste Naturgeschichte, Abt. 2, Vögel, pl. 718) who figured two birds to which he applied the name *bifurcatus* Swainson. Gould (1861, Introduction to the Trochilidae, p. 102) cited "*Lesbia bifurcatus* Reich." as a possible synonym of his *eucharis*, although Bonaparte (1850, Conspectus avium, vol. 1, p. 81) had adopted Swainson's name as a prior term for *nuna*.

Lesson's bird I have been unable to identify, but I am unable to believe it belongs to the genus *Lesbia*. Reichenbach's figures agree well with certain plumages of the *Lesbia victoriae* group but not with *nuna* or its conspecifics, although the specimens from which the figures were drawn may have been other than they appear. In any case, their identity has no bearing on the status of Lesson's species, which Lesson compared with *Phaethornis superciliosus*.

Records from localities other than those cited in the list of specimens examined are from Chospiyoc, Calca, Río Cadena, Yauli, Lircay, and probably (sight records) Acoria and Anco. A female in the British Museum listed by Salvin (1892, Catalogue of birds in the British Museum, vol. 16, p. 149) as from "Vicinity of Lima" must have been either wrongly labeled or perhaps an escaped cage bird; the locality is certainly not in the normal range of the species.

SPECIMENS EXAMINED

L. n. gouldii.—

COLOMBIA:

Pamplona, 1 ♂;

Sibaté, 1 (?);

La Mar, near Subachoque, 1 ♀;

"Bogotá" 18 ♂, 4 ♂¹, 1 ♀, 3 ♀¹, 4 (?).

¹ Specimens in Chicago Natural History Museum.

L. n. gracilis.—

ECUADOR:

- Loja, 5 ♂, 1 ♀;
 Loja or Cuenca, 1 (?);
 Province of Loja, 1 ♂;
 Taraguacocha, 2 ♂;
 Province of Pichincha, 2 ♂;
 Mt. Pichincha, 2 ♂, 1 ♀;
 Oyacachi, 1 ♂, 1 ♀;
 El Paso, 3 ♂, 1 ♀;
 "Quito," 2 ♂, 1 ♀;
 "Ecuador," 6 ♂, 3 ♂¹, 1 ♀;
 "Río Napo," 1 ♂.

L. n. pallidiventris.—

PERÚ:

- El Tambo, 1 ♂;
 Chugur, 6 ♂;
 Taulis, 1 ♂;
 Seques, 2 ♂;
 Uchco, 1 ♂, 2 ♀, 1 (?);
 La Lejia, 5 ♂;
 San Pedro, 2 ♂, 1 ♀;
 Río Utcubamba, 1 ♀¹;
 Levanto, 1 ♂;
 Hacienda Llagueda, 2 ♂¹;
 Callahuete, 1 ♂¹;
 Chachapoyas, 3 ♂;
 Cajabamba, 7 ♂, 2 ♀ (9 cotypes);
 Cajamarca, 2 ♂, 1 ♀;
 Succha, 1 ♀;
 Algamarca, 1 [♂] (cotype);
 Maynapall, 1 [♂];
 Araqueda, 1 [♂] (cotype);
 Tayabamba, 1 (?);
 Cullcui, Río Marañón, 2 ♂¹.

L. n. eucharis.—

PERÚ:

- "New Grenada," 1 ♂ (type);
 mountains above Hunáuco, 3 ♂¹;
 Chinchao, 1 ♀¹.

L. n. nuna.—

PERÚ:

- Paucartambo, 9 ♂, 1 ♂¹;
 Huatocto [= Huatocoto], 1 ♀;
 Cusco, 6 ♂, 1 ♀;
 Pisac, 1 (?);
 Ollantaytambo, 1 ♂, 1 (?).

BOLIVIA:

- "Bolivia," 1 ♂¹.

¹ Specimens in Chicago Natural History Museum.

***Lesbia victoriae juliae* (Hartert)**

Psalidoprymna juliae HARTERT, 1899, *Novitates Zool.*, vol. 6, p. 75—north-ern Perú; type is from Cajabamba; ♂; Amer. Mus. Nat. Hist.

North-Peruvian birds are distinguishable from the Ecuadorian and Colombian form, *victoriae*, by shorter tail and bill, more golden green coloration on the average, and paler, less deeply tawny belly and under tail-coverts in the male plumage. The length of wing appears to vary little throughout the species.

Young males appear to be distinguishable from females by somewhat longer tail (77 to 80 mm. as against 70 to 72 in the limited series available), and by having the green markings on breast and sides broader, less restricted to small, rounded spots. If the more strongly glittering feathers of the gorget have begun to appear, their color is the clearer green of the adult male plumage and not the strongly golden or coppery color of the females; also, these gorget feathers are less likely to form a clear-cut ovate patch or, if development has proceeded far enough, they will occupy a larger area that may involve the upper throat.

