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STUDIES OF PERUVIAN BIRDS. NO. XLVIII¹

THE GENERA *IRIDOSORNIS*, *DELOTHRAUPIS*, *ANISOGNATHUS*, *BUTHRAUPIS*,
COMPSOCOMA, *DUBUSIA*, AND *THRAUPIS*

By JOHN T. ZIMMER

Many thanks are due to Messrs. James Bond and Rodolphe de Schauensee of the Academy of Natural Sciences of Philadelphia, Mr. W. E. C. Todd of the Carnegie Museum of Pittsburgh, and Acting Director Orr Goodson, Mr. K. P. Schmidt, and Mrs. Ellen T. Smith of the Chicago Natural History Museum for the loan of important material in their charge that has been of much service in the following studies.

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

Iridosornis rufi-vertex reinhardti (Sclater)

Iridornis reinhardti SCLATER, 1865, Ibis, new ser., vol. 1, p. 495, pl. 11—eastern slope of the Peruvian cordillera; Copenhagen Mus.

Two birds from San Pedro, near Chachapoyas, extend the known range of this form slightly to the northward. I can find no characters distinguishing these specimens from those taken farther south.

I agree with Hellmayr that the characters shared in common with *rufi-vertex* outweigh those which separate it, and that the relationship may best be expressed by the use of a trinomial. The yellow area on the top of the head is paler than in *rufi-vertex* and is withdrawn from the crown but extended laterally to the sides of the neck and the posterior part of the auriculars. The lack of rufous on the lower under parts is

shared by *I. r. caeruleoventris*. The coloration of the rest of the plumage and the proportions are shared by all the subspecies.

Records of *reinhardti* are from Culumachay, Puyas-yacu, Pumamarca, and Cumpang (Compan).

In the examination of the various forms of this species, an interesting situation has come to light. The original description of *I. r. ignicapillus* from southwestern Colombia pointed out the deeper, more orange hue of the coronal patch in comparison with typical *rufi-vertex* from eastern Colombia, but overlooked the fact that *ignicapillus* has, rather consistently, a broader black frontal band. In *rufi-vertex*, this band varies in width (along the median line from the exposed base of the culmen to the posterior border) usually from 4 to 6 mm.; in one specimen it is only 3.5, in one it is 7 and in one 8 mm. The average of 21 specimens is 5.4 mm. In *ignicapillus*, the band is 6.2–8 mm. wide, averaging 7.3 mm.

Birds from the western side of the Western Andes in Ecuador have the frontal band even wider, on occasion, but show the coronal patch varying from the light yellow of *rufi-vertex* to a darker and duller tone, though still without the strong orange hue of *ignicapillus*. Since these birds cannot be referred either to *rufi-vertex* or *ignicapillus*, it seems desirable to give them a new name as follows.

Iridosornis rufi-vertex subsimilis, new subspecies

TYPE: From Mindo Valley, western Ecuador; altitude 9400 feet. No. 173618, American Museum of Natural History.

¹ Earlier papers in this series comprise American Museum Novitates nos. 500, 509, 523, 524, 538, 545, 558, 584, 646, 647, 668, 703, 728, 753, 756, 757, 785, 819, 860, 861, 862, 889, 893, 894, 917, 930, 962, 963, 994, 1042, 1043, 1044, 1045, 1066, 1095, 1108, 1109, 1126, 1127, 1159, 1160, 1168, 1193, 1203, 1225, 1245, and 1246.

Adult male collected September 4, 1922, by Chapman, Cherrie, and O'Connell.

DIAGNOSIS: Similar to *I. r. ignicapillus* of southwestern Colombia in respect to the broad frontal band, averaging even wider, but differing from it by the color of the coronal patch which lacks the strong orange tone, being lighter or duller. In the light extreme, the color of this patch matches that of some examples of *rufi-vertex*, but the frontal band is broader than in that form.

RANGE: Western slope of the Western Andes of Ecuador.

DESCRIPTION OF TYPE: Whole head and neck black except for the bright coronal patch, with the frontal band broad, extending posteriad 9 mm. in mid-line from the exposed base of the culmen; center of crown, occiput, and nape occupied by a broad patch of Xanthine Orange, leaving a broad black collar behind it on the hind neck; mantle a little more violaceous than Hay's Blue; lower back and upper tail-coverts Dusky Blue × Indulin Blue. Breast (behind the black throat) near Azurite Blue; lower breast and flanks a little darker than the lower back; belly and under tail-coverts Auburn × Sanford's Brown. Remiges blackish; primaries, except outermost, with only a faint trace of bluish color on the outer margin; secondaries and tertiaries with broad outer margins near China Blue; greater upper wing-coverts margined like the secondaries; middle and lesser series a little brighter blue than the mantle; primary-coverts black with slightly stronger bluish outer margins than the primaries, under wing-coverts sooty, with traces of bright brown on the tips of the lower series, only faintly paler than the rest of the under side of the webs. Rectrices blackish, with outer margins near Dark Cadet Blue. Bill (in dried skin) blackish, with the mandible a little slaty; feet dark brown. Wing, 87.2 mm.; tail, 74.5; exposed culmen, 9.2; culmen from base, 13; tarsus, 26.

REMARKS: Females like the males but a little smaller, at least averaging so; wing, 79–82.1 mm. (as against 80–87); tail, 64–66 (as against 66–74.5).

The type is one of the darker-crowned

examples of the new form, but from this extreme there is a gradation of color on the area in question reaching a pale yellow extreme that is close to Deep Chrome. In *ignicapillus*, the color is a little more reddish than Orange Chrome. In *rufi-vertex*, it is nearer Cadmium Yellow or Orange.

Although the characters of this form are composed of a combination of certain features of *rufi-vertex* and *ignicapillus*, they are not intermediate between them. In the matter of the frontal band, *subsimilis* is even more marked than *ignicapillus*, having its width ranging from 7 to 11 mm., averaging 8.3. As noted above, the color of this cap also is not an intermediate hue but is duller than in either of the others.

SPECIMENS EXAMINED

I. r. rufi-vertex.—

COLOMBIA:

El Piñón, 1 ♂;
"Bogotá," 4 (♀).

ECUADOR:

Oyacachi, 2 ♂, 4 ♀;
Macas region, 1 (♀);
Zufiac, 3 (♀);
Tambillo, 2 (♀);
Asilan, 1 (♀);
Galgalan, 1 (♀);
"S. Ecuador," 1 (♀).

I. r. caeruleoventris.—

COLOMBIA:

Paramillo, 2 ♀ (incl. type).

I. r. ignicapillus.—

COLOMBIA:

Coast range west of Popayan, 3 ♂ (incl. type), 3 ♀;
Almaguer, 2 ♂;
"Antioquia," 1 (♀).

I. r. subsimilis.—

ECUADOR:

Mindo Valley, 1 ♂ (type);
Mindo, 1 ♂;
Gualea, 1 ♂, 2 ♀;
Nono, 2 (♀);
Aloag, 1 ♀;
above Intac, 2 ♂;
Verdecocha, 1 ♂, 1 ♀;
west side of Pichincha, 1 ♀;
"Quito-skin," 1 (♀);
"Chivinda" (ex Buckley), 1 ♂.

I. r. reinhardtii.—

PERÚ:

San Pedro, 1 ♂, 1 ♀;
Rumicruz, 1 ♂, 1 ♀, 1 (♀);
Maraynioc, 2 ♀;
Cueva Seca, 1 (♀).

***Iridosornis jelskii jelskii* (Cabanis)**

Iridornis Jelskii CABANIS, 1873, Jour. für Ornith., vol. 21, p. 316—Maraynioc, Perú; ♂; Berlin Mus.

Apparently never found anywhere in Perú except at Maraynioc, from which locality we have a number of specimens. The record from the Urubamba Valley is better assigned to the following form.

***Iridosornis jelskii bolivianus*
Berlepsch**

Iridosornis jelskii boliviana BERLEPSCH, 1912 (Feb.), Ber. V Internatl. Ornith. Kongr., Berlin, 1910, p. 1043—Unduavi, La Paz, Bolivia; ♂; Frankfurt Mus.

The two males from Cedrobamba, near Machu Picchu, recorded by Chapman (1921, Bull. U. S. Natl. Mus., vol. 117, p. 119) are closer to the Bolivian subspecies than to typical *jelskii*, although they are not so strongly marked as a female from Cocopunco, La Paz. The Cocopunco bird has only the faintest trace of yellow tips on the black feathers of the median line of the forehead—not noticeable except on close examination—and those on the anterior part of the crown are less prominent than in *jelskii*. In the Cedrobamba birds, the marking on the forehead is only slightly more pronounced but still weaker than in the Maraynioc examples. The correspondingly greater extension of the black pigmentation is further demonstrated in all three birds over the rest of the top of the head where the dark centers of the feathers are somewhat deeper black than in *jelskii* and reach nearer to the tips of the feathers. An additional character also is shown by all three specimens, although I can find no mention of it in discussions of *bolivianus*. This is the color of the mantle which is nearer an indigo hue than the more violaceous blue of the same area in *jelskii* (near dark Eton Blue instead of Deep Dull Violaceous Blue).

Although *bolivianus* might be expected to occur in extreme southeastern Perú adjacent to Bolivia, there are no records of the species from that region.

SPECIMENS EXAMINED

I. j. jelskii.—

PERÚ:

Maraynioc, 6 ♂, 4 ♀, 1 ♀¹.

I. j. bolivianus.—

PERÚ:

Cedrobamba, 1 ♂, 1 ♂¹.

BOLIVIA:

Cocopunco, 1 ♀.

***Iridosornis analis analis* (Tschudi)**

T[anagra] analis TSCHUDI, 1844 (May), Arch. Naturgesch., vol. 10, no. 1, p. 287—Perú; Lima (errore), Tschudi, 1846; C. Perú suggested, Berlepsch, 1912; Vitoc suggested, Hellmayr, 1936; cotypes in Mus. Neuchâtel, U. S. National Mus., and British Mus.

A male of this form from Cutucú, eastern Ecuador, extends the known range well to the northward, approaching somewhat closer to that of the allied *I. a. porphyrocephalus*. A specimen of the latter from Buckley's collection through the Boucard Museum is labeled "Sarayacu" where it is known that Buckley worked, but the only indication of locality is on the Boucard Museum label, and the word "Sarayacu" has been added to the label after the rest of the lettering which gives, simply, "Aequator." The specimen is of regular "Quito" preparation. The only definite Ecuadorian locality for *porphyrocephalus* is above Intac, on the western side of the Andes, although other "Quito" skins are known, one of which also is at hand. There is, thus, no near conflict of the ranges of *porphyrocephalus* and *analis*.

As in the case of other members of the genus *Iridosornis* (*reinhardti* and the *rufi-vertex* group), the subspecific distinction appears to be quite abrupt, but there are more points of resemblance than of difference. Among the similarities may be mentioned the pattern of pigmentation of the bill, common to *analis* and *porphyrocephalus* but not shared with the other conspecies.

