

# AMERICAN MUSEUM NOVITATES

Published by

Number 1225 THE AMERICAN MUSEUM OF NATURAL HISTORY  
New York City

April 9, 1943

## STUDIES OF PERUVIAN BIRDS. NO. XLV<sup>1</sup>

### THE GENERA *TERSINA*, *CHLOROPHONIA*, *TANAGRA*, *TANAGRELLA*, *CHLOROCHRYSA*, AND *PIPRAEIDEA*

By JOHN T. ZIMMER

I am grateful to Mr. R. M. de Schauensee and Mr. James Bond of the Academy of Natural Sciences of Philadelphia, and to Mr. W. E. C. Todd of the Carnegie Museum, Pittsburgh, for the loan of comparative material used in the following studies.

Names of colors are capitalized when direct comparison has been made with Ridgway's "Color Standards and Color Nomenclature."

#### *Tersina viridis occidentalis* (Selater)

*Procnias occidentalis* SCLATER, 1855 (April), Proc. Zool. Soc. London, XX (for 1854), p. 249—Nova Grenada = Bogotá, Colombia; ♂, ♀; cotypes in British Mus.

Cosñipata, 1 ♀; La Pampa, 1 ♂; Astillero, 1 ♂, 1 ♀; Chuchurras, 1 ♂; mouth of Río Urubamba, 1 ♂; Apayacu, 9 ♂, 2 ♀; Río Negro, west of Moyobamba, 2 ♀; Nauta, 2 ♂, 1 ♀; Jeberos, 3 ♂, 8 ♀; mouth of Río Curaray, 4 ♂, 2 ♀.

I can find no positive differences of color in either sex of *occidentalis* as compared with *viridis*, although the males of the "western" form have the shaft streak of the longer under tail coverts averaging more pronounced—more often forming a broad stripe. Even this feature, however, is not constantly different in the two forms, both of which exhibit both extremes. As to the blue or greenish color of the males, I can see no distinctions in over a hundred adult males representing both forms.

In the matter of size, there is good separation

between the birds from Paraguay and the eastern part of Brazil and those from Perú, Ecuador, and Colombia, but the identification of the birds from Matto Grosso and Bolivia, and perhaps those from some other regions, offers a problem. The Paraguayan and east-Bolivian series of eighteen males has the wing, 89–94 mm., averaging 91.3. The Colombian, Ecuadorian, and Peruvian series of fifty-six males has the wing, 80–89.1, averaging 84.7. Northwest-Bolivian birds fit well into the Peruvian series, with wing, 85.5 and 86.5; also an east-Panamanian male with wing, 84; two Rio Uaupés males with wing, 83 and 83.5; a male from the foot of Mt. Duida with wing, 83.1.

North-Venezuelan birds show a wide range of size in only four skins, having the wing 89 (Maracay), 84 (San Antonio), and 90 (La Latal). A British Guiana male is 91; a French Guiana male, 90. Three males from Caxiricatuba, Rio Tapajoz (a new area for the range of the species), are 87.8, 88.8, and 89.3. It is a question whether the Tapajoz, Guianan, and northeast-Venezuelan (La Latal) specimens should not go with typical *viridis*, but a large series will be needed to determine the point.

Eleven east-Bolivian males have the wing, 83–93, averaging 87.7, with only two of the specimens exceeding 90 mm. Fourteen males from Chapada, Matto Grosso, measure 84.5–93.8, with four examples 90 or above. Of three males from Santa Isabel, Rio Preto, Brazil, one is 90, one 84.5, and one 83.5. Comparing these figures with those of east-Brazilian and those of Andean birds, the assignment of the west-Brazilian and east-Bolivian birds to the

<sup>1</sup> 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, and 1203.

western form, *occidentalis*, is indicated, although the range of variation in the series straddles the line of demarcation between that form and *viridis*.

The length of tail is less diagnostic but follows the direction indicated by the wings. In *viridis* males the tail ranges in length from 52 to 59 mm. and in *occidentalis*, from 47 to 54, once 56 (western Ecuador), once 57 (La Latal, Venezuela), and once 55 (Rio Tapajoz). Matto Grosso males range from 50 to 59 although the average is 52.8 and only three birds are above 54. The east-Bolivian birds are all 48–54.

The females are less distinct than the males, although there is a possibility of error due to incorrect sexing of young males as females. In any case, two Panamanian females have the wing 79 and 81; four Colombian females, 81–82; eleven Ecuadorian females, 80–89.1 (six are 86 or over); and seventeen Peruvian females, 78–84.8. Ten east-Brazilian and Paraguayan females range from 85 to 92, although only two are at the maximum, the rest below 89. Matto Grosso females range from 82.2 to 89.2; east-Bolivian females, from 80 to 87.

In any case, Peruvian birds of both sexes are shorter-winged than east-Brazilian or Paraguayan birds, and their assignment to *occidentalis* is therefore unquestioned.

The distribution of *occidentalis* is curiously interrupted for a form that is of Tropical Zone affiliation. It ranges from very low elevations as at Pebas, Perú, to the edge of the Subtropical Zone and yet has never been collected on the Amazon between the Tapajoz and Pebas nor at more than a small number of the many stations within the Tropical Zone at which great collections have been made by a long series of field workers. Probably it exists at numerous localities where it has not yet been found. Additional records from Perú are from Huaynapata, Río Cadena, Chaquimayo, Marcapata, Monterico, San Emilio (Vitoc), Cumaria (Río Ucayali), Vista Alegre, Yurimaguas, Saposoa, and Pebas.

Dunajewski's comment (1939, Act. Orn. Mus. Zool. Pol., III, No. 2) on two birds

from Marcapata as being intermediate between *occidentalis* and *grisesens* (of Santa Marta, Colombia) can have no greater significance than as an indication of the variability of this species.

### *Chlorophonia cyanea longipennis*

(Du Bus)

*Euphonia longipennis* DU BUS, 1855, Bull. Acad. Roy. Sci. Lettr. et Beaux-Arts Belgique, XXII (1), p. 155—Antioquia, Colombia; Brussels Mus.

*Chlorophonia torrejonii* TACZANOWSKI, 1882, Proc. Zool. Soc. London, p. 9, Pl. I, fig. 1—Chirimoto, Perú; ♂; formerly in Warsaw Mus., now lost.

The proper disposition of the Peruvian members of this species is troublesome. Taczanowski described *torrejonii* from specimens in what Berlepsch and, later, Hellmayr were convinced was the first winter plumage of the males of *longipennis*, but the evidence is far from satisfactory. Carriker (1932, Proc. Acad. Nat. Sci. Phila., LXXXIII, p. 466) proposed to revive *torrejonii* as a full species on the basis of his discovery of a breeding male in this plumage. His evidence was discounted by Hellmayr (1936, Field Mus. Nat. Hist. Publ., Zool. Ser., XIII, pt. 9, p. 8, footnote) because of the known breeding of other tanagers in immature plumage.

It is curious that of the Peruvian males that have come to my hand, all are in the dull, first winter dress, whereas the preponderance of birds of both sexes from Colombia and Mérida, Venezuela, are bright, adult males. On this basis, the suspicion arose that perhaps the Peruvian population never passed beyond a retarded adult plumage similar to the first winter one. However, Berlepsch (1912, Ber. V Inter. Orn.-Kongr., p. 1010) refers central and southeastern birds to *longipennis* and north-Peruvian specimens to a doubtful "*torrejonii*," and Hellmayr (1936, Field Mus. Nat. Hist. Publ., Zool. Ser., XIII, pt. 9, p. 8, footnote) mentions two males from Huaynapata, Perú, and three from Bolivia as being as brightly colored as Bogotá examples. Mr. Bond, of the Academy of Natural Sciences of Philadelphia, has lent me two Bolivian males

that agree fairly closely with Colombian and Venezuelan adults, although the yellow of the belly is at the pale extreme of the northern series. The apparently immature Peruvian males, including one lent by Mr. Bond, are, on the other hand, at or beyond the maximum of the northern young ones in respect to the brightness of the yellow on the belly, and one of them has a tendency toward blue on the rump. Some of these birds are obviously not fully adult, judging by the texture of the plumage and a slightly brownish tone of the black of the remiges, but others might represent a retarded adult condition that would, if it were constant, lend some support to a proposal to recognize "*torrejoni*" as a subspecies of *cyanea* (not as a full species), even though it left the southeast-Peruvian and Bolivian population cut off from the more northern part of the range of *longipennis*. More material from central and northern Perú will be needed to settle the question. In the meantime, it seems best to consider *longipennis* as ranging south through Perú to Bolivia.