These same features are useful in distinguishing young males and females of Ecuadorian specimens of *victoriae*, but in Colombian examples I have been unable to find them equally definitive. In *aequatorialis*, the specimens sexed as [young] males, and non-sexed birds that agree with them in the color of the throat, have the tail 91 to 93.5 mm., while those sexed as females and non-sexed individuals with noticeably golden or coppery throat show the tail 72 to 84. In the series of Colombian *victoriae*, two examples sexed as females have the tail 70 and 84.5 mm., respectively; the latter has the throat-patch strongly coppery, but the shorter-tailed example has no prominent glittering throat-feathers. Three non-sexed birds with tails, respectively, 76, 82, and 83 mm. have the weak pectoral color of females, but the first has no glittering gorget plumes, the second only moderately golden ones, and the third even less golden feathers. Ten non-sexed specimens with somewhat clearer green gorgets have the tail 86 to 93 mm. They also show, in most cases, the stronger green coloration of breast and sides that appears to be associated with the young male plumage.

I find myself unable to recognize "*aequatorialis*" as distinct from *victoriae*. There is a tendency for the Ecuadorian birds to have longer bill and tail than the Colombian examples, but the overlap is considerable. Adult Colombian males have the bill

12.5 to 14 mm. and the Ecuadorian 13.5 to 16, but eight of 26 Colombian specimens and 14 of 24 Ecuadorian specimens show 13.5 to 14, making 30 per cent of the Colombian series and 58 per cent of the Ecuadorian, or 44 per cent of the total, unidentifiable on this character. In respect to the tail, Colombian birds measure 149 to 170; Ecuadorian birds, 160 to 194, but 13 Colombian examples (50 per cent) and seven Ecuadorian birds (25 per cent) range from 160 to 170, making a total of 40 per cent unidentifiable on that basis. There are no constant differences of color.

One of the specimens at hand is from the Boucard collection, labeled "Rio Napo," and was obtained by Buckley. It appears to be one of the original series from which Boucard described his "*aequatorialis*," and, since no type was originally selected, this specimen presumably may be considered one of the numerous cotypes of that proposed form.

Additional records of *juliae* are from near Cajamarca and Leimebamba.

Mention may again be made here of the association of the name "*eucharis*" with the *victoriae* group instead of with *nuna* where it belongs. The faulty allocation has been made on the basis of wholly green median and submedian rectrices of certain specimens of *victoriae*. This condition occurs in many females and young males of the members of the *victoriae* group. I have noted cases at hand where one side of the tail showed the relatively short outermost rectrices and wholly green median two pairs of rectrices of the immature plumage and the other side, the elongated outer feathers and the merely green-tipped median rectrices of the adult plumage. There are approaches to the condition in several adult males that have only a little purplish black space exposed on the two pairs of median feathers, and in any case the occurrence of this characteristic in adult males may signify no more than the retention of a juvenile feature.

***Lesbia victoriae berlepschi* (Hellmayr)**

Psolidoprymna berlepschi HELLMAYR, 1915, Verhandl. Ornith. Gesellsch. Bayern, vol. 12, p. 210—Anta, Cuzco, Marcapata, Perú; ♂; Munich Mus.

I have seen only a single specimen of this form, a male from Tarma, Perú, kindly lent by Mr. de Schauensee of the Academy of Natural Sciences of Philadelphia. It has a broken bill, preventing comparison with the published figures of the length of

this member, but even in its broken condition it is near the length of the bill of *juliae* and certainly was originally longer, as the original description of *berlepschi* specifies. The other characters are also in agreement. The hues of green of the different parts are deeper and less golden than in either *victoriae* or *juliae*, and the lower under parts are more strongly cinnamomeous buff than in *juliae* but less than in *victoriae*. The tail is longer (124 mm.) than in any *juliae* examined but shorter than in *victoriae*.

The measurements originally cited by Hellmayr were: wing, 60–62 mm.; tail, 112–118; culmen, 11.5–13. I found *juliae* to measure, in adult males: wing, 59–63.5; tail, 102–119.5; culmen, 11.5–12.5. Curiously, Hellmayr (*in* Morrison, 1939, Ibis, ser. 13, vol. 3, p. 472), commenting on Morrison's specimens from Huancavelica, stated that they averaged slightly smaller than [other] *berlepschi*, but the measurements he cited indicate the opposite: wing, 62–65; tail, 118–125; culmen, 14.5–15.5. In any case, *berlepschi* appears to average larger in all dimensions than *juliae*.

Records of *berlepschi* are from Anta, Urcos, Huancavelica, Lachoc (sight observation), and Tapo (Department of Junín).

SPECIMENS EXAMINED

L. v. victoriae.—

COLOMBIA:

(Anolaima, Chipaque, La Holanda, La Herrera, La Pradera, Cundinamarca, and La Mar), 8 ♂, 1 [♂], 2 ♀;
"Bogotá," 32 [♂], 3 [♀].

ECUADOR:

(Mt. Chimborazo, Mt. Pichincha, El Paso, Bestión, Valle Tumbaco, Cayambe, Cayumba, Valle Cumbaya, Cerro Huamani, Lloa, and Pomasqui), 21 ♂, 9 ♀, 1 (?);
"Quito," 55 [♂], 4 [♀];
"Ecuador," 2 ♂, 1 ♀, 2 [♀];
"Río Napo," 2 ♂ (including cotype of "*aequatorialis*"), 1 ♀.

L. v. juliae.—

PERÚ:

Cajabamba, 10 ♂ (including type), 2 ♀;
La Lejía, 1 ♂;
mountains above Huánuco, 4 ♂¹.

L. v. berlepschi.—

PERÚ:

Tarma, 1 ♂².

¹ Specimens in Chicago Natural History Museum.

² Specimen in the Academy of Natural Sciences of Philadelphia.