I can see no distinctions in the series of *analis analis* from eastern Ecuador to southeastern Perú. Two birds from the Huayabamba Valley show some development of red on portions of the yellow throat, quite marked in one of them.

Friedmann and Deignan (1942, Zoologica, vol. 27, p. 52) consider one of Tschudi's specimens in the United States Na-

¹ Specimens in U. S. National Museum, Washington, D. C.

tional Museum as a cotype of *analís*, basing this contention on the fact that Tschudi did not specify any particular specimen as type in his published accounts of the species. There is no evidence, either, that Tschudi marked any of his birds as type, even without publishing that fact. In Berlepsch and Hellmayr's account of a limited number of Tschudi's birds in the Neuchâtel Museum (1905, Jour. für Ornith., vol. 53, pp. 6-20), the transcriptions of the labels there given show no such designation. Consequently, Friedmann and Deignan are probably correct in their contention. Another cotype is in the British Museum.

There is no justification for the claim that other specimens in the United States National Museum are types of Tschudi's species merely because Berlepsch and Hellmayr failed to mention those species in their paper. They expressly state that their discussion concerns only certain forms which are poorly known. Most of Tschudi's birds are thus left out of the account, although the types, or perhaps cotypes, of these were in the Neuchâtel Museum at the time and are still there. Without other evidence, therefore, I must consider the specimens in the United States National Museum as no more than cotypes at best.

Records of *analís* are from Achamal, Chirimoto, Pampa de Felipe, Ray-urmana, Utcubamba, Huaynapata, and San Antonio. Tschudi's citation of "Lima" is totally unsupported by any later evidence and must be considered erroneous.

SPECIMENS EXAMINED

I. a. analís.—

PERÚ:

Inca Mine, 2 ♂;
Santo Domingo, 6 ♂, 3 ♀;
Río Inambari, 4 ♂, 1 ♀;
Idma, 2 ♂;
Chilpes, 3 ♂, 4 ♀;
Utcuyacu, 2 ♀;
Garita del Sol, Vitoc, 1 ♂;
Chinchao, 1 ♂¹, 3 ♀¹;
Huachipa, 1 ♂¹;
Chachapoyas, 1 ♂;
Huayabamba [Valley], 1 ♂, 1 ♀.

ECUADOR:

Cutucú, 1 ♂.

I. a. porphyrocephalus.—

ECUADOR:

"Sarayacu" = "Quito-skin," 1 (?);
"Quito," 1 ♂.

COLOMBIA:

Cerro Munchique, 1 ♀;
Nóvita trail, 1 ♂;
Cocal, 2 ♂;
San Antonio, 4 ♂, 1 ♀ (?);
"Bogotá," 1 (?);
Medellín, 1 (?);
La Costa, El Tambo, 1 ♀;
"Colombia," 2 (?).

Delothraupis castaneiventris peruviana Carriker

Delothraupis castaneiventris [sic] *peruviana* CARRIKER, 1935 (Oct. 25), Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 358—Auquimarca, Perú; ♂; Acad. Nat. Sci. Philadelphia.

Most of the characters ascribed to this subspecies are of no value. There is no difference in the size of the bill in Bolivian and Peruvian specimens, and the intensity of color on the under parts, including the chin and throat, varies in both; in fact, the specimen immediately at hand with the least amount of whitish feathering at the base of the bill is from Bolivia.

However, the blackish malar stripe in the Peruvian birds is distinctly narrower and averages shorter than in the Bolivian examples, and the Bolivian birds have the wing shorter. Southeast-Peruvian birds, according to Carriker's measurements and one specimen from that area now before me, are intermediate in respect to the length of wing, but the bird at hand has the malar stripe like that of the birds from central Perú, indicating that southeastern birds belong to *peruviana* rather than to *castaneiventris*.

According to published measurements and the dimensions of the specimens examined, central-Peruvian birds (without regard to sex) have the wing 80-86 mm. in length; southeast-Peruvian birds, 79-81; Bolivian birds, 75-81.5.

Peruvian records thus are from Culumachay, Sillapata, Auquimarca, Pumamarca, San Gaban, Oconeque, and Santo Domingo.

SPECIMENS EXAMINED

D. c. castaneiventris.—

BOLIVIA:

¹ Specimens in Chicago Natural History Museum.

Incachaca, 1 ♂, 1 ♀, 1 (?)¹;
Quebrada Onda, 1 (?)².

D. c. peruviana.—

PERÚ:

Marcapata, 1 (?);
Pariayacu, 1 ♀, 1 ♀²;
Maraynioc, 1 ♀;
Panao, 3 ♂³, 2 ♀³;
mountains near Huánuco, 1 ♂³.

Anisognathus igniventris ignicrissus
(Cabanis)

Poecilothraupis ignicrissa CABANIS, 1873,
Jour. für Ornith., vol. 21, p. 317—Maraynioc,
Perú; Berlin Mus.

Poecilothraupis lunulata intercedens BERLEPSCH, 1912, Ber. V Internat. Ornith. Kongr.,
Berlin, p. 1044—Leimebamba; ♂; Frankfort
Mus.

Birds from the northern part of Perú
show a slightly longer average wing-length
than those from central Perú (89–96.5 mm.
as against 93–98) and also average very
slightly deeper red on the lower under
parts, but there is too much overlap in
both characters to permit the recognition
of *intercedens*.

Records are from Huambo, Vitoc, and
Tamiapampa.

I have elsewhere (1930, Publ. Field Mus.
Nat. Hist., zool. ser., vol. 17, p. 444)
given the reasons for supplanting *Poecilothraupis*
by the earlier *Anisognathus*.

Anisognathus igniventris igniventris
(D'Orbigny and Lafresnaye)

A [glai] igniventris D'ORBIGNY AND LAFRES-
NAYE, 1837, Mag. Zool., vol. 7, cl. 2, "Syn. Av.,"
p. 32—Apolobamba, Bolivia; Paris Mus.

This form replaces *ignicrissus* in the
southeastern part of Perú, including the
Urubamba Valley. Peruvian birds are
inseparable from Bolivian examples.

Records are from Chachupata [=
Ccachupata; Cachupata], San Gaban, and
Paucartambo.

SPECIMENS EXAMINED

A. i. igniventris.—

BOLIVIA:

Pucuyuni, 1 ♂;
Cillutinacara, 2 ♂;
Cocopunco, 1 (?)²;

near Río Aceramarca, 2 ♂;
Incachaca, ♂¹, 3 ♀¹.

PERÚ:

Marcapata, 1 ♂;
Limbani, 2 ♂, 1 ♀, 1 (?)²;
Cedrobamba, Machu Picchu, 1 ♂.

A. i. ignicrissus.—

PERÚ:

Maraynioc, 4 ♂, 2 ♀;
Panao, 1 ♂³;
mountains near Huánuco, 5 ♂³, 5 ♀³;
Compan [Cumpang], 1 (?)²;
Levanto, 3 ♂, 1 ♂³;
mountains east of Balsas, 1 ♀³;
Leimebamba, 2 ♀;
Chachapoyas, 1 ♀;
La Lejia, 5 ♂;
San Pedro, 2 ♂.

A. i. erythrotus.—

ECUADOR: 54.

A. i. lunulatus.—

COLOMBIA: 39.

Anisognathus lacrymosus caerulescens
(Taczanowski and Berlepsch)

[*Poecilothraupis palpebrosa*] *caerulescens* TAC-
ZANOWSKI AND BERLEPSCH, 1885, Proc. Zool.
Soc. London, p. 80, in text—Cutervo, Perú;
♂; type from Berlepsch Collection in Amer.
Mus. Nat. Hist.

The allocation of the name *caerulescens*
is open to a certain amount of study. The
first use of the name is in the reference cited
above where it appears in the discussion
of three birds from San Rafael, eastern
Ecuador, which Taczanowski and Berlepsch
found to be intermediate between Bogotá
and Antioquia examples of "*palpebrosa*"
and examples from Cutervo, northern
Perú. Actually, Bogotá and Antioquia
birds belong to *olivaceiceps*, but that does
not affect the application of the name
caerulescens. After noting the intermedi-
ate character of the San Rafael birds,
Taczanowski and Berlepsch give the char-
acters that distinguish them from the
Bogotá and Antioquia form and state that
they belong to the "subsp. *caerulescens*,
Berl. MS." The characters are even
more pronounced in the birds from Cutervo
and vicinity than in those from San Rafael,
as may be supposed by the comment on
intermediacy. Since Cutervo is cited in
this 1885 account, it, too, must be counted
as one of the original localities.

It was not until 1912 (Ber. V Internat.
Ornith. Kongr., Berlin, 1910, p. 1046)

¹ Specimens in Carnegie Museum, Pittsburgh.

² Specimen in U. S. National Museum, Washington,
D. C.

³ Specimens in Chicago Natural History Museum.

that Berlepsch published a formal description of *caerulescens* with citation of the type specimen, but at that time he noted Cutervo as type locality and specified No. 6784 from his collection as the type, which specimen came into possession of the American Museum of Natural History some years ago and is now before me, marked in Berlepsch's handwriting as "typus." Since he acquired this skin in 1880, as noted on the label, it was in his possession at the time of the publication of the paper by Taczanowski and himself in 1885 and was, without question, one of the original series. There is no reason, therefore, to refuse to accept it as the type of *caerulescens*, the type locality of which is, accordingly, Cutervo, Perú.

The matter is of some importance since the birds from the area adjacent to San Rafael are closer to true *palpebrosus* than to the north-Peruvian form, although Taczanowski and Berlepsch's material may have shown a trend in the other direction. To attempt to cite San Rafael as type locality of *caerulescens*, 1885, as has been done by Hellmayr (1936, Publ. Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 9, p. 187) would necessitate providing a new name for the Cutervo form, a procedure for which there is no need.

This north-Peruvian form, *caerulescens*, differs from *palpebrosus* by lighter yellow under parts, lighter and duller upper parts with a tinge of blue (weaker than in *lacrymosus* of central Perú), and a paler and duller tone of blue on the upper wing-coverts than in either of the others, though closer to the color in *lacrymosus*. The yellow post-auricular spot and the smaller subauricular blotch are present in all the specimens examined, although it is weaker in one or two of the skins from La Lejía, east of the Marañón, than in the others. Hellmayr (*loc. cit.*) found the post-auricular spot lacking in a Cutervo specimen he examined, but it is quite pronounced in the type.

There is perfect intergradation between *caerulescens* and *palpebrosus*. A series of birds from southern Ecuador (Taragua-cocha, Loja, and Oña) have the under parts only a little deeper in color than that

area in the Peruvian birds; the upper parts average less bluish and a little darker, and the upper wing-coverts are usually a little deeper blue. North-Ecuadorian birds from as far south as the Macas region (which is south of San Rafael) have the under parts averaging still deeper yellow, with the extremes overlapping both the south-Ecuadorian and the Colombian series; the upper parts are not quite so dark as in the Colombian birds and show as little bluish tinge as in *palpebrosus*; and the color of the upper wing-coverts is deep blue, also as in *palpebrosus*. They form the pale extreme of *palpebrosus*, and the dividing line between *palpebrosus* and *caerulescens* thus appears to lie south of the Macas region, between that point and Loja, although it is not sharp at any point.