Records from Perú are from Huayabamba, Palto, Chirimoto, Vitoc, La Merced, Garita del Sol, and Huaynapata.

An adult male and a young bird of the same sex from the western side of the Western Andes of Colombia are the first examples of the species from that area to be placed on record but are different enough from the series of *longipennis* to deserve separate recognition, as described below.

#### ***Chlorophonia cyanea intensa*, new subspecies**

TYPE from Primavera, western Colombia; altitude, 1700 meters. No. 511,681, American Museum of Natural History (Rothschild Coll.). Adult male collected in 1904 by Raap; original No. 333.

DIAGNOSIS.—Similar to *C. c. longipennis* of central and eastern Colombia, but adult male with yellow of lower under parts markedly deeper; back, at least in the type, blue like the hind neck and of a deeper hue (less greenish) than most *longipennis*. Young male indistinguishable from *longipennis* in the same plumage except that the collar on the hind neck is somewhat deeper in tone; lower under parts somewhat deeper yellow; forehead with a narrow and poorly defined band of yellow.

RANGE.—Known only from the type locality, western Colombia.

DESCRIPTION OF TYPE.—Head bright green with a faint tinge of yellow on the frontal region (not at all clearly defined); lores with a faint bluish tinge and orbit surrounded by a bright blue ring; whole back (held toward light) Methyl Blue, (away from light) Light Methyl Blue  $\times$  Light Cerulean Blue; subterminal portions of back feathers dark green, almost entirely concealed; upper tail-coverts purer blue (near Spectrum Blue). Breast and belly between Light Cadmium and Lemon Chrome, becoming lighter (Lemon Chrome) on crissum. Scapulars dark green (Cossack Green) with posterior feathers strongly tipped with blue; remiges black with outer margins (except of outermost primary) dark green, most broadly on inner secondaries and tertials where there is a tinge of blue at the tips of the feathers; upper wing-coverts with exposed portions dark green except for a touch of blue at the tips of the greater and median series; under wing-coverts with antecubitals yellow like the breast, infracubitals white with yellow tips, primary-coverts gray with green tips; inner margins of remiges dull whitish. Rectrices largely blackish with dark green outer margins except on outermost pair but with median pair distally bluish green on both webs. Bill (in dried skin) blackish, with base of mandible slaty; feet light brown. Wing, 64.2 mm.; tail, 35; exposed culmen, 7; culmen from base, 10; tarsus 14.

REMARKS.—Young male (in first winter plumage ?) much like *longipennis* in a similar stage but lower under parts slightly deeper yellow, flanks with a more definitely yellow tinge and with yellow tips on many feathers, uropygium with a stronger bluish tinge, and collar on hind neck more deeply blue than usual. The forehead has a definite tinge of deep yellow at the base of the bill, not sharply outlined but quite obvious.

Of the same general nature is a Bogotá trade-skin, without given sex but apparently also an immature male. It is not quite so deeply blue on the collar nor so strongly blue on the rump but is at the extreme of variation shown in this direction by *longipennis* if not beyond it. The lower under parts are deeper yellow than in other immature Bogotá skins, and the flanks are green with yellow tips as in the young Primavera bird. In addition, this specimen has a deep yellow frontal band rather well defined though narrow. Comparing this specimen with the young Primavera specimen there is such close agreement in many respects that I believe

they belong to the same subspecies. Berlepsch (1912, Ber. V Inter. Orn.-Kongr., p. 1123) commented on a Bogotá specimen with yellow frontal band and green rump, preserved in his collection and which he assigned to *roraimae*, although Hellmayr (1936, Field Mus. Nat. Hist. Publ., Zool. Ser., XIII, pt. 9, p. 8, footnote) believed it to be only an individual mutant of *longipennis*. The young birds in hand are very similar to those of *roraimae* in respect to the frontal band, but the color of the collar is deeper than in *roraimae* and the yellow of the under parts also deeper; the adult from Primavera is quite distinct from adult *roraimae* males which are paler blue above, lighter yellow below, and have a narrow yellow frontal band like the females and young males.

The greatest obstacle to the reference of the peculiar Bogotá skin to *intensa* is the distance of the known range of this form from Bogotá, and the improbability (not impossibility) that the native hunters from Bogotá ranged as far as the western slope of the Western Andes. I do not recall, at the moment, any bird known only from that western region that has appeared in "Bogotá" collections. In the few cases where there is an approach to this situation (as with *Habia cristata*) the western bird is found on both sides of the Western Andes as well as in "Bogotá" collections. In such case the present bird would be expected at Antioquia, which is the type locality of *longipennis*! Our only specimen from the Antioquia region is as blue-backed as the type of *intensa* but has the lower under parts much lighter yellow, being exceeded in depth of color on that area by many of the Bogotá skins of *longipennis*, all of which are paler than the type of *intensa*. It is possible, therefore, that east-Colombian birds should be separated from the Antioquia form which may have an extensively blue back and pale yellow belly as regular features, but there is complete intergradation demonstrable between the Antioquia male at hand and the east-Andean males which throws doubt on such separation. There is no such intergradation with the Primavera male except in the color of the back.

## SPECIMENS EXAMINED

- C. c. cyanea*.—  
 BRAZIL: 34.  
 PARAGUAY: 5.  
 ARGENTINA:  
   Puerto Segundo, Misiones, 2 ♂.  
*C. c. longipennis*.—  
 BOLIVIA:  
   Prov. Sara, 1 ♂, 2 ♀;  
   Palmar, Cochabamba, 1 ♂<sup>1</sup>;  
   Yungas of Cochabamba, 1 ♂<sup>1</sup>.  
 PERU:  
   Santo Domingo, 1 ♂;  
   La Oroya, Inambari, 1 ♂<sup>1</sup>;  
   Chanchamayo, 1 ♂;  
   Tulumayo, 1 ♂;  
   Río Seco, 1 ♂, 1 (?);  
   Lomo Santo, 1 ♀.  
 ECUADOR:  
   (no other locality), 1 ♂, 1 ♀.  
 COLOMBIA:  
   Antioquia, 1 [♂];  
   Cundinamarca, 1 ♂;  
   "Bogotá," 12.  
 VENEZUELA:  
   Mérida, 2 ♂;  
   Valle, 4 ♂;  
   Escorial, 3 ♂;  
   Nevados, 1 ♀.  
*C. c. intensa*.—  
 COLOMBIA:  
   Primavera, 2 ♂ (incl. type);  
   "Bogotá," 1 [♂?]<sup>2</sup>.  
*C. c. psittacina*.—  
 COLOMBIA:  
   (Santa Marta region), 32.  
*C. c. frontalis*.—  
 VENEZUELA: 14.  
*C. c. minuscula*.—  
 VENEZUELA: 15.  
*C. c. roraimae*.—  
 BRITISH GUIANA:  
   Waremia Creek, 1 ♀;  
   Carimang River, 1 ♂.  
 VENEZUELA:  
   Mt. Roraima, 6;  
   Mt. Duida, 13.

***Tanagra musica aureata* Vieillot**

*Tanagra nigricollis* VIEILLOT, 1819 (nec Gmelin, 1789), Nouv. Dict. Hist. Nat., nouv. éd., XXXII, p. 412—Brésil [= Rio de Janeiro]; Paris Mus.

*Tanagra aureata* VIEILLOT, 1822, Tabl. Encycl. Méth., Orn., livr. 91, p. 782—based on "Lindo azul y oro" of Azara, no. 99; Paraguay.

Lomo Huato, 2 ♂; Chaupe, 1 ♂; Saucos, 1 ♀; Huayabamba, 1 ♂<sup>1</sup>; Ucayali (= Sarayacu or Cashiboya).

Peruvian examples appear not to differ from Bolivian, Argentine, and east-Brazil-

<sup>1</sup> Specimens in Academy of Natural Sciences, Philadelphia.

<sup>2</sup> Referred here with a query.

ian specimens. The width of the frontal band varies considerably without apparent regard to distribution, and there is also a little variation in the depth of yellow on the belly. The Ucayali specimen is strongly brownish below, but the skin is old and possibly has altered through the years.

The distinction of *intermedia*, of Colombia, Venezuela, and the Guianas, from the present form is not very pronounced as has already been remarked by other workers. I can find no certain differences of color, and those of measurement overlap to a considerable extent. A male from Medellín, Colombia, is as large as one from Tujma, Bolivia, the largest of the two series at hand. Both have the wing 68.8 mm. in length. Three other Colombian males have the wing 67 or over as do two from Perú and one bird from eastern Brazil. Two Colombian males and one Mérida male have the wing 66 or over, but below 67, while five males from Perú, Bolivia, Argentina, and eastern Brazil fall into the same category. The rest of the Colombian, Venezuelan (Mérida and the northern part of the country), and Dutch Guianan males are below 66, mostly 61 or more but reaching 59 and 60 in two Surinam specimens; eight examples from Perú to eastern Brazil range from 63.5 to just over 65. Thus, Colombian birds cover nearly the entire range of variation in size presented by both *aureata* and *intermedia*, but Venezuelan and Guianan birds appear not to reach so large an extreme but are, more often than not, Colombian skins excepted, smaller than the minimum of *aureata* while Guianan birds reach the smallest extreme. With the ranges of *aureata* and *intermedia* separated by those of *pelzelni* and *insignis* in Ecuador, the logical division line, on geographic grounds, separates Colombian and Peruvian birds from each other, whereas, taxonomically, the Colombian birds form the bridge between the Peruvian and Venezuelan populations, showing the extremes of both. It seems almost advisable to reject *intermedia* as a synonym of *aureata*, but in the absence of topotypes of *intermedia* from Mt. Roraima, I reserve final conclusions.

On the other hand, I believe that *T. m.*

*vincens* (Hartert), described from Costa Rica, is recognizably distinct from *elegantissima* of Mexico. With *elegantissima* I should place a male from Finca El Soche, Guatemala, a male from Quezaltenango, and a Guatemalan trade-skin, from the series at hand. Specimens from Tecpam, Vera Paz, Finca Concepción, and Volcán San Lucas, Guatemala, one Nicaraguan specimen, twenty skins from Costa Rica, eight from Honduras, and eighteen from Panamá are, with relatively few exceptions, lighter blue on the top of the head than the more northern birds, only three or four of which (out of some forty-two examples) are light-capped like the southern series.

Peruvian records of *aureata* are from Chachapoyas, Huambo, Callacate, Tambillo, Hacienda Limón, Paltaypampa, Chontabamba, and Garita del Sol.

#### *Tanagra xanthogaster brevirostris* (Bonaparte)

*Euphonia brevirostris* BONAPARTE, 1851, Rev. Mag. Zool., (2) III, p. 136—Colombia = "Bogotá"; repository of type unknown.

The delimitation of this form is very puzzling. Male birds in old "Bogotá" collections stand out fairly well from all the rest of the Colombian birds by reason of their darker caps and more brownish suffusion of the breast and middle belly in which they exceed specimens known to have been taken on the Eastern Andes. From this fact, it is possible that some of the darker shading is due to post-mortem change in the ancient material. At any rate, until some definite locality can be established for the dark birds, it seems best to consider all the east-Colombian birds as belonging to the same subspecies.

In any case, the palest "Bogotá" males are matched by the darkest extreme of the assured east-Andean specimens although the palest of the latter series are distinguishable. East-Ecuadorian birds are like the east-Colombian, and the same variability occurs down the eastern side of the Andes through northern to central Perú, excepting the region about the mouth of the Napo and on the Ucayali where an extreme condition appears to be established as will be detailed below. I can see no

satisfactory way to distinguish any parts of this mountainside population from the other parts, although there are somewhat different, overlapping color gradients involved at various places.

Thus, the birds from Andean Perú are fairly consistent in their deeply hued under parts, in which a male from Nuevo Loreto exceeds any of the others including east-Ecuadorian and east-Colombian birds; its cap, however, is not so dark as that of various Colombian specimens. East-Ecuadorian birds are not so consistently colored, and occasional birds from the Napo show a paler hue than the general series, approaching the character of the Ucayali and Amazonian specimens. Nevertheless, I am unable to draw a clear line of distinction from *brevirostris* in the series as a whole. Most specimens from the mouth of the Río Curaray, Perú, belong in this series.

Two males from Mt. Duida, Venezuela, and one from the nearby Rio Uaupés, northern Brazil, are not recognizably distinct nor is a male from British Guiana, although these four birds are by no means uniform among themselves.

An unusual specimen is at hand from the mouth of the Curaray, northeastern Perú. At first glance, the coloration of the under parts strongly suggests *T. mesochrysa*, being largely near Primuline Yellow. The throat, however, is drab as is the middle of the lower belly, and there is a buffy tinge in the median line of the breast and upper belly while the flanks are not green as in *mesochrysa* but clear yellow with quite dark gray bases and a dusky subterminal bar as in males of the present species. The upper parts are rather darker than usual in females of *brevirostris* and the forehead somewhat more intensely orange-tinted (between Mars Yellow and Raw Sienna). There are no traces of the steely blues and purples of the adult males. Granting that the specimen is correctly sexed, as seems probable, the individual appears to be an "advanced" female.

Peruvian records that remain with *brevirostris* are from west of Perico, Huambo, Chirimoto, Piña, La Merced, Garita del

Sol, Monterico, Amable Maria, and Ropaybamba.

The separation of *quitensis* from the western side of the Ecuadorian Andes is justifiable. Several characters are involved, not all of which appear to have been mentioned in the literature. The bill of the western birds is larger, in most cases, than that of the eastern birds, although the wing and tail are not. The color of the belly is about like that of *brevirostris* at its lighter average, but the cap usually is distinctly paler yellow than that of the eastern examples, occasionally not, though never so deeply hued as in the "Bogotá" birds. The blackish color of the lores is more broadly developed and nearly always involves some part of the nasal feathering which is not the case in *brevirostris*. Concurrently with this, the stripe over the eye may be broader, the bases of the frontal feathers are more noticeably dusky, and the dark bases of the anterior crown-feathers, also, are a little more extensive.

The females of *quitensis* have the forehead more intensely colored than do those of *brevirostris*, and there is often a dusky line across the front at the base of the bill. The breast averages more grayish; the back darker green.

A series of sixteen birds from northeastern Perú, including the Ucayali and both sides of the Amazon below the mouth of the Ucayali, show enough difference in size and color from *brevirostris* to warrant a separate name and they may, accordingly, be known as follows.

#### ***Tanagra xanthogaster dilutior*, new subspecies**

TYPE from Orosa, south bank of the Río Amazonas, northeastern Perú. No. 232,736, American Museum of Natural History. Adult male collected September 27, 1926, by the Olalla brothers.

DIAGNOSIS.—Similar to *T. x. brevirostris* of the Eastern Andes of Colombia, Ecuador, and northern Perú, but wing shorter, breast and belly paler yellow (with lower belly less prominently buffy drab), and cap more consistently light in tone of yellow.

RANGE.—Ucayali Valley and both sides of the Amazon below the mouth of the Ucayali, reaching Loretoyacu, Colombia (formerly Perú).