A similar intergradation takes place between *palpebrosus* and *olivaceiceps* in the central Andes of Colombia where *palpebrosus* occurs at Laguneta, on the western slope, with a tendency toward an olive tinge on the forehead and over the eye. At Medellín, a little farther to the northward, *olivaceiceps* is well developed, and a single bird from Río Toché, very near to Laguneta but on the eastern slope of the Central Range, is distinctly closer to *olivaceiceps* than to *palpebrosus*, even as the latter is modified in the Laguneta specimens. A Bogotá skin shows an approach toward *tamae*.

Records of *caerulescens* are from Paucal, Tambillo, and Leymebamba.

Anisognathus lacrymosus lacrymosus (Du Bus)

Tachyphonus lacrymosus DU BUS, 1846, Esq. Ornith., no. 2, pl. 10—Perú (I suggest Maraynioc); Brussels Mus.

The yellow post-auricular spot is quite absent from most of the individuals of this form, but occasionally there is a suggestion of it on one or two feathers.

Records are from Higos, Chilpes, and Cumpang (= Compan).

[Anisognathus lacrymosus palpebrosus (Lafresnaye)

Tanager palpebrosa LAFRESNAYE, 1847, Rev. Zool., vol. 10, p. 71—"Pasto in Peruvia,"

errore = Pasto, Colombia; ♂; Acad. Nat. Sci. Philadelphia.

Although ostensibly from Perú, it is conceded that the locality, Pasto, refers to the place of that name in Colombia. The original description agrees with the characters of the subspecies found in that region to which the name has been assigned in recent years. That subspecies does not reach any part of Perú.]

SPECIMENS EXAMINED

A. l. lacrymosus.—

PERÚ:

Maraynioc, 1 ♂, 2 ♀;
Rumicruz, 6 ♂, 1 ♀.

A. l. caerulescens.—

PERÚ:

Cutervo, 1 ♂ (type);
Chugur, 4 ♂, 2 ♀;
Taulis, 2 ♂, 1 ♀;
El Tambo, 3 ♂, 3 ♀;
La Lejia, 2 ♂, 3 ♀.

ECUADOR:

Loja, 1 ♂, 1 ♀;
Taraguacocha, 3 ♂, 3 ♀;
south of Ofia, 1 ♀.

A. l. palpebrosus.—

ECUADOR:

(Papallacta, Oyacachi, upper Sumaco, above Baeza, Sical, Zuñac, Tambillo, Galgalan, Macas region, and Monji), 14 ♂, 12 ♀, 6 (?).

COLOMBIA:

(Almaguer, coast range west of Popayan, Santa Isabel, Laguneta, and "Bogotá" = *errore*; not a Bogotá-skin), 17 ♂, 14 ♀, 1 (?).

A. l. olivaceiceps.—

COLOMBIA:

(Medellin, Santa Elena, Paramillo, Río Toché, Sabanalarga, and "Bogotá"), 5 ♂, 6 ♀, 2 (?).

A. l. tamae.—

VENEZUELA:

Parámo Tamá, 2 ♂ (incl. type¹).

A. l. melanops.—

VENEZUELA:

(Mérida, Culata, Nevados, Escorial, El Valle, El Loro, and Cicua Nevada), 14 ♂, 2 ♀, 8 (?).

A. l. melanogenys.—

COLOMBIA:

Santa Marta, El Libano, 4 ♂;
San Lorenzo, 5 ♀.

Buthraupis montana cyanonota

Berlepsch and Stolzmann

Buthraupis cucullata cyanonota BERLEPSCH AND STOLZMANN, 1896, Proc. Zool. Soc. London,

p. 342—Maraynioc, Perú; ¹cotypes, ♂ in Warsaw Mus., ♀ in Amer. Mus. Nat. Hist.

Berlepsch and Stolzmann had five specimens from Maraynioc when they described their *cyanonota*. Stolzmann and Domaniewski (1927, Ann. Zool. Mus. Pol. Hist. Nat., vol. 6, p. 184) claim a male in the Warsaw Museum as type but no specimen was singled out for that honor in the original account, and one of the five original examples (from the Rothschild Collection and now before me) is marked "typus" on the original label. It is a female, while the Warsaw "type" is a male. Presumably both specimens are of equal rank as cotypes of the subspecies.

I can find no distinctions between birds from northern Perú and those from the central part of the country.

Records are from Higos and Pangoa.

***Buthraupis montana saturata* Berlepsch and Stolzmann**

Buthraupis cucullata saturata BERLEPSCH AND STOLZMANN, 1906, Ornith., vol. 13, p. 80—Idma, Santa Ana, Perú; ♂; Warsaw Mus.

Apparently confined to southeastern Perú and the Urubamba Valley. Records are from Idma [Santa Ana], and Marcapata Valley.

There appears to be some uncertainty regarding the record from Cosñipata. Sclater and Salvin (1873, Proc. Zool. Soc. London, p. 185) give a list of the species represented in the collection made by Whitely in that general region and not included in a former report. The birds secured at a number of different localities are supposedly marked with distinguishing letters, and the remainder are said to have come from Cosñipata, among which is "*Buthraupis cucullata*." However, on the following page, there is a special discussion of the form in question of which Whitely is said to have taken two examples at "Huasampilla," with no mention of Cosñipata. Whitely must have taken more than the two examples mentioned, since two are listed in the "Catalogue of birds in the British Museum," (vol. 11, p. 148), Berlepsch (1896) noted one in his collection, and one is in the American Museum of Natural History, all collected by

¹ Specimen in collection of William H. Phelps, Caracas, Venezuela.

Whitely at "Huasampilla." Nevertheless, there is no apparent reason why *saturata* should not occur at Cosñipata, although the record has yet to be made.

SPECIMENS EXAMINED

B. m. montana.—

BOLIVIA:

- Cocapata, 1 ♂, 1 ♀;
San Cristóbal, 1 ♂;
Tanampaya, 1 ♂;
Chaco, Yungas, 1 ♂.

B. m. saturata.—

PERÚ:

- Limbani, 1 ♂;
below Limbani, 1 ♂;
Huasampillo, 1 (?);
Torontoy, 1 ♂.

B. m. cyanonota.—

PERÚ:

- Maraynioc (Tambo de Aza), 1 ♀ (cotype);
Maraynioc, 1 ♂, 4 ♀;
Rumieruz, 2 ♀;
Compan, 1 (?);
Leimebamba, 1 ♀, 1 (?);
La Lejía, 2 ♂, 2 ♀.

B. m. cucullata.—

ECUADOR: 34.

COLOMBIA:

- (Almaguer, Cocal, Cerro Munchique, Laguneta, and Santa Isabel), 5 ♂, 6 ♀.

B. m. gigas.—

COLOMBIA:

- Subia, 1 ♂, 1 ♀;
El Piñón, 3 ♀;
Anolaima, 2 ♂;
"Bogotá," 12 (?).

Compsocoma flavinucha somptuosa
(Lesson)

Tachyphonus somptuosus LESSON, 1831, *Traité d'ornithologie*, p. 463—no locality; the type in the Paris Museum said to have been collected in Perú.

Examples of this species from northern Perú and southeastern Ecuador are recognizably distinct from those found in central Perú. Not only is the yellow color of the under parts and the crown somewhat deeper in tone, as pointed out by Chapman (1926, *Bull. Amer. Mus. Nat. Hist.*, vol. 55, p. 670), but the outer margins of the rectrices are brighter and less greenish blue, the outer margins of the remiges also less greenish although not so distinctly brighter. A bird from Cueva Seca, on the Río Mixiollo, Huallaga Valley, is clearly like the northern examples, while three skins from Cushi Libertad are more

like the Junín specimens although with a trend toward the characters of the northern birds.

It is justifiable, therefore, to separate the two populations under distinctive names, but this cannot be done until it is determined to which form the type of *somptuosa* belongs. Hellmayr (1936, *Publ. Field Mus. Nat. Hist.*, zool. ser., vol. 13, pt. 9, p. 203) notes that the type was collected by Ajassou, but I am quite unfamiliar with this name and have no information as to the portion of Perú in which he may have traveled. The naming of the new form must, therefore, await the determination of the application of the name *somptuosa*.

Records which belong to the northern population are from Charapi, Chirimoto, Ray-urmana, and Piquitambo. Records that are assignable to the Junín form are from Paltaypampa, Garita del Sol, Auquimarca, "Marca" (probably Auquimarca), Chanchamayo, and "Eastern Perú" (Tschudi).

Compsocoma flavinucha flavinucha
(D'Orbigny and Lafresnaye)

T[achyphonus] flavinucha D'ORBIGNY AND LAFRESNAYE, 1837, *Mag., Zool.*, vol. 7, cl. 2, "Syn. Av.," p. 29—Yungas (Bolivia); Paris Mus.

Although not recorded heretofore, this form occurs in southeastern Perú in the vicinity of Santo Domingo. I can find no distinctions between Peruvian and Bolivian birds.

SPECIMENS EXAMINED

C. f. somptuosa.—

PERÚ:

- Chaupe, 2 ♂, 3 ♀;
Uchco, 1 ♂;
Chachapoyas, 1 ♂, 2 ♀;
Cueva Seca, 1 [♀];
Chilpes, 5 ♂, 3 ♀;
Cushi Libertad, 2 ♀, 1 ♀.

ECUADOR:

- Zamora, 2 ♂, 1 ♀;
Sabanilla, 1 ♂, 2 ♀;
Cutucú, 1 ♀.

C. f. flavinucha.—

PERÚ:

- Santo Domingo, 9 ♂, 7 ♀;
Inca Mine, 2 ♂.

BOLIVIA:

- Incachaca, 8 ♂, 2 ? ♂, 4 ♀;

Locotal, 1 ♂, 2 ♀;
 Roquefalta, 1 ♂, 1 ♀;
 Quebrada Onda, 1 ♂;
 San Cristóbal, 1 ♂.

C. f. alamaris.—

ECUADOR:

(Alamor, Salvias, El Chiral, San Bartolo, and Celica), 17 ♂ (incl. type), 7 ♀.

C. f. baezae.—

ECUADOR:

Baeza, 6 ♂ (incl. type), 3 ♀;
 below Baeza, 1 ♀;

(a series of specimens collected by Goodfellow and Hamilton and labeled "w. Pichincha," "Mindo," "above Milligalli," and "Canzacota"—*errore*), 5 ♂, 3 ♀.