DESCRIPTION OF TYPE.—Forehead and crown Lemon Chrome × Light Cadmium; rest of head

including chin, throat, sides of head, occiput, nape, a prominent superciliary stripe, and the lower part of lores blackish with a deep violaceous tinge weakest on chin and throat and strongest on the back of the head. Back dark steel-blue with a violaceous tinge strongest on the anterior mantle; subterminal portions of the feathers black; under parts below the blackish throat yellow, near Lemon Chrome on the sides and flanks but tinged with cadmium on the median portion; lower belly with a small, inconspicuous area buffy drab; under tail-coverts like the flanks. Wings black; secondaries, tertials, and upper wing-coverts margined with the color of the back; primaries with outer margins duller and much narrower; secondaries and inner six primaries each with a large white patch at the base of the inner web; under wing-coverts largely white, faintly tinged with yellow at the tips; feathers along carpal margin and at base of primaries blue-black, sometimes tipped with yellow. Tail black; outer margins of all but outermost pair of rectrices blue-black; outermost pair with a white subterminal patch on inner web, reaching both shaft and margin. Bill (in dried skin) black, slaty at base of mandible; feet black. Wing, 59 mm.; tail, 31.5; exposed culmen, 7; culmen from base, 10.5; tarsus, 15.

REMARKS.—Females very similar to those of *brevirostris* but wing shorter and breast grayer, with less vinaceous tinge. Wing, 54.1–56.5 mm. (as compared with 57–64; except for one bird from the mouth of the Curaray, northeastern Perú, and one from the Rio Uaupés, northwestern Brazil, the *brevirostris* females have the wing, 60–64).

The series of fourteen males of *dilutor* have the wing, 56.9–61.9, but of these, only three are 61 mm. or over. In *brevirostris*, sixteen males from Colombia have the wing, 61–66; of twenty-eight from eastern Ecuador, one is 58.8, one 60.1, and twenty-six are 61–67; of five males from the "Napo" (some of which may be from near the Amazon), one is 58.2 and the rest 61–65.5; two males from Mt. Duida are, respectively, 62 and 63; a male from the Uaupés is small, like the female from the same locality, having the wing 58.2; a British Guianan male is only 59.

Thus the total of fifty-three males assigned to *brevirostris* include only five specimens with wing below 61 mm., making, with the three oversized *dilutor*, eight out of sixty-seven examples that are unidentifiable by size alone, in the two forms.

Taken in conjunction with the pale coloration of the Amazonian males, the recognition of *dilutor* is not too difficult.

Records from Iquitos and Sarayacu presumably must go under *dilutor*.

### *Tanagra xanthogaster brunneifrons* (Chapman)

*Euphonia xanthogastra brunneifrons* CHAPMAN, 1901, Bull. Amer. Mus. Nat. Hist., XIV, p. 226—Inca Mine, Perú; ♂; Amer. Mus. Nat. Hist.

This well-marked form appears to be confined to southeastern Perú; a male and two females from Ticunguaya, northwest of La Paz, Bolivia, belong to *ruficeps*.

I have no material from the Urubamba region and am in doubt as to the proper assignment of a record from Idma. Hellmayr (1936, Field Mus. Nat. Hist. Publ., Zool. Ser., XIII, pt. 9, p. 27) includes the references and the locality in the account of *brunneifrons*, but it is not stated that he had seen the pertinent specimen, a male collected by Kalinowski and first recorded by Berlepsch and Stolzmann (1906, Ornith., XIII, p. 78). These authors state that the specimen differed from north-Peruvian and east-Ecuadorian birds only by an apparently shorter cap (a character that I find to be variable), but since they state elsewhere (*tom. cit.*, p. 108) that five males and five females from Río Cadena, Escopal, and Marcapata (localities within the demonstrable range of *brunneifrons*) differ not at all from central and north-Peruvian birds, the observation is of little value in the discussion. Berlepsch (1912, Ber. V Inter. Orn.-Kongr., "1910," p. 107) included "Santa Ana" (= Idma) under *brevirostris* rather than *brunneifrons*. Urubamba birds might well belong to either one of the two forms, *brunneifrons* or *brevirostris*. Tropical Zone species that show distinction between the Marcapata and Chanchamayo districts sometimes have one association for the Urubamba Valley birds, sometimes the other. The present case can be decided only by examination of specimens from the critical region. With no evidence to disprove Hellmayr's assignment, therefore, I leave Idma among the recorded localities for *brunneifrons*. Other records of less

doubtful application are from Cosñipata, Yahuarimayo, San Gaban, Chaquimayo, Marcapata, Río Cadena, Escopal, and Huaynapata.

## SPECIMENS EXAMINED

*T. x. brevirostris*.—

## COLOMBIA:

"Bogotá," 8 [♂], 5 [♀?];  
(La Candela, La Palma, La Morelia, Florencia, Caquetá trail, near Quitame, and Buena Vista), 11 ♂, 1 ♀.

## ECUADOR:

(Oyacachi, below San José, upper Río Suno, lower Río Suno, Macas, Sarayacu, Zamora, upper Sumaco, Gualaquiza, Sabanilla, and "Napo"), 24 ♂, 11 ♀.

## PERU:

mouth of Curaray, 12 ♂, 5 ♀;  
Pomará, 4 ♂, 4 ♀;  
Santa Rosa (Marañón), 1 ♂;  
Río Seco, 2 ♂, 2 ♀;  
Río Negro, 3 ♂, 1 ♀;  
Uchco, 1 ♂;  
Chaupe, 1 ♂, 1 ♀;  
Nuevo Loreto, 1 ♂;  
Huayabamba [Valley], 1 ♀;  
Chayavitas, 1 ♀;  
Rioja, 1 ♂<sup>1</sup>;  
Moyobamba, 2 ♂<sup>1</sup>, 1 ♀<sup>1</sup>;  
Huachipa, 1 ♂<sup>1</sup>, 1 ♀<sup>1</sup>;  
Vista Alegre, 2 ♂<sup>1</sup>;  
Chilpes, 2 ♂;  
Utcuyacu, 1 ♂, 2 ♀;  
Tulumayo, 1 ♀;  
Pozuzo, 1 ♂, 1 ♀;  
Chuchurras, 1 ♂, 1 ♀.

## VENEZUELA:

Mt. Duida (Aguña and Primer Pico), 2 ♂, 2 ♀.

## BRAZIL:

Rio Uaupés, Tahuapunto, 1 ♂, 1 ♀.

## BRITISH GUIANA:

Kamakusa, 1 ♂.

*T. x. chocoensis*.—

## COLOMBIA:

(San José, Juntas de Tamaná, San Antonio, Gallera, Las Lomitas, east of Palmira, Novita trail, La Frijolera, Cocal, Barba-coas, and Alto Bonito), 11 ♂, 8 ♀.

## ECUADOR:

(Cachabí, Lita, and Paramba), 8 ♂, 3 ♀, 1 (?).

*T. x. quitensis*.—

## ECUADOR:

(La Chonta, El Chiral, San Bartolo, Gualea, Alamor, Zaruma, Chimbo, Punta Santa Ana, Las Piñas, Bucay, Cebollal, Río de Oro, Salvias, Guaracillo, Santo Domingo, Intac, Naranjo, Cocó, and "Quito"), 53 ♂, 44 ♀, 1 (?).

*T. x. dilutior*.—

## PERÚ:

Orosa, 5 ♂ (incl. type), 1 ♀;  
Puerto Indiana, 3 ♂, 1 ♀;  
Apayacu, 1 ♂;  
Sarayacu, 1 ♂;  
Lagarto, 2 ♀.

## COLOMBIA:

Loretayacu, 2 ♂.

*T. x. brunneifrons*.—

## PERÚ:

Inca Mine, 2 ♂ (incl. type);  
Río Távora, 3 ♂, 5 ♀;  
La Oroya (Inambari), 1 ♂;  
Inambari, 3 ♂;  
Chirimayo, 1 ♂;  
Candamo, 1 ♂;  
Santo Domingo, 1 ♂;  
La Pampa, 1 ♂.

*T. x. ruficeps*.—

## BOLIVIA:

Todos Santos, 3 ♂, 1 ♀;  
Yungas (Cochabamba), 4 ♂, 1 ♀;  
Locotal, 2 ♂, 1 ♀;  
Incachaca, 2 ♂;  
Ticunguaya, 1 ♂, 2 ♀.

*T. x. exsul*.—

## VENEZUELA:

(San Esteban, Caripe, Mt. Bucarito, and El Limón), 5 ♂, 1 ♀.

*T. x. xanthogaster*.—

## BRAZIL:

Espirito Santo, Lagôa Juparaná, 2 ♂;  
Bahia, Cajazeiras, 2 ♂, 1 ♀;  
"Bahia," 1 ♂;  
Matto Grosso, "Broken Canoe Rapids," 1 ♂;  
Rio Madeira, Calamá, 1 [♀];  
"Brazil," 2 ♂.

*Tanagra minuta minuta* (Cabanis)

*Euphonia olivacea* (not *Tanagra olivacea* Gmelin = *Piranga olivacea*) DESMAREST, 1806, Hist. Nat. Tangaras, livr. 10, Pl. xxvii—Cayenne; ♀; Paris Mus.

*Euphonia minuta* CABANIS in Schomburgk, "1848" = 1849, Reisen Brit. Guiana, III, p. 671—British Guiana; Berlin Mus.

*Euphonia strictifrons* STRICKLAND, 1851, Contr. Orn., p. 72—Cayenne; ♂; British Mus.

*Euphonia pumila* BONAPARTE, 1851, Rev. Mag. Zool., (2) III, p. 138—Cayenne and "Nuova Granada"; Parzudaki Coll., present repository unknown.

*Tanagra olivacea mellea* BANGS AND PENARD, 1918 (April), Bull. Mus. Comp. Zool., LXII (2), p. 87—Yquitos, Perú; ♂; Mus. Comp. Zool.

Eleven males from northeastern Perú are quite inseparable from birds of the same sex from the Guianas, Venezuela, "Bogotá," and various localities on both sides of the Brazilian Amazon. I am forced to the conclusion that *mellea* must be sub-

<sup>1</sup> Specimens in Field Museum of Natural History, Chicago.



merged as a synonym of *minuta minuta*. The color of the head and back is quite variable throughout the range, and it is possible to select specimens which show just the opposite characters from those given for "*mellea*" and *minuta* as well as to match other individuals perfectly.

Peruvian records are from Tarapoto, Jeberos, Nauta, Moyobamba, Yurimaguas, and Iquitos.

#### SPECIMENS EXAMINED

##### *T. m. minuta*.—

##### BRITISH GUIANA:

(Wismar, Potaro Landing, Carimang River, Rockstone, Tumatumari, and "British Guiana"), 9 ♂, 6 ♀.

##### FRENCH GUIANA:

"Cayenne," 1 ♂.

##### DUTCH GUIANA:

(near Paramaribo, "Demerara," and Little Wanica), 8 ♂, 3 ♀.

##### VENEZUELA:

Guanoco, 2 ♂, 1 ♀;  
Río Caura, Nicaré, 1 ♂;  
Mt. Duida, "Primer Campamento," 1 ♂.

##### COLOMBIA:

"Bogotá," 4 [♂], 2 [♀].

##### BRAZIL:

Manaos, 1 ♀;  
Río Tocantins, Mocajuba, 1 ♂;  
Río Tapajoz (Boim, Caxiricatuba, and Tauary), 3 ♂, 3 ♀;  
Río Madeira, Borba, 1 ♀;  
Río Amazonas, Villa Bella Imperatriz, 1 (?);  
Teffé, 3 ♂, 1 ♀.

##### PERÚ:

Puerto Indiana, 2 ♂;  
Orosa, 3 ♂;  
Sarayacu, 1 ♀;  
"Upper Ucayali" (Cashiboya), 1 ♂;  
Chuchurras, 1 ♂;  
Chamicuros, 1 ♂;  
Chayavitas, 2 ♂;  
Pachiza, 1 "♂" [= ♀];  
Río Negro, west of Moyobamba, 1 ♂, 1 ♀.

##### *T. m. humilis*.—

##### COLOMBIA:

(Barbacoas, Noanamá, Baudó, Quibdó, Puerto Valdivia, Juntas de Tamaná, and "Antioquia"), 7 ♂, 5 ♀.

##### PANAMÁ:

[Lion Hill], and "Aspinwall" (Colón), 2 ♂, 1 ♀.

##### COSTA RICA:

(San José, Azahar de Cartago, Limón, and Pozo Azul), 3 ♂, 3 ♀.

#### *Tanagra chlorotica taczanowskii* (Sclater)

[*Euphonia chlorotica*] Subsp. *taczanowskii* SCLATER, 1886, Cat. Birds Brit. Mus., XI, p. 65—Callacate, Perú; British Mus.

Peruvian males of this species are separable from those of *chlorotica* by their paler yellow cap and belly and from those of *serrirostris* by a less marked average difference of the same sort coupled with a smaller average size. Females and young males are very like those of *chlorotica* but have less extensive gray coloration on the median under parts. These distinctions are discussed in greater detail below.

I have found it advisable to extend the range of *taczanowskii* along the south bank of the Amazon to the Tapajoz and across northern Matto Grosso and northern Bolivia, since the birds from this area are closer to *taczanowskii* than to *chlorotica* to which they have been previously referred. They are, however, somewhat intermediate in coloration, although none of the adult males exceeds the depth of color shown by the Peruvian series or approaches the extreme depth of color shown by *chlorotica*.

I am unable to find the supposedly more violaceous dorsal coloration of *taczanowskii* males as compared with the same sex of *chlorotica*. There is much variation in this respect in both forms.

Peruvian records of *taczanowskii* are from Tambillo, Moyobamba, Callacate, Tarapoto, Juanjuí, Bellavista, Guajango, Malca, and Chanchamayo. Others are given in the list of material examined.

In view of the considerable amount of material examined in the course of the study of this species, a review of the general results of the study may be of interest.

Examination of a number of specimens from the Orinoco has convinced me that *cynophora* is quite distinct from *trinitatis* and reasonably so from *chlorotica*, but the specific relationships of the three are not entirely clear. There is no question about the status of *serrirostris* and *taczanowskii* as conspecific of *chlorotica*, although I have some changes to propose below with respect to the geographical distribution of each of them. Adult males of all of them have the white area on the outer primary quite broad, reaching the shaft on the inner web and continued nearly or quite to the base of the feather. Of over a hundred males examined, the only birds that show no more

than a relatively narrow whitish inner margin of the outer primary show, also, some definite signs of immaturity, even though it may be no more than fine, pale outer margins on the remiges, absent in fully adult birds. Some young birds have the wing marking as well developed as the adults, but these are few.

On the other hand, no specimens of *trinitatis*, from Trinidad to Barranquilla, Colombia, of any age or either sex, have the white area of the outer primary broad enough to reach the shaft, although there is sometimes an angular expansion of the marginal stripe suggesting a trend in that direction. Almost all the birds from Ciudad Bolívar, lower Orinoco, agree with the Caribbean coastal form in this respect as well as in their more bluish, less violaceous throats and backs, and one fully adult male from Caicara, middle Orinoco, is easily referable to *trinitatis* in these respects; a single male from Agua Salada de Ciudad Bolívar has the white area on the outer primary touching the shaft. Five additional males from Caicara, one from Quiribana de Caicara, two from Maripa (Río Caura), and one from Villavicencio, eastern Colombia, disagree with one or both of these characters of *trinitatis*. Five of them are fully adult and four of the five (two from Caicara and two from the Caura) have the outer primary with the full marking as present in adult *chlorotica*; the fifth (from Caicara) has the white margin nearly reaching the shaft but not quite in contact. The younger males have the marking as in young Brazilian specimens of the same sex. (Another male, still largely in immature plumage, is doubtful but may belong here also. The cap is as short as that of *chlorotica*!) All nine birds have strongly violaceous backs and throats like *chlorotica* males from which they differ by more extended yellow caps and longer blackish tips on the rectrices; and the two Río Caura birds also have a somewhat deeper tone of yellow on the under parts than *chlorotica*, but the Caicara birds do not show it. Unless these upper Orinoco birds are united with *chlorotica*, they must be recognized as *cynophora*. I believe their recognition is justified.