C. f. cyanoptera.—

ECUADOR:

"Papallacta" (*errore*, by Goodfellow and Hamilton), 6 ♂, 3 ♀;
 (Pallatanga, Gualaea, "Quito," Zaruma, Porvenir, and "Equador"), 2 ♂, 5 ♀, 2 (?).

COLOMBIA:

[San Antonio, Cerro Munchique, La Florida, La Sierra, Salento, east of Palmira, Gallera, Cocal, Cauca Valley, El Roble (near Salento, not E. Andes), "New Grenada" and "Bogotá" (*errore*; not a "Bogotá trade skin"), 19 ♂, 15 ♀, 7 (?).

C. f. victorini.—

COLOMBIA:

(Subia, El Roble, La Candela, near San Augustin, Anolaima, La Palma, and "Bogotá"), 15 ♂, 5 ♀, 8 (?).

C. f. antiophae.—

COLOMBIA:

(Barro Blanco, Santa Elena, Paramillo Trail, Las Cruces, Retiro, La Ceja, El Eden, Medellin, and Río Toché), 8 ♂, 4 ♀, 6 (?).

C. f. venezuelana.—

VENEZUELA:

[Galipan, Cumbre de Valencia, near Bucarito (Tocuyo), Colonia Tovar, between El Limón and Colonia Tovar, "Caripé" (*ex* Mocquerys; presumably not the Caripé in Bermúdez)], 5 ♂, 5 ♀, 6 (?).

Dubusia taeniata stictocephala Berlepsch and Stolzmann

Dubusia stictocephala BERLEPSCH AND STOLZMANN, 1894, Ibis, vol. 6, pt. 6, p. 386—Maraynioc, Perú; cotypes in Warsaw Mus., Amer. Mus. Nat. Hist., and possibly Frankfort Mus.

There is a wide hiatus between the known ranges of this form and typical *taeniata*, embracing the whole of northern Perú south to the Junín region. Nevertheless, I consider the differences to be only of subspecific value. Specimens of *taeniata* from eastern Ecuador frequently show a definite trend toward the characters

of *stictocephala* by having the feathers of the mantle distinctly tipped with silvery blue and those of the hind neck sometimes even more brightly marked. It is possible that closer intergrades may yet be found in suitable terrain in northern Perú. The range of *taeniata* approaches the Peruvian border but is not known to cross it.

Among the material at hand is one of Berlepsch and Stolzmann's original specimens clearly marked "typus." Since a "type" is claimed for the Warsaw Museum and other specimens, possibly cotypes, are said to be in the Berlepsch Collection, now in the Frankfort Museum, I must consider the bird at hand and the Warsaw specimen as cotypes—possibly also the Frankfort examples.

Records of *D. t. stictocephala* are from Huarmipaycha and Occobamba Valley.

Hellmayr (1936, Publ. Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 9, p. 197) proposes the acceptance of *Dubusia selysia* = *Tanagra selysia* as type of the genus *Dubusia* by "virtual orig. desig." as being the sole species in the original account whose specific name was there listed in combination with the new generic name. I doubt the validity of this claim. In the first place, the name *taeniata* is listed also in combination with *Dubusia*, and even if *taeniata* and *selysia* are synonymous, as appears to be the case, Bonaparte did not consider them as such and did not specify either as the type. In any case, seven other species are assigned by Bonaparte to *Dubusia*, albeit without formally combining the specific and the new generic names, and any one of them is available as type. To avoid any possibility of confusion or undue change in accepted nomenclature, I hereby designate *Dubusia selysia* (Bonaparte) = *Tanagra selysia* Bonaparte as type of the genus *Dubusia* Bonaparte, 1850.

SPECIMENS EXAMINED

D. t. taeniata.—

VENEZUELA:

Escorial, Mérida, 1 ♂;
 San Antonio, Mérida, 1 ♂.

COLOMBIA:

("Bogotá," El Piñón, Subia, and west of Popayán), 2 ♂, 2 ♀, 1 (?).

ECUADOR:

(Pichincha, Yanacocha, "Quito," Chivinda, Taraguacocha, Zuñac, Riobamba, Baeza, Oyacachi, Sumaco, Macas region, and "Napo?"), 9 ♂, 6 ♀, 7 (?).

D. t. stictocephala.—

PERÚ:

Maraynioc, Pariayacu, 1 ♂ (cotype);
Rumicruz, 1 ♂, 2 ♀.

***Thraupis episcopus quaesita* Bangs and Noble**

Thraupis cana quaesita BANGS AND NOBLE, 1918, Auk, vol. 35, p. 460—Sullana, Perú; ♀; Mus. Comp. Zool.

This subspecies is confined to the region west of the Andes in extreme northwestern Perú, western Ecuador, and southwestern Colombia. Whereas there is in *caerulea* some indication of a trend toward this form, I can find no suggestion of a similar, opposite trend in *quaesita*, even in birds from Palambra, just across the divide from Huancabamba.

Records are from Sullana, Paletillas, Mórrope, Paucal, Piura, La Laja, Romero, and Lechugal.

***Thraupis episcopus mediana*, new subspecies**

TYPE: From Manaos, Brazil. No. 233638, American Museum of Natural History. Adult male collected August 20, 1927, by G. H. H. Tate and T. D. Carter; original no. 38.

DIAGNOSIS: Similar to *T. e. episcopus* of French Guiana, but males with the top of the head a little deeper blue and wing with more white on the greater upper coverts—usually with a decided bar formed by the white tips of these feathers.

RANGE: Southwestern Venezuela, on the Cassiquiare; northern Brazil on the Rio Negro and Rio Uaupés (and the Colombian side of the Uaupés); east to the Rio Jamundá and (on the south bank of the Amazon) to the Tapajoz; west to the Rio Madeira (both banks), ascending that stream to Porto Velho and possibly farther.

DESCRIPTION OF TYPE: Top of the head Lumiere Blue × Etain Blue (Pale Nero-palin Blue);¹ mantle Glaucous-Blue (Cadet

Gray); rump Sky Gray (pale Burn Blue); upper tail-coverts a little darker. Throat Pale Glaucous-Blue (Sky Gray); breast and sides Persian Blue (Burn Blue); flanks like the sides; belly a little paler; under tail-coverts duller. Primaries and secondaries with outer margins Olympic Blue (Vanderpoel's Blue); tertials duller—a little greenish—with indistinctly defined whitish areas at the tips of the outer webs; greater upper wing-coverts broadly tipped with white extending basad along the outer margins of the feathers—rather broadly on the outer ones; lesser and median coverts white; under wing-coverts whitish washed with pale blue; inner margins of remiges pale. Tail with exposed outer margins the color of the primary margins. Bill (in dried skin) blackish; feet dusky brown. Wing, 87.5 mm.; tail, 62; exposed culmen, 13; culmen from base, 17; tarsus, 20.

REMARKS: Females sometimes indistinguishable from the males but averaging paler and duller and with less white on the greater upper wing-coverts; shoulder usually clearer white, less lilac tinged.

This form is admittedly intermediate between *episcopus* and *coelestis*, but it is relatively consistent over a very extensive range and deserves recognition as a distinct form.

While *T. e. episcopus* often has the shoulder apparently clear white, especially when comparison is made with the lilac-shouldered *nesophila*, there is usually a trace of lilaceous coloration, sometimes quite obvious, against which the shoulder of *mediana* appears still whiter. The pale tips and edges of the greater upper wing-coverts also are definitely lilac-blue in all Guianan birds and never form a decided wing-bar, whereas in *mediana* they are whiter and often very broad and conspicuous.

There is more tendency toward intergradation between *mediana* and *episcopus* than between *mediana* and *coelestis* where the distinction is more abrupt. Specimens from the Xingú, Tapajoz, Pará district, and northern Goyaz are very close to the Guianan specimens, although they show a little stronger tinge of lilac on the shoulder

¹ Colors in parentheses are with the bird held toward the light.

in some examples. In any case, none of these birds has a well-marked wing-bar and but little whitish edging is on the greater wing-coverts. My material from the Tapajoz and Villa Bella Imperatriz, just west of that stream, is limited, but has more pronounced white on the greater coverts as do specimens from Faro, on the north bank of the Amazon. When the series are laid out from the different areas, these Faro-Tapajoz-Villa Bella Imperatriz birds agree a little better with *mediana* than with *episcopus*.

Likewise, an occasional specimen from the course of the Rio Negro and its upper affluents shows a diminution of white on the wing-coverts suggesting a trend toward *episcopus*, but other examples from the identical localities frequently show a decided, white wing-bar, preventing association with the Guianan form. One bird from San Gabriel has the blue areas rather greener and shows a decided likeness to *leucoptera* of eastern Colombia. It is the only specimen so marked.

Two birds from Mt. Duida are rather difficult to place. Neither has much white on the greater wing-coverts, although both are sexed as males. They can be matched more closely with certain extreme examples of *mediana* than with *episcopus*, especially in respect to the darker hue of the head, and probably belong to *mediana* as, indeed, the geographic position would suggest.

A bird labeled "Yungas, Bolivia," collected by Rusby, belongs to this form but may have been collected outside of the boundaries of Bolivia, perhaps on the Rio Madeira. There is no other record from Bolivia.

Association of the Duida birds with *episcopus episcopus* is difficult for geographic reasons. I find myself unable to agree with Hellmayr (1936, Publ. Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 9, p. 213, footnote 1) that birds from the Orinoco Valley are pronouncedly intermediate between *cana* and *nesophila*, but find them decidedly close to *nesophila* with very little variation in the direction of *cana*. On the other hand, an occasional *cana* shows a little more violaceous coloration

on the shoulder than the great majority of specimens of that form, and between Caracas and the Paria Peninsula there is evident intergradation, making the identification of birds from that area rather puzzling; but Orinoco birds I believe to be unequivocally referable to *nesophila*, at least as far upstream as Maipures and Ayacucho.

In this same category are specimens from Roraima and Auyan-tepui in Venezuela, and from Frechal, Rio Surumú, Brazil—all with strongly violaceous shoulders. There is a tendency toward *episcopus* in this region, evidenced by somewhat paler violaceous shoulders than in Orinoco birds. On the other hand, specimens of *episcopus* from British Guiana show a trend toward *nesophila* by having more evident violet tints on the shoulder, but here the closest affinity is with the Cayenne population.

In any case, the presence of *nesophila* in an intermediate area seems to close any avenue of connection between the Guianas and Duida.

***Thraupis episcopus caerulea* Zimmer**

Thraupis episcopus caeruleus ZIMMER, 1929, Proc. Biol. Soc. Washington, vol. 42, p. 94—Vista Alegre, Perú; ♂; Chicago Natural History Museum.

I have found the delimitation of this form extremely difficult since there is perfect intergradation between it and *coelestis* of the upper Amazonian region of western Brazil. There is no point at which sharp demarcation takes place.