The occurrence of *trinitatis* at the same place calls for specific separation of *cynophora* (with *chlorotica*) from the Caribbean coastal form, at least until some ecological or other distributional facts can be adduced to show that the two groups do not live side by side. I have confidence that this evidence will some day be found, and that *trinitatis* is not specifically distinct from *chlorotica*.

Two very young males and four females from Caicara, one female from Maipures, and two females from Altagracia are unidentifiable with certainty. The question involves more than the distinctions of female and young male plumage in *trinitatis* and *cynophora*. Hellmayr (1923, Novit. Zool., XXX, p. 234) reached the conclusion that birds with the entire under parts yellow are young males and those with gray on the breast and belly are females. I am unable to confirm this from the material before me unless over a third of my material in those plumages is wrongly sexed. Furthermore, I am able to segregate most of the material subspecifically by the character in question in correlation with a similar distribution of the males from the same regions.

Thus, the females from Santa Marta, northern Venezuela, Trinidad, and the lower Orinoco are all gray-bellied. Several young males from Santa Marta and two from northeastern Venezuela likewise show some gray feathering on the median under parts. Four other young males from northeastern Venezuela, however, have no gray beneath. These birds presumably are all referable to *trinitatis*. Both young males and adult females of *luteicapilla* are without gray below.

All the females from the upper Orinoco and the Río Caura, except one from Altagracia, are strongly yellow below, without gray, including one other Altagracia specimen. The example with the gray median stripe agrees with the other upper Orinoco females in having a noticeable (though short) yellow superciliary stripe and a slight dusky supraloral bar, both of which characters are lacking in females of *trinitatis*. I have no hesitation, therefore, in assigning this specimen to *cynophora*.

An immature male from Caicara also has whitish median under parts, but the yellow portions of the plumage are too dull to show much distinction over the orbit where, however, the superciliary line is indicated.

Females and young males of *chlorotica* are almost completely yellow below though there may be some dull grayish, usually very poorly defined, along the median line of the under parts. An exception is noted in two birds from Isla São Luiz, northern Maranhão, which have a more definite gray patch or broad stripe in the area. One is sexed as a female; the other is without given sex; both are unusually brightly yellow on flanks and forehead. Two obvious young males (one without given sex but with adult plumage beginning to appear) are without any gray below.

Females and young males from eastern Bolivia, extreme southern Matto Grosso and southeasternmost Brazil, Paraguay, and Argentina are most like those from northern Venezuela, having a broad gray (sometimes ashy gray) area down the median under parts, without exception so far as the material at hand shows although the character is less pronounced in several young males beginning to assume adult plumage. The longer under tail-coverts are almost always white or whitish which they are not in *chlorotica*. The size averages somewhat larger than that of *chlorotica*, and the upper parts are darker and duller olive. Birds of this sort are found in southeastern Brazil in Rio Grande do Sul and Paraná, but the exact line of demarcation from *chlorotica* to the northward is not determinable from the material now at hand. A "Bahia-skin" agrees moderately well with the more southern females but even better with the gray-breasted bird without sex from Ilha São Luiz. A second example, marked as a "Bahia-skin" but not of typical "make," has no gray below. Males from Bahia (both trade-skins and authenticated specimens) agree best with *chlorotica* although seven skins have the wing 57 to 58 mm., a measurement larger than any of the males from north of the Amazon; the "Bahia"

female with the yellow belly also is large, with wing 57.

I have no females from Goyaz, but two males from that state are large (wing, 58 and 61.2) and agree better with males of *serrirostris* to the southward, both in size and color. I have no birds of either sex from Rio de Janeiro except three abnormal trade-skins of "Rio-make" discussed below. Since Goyaz examples are nearer *serrirostris* than *chlorotica*, it is probable that Rio de Janeiro should be included in the range of *serrirostris* which is found also in Paraná, Rio Grande do Sul, and southern Matto Grosso, Argentina, Paraguay, and eastern Bolivia.

In the Amazon Valley, south of the river in Brazil, northern Bolivia, and northern Perú, the females and young males are very like those of *chlorotica*, often without any gray beneath but sometimes with a small amount, usually poorly defined even when present, though sometimes prominent. The under tail-coverts are yellow. Distinction is better from *serrirostris* than from *chlorotica*. Some examples have the smaller bill of *chlorotica*, but others are very like central Peruvian birds in this respect. On the basis of females and young males, therefore, this population, including northern Matto Grosso in its range, may be assigned to *taczanowskii*.

This segregation of subspecies is supported by the males from the various regions here discussed. The distinction of *trinitatis* from the other South American forms has been discussed earlier, as has the separation of *chlorotica* from *cynophora*. Adult males that agree well with Guianan *chlorotica* are present from the lower Rio Negro, Monte Alegre (north bank of the Amazon), Maranhão, Ceará, Pernambuco, Piahy, and Bahia. Males from the distributional area I have tentatively assigned to *serrirostris* differ from the males of *chlorotica* by somewhat larger size and usually noticeably paler yellow under parts. Adult males of *taczanowskii* average even paler yellow than those of *serrirostris* and are thus most widely separable from those of *chlorotica*. The northern Matto Grosso birds and those from the south bank of the lower Amazon are some-

what intermediate with *chlorotica* but are distinctly closer to *taczanowskii*. The individual variations in the greater or lesser degree of purplish or bluish tinges on throat and back are so marked in all parts of the range of the species that I am unable to find the character of value except in the separation of *trinitatis* and *luteicapilla* as previously noted.

With this agreement of both sexes in the proposed reassignment of ranges for the various forms, I have distributed the material examined as listed on a later page. Other notes on the affinities of *chlorotica* are given in the discussion of *T. saturata*.

Three unusual specimens are at hand which resemble the descriptions of the type of *serrirostris*, a bird considered by Hellmayr (1936, Field Mus. Nat. Hist. Publ., Zool. Ser., XIII, pt. 9, p. 41, footnote) as in "retarded" adult male plumage. The three birds at hand are not quite uniform but agree in major particulars. All blue coloration is suppressed, although two of the specimens have a slight purplish sheen on the hind neck. The throat is olive green, darker in the two birds mentioned. The remiges are edged exteriorly with olive, and the white area on the inner webs of the outer quills is marginal as in adult females or young males. The two darker birds have strong white patches on the outer two pairs of rectrices, about as in first-winter males but less clear than in fully adult males; the third specimen has rather less than the others though more than the amount present in adult females. All three birds are marked as young males but probably not by the original collector since all three are without definite locality. One has been subsequently annotated as a "Rio-skin" and the other two as "Bahia-skins" but all three are of similar "make" and appear to be "Rio-skins." The type of *serrirostris* was from Bolivia. I am inclined to agree with Hellmayr that this plumage is best considered as "retarded" adult male dress of the bird long known as *violaceicollis*.

An unusual specimen of *trinitatis* also may be mentioned at this time. It is an adult male, undated, collected by D. W. Smith, and bearing a label from the Salvin and Godman collection on which is the

printed locality, "St. Vincent, W. I." Since the species is unknown from the West Indies (in spite of Strickland's original citation of "St. Thomas") and since St. Vincent is particularly well known ornithologically (as Mr. James Bond informs me), some doubts attach to the locality of this specimen. The matter is of possible importance since this bird differs from all other examples of *trinitatis* at hand by having the white on the outermost pair of rectrices extending to the bases of the feathers and equally long on one of the two subexternal quills. The white area also reaches within 4 mm. of the tips of the feathers. A suggestion of the character is noticeable in a Santa Martan male where, however, there is only a small, disconnected, whitish spot at the base of the tail and the usual broad, dark tip, 7 or 8 mm. wide.

An examination of other specimens received by the American Museum from the same collector at the same time reveals that the others were collected at Carúpano and El Pilar, Venezuela, in October and November, 1891, with the data handwritten on similar Salvin and Godman-St. Vincent labels with the "St. Vincent" cancelled. Obviously, no credence can be placed in the supposed locality of this specimen, and the extensive white on the tail must be considered as mere individual variation of *trinitatis*.