Beginning at Caviana, west of the Rio Madeira, there is an increase in the intensity of coloration on the top of the head, which reaches its strongest development in the neighborhood of Moyobamba. A Caviana male has the top of the head Light Neropalin Blue (with the bird held toward the light). At Tefé, the color approaches Neropalin Blue. At Tonantins, the darkest bird has the cap Neropalin Blue × Alice Blue. Males from north-eastern Perú and one specimen from Loretoyacu, Colombia, reach a greater extreme, sometimes approaching Pale Cadet Blue, but in general the hue remains in the clear "Blue" column, not verging on the greenish tones.

These birds from Caviana westward also have the mantle relatively clear and light in hue and with a bluish tinge when held toward the light. The tips of the feathers are a little paler than the subterminal areas and, when the plumage is abraded, often appear conspicuously light.

At the most strongly colored end of the scale are, as noted, some of the Moyobamba males which have the top of the head approaching Vanderpoel's Blue. Other males from the same region are less intensely colored, with the cap near King's Blue, and still others are intermediate. These birds appear to be adult, since examples that are obviously immature have the cap still duller and the shoulder and wing-bar very dull or obsoletely marked—not the clear white of adults. In the upper Huallaga region there is less intensity of blue on the head, and in the middle Marañón region and other adjacent areas the color is even more greenish, approaching Squill Blue. All these birds, however, have the mantle darker, more clouded, and more greenish in tone than in the birds of the lower, more eastern region, and the outer surface of the wing and tail also averages more greenish blue. In spite of the range of variation, therefore, all these Andean birds may be included in *caerulea* in default of a number of additional groups of minor importance in which each degree of difference would have to be segregated.

Some difficulty occurs in trying to assign the specimens from the lower Huallaga and the Ucayali rivers. They show various stages of intermediacy but are not certainly assignable to one form or the other. In general the Ucayali birds show a closer approximation to *coelestis*, having the mantle relatively light in color and the cap rather clear blue. The lower Huallaga birds have the mantle rather clearer than that of typical *caerulea*, but the head is a little more greenish blue than in *coelestis*. I prefer to keep them in *caerulea*.

Females of *coelestis* are distinguishable from females of *caerulea* by their lighter color of head and back, although in both forms the coloration of the head is less strongly developed than in the respective males.

Two specimens from Huancabamba and Pucará, respectively, have the wing-bar greatly reduced and the shoulder-patch noticeably lilaceous instead of white. Both appear to be adult males. Since the range of *quaesita*, with its blue shoulder and no wing-bar, occurs just over the divide on the western side of the Western Andes, perhaps the peculiarity of the two skins in question is an indication of a degree of intermediacy.

Peruvian records of *caerulea*, as limited here, are from Callacate, Viña, Jeberos, Chamicuros, Guajango, and Huambo.

Thraupis episcopus coelestis (Spix)

Tanagra coelestis SPIX, 1826, Av. Spec. Nov. Brasil., vol. 2, p. 42, pl. 55, fig. 2—(part) descr. male; Fontebôa and Pará, Brazil; ♂; restricted to Fontebôa by Hellmayr, 1906; Munich Mus.

Tanagra ehrenreichi REICHENOW, 1915, Ornith. Monatsber., vol. 23, p. 154—Hyutanahán, Rio Purús, Brazil; 2 ♂, 1 ♀; Berlin Mus.

This subspecies, as noted in the discussion of *caerulea*, is variable, showing the strongest coloration in the more western part of the range and the lightest toward the east. I have not seen material exactly topotypical of *coelestis*, but specimens from Tefé and from São Paulo de Olivença are not distinguishable from each other, and Fontebôa lies between these two localities.

Several specimens from the Rio Purús, kindly lent by Mr. Todd, show the agreement of the supposedly distinct "*ehrenreichi*" with *coelestis* and not with the form from the Rio Madeira separated hereunder.

Peruvian records that may be assigned to *coelestis* are from Pebas, Cumaria, and "Lower Ucayali."

Thraupis episcopus major (Berlepsch and Stolzmann)

Tanagra coelestis major BERLEPSCH AND STOLZMANN, 1896, Proc. Zool. Soc. London, p. 343—La Merced, Chanchamayo, and Garita del Sol, Perú; cotypes in Warsaw Mus., Amer. Mus. Nat. Hist., and Frankfurt Mus.

The name *major* is not highly appropriate for this form since most examples of it are no larger than individuals of some other forms. The form is, however, quite distinct, although relatively limited in distribution, being confined to the Chancha-

mayo Valley region of central Perú. Its colors are lighter in tone than those of the other Peruvian forms except a new subspecies from southeastern Perú described hereunder.

Berlepsch and Stolzmann did not publish any facts indicating the selection of a definite type specimen of this form, although Stolzmann and Domaniewski (1927, Ann. Zool. Mus. Pol. Hist. Nat., vol. 6, p. 185) claimed this honor for a male in the Warsaw Museum. There are, however, other specimens apparently entitled to share the honor of the rank of cotypes. Among these are two of the original series collected by Kalinowski—a male from Garita del Sol and a female from La Merced, both marked "typus" on the original labels. A third male from La Merced, with similar origin, is not marked in this way, indicating some selection in the matter, even though nothing was published concerning it in the original account. The type locality may remain as La Merced.

Records that should be assignable to *major* are from San Juan.

***Thraupis episcopus urubambae*, new subspecies**

TYPE: From Santa Ana, Urubamba Valley, Perú; altitude 3500 feet. No. 145784, American Museum of Natural History. Adult male collected July 15, 1916, by Frank M. Chapman and George K. Cherrie.

DIAGNOSIS: Similar to *T. e. major* of central Perú, but top of the head paler and duller. Wing-bar averaging a little less clearly white.

RANGE: Urubamba Valley and extreme southeastern Perú in the Amazonian drainage.

DESCRIPTION OF TYPE: Top of the head Dark Glaucous-Gray (Light Medici Blue); mantle Grayish Blue-Green × Deep Grayish Blue-Green (Medici Blue × Deep Medici Blue); rump Pale Dull Glaucous-Blue × Light Niagara Green (Pale Russian Blue); upper tail-coverts about like the mantle. Throat and breast Pale Glaucous-Blue (Russian Blue × Pale Russian Blue); flanks slightly darker; belly and under tail-coverts paler. Outer

margins of outer remiges Motmot Blue × Methyl Green (Chessylite Blue), becoming darker and a little greener on the inner feathers. Shoulder white; greater wing-coverts tipped with slightly dull whitish; under wing-coverts white; inner margins of remiges dull whitish. Tail with exposed edges like the outer margins of the primaries. Bill (in dried skin) blackish; feet dark brown. Wing, 99 mm.; tail, 66.5; exposed culmen, 11.5; culmen from base, 16; tarsus, 19.8.

REMARKS: Female like the male but averaging duller and paler and usually with the wing-bar reduced or inconspicuous.

This form appears to be relatively constant in characters and shows no distinctions between the Urubamba Valley and southeastern Perú.

Peruvian records are from Marcapata, Pintobamba, Occobamba, Huaynapata, Chaquimayo, San Gaban, and Astillero.

Through the kindness of Mr. Rodolphe de Schauensee of the Academy of Natural Sciences of Philadelphia, I have been able to examine the type and other specimens of *T. e. boliviana* whose relationship to *urubambae* might have been questioned.

This is a puzzling form whose status cannot be determined with complete satisfaction until more adequate series of birds are available from western Bolivia. *T. e. boliviana* would make a good connectant between the *episcopus* and *sayaca* groups. The color of wings and tail is that of *sayaca*, the wing-bar is nearly obsolete though lightly suggested, and the shoulder is neither white nor the deep blue of *sayaca* but an intermediate hue that is different in all four known specimens of *boliviana*. In the type, from Chatarona, the shoulder is Light Neropalin Blue (held toward light); in the female from Chatarona it is a duller tone of the same hue; in the male from Huanay, it is much more whitish, with a tinge of blue; and in the other bird from Huanay (with sex questioned but with the notation "T.M.E.") the shoulder is more strongly blue than in the Huanay male but less than in the Chatarona female.

The top of the head and the back are paler than in *urubambae* but with a slight

bluish tinge, and are much paler than in *sayaca obscura*.

T. sayaca obscura is at hand from Apolo and is recorded from Sandillani. Both these localities are at higher elevations than Huanay and Chatarona, so it is not impossible that there is a zonal separation of ranges of the two groups in northwestern Bolivia. Nevertheless, *T. episcopus urubambae* is found at Santo Domingo, Perú, at an elevation as high as that of Apolo, and *obscura* occurs at Todos Santos, lower than Huanay.

Four specimens collected by Rusby in Bolivia are at hand. Two examples of *obscura* are labeled as from the [Province of] Yungas, 6000 feet, presumably quite correctly; a third example of the same form is labeled as from the lower Beni, while a specimen of *T. e. mediana*, probably from the lower Beni, is labeled as from the Yungas at 6000 feet. I suspect that the labels of these last two birds should be transposed. That would place the specimens of *obscura* as coming from somewhere near Sandillani and the example of *mediana* as taken on the lower Beni where it may be suspected to occur.

Thus, there is a possibility that *boliviana* represents an intermediacy between *T. s. obscura* and *T. e. mediana*, but until more is known of the variability of the population in the upper Beni region, it would be unwise to propose specific union of the two groups, both of which occur there, although apparently not at the same localities. Union of the two groups would necessitate the use of the specific name, *sayaca*, for the combined group.

SPECIMENS EXAMINED

T. e. episcopus.—

FRENCH GUIANA:

(Cayenne and Approuague), 4 ♂, 4 ♀, 1 (?).

DUTCH GUIANA:

(Paramaribo, Kwata, and "Surinam"), 13 ♂, 1 ♀, 1 (?).

BRITISH GUIANA:

(Rockstone, Minnehaha Creek, Wismar, Potaro Landing, Tumatumari, Quonga, Annai, and "Demerara"), 7 ♂, 3 ♀, 10 (?).

BRAZIL:

(Utinga, Pará, Igarapé Assú, Maguary,

and Camotins), 5 ♂, 2 ♀;
Ilha São Luiz, 2 ♂, 4 ♀, 1 (?);
Maranhão (Estiva, Ilha Jeanna, and Ilha Bom Fin), 1 ♂, 2 ♀;
Piahy, Therezina, 3 ♂;
Rio Tocantins (Baião and Mocajuba), 6 ♂, 1 ♀;
Rio Xingú (Tapará and Porto de Moz), 7 ♂, 1 ♀;
Rio Majary, Recreio, 1 ♂.

T. e. mediana.—

BRAZIL:

Rio Negro, Manaos, 14 ♂ (incl. type), 11 ♀;
(Muirapimá, Igarapé Cacao Pereira, Tauapessasu, Tahuapunto, Iauarete, Tatú, San Gabriel, Santa Maria, Tabocal, Yavanari, and Yucabí), 36 ♂, 24 ♀, 1 (?);
Faro, 6 ♂, 11 ♀;
Rio Tapajoz (Tauary, Aramanay, Igarapé Brabo, and Santarem), 2 ♂, 6 ♀, 1 (?);
Villa Bella Imperatriz (Lago Andirá, Boca R. Andirá, and Santa Clara), 9 ♂;
Rio Madeira (Borba, Igarapé Auará, Rosarinho, Santo Antonio de Guajará, Porto Velho, and Calamá), 27 ♂, 12 ♀;
Rio Solimões, 1 ♂;
? "Bolivia, Yungas," 1 (?).