Actually, the pattern of the outer rectrices in the specimen erroneously credited to St. Vincent is extremely similar to that found in *T. godmani*, and the pattern of the outer primaries is similar, but there is little else in common except the general style of coloration common to a number of species of this genus. The resemblance between the tail of this specimen of *trinitatis* and that of *godmani* is of considerable interest but of uncertain significance.

#### *Tanagra saturata* (Cabanis)

*Phoenicea saturata* CABANIS, 1860, Jour. für Orn., VIII, p. 336—"New Grenada"; Berlin Mus.

In view of the uncertainty surrounding the relationships of many of the forms of this genus, I hesitate to assign *saturata* to a

separate species with *finschi* and *concinna* as has been proposed by Hellmayr. The males of the three forms agree only in usually lacking the white spots on the tail (in which they agree with *luteicapilla*), in their violaceous upper parts (in which they agree with the *chlorotica* group), and in having a certain amount of brownish coloration on the lower under parts. They differ among themselves in various respects.

The males of *finschi* have more extended white at the base of the inner webs of the outer primaries (agreeing with *chlorotica* and its conspecies). The belly is more strongly brownish than in *concinna*, and the breast is more strongly yellowish than in *saturata*. The color of the cap is deeper than in *concinna* but not so deep as in *saturata* where the cap is much larger, and in its extent and in the width of the blackish frontal band there is much resemblance to the cap of *chlorotica*, although that of the latter is a little paler yellow.

The males of *concinna* have the white area on the outer primaries restricted to the inner margins of the feathers (as in *trinitatis*). The cap is about the same restricted size as it is in *finschi* but is paler in color and has a very pronounced blackish frontal bar; the brownish color of the lower under parts is variable and much less pronounced than in *finschi*, sometimes not very strongly differentiated from the yellow of the breast.

Males of *saturata* differ from those of the other forms mentioned by the strong brownish tinge over the whole under parts below the throat and by the very full, deep (brownish) yellow cap without a blackish frontal band and without dusky bases on the feathers. In this latter respect they are matched only by males of *minuta* and *violacea*, both of which presumably have little to do with *saturata*. The white on the outer primaries is marginal as in *concinna*.

All three forms, *saturata*, *concinna*, and *finschi*, usually have the tail entirely blackish like *luteicapilla*, but occasional specimens of all three, also like *luteicapilla*, have well-developed white patches on the outer rectrices.

Males of *finschi* differ from those of *chlorotica* principally by the usual lack of the white on tail (not constant), the deeper yellow cap, and the brown color of the belly (faintly suggested in one or two examples of *chlorotica*). I am not sure that there is any conflict of ranges in these two birds although both are recorded from all three Guianas. I have skins of *finschi* from the extreme northwestern part of French Guiana (Mana), but of *chlorotica* I have specimens only from Cayenne, some distance to the eastward. The only records of *chlorotica* from Dutch Guiana are one by Penard and one by Pallas (in Vroeg), the latter described but not named although Richmond, in 1905, applied a name used by Vroeg (who was not consistently binary) to the bird described by Pallas. Richmond identified Pallas's bird as the form now known as *chlorotica*, but the description by Pallas applies equally well to *finschi*. Penard's record may be sound but is doubtful in view of one of his birds, now before me, which is labeled as *chlorotica* (probably because of the abnormal white spots on the tail) but which is an undoubted *finschi*.

The only records of "*chlorotica*" from British Guiana are based on birds in the British Museum, and these have been described by Chubb in his work on the birds of that country. The male, from Supenaam River, is rather certainly *trinitatis* (bluish back and outer three primaries with no more than dull pale margins); the female is equally probably *minuta* (throat, middle of abdomen, and under tail-coverts ashy gray but breast greenish yellow). Records of *finschi* from British Guiana are from the interior of the country, not in conflict with the coastal record of *trinitatis*.

It is not impossible, therefore, that *finschi* is no more than a well-marked representative of the *chlorotica* group, although full intergradation has yet to be established. I consider that its affinities are with *chlorotica* rather than with *concinna*.

*Concinna* may possibly have its nearest relative in *trinitatis*, although here, again, decisive proof is lacking. Both forms have

a proportionately long tail (in comparison with the tails of *finschi* and *chlorotica*), the bill is relatively short and stubby, the cap is about the same hue of yellow, the white of the outer primaries has a similar pattern, and the frontal bar is well developed, being stronger in *concinna* than in *trinitatis*. They differ in the amount of violaceous color on the back, in the size of the yellow cap, and in the prevalence of white spotting on the tail, invariably present in *trinitatis* and of rare occurrence in *concinna*. With picked specimens of both forms, these differences are not at all striking although not completely bridged. There are also many points of resemblance between *concinna* and *affinis* that will bear further study.

The males of *saturata* do not appear close enough to any of these forms to assure specific association with them, and I prefer to keep *saturata* as a distinct species.

The females of the various forms discussed here are so similar to each other in an irregular manner that it is impossible to arrange them satisfactorily to supplement the characters shown by the males. Females of *saturata* have much in common with those of *luteicapilla*. Females of *finschi* resemble those of *cynophora*; those of *concinna* and *chlorotica* have some points in common as do *finschi* and *concinna*. The indicated relationships are not all possible unless the South American forms, excluding *saturata*, are placed in the same specific group—a move I am not prepared to recommend.

Consequently, although I dislike to increase the number of species to be recognized, especially as monotypic units, I think the present evidence requires that some of the forms be detached and maintained apart from each other until more conclusive proof of conspecific relationship is available. The arrangement I adopt may be seen in the list of material examined.

I am unable to recognize *T. affinis esperanzae*, said to have the back and head blue instead of violaceous. The individual variation of *affinis* in various parts of its range covers both extremes.

My only specimen of *saturata* ostensibly

from Perú was collected at Milagros, possibly just across the border in Ecuador. It has been recorded from Tumbes, definitely within Peruvian boundaries.

#### SPECIMENS EXAMINED

##### *T. godmani*.—

##### MEXICO:

(Juan Lisiarraga Mts., Sinaloa; Tepic, Jalisco; Escuinapa, Sinaloa), 6 ♂, 2 ♀.

##### *T. affinis*.—

##### MEXICO:

(Río Givicia, Tampico, Orizaba, Tehuantepec, Chimalapa, Tlacotalpan, and Yucatan), 12 ♂, 3 ♀.

##### HONDURAS:

(Las Peñitas, Cofradia, El Caliche, and El Boqueron), 4 ♂, 3 ♀.

##### NICARAGUA:

(Matagalpa, León, Muy Muy, Uluce, south of Metapa, and Chinandega), 7 ♂, 1 (?).

##### GUATEMALA:

(Finca El Cipres, Hacienda California, and Carolina), 17 ♂, 14 ♀.

##### COSTA RICA:

(Miravalles, Bebedero, Las Cañas, and El Zapotal), 4 ♂, 2 ♀.

##### *T. luteicapilla*.—

##### NICARAGUA:

(Quilale, Los Sabalos, Chontales, and Matagalpa), 4 ♂, 1 ♀.

##### COSTA RICA:

(Limón, San José, Guapiles, Terraba, Boruca, Turrialba, Buenos Aires, Bonilla, and Monte Redondo), 13 ♂, 4 ♀.

##### PANAMÁ:

(Mata Coclé, La Colorado, Almirante, Piña, El Villano, near Panamá, Boqueron, Chiriquí, Bogava, Veragua, Boquete, Parida Is., Cebaco Is., and Brava Is.), 20 ♂, 8 ♀.

##### *T. saturata*.—

##### COLOMBIA:

(Caldas, Río Caquetá, Cali, Atuncela, "western Colombia," and "Bogotá"), 12 ♂, 1 ♀, 1 (?).

##### ECUADOR:

(Esmeraldas, Guayaquil, Río Pindo, Cebollal, Santa Rosa, Pullango, Chone, Chongocito), 12 ♂, 5 ♀.

("Archidona," "Río Suno," and "Napo"—probably all erroneous), 4 ♂.

##### PERÚ:

Milagros, 1 ♀.