COLOMBIA:

Río Uaupés, opposite Tahuapunto [Brazil], 1 ♂.

VENEZUELA:

Río Cassiquiare, El Meray, 2 ♂, 1 ♀;
? Mt. Duida (Esmeralda and Playa del Río Base), 2 ♂.

T. e. berlepschi.—

TOBAGO: 12 ♂, 10 ♀, 2 (?).

T. e. nesophila.—

TRINIDAD:

(Caparo, Seelet, Chaguaramas, Carenage, Pointe Gourde, Valencia, Savannah Grande, Princetown, Heights of Aripo, and "Trinidad"), 27 ♂, 10 ♀, 3 (?).

MONOS ISLAND: 1 ♀.

VENEZUELA:

(Guanoco, Cristóbal Colón, Cocallar, La Latal, Río Neveri, Carapás, Cuchivano, Ayacucho, Caicara, Las Barrancas, Maripa, Quiribana de Caicara, La Unión, Altigracia, Ciudad Bolívar, Agua Salada de Ciudad Bolívar, Sacupana, Maipures, Roraima, and Auyan-tepui), 35 ♂, 23 ♀, 2 (?).

BRAZIL:

Frechal, Rio Surumú, 1 ♂, 1 ♀.

T. e. cana.—

VENEZUELA:

(Caracas, Cotiza, Colonia Továr, El Limón, Las Trincheras, above La Guaira, Tucacas, Cumanacoa, San Antonio, San Estéban, Salsipuede, Quebrada Seca, Valle Santa Ana, Campos Alegre Valley, and Mérida), 22 ♂, 14 ♀, 10 (?).

COLOMBIA:

(Cartagena, Las Lomitas, Florida, Noanamá, Juntas de Tamaná, Puerto Valdivia, Antioquia, Navarro, Río Frío, Caldas, near Honda, Popayan, La Frijolera, Dabeiba, Tumaco, San José, San Antonio—Cauca, San Antonio—Cundinamarca, El Carmen, Nóvita, Chicoral, Tenasuca, Alto de La Paz, near San Agustín, Anolaima, Andalucia, Cauca River, east of Palmira, La Mar, Santa Marta, Donama, Cacagualito, Bonda, and "Bogotá"), 42 ♂, 31 ♀, 24 (?).

PANAMÁ:

(Cape Garachiné, Tapalisa, El Real, Río Chucumaque, and Ensenada Guayabo Chiquito), 4 ♂, 5 ♀.

T. e. diaconus.—

PANAMÁ:

(Saboga I., San Miguel I., Sevilla I., Leones I., Espartal I., Afuera I., Jicarón I., Coiba I., El Rey I., Pacheco I., San José I., Pedro Gonzales I., Vivienda I., La Chorrera, "Panamá" = Lion Hill, Savanna near Panamá, Gatún, Almirante, Cocoplum, Santa Fé, Santiago, Chitrá, Bogava, Boquete, Tocumé, Monte Oscuro, Veragua, and Boqueron), 42 ♂, 29 ♀, 6 (?).

COSTA RICA: 14 ♂, 10 ♀.

NICARAGUA: 4 ♂, 4 ♀.

GUATEMALA: 11 ♂, 11 ♀, 2 (?).

HONDURAS: 3 ♂, 1 (?).

MEXICO: 5 ♂, 4 ♀, 4 (?).

T. e. leucoptera.—

COLOMBIA:

(Barrigon, Buena Vista, and Quitame), 1 ♂, 6 ♀.

T. e. quaesita.—

COLOMBIA:

Barbacoas, 1 ♂, 1 (?).

ECUADOR:

(Esmeraldas, Santa Rosa, Chone, Daule, coast of Manaví, Río de Oro, Loja, Las Piñas, Naranjo, Bucay, Isla Puna, Zaruma, Casanga, Alamor, Portovelo, Río Jubones, Guala, Duran, Salvias, Guainche, Cebollal, Cachabí, Chimbo, Santo Domingo, Guancillo, and Guayaquil), 43 ♂, 33 ♀, 2 (?).

PERÚ:

Túmbes, 1 ♀;
Sullana, 5 ♂, 4 ♀;
Paletillas, 2 ♂, 2 ♀;
Pílares, 1 ♂, 1 ♀;
Palambra, 3 ♂, 3 ♀.

T. e. caerulea.—

ECUADOR:

Zamora, 2 ♀;
Sabanilla, 2 ♀.

PERÚ:

Sauces, 1 ♂, 1 ♀;
Jaen, 1 ♂, 2 ♀;
Lomo Santo, 1 ♂;
Pucará, 1 ♂;

San Felipe, 1 ♂, 1 ♀;
Huancabamba, 3 ♂;
San Ignacio, 1 ♂, 2 ♀;

Cabico, 1 ♂;

Perico, 3 ♀;

Huarandos, 1 ♂;

Charapi, 1 ♂;

Tamborapa, 2 ♂¹;

Saposo, 1 ♂¹;

Ucheco, 1 ♂;

Río Seco, 3 ♂, 1 ♀;

Chachapoyas, 1 ♀;

Yurimaguas, 2 ♂²;

Tarapoto, 1 (?);

Moyobamba, 5 ♂², 7 ♀²;

Vista Alegre, 2 ♂² (incl. type), 1 ♀²;

Chinchao, 3 ♂², 1 ♀²;

[Santa Rosa de] Huayabamba, 1 ♂, 2 ♀;

Nuevo Loreto, 1 (?).

T. e. major.—

PERÚ:

Tulumayo, 5 ♂;

Perené, 3 ♂, 1 ♀;

Utcuyacu, 1 ♂;

Vitoc, 1 ♂ (cotype);

La Merced, 1 ♂, 4 ♀ (incl. cotype);

Chanchamayo, 1 ♀;

San Ramón, 2 (?).

T. e. urubambae.—

PERÚ:

Santa Ana, 1 ♂ (type), 1 ♀;

Idma, 4 ♂, 1 ♀;

Chauillay, 1 ♂;

Astillero, 2 ♀;

Potrero, 1 ♀;

Cosñipata, 1 ♂, 1 ♀;

Huiri, 2 ♀¹.

T. e. boliviana.—

BOLIVIA:

Chatarona, 1 ♂ (type)¹, 1 ♀¹;

Huanay, 1 ♂¹, 1 ♀¹.

T. e. coelestis.—

PERÚ:

Pozuzo, 1 ♂;

"Upper Ucayali," 1 (?);

Santa Rosa, 2 ♂, 6 ♀;

Lagarto, 1 ♂;

Sarayacu, 3 ♂, 2 ♀;

Orosa, 1 ♂;

Apayacu, 2 ♂, 5 ♀;

Puerto Indiana, 1 ♂, 2 ♀;

mouth of Río Curaray, 1 ♀, 1 ♀¹;

Iquitos, 1 (?);

Nauta, 1 ♂.

ECUADOR:

"Napo," 2 (?);

mouth of Lagarto Cocha, 1 ♀;

Archidona, 2 ♂, 1 ♀;

valley of Gualaquiza, 1 (?);

Macas region, 3 ♂, 2 ♀;

"Santa Rosa (Dalmas), 1 (?);

"El Loreto," 1 (?).

¹ Specimens in Academy of Natural Sciences, Philadelphia.

² Specimens in Chicago Natural History Museum.

COLOMBIA:

La Morelia, 3 ♂, 1 ♀, 1 (?) , 1 ♂¹, 1 ♀¹;
Loretoyacu, 1 ♂.

BRAZIL:

Teffé, 10 ♂, 9 ♀;
Caviana, 1 ♂².
Tonantins, 2 ♂²;
Arimã, 2 ♂²;
Hyutanahán, 1 [♂]².

***Thraupis palmarum melanoptera* (Sclater)**

Tanagra melanoptera SCLATER, "1856"
[= Jan., 1857], Proc. Zool. Soc. London, vol.
24, p. 235—E. Peru; British Mus.

Thraupis palmarum duvida CHERRIE, 1916
(May), Bull. Amer. Mus. Nat. Hist., vol. 35,
p. 190—Carapanha, Rio Roosevelt, Brazil;
♂; Amer. Mus. Nat. Hist.

This appears to be a very wide-ranging subspecies from the eastern side of the Andes in Colombia, Ecuador, and Perú to Trinidad, the three Guianas, and the Pará district of Brazil, extending thence south-westward across northern Matto Grosso to northern Bolivia.

In this wide area there is a gradually increasing trend toward typical *palmarum* as the more eastern parts of the range are approached. The greenish edges of the remiges become a little broader (or more frequently so), the top of the head may average a little duller, the mantle tends to become slightly lighter in tone, and the under parts likewise have an average tone somewhat lighter than in Peruvian specimens. The strongest expression of these trends is found in the Pará district and on the Rio Xingú. On the Tocantins, at Faro, and in French Guiana they appear to be less evident. On the Madeira and the Negro, in British and Dutch Guiana, and in Venezuela there is less departure from topotypical examples. At almost any place east of Colombia, Perú, and Ecuador, there is slight differentiation from the birds of these three countries, but it is impossible to draw a satisfactory line until the range of *palmarum* is reached in eastern Brazil, from Maranhão to São Paulo and southern Matto Grosso. I have seen no material from Santa Catharina or from Paraguay.

Two specimens from the Province of

Sara in eastern Bolivia are not clearly distinguishable from parts of this intergrading population, but without more material it is unsafe to attempt their assignment to one form or the other.

In addition to the localities in Perú from which material has been examined, there are records from Iquitos, Rioja, Monterico, La Merced, Lamas, San Miguel Bridge, Río Cadena, and Caradoc.

Although *T. p. melanoptera* is the only subspecies of *palmarum* found in Perú, it will be advisable to fix a definite type locality for it, and I suggest San Ramón, Chanchamayo Valley, as a satisfactory, central locality known to have been visited by collectors prior to the date of the description of this form.

Although *T. p. violilavata* of western Ecuador is found so near to the boundary of Perú that its occurrence on the Peruvian side is almost certain, I have no positive evidence of such occurrence. This dark form may, therefore, be left in abeyance for further consideration as a Peruvian form when satisfactory evidence is forthcoming.

SPECIMENS EXAMINED

T. p. palmarum.—

BRAZIL:

Maranhão (Kelsú, Ilha São Luiz, S. João dos Patos, Flores, Ilha Itauna, As Mangueiras, and Riachão), 19;
Goyaz (Fazenda Esperança), 1;
Ceará (Viçosa), 4;
Bahia (Jaguaquará, Iracema, Santa Ritta, Cajazeiras, Bahia), 12;
"Brasília" [= Canaveiras, Bahia], 1 ♂ (type);
Minas Geraes (Rio Jordão), 1;
São Paulo (S. Sebastião), 2;
Piauí (Patos, Bello Horizonte, Therezina, Corrente, and Gilbues), 9;
Espírito Santo (Lagôa Juparaná), 4;
Rio de Janeiro, 1;
Matto Grosso (Chapada, Abrilongo, and Santa Ritta de Araguaia), 44.

BOLIVIA:

Prov. Sara, 2 (subsp. incert.).

T. p. melanoptera.—

PERÚ:

Astillero, 3 ♂;
Río Tavera, 1 ♂, 1 ♀;
Cosñipata, 1 ♂, 1 ♀;
La Pampa, 1 ♂;
Perené, 2 ♂, 1 ♀;
Tulumayo, 1 ♀;
San Ramón, 1 ♂;
Chanchamayo, 1 ♀;

¹ Specimens in Academy of Natural Sciences, Philadelphia.

² Specimens in Carnegie Museum, Pittsburgh.

Chuchurras, 1 ♀;
 Pozuzo, 2 ♀;
 Vista Alegre, 1 ♀;
 "Upper Ucayali," 2 ♂;
 "Lower Ucayali," 1 ♂;
 Santa Rosa, 5 ♂, 3 ♀;
 Sarayacu, 1 ♂;
 Apayacu, 1 ♂, 3 ♀;
 Puerto Indiana, 5 ♂, 3 ♀;
 mouth of Río Curaray, 9 ♂, 3 ♀;
 Yurimaguas, 1 ♀;
 Jeberos, 5 ♂, 2 ♀;
 Chamicuros, 2 ♂;
 Uchco, 1 ♂;
 Río Negro, 2 ♀;
 Río Seco, 2 ♂, 2 ♀;
 Nuevo Loreto, 1 (?).

ECUADOR:

(Zamora, Archidona, and lower Río Suno), 15.

BOLIVIA:

(Todos Santos, Vinto, Yungas of Cochabamba, and Pitiaguaya), 4.

COLOMBIA:

(Villavicencio, La Morelia, Quetame, Barrigon, Florencia, Buena Vista, and "Bogotá"), 13.

VENEZUELA:

(Mérida region), 7;
 (Cocallar, Campos Alegre Valley, Salsipuede, Rincón San Antonio, and Cristóbal Colón), 12;
 (Mt. Duida and Río Cassiquiare), 29;
 (Orinoco and Caura valleys, Mt. Roraima, and Auyan-tepui), 56.

TRINIDAD: 27.

BRITISH GUIANA: 11.

DUTCH GUIANA: 14.

FRENCH GUIANA: 7.

BRAZIL:

(Río Negro, Río Uaupés, and Río Surumú), 86;
 Faro, 17;
 Pará region, 7;
 Río Tocantins, 10;
 Río Xingú, 10;
 Río Tapajoz, 29;
 Villa Bella Imperatriz, 3;
 Río Madeira (south to Calamá and Porto Velho), 28;
 Teffé, 9;
 Matto Grosso, Tapirapoan, 3;
 Carapanha, 1 ♂ (type of "*duvida*").

T. p. violilavata.—

ECUADOR:

(Esmeraldas to Santa Rosa), 18.

T. p. atripennis.—

COLOMBIA:

(Magdalena and Cauca valleys, west coast south to Los Cisneros, and Santa Marta region), 30.

PANAMÁ: 35.

COSTA RICA: 18.

NICARAGUA: 3.

Thraupis cyanocephala cyanocephala (D'Orbigny and Lafresnaye)

A [glia] cyanocephala D'ORBIGNY AND LAFRESNAYE, 1837, Mag. Zool., vol. 7, cl. 2, "Syn. Av.," p. 32—Yungas [Bolivia]; type from Enquisivi, Bolivia, in Paris Mus.

Peruvian birds are so nearly like Bolivian examples that separation is inadvisable. They have the back averaging a little yellower green (though often at the same time a little darker), the under parts a trifle darker, and the under tail-coverts deeper yellow with more frequent clouding in the centers of the feathers. Also, where the Bolivian birds appear to have a noticeably greenish area on the hind neck at the posterior border of the blue cap, the Peruvian birds, especially those from the northern parts of the country, usually have little or no trace of it. Nevertheless, these characters are not constant, and sharp delimitation is not present.

Most of these same distinctive features are developed in Colombia and the Mérida region of Venezuela in the birds heretofore grouped together under the name *auricrissa*, but in this case they appear to be of greater value than in Perú and Bolivia and it is possible to separate a recognizable subspecies on them as is discussed hereunder.

Peruvian records of *cyanocephala* are from Marcapata, San Miguel Bridge, Occobamba Valley, Aquimarca, Garita del Sol, Ninabamba, Cumpang, Cutervo, Tambillo, and Tabaconas. Tschudi's record from Lima (1846, Faun. Per., Aves, p. 206) is certainly an error unless individuals of the species had been brought to Lima and released in the fruit gardens thereabouts. Other workers around Lima never secured the bird at that locality, which is far out of the range of the species as otherwise known.

Thraupis cyanocephala annectens, new subspecies

TYPE: From Cerro Munchique, Coast Range west of Popayan, Colombia; altitude 8325 feet. No. 110256, American Museum of Natural History. Adult male collected May 26, 1911, by W. B. Richardson.

DIAGNOSIS: Similar to *T. c. auricrissa*

¹ Specimen in Chicago Natural History Museum.

of "Bogotá," Colombia, and the Mérida region of Venezuela, but back darker green; under parts usually darker gray; under tail-coverts on average lighter yellow, always obscured by greenish centers of the feathers that often leave only relatively narrow yellow borders.

RANGE: Central and Western Andes of central Colombia.

DESCRIPTION OF TYPE: Top of head Grayish Violaceous Blue, extending over hind neck; forehead narrowly black, all but interrupted in mid-point; lores and a narrow circumocular ring black, extending over anterior part of auriculars and base of malar region; rest of sides of head and neck blue like the cap; back near Serpentine Green, with uropygium very little lighter. Throat, breast, sides, and flanks between Dark Plumbeous and Blackish Plumbeous; belly near Dark Plumbeous, even lighter in mid-line; thighs Lemon Chrome; under tail-coverts centrally Citrine margined with Aniline Yellow. Exposed outer surface of wings near Warbler Green but outer margin of outermost primary dark, and a small spot on the shoulder is near Light Cadmium. Bend of wing and under wing-coverts deep Lemon Chrome; inner margins of remiges near Wax Yellow (except toward tips of outer primaries and on tertials). Tail largely Dark Citrine, brighter and more greenish on outer margins and on middle rectrices. Bill (in dried skin) blackish, a little paler at lower base; feet dark brown. Wing, 89 mm.; tail, 67; exposed culmen, 12.5; culmen from base, 18; tarsus, 22.

REMARKS: Females similar to the males.

An occasional specimen from the Central Andes of Colombia shows a reduction of the amount of dark shading in the centers of the under tail-coverts, but in none is this area as clear yellow as in true *auricrissa* which, on the other hand, is never so heavily shaded as most of the examples of *annectens*. The color of the back similarly varies in some Central-Andean specimens, but distinction is possible on this basis in nearly all the examples at hand.

The small yellow patch on the shoulder is unequally developed in all specimens of *annectens* as well as in *auricrissa*, but it is of

more frequent development than in *cyanocephala* where it rarely occurs. Some of the variability may be due to differences of preparation of the skins, since this patch is a continuation of the yellow under wing-coverts, part of which may sometimes be drawn over to the dorsal surface of the shoulder.

SPECIMENS EXAMINED

T. c. cyanocephala.—

BOLIVIA:

Incachaca, 5 ♂, 4 ♀;
Locotal, 1 ♂.

PERÚ:

Inca Mine, 1 ♂;
Oconeque, 1 ♂;
Santo Domingo, 6 ♂, 2 ♀;
Torontoy, 1 ♀;
San Miguel, 1 ♂;
Santa Rita, 1 ♂, 1 ♀;
Utcuyacu, 2 ♂, 1 ♀;
Chilpes, 2 ♂, 5 ♀;
Rumicruz, 2 ♂, 2 ♀;
Chinchao, 1 ♂¹;
Chugur, 2 ♂, 1 ♀;
La Lejia, 3 ♂;
San Pedro, 2 ♀;
Taulis, 1 ♀;
Levanto, 1 ♀;
Chachapoyas, 2 ♂, 1 ♀.

ECUADOR:

Pallatanga, 1 ♂;
Guallea, 1 ♂;
San Bartolo, 2 ♂;
Loja, 2 ♂, 1 ♀;
Guachanamá, 1 ♂.

T. c. annectens.—

COLOMBIA:

Cerro Munchique, 3 ♂ (incl. type), 1 ♀, 1 (?);
Cocal, 1 ♀;
Coast Range west of Popayan, 2 ♂, 1 ♀;
Salento, 1 ♂;
above Salento, 1 ♀;
Retiro, 1 ♂;
La Florida, 1 ♂, 1 ♀;
El Eden, 1 ♂, 5 ♀;
La Sierra, 1 ♂, 1 ♀;
Santa Elena, 3 ♂, 2 ♀, 1 (?);
Nóvita trail, 1 (?);
Medellín, 1 ♂, 1 ♀;
Antioquia, 1 (?).

T. c. auricrissa.—

COLOMBIA:

Gramalote, 1 ♂;
Palo Hueco, near Pacho, 1 ♂, 1 ♀;
Aguadita, 1 ♀;
El Roble, 1 ♂;
Choachi, 1 (?);
"Bogotá," 5 (?).

¹ Specimen in Chicago Museum of Natural History.

VENEZUELA:

- Mérida, 1 ♂, 5 (?);
 Valle, 8 ♂, 2 ♀, 1 (?);
 Escorial, 2 ♂;
 Sierra, 1 ♂;
 Culata, 1 ♂;
 Ejido, 1 (?).

T. c. margaritae.—

COLOMBIA:

- Santa Marta, Valparaiso, 1 ♂;
 El Libano, 1 ♀.

T. c. olivi-cyanea.—

VENEZUELA:

- Galipan, 8 ♂, 4 ♀;
 Las Cienagas de Aguilar, 2 ♂;
 Silla de Caracas, 1 ♂;
 Colonia Továr, 1 ♂, 2 (?);
 Junquito, 1 ♂;
 Junquito or Colonia Továr, 1 ♂, 2 ♀;
 head of Chichirivichi Valley, 1 (?).

T. c. subcinerea.—

VENEZUELA:

- El Guácharo, 1 ♂, 1 (?);
 Los Dos Rios, 1 ♀;
 Los Palmales, 7 ♂, 1 (?);
 hills of Quebrada Seca, 1 ♂.

T. c. busingi.—

TRINIDAD:

- Trinidad, 1 ♂, 1 (?);
 Aripo, 10 ♂, 5 ♀.

Thraupis bonariensis darwini
 (Bonaparte)

Tanagra darwini BONAPARTE, 1838 (June),
 Proc. Zool. Soc. London, vol. 5, p. 121—Chile;
 S. W. Perú subst. by Berlepsch, 1912; type lost.

T[anagra] frugilegus TSCHUDI, 1844 (May),
 Arch. Naturgesch., vol. 10, no. 1, p. 286—Perú
 [fruit gardens of Lima; Tschudi, 1845]; Mus.
 Neuchâtel.

T[anagra] darwini laeta BERLEPSCH AND
 STOLZMANN, 1906, Ornith. vol. 13, p. 81—Cuzco,
 Perú; ♂; Mus. Frankfurt.

A long series of specimens from various parts of Perú gives some support to the claim of "*laeta*" for recognition, but I am dubious about the full validity of the claim. The only character of any value is the size of the bill, and this is not always diagnostic. If the birds from the coast of northernmost Chile, the coast of Perú from Macate southward, and the upper part of the Marañón Valley are grouped together, it will be found that the exposed culmen ranges in length from 11.5 to 14 mm.; the culmen from base, 16 to 19.5. The birds from the Urubamba Valley, Chanchamayo, Huánuco, Chachapoyas, and Huancabamba regions of Perú and from Ecuador have the exposed culmen between 10 and 12.75 mm. in length; the

culmen from base, 15 to 18. In the region of overlap, there are 17 out of 28 coastal and upper Marañón birds and 26 out of 34 of the remaining adult males. However, taking the mean of the overlapping measurements, there are only some 20 birds out of the 62 that cannot be placed definitely in one group or the other on this basis.

Nevertheless, without some supporting character, the separation of "*laeta*" is hardly justified. Wings and tail are even more broadly overlapping in lengths and are useless for this purpose. The colors of the various parts of the population appear to vary without any clear distinctions, and I am unable to recognize any subspecies in different parts of Perú on such basis. The adult male at hand with the lightest yellow under parts is from Chachapoyas; the most deeply colored males are from Utcuyacu, Huancabamba, and Cajabamba, Perú, and from Cumbaya, Ecuador, but other examples from these localities fail to support this tendency.

It is questionable whether we are justified in accepting Berlepsch's emendation of Bonaparte's given locality for *darwini*. It is reasonably certain that the type was not obtained by the Beagle expedition as claimed by Bonaparte, since the account of the birds obtained on the expedition contains the statement that the only specimen of this species was obtained at Maldonado, Uruguay—of course an example of typical *bonariensis* to which Bonaparte's description does not apply. However, in spite of the fact that Peruvian specimens of ancient date are sometimes labeled as from Chile, it is not impossible that Bonaparte's specimen actually came from that country, in a limited portion of which *darwini* exists. Consequently, the type locality may remain as Chile until more information becomes available on the actual source of Bonaparte's bird.

This tanager is widely distributed in the Andean regions of Perú and on the more southern part of the coast. Localities of record from which material has not been examined in the present study are Marcapata, Cosñipata, Huiro, Idma, Machu Picchu, Pisac, Santa Ana, Maraynioc,

Pumamarca, Tamiapampa, La Merced, Tarma, Auquimarca, Huancavelica, Anco (sight), Lircay, Lucre, Moquegua, Arequipa, Araqueda, Succha, Chota, Cutervo, Callacate, Palca, Huanta, and Lima. Further extensions of the range are as far as northern Ecuador and western Bolivia.

In conjunction with the study of the present subspecies, the other forms of the species have been examined. It appears that *T. b. schulzei* (Brodkorb, 1938, Occas. Papers Univ. Michigan, Mus. Zool., no. 367, p. 3—west of Puerto Casada, Paraguay) ranges west from Paraguay to northwestern Argentina from which region I have 32 examples that show the characters ascribed to this form, i.e., smaller size and more intense coloration on the under parts of the males than in typical *bonariensis*.

Birds from Bolivia, as far west as the Cochabamba region, combine the characters of the typical form and *schulzei* almost exactly, although the range is not an intermediate one. They are fully as large as *bonariensis* but have the under parts of the males almost as richly colored as in *schulzei*. In view of the impossibility of assigning them to either form, they may be described as new.

***Thraupis bonariensis composita*, new subspecies**

TYPE: From Vinto, Province of Cochabamba, Bolivia; altitude 8000 feet. No. 138354, American Museum of Natural History. Adult male collected July 6, 1915, by Leo E. Miller and Howarth Boyle; original No. 12937.

DIAGNOSIS: Similar in size to *T. b. bonariensis* of southeastern Brazil and northeastern Argentina, but lower under parts more deeply colored; orange of breast deeper and carried farther posteriorly; flanks less brownish. Compared to *T. b. schulzei* of [Paraguay and] northwestern Argentina, *composita* is larger, the blue of the head averages darker, and the orange colors of the lower under parts and rump are a little less intense.

RANGE: Eastern and central Bolivia.

DESCRIPTION OF TYPE: Forehead, lores, circumocular space, malar apex, and point

of chin black; rump deep Cadmium Orange; upper tail-coverts olive brown, broadly margined with Orange Citrine. Breast deep Cadmium Orange with a black area on each side continuous with the mantle; the orange is continued posteriorly, becoming paler and more yellowish, near Lemon Chrome, on the lower belly; posterior flanks slightly tinged with Old Gold; thighs whitish; shorter under tail-coverts near Apricot Yellow; longer ones paler. Wings and tail blackish, with outer margins Light Columbia Blue; outer rectrices with a terminal whitish spot and a subterminal black area; axillars and inner under wing-coverts with pale greenish margins; outer ones with somewhat bluish margins. Maxilla (in dried skin) blackish; mandible pale; feet light brown. Wing, 97 mm.; tail, 74; exposed culmen, 12; culmen from base, 16.8; tarsus, 22.

REMARKS: Females not certainly distinguishable from those of *bonariensis* but possibly averaging darker in general coloration; size larger than that of female *schulzei*.

The measurements in *composita* are more definitive than those found in the different parts of the population of *darwinii*. Thirty adult males of *bonariensis* have the wing 89–96 mm. in length (average, 92.9); 17 *schulzei*, 84.5–91.2 (average, 88.2); 19 *composita*, 90–97 (average, 93.6). The tails in the three respective forms are 65.5–74.2 (average, 72.9); 64–69 (average, 67.8); and 68–74 (average, 71.5). Only five *composita* males and three *schulzei* males overlap in wing measurement, and the figures are but three and one, respectively, if the mid-point of the overlap is taken as the line of demarcation. Between *schulzei* and *bonariensis*, there is an overlap of three *schulzei* and two *bonariensis*, or one and one, respectively, from the mid-point. With regard to the tail, there are two *composita* males and six *schulzei* in the overlapping sector, or but one and one below and above the mid-point. There are, however, nine *schulzei* and 11 *bonariensis* with overlapping tail measurements, or seven and 10, respectively, on the wrong side of the mid-point of the overlap.

Several specimens of *bonariensis* males have the black mantle feathers margined, in varying degree, with olive. Many specimens of *bonariensis*, *schulzei*, and *composita* have a band of olive separating the black of the mantle from the orange of the rump, but many lack it. Some females (if the specimens are correctly sexed) have as much blue on the head as certain females of *darwini*, although other examples of the Peruvian form reach an extreme not covered by the other three subspecies. All these characters, however, are indicative of the close relationship of all forms.

SPECIMENS EXAMINED

T. b. bonariensis.—

ARGENTINA:

La Plata, 1 ♂, 2 ♀;
La Soledad, 3 ♂, 1 ♀;
Buenos Aires, 1 ♂;
Conchitas, 1 ♀;
Barracas al Sud, 1 ♂, 1 ♀;
"Argentina," 1 ♂.

BRAZIL:

Rio Grande do Sul (Palmares, Sinimbú,
Arroyo del Rey, Lagôa dos Patos,
São Lorenzo, São Francisco de Perla,
Candiota, Lagôa Mangueira, Tahyn,
Quinta, Santa Cruz, Sapyranga, and
Santa Victoria), 33 ♂, 23 ♀, 2 (?).

URUGUAY:

Jaquarão River, 1 ♂.

T. b. schulzei.—

ARGENTINA:

Rosario de Lerma, 6 ♂, 2 ♀;
Suncho Corral, 4 ♂, 1 ♀;
Embarcación, 5 ♂, 1 ♀;
Tucumán, 2 ♀;
San Pablo, 1 ♂;
Avia Terai, 1 ♀;
Lavalle, 1 ♀;
Fuente de Andagala, Catamarca, 2 ♂;
Mendoza, 2 ♂, 1 ♀.

T. b. composita.—

BOLIVIA:

Vinto, 4 ♂ (incl. type);

Parotani, 2 ♂, 2 ♀;
Tujma, 1 ♂;
Tarata, 1 ♂, 1 ♀;
Arque, 1 ♂;
Valle Grande, 1 ♂;
Olgin, 1 ♂;
Pulque, 2 ♂;
Chilon, 7 ♂, 1 ♀;
Río Pilcomayo, 2 ♂;
Río Cachimayo, 1 ♂, 1 ♀.

T. b. darwini.—

PERÚ:

Cuzco, 1 ♀;
Calca, 1 ♂;
Tinta, 1 ♂, 1 ♀;
Chospiyoc, 1 ♀;
San Miguel, 1 ♂;
Vitor, 7 ♂, 2 ♀;
Moquegua, 1 ♂;
Sayan, 1 ♀;
Huaral, 10 ♂, 2 ♀;
Huacho, 6 ♂, 2 ♀;
Matucana, 1 ♀;
Acobamba, 1 ♀;
Utcuyacu, 7 ♂, 4 ♀;
Chinchao, 1 ♀;
Panao, 1 ♀;
Huánuco, 4 ♂¹, 2 ♀¹;
Culleui, 2 ♂¹, 3 ♀¹;
Cumpang, 1 ♀;
Cajabamba, 3 ♂;
Huamachuco, 1 ♂, 2 ♀;
Cajamarca, 3 ♂, 1 ♀, 4 ♂¹, 1 ♀¹;
Hacienda Llagueda, 2 ♂¹, 1 ♀¹;
Macate, 4 ♂¹;
Huancabamba, 5 ♂, 3 ♀;
Sondorillo, 2 ♂, 2 ♀;
Chachapoyas, 4 ♂, 1 ♀;
San Pedro, 1 ♂, 1 ♀;
Palambla, 1 ♂.

CHILE:

Putre, 1 ♂¹, 3 ♀¹;

ECUADOR:

(El Paso, Valle Tumbaco, Valle Cumbaya,
Mt. Chimborazo, Guapilo, Ibarra, Cay-
ambe, Río Napo, Chivinda, Quito, and
"Ecuador"), 23 ♂, 12 ♀, 2 (?).

¹ Specimens in Chicago Natural History Museum.