##### *T. trinitatis*.—

##### TRINIDAD:

(Chaguarama, Caura, Pointe Gourde, Santa Cruz, and "Trinidad"), 3 ♂, 2 ♀.

##### VENEZUELA:

(Cristóbal Colón, Carúpano, Campos Alegre Valley, Cocallar, San Antonio, San Felix, Salsipuede, San Antonio, Barquisimeto, Tucacas, El Cuji, Ciudad Bolívar,

Agua Salada de Ciudad Bolívar, and Las Barrancas), 27 ♂, 16 ♀;

Caicara, 1 ♂.

COLOMBIA:

(Barranquilla, Santa Marta, and Bonda), 17 ♂, 3 ♀, 1 (?).

*T. concinna*.—

COLOMBIA:

(Honda, within 20 miles of Honda, Tolima, and "Bogotá"), 14 ♂, 7 ♀.

*T. finschi*.—

VENEZUELA:

Arabupú, Roraima, 1 ♂, 1 ♀.

BRAZIL:

Frechal, Rio Surumú, 4 ♂, 1 ♀.

DUTCH GUIANA:

(Rijweg, and near Paramaribo), 2 ♂.

FRENCH GUIANA:

Mana, 1 ♂, 1 ♀.

*T. chlorotica cynophora*.—

VENEZUELA:

Maripa, 2 ♂, 2 ♀;

Caicara, 7 ♂, 3 ♀;

Quiribana de Caicara, 1 ♂;

Maipures, 1 ♀;

Altagracia, 2 ♀.

COLOMBIA:

Villavicencio, 1 ♂.

*T. c. chlorotica*.—

FRENCH GUIANA:

Cayenne, 5 ♂, 2 ♀.

BRAZIL:

Rio Negro, Igarapé Cacao Pereira, 6 ♂;

Monte Alegre, 2 ♂;

Faro, 1 ♂, 1 ♀;

Maranhão (As Mangueiras, Tabocas, Flores, S. João dos Patos, and Ilha São Luiz), 11 ♂, 4 ♀, 1 (?);

Pernambuco, Garanhuns, 1 ♀;

Piahy (Therezina, Corrente, and Freicheiras), 6 ♂, 4 ♀;

Ceará (Joazeiro, Viçosa, Lavras, and Quiseada), 4 ♂, 1 ♀;

Bahia (Santa Ritta, Barra, and Bahia), 9 ♂, 2 ♀.

*T. c. serrirostris*.—

BRAZIL:

Goyaz, 2 ♂;

[Rio de Janeiro] trade-skins, 3 [♂];

Paraná, Foz de Iguaçu, 1 ♀;

Rio Grande do Sul, Sapyranga, 1 ♂;

Matto Grosso, Campanario, 1 ♀.

PARAGUAY:

(Trinidad, Colonia Independencia, Zanja Morotí, east of Caaguasu, Abai, east of Concepción, Makthlawaiya, La Fonciere, and east of Yhú), 15 ♂, 4 ♀.

ARGENTINA:

(Tucumán, Las Vasquez, Ledesma, Embarcación, Metau, Tafi Trail, above San Pablo, Lavalle, San Vicente, and Concepción, Misiones), 11 ♂, 6 ♀.

BOLIVIA:

(Rio Pilcomayo, Chilón, Rio Parapeti, and Prov. Sara), 10 ♂, 4 ♀.

*T. c. taczanowskii*.—

PERÚ:

Jaen, 2 ♂;

Lomo Santo, 1 ♂;

Perico, 2 ♂;

Sauces, 2 ♂, 1 ♀;

San Ignacio, 1 ♂;

Rio Negro, 1 ♀;

Contamana, 1 ♂;

Pachiza, 1 ♂;

La Merced, 1 ♂;

Perené, 1 ♀.

BOLIVIA:

Trinidad, Rio Mamoré, 1 ♂.

BRAZIL:

Matto Grosso, Chapada, 38 ♂, 10 ♀;

Descalvados, 2 ♂, 1 ♀;

Agua Blanca de Corumbá, 1 ♂;

Tapirapoan, 1 ♀;

Juruena, 1 ♂;

Boca Lago, Teffé, 1 ♂;

Rio Madeira, Rosarinho, 1 ♂;

Villa Bella Imperatriz, 2 ♂, 1 ♀;

Rio Tapajoz, Tauary, 1 ♂;

Caxiricatuba, 4 ♂;

Santarem, 1 ♀;

Itaituba, 1 ♂.

*Tanagra laniirostris melanura* (Sclater)

*Euphonia melanura* SCLATER, 1851, Contr. Orn., p. 86—"Barra do Rio Negro"; ♂; British Mus.

With the material at hand there remains no doubt that *melanura* is no more than a subspecies of *laniirostris*. Several of a series of males from near the mouth of the Rio Madeira, Brazil, show a certain amount of white on the outermost rectrices, sometimes only a trace and sometimes a large, conspicuous spot not, however, so extensive as that found in typical *laniirostris*. The dark marking at the apex of the chin is nearly always present but is of variable extent and in its minimum development is matched by extreme examples of *laniirostris*.

This form is found on both sides of the Amazon in eastern Perú and, south of that stream, crosses northern Perú to the neighborhood of Moyobamba. It also ascends the Ucayali to near the junction of the Urubamba and the Tambo. Localities of record from which material has not been examined in this study are Tarapoto and Moyobamba.

A male "Bogotá"-skin is unusual in the extent of the yellow cap which reaches to the hind neck and is unusually full, and the

individual feathers of which are also longer than usual. In other respects it shows no obvious peculiarity. Another "Bogotá" male shows a strong tendency in the same direction, and two males from the Macas region of eastern Ecuador likewise show the same sort of variation, though none of these three birds is so strongly marked as the specimen first mentioned. One of the Macas birds has the chin-bar obsolete and has a small white area on the outermost rectrices. I can find no other Colombian or Ecuadorian specimens with the same features, including a male from Florencia, eastern Colombia. The remaining "Bogotá" males in the collection belong to another subspecies, *crassirostris*, of which I have specimens from Honda, Magdalena Valley, Colombia, and the Mérida region of southwestern Venezuela. It is difficult to postulate a range for another form without conflicting with either *melanura* or *crassirostris* although future collections may show some such condition. In the meantime, I refer these unusual specimens to *melanura* with this note as to their peculiarities.

There is considerable doubt about the correctness of the type locality of *melanura* as commonly accepted. Actually Sclater says that Wallace sent the series of this bird from Barra [= Manaos]—not that he found it at Barra. Wallace, according to his own account, reached Barra from Santarem after stopping at Obydos, Villa Nova, and Serpa. Both Obydos and Serpa are on the north bank of the lower Amazon where no form of *lanirostris* has been found by subsequent collectors. Villa Nova, according to the maps published by both Wallace and Bates, was on the south bank of the Amazon near where Parintins is now situated; perhaps Parintins is the same settlement now under another name. In any case, *melanura* occurs in that region as is evidenced by specimens in hand from Villa Bella Imperatriz, and there is every reason to believe that Wallace secured the type at his "Villa Nova," not at Barra. Accordingly I suggest that the type locality of *melanura* be altered to "Villa Nova," south bank of the lower

Amazon, west of the mouth of the Rio Tupinambaranas.

***Tanagra lanirostris zopholega***  
Oberholser

*Euphonia lanirostris peruviana* (nec *Tanagra peruviana* Desmarest) BERLEPSCH AND STOLZMANN, 1906, Ornith., XIII (2), p. 77—La Merced, Perú; ♂; Warsaw Mus.

*Tanagra lanirostris zopholega* OBERHOLSER, 1918 (Nov. 29), Proc. Biol. Soc. Wash., XXXI, p. 125—new name for *Euphonia lanirostris peruviana* Berlepsch and Stolzmann.

This is not a very strongly marked form and it is doubtfully distinct from typical *lanirostris*. The average length of wing is greater, but the maximum is about the same as that of *lanirostris*. Five males have the wings 64–65 mm. (av., 64.3) as compared with eight males of *lanirostris* with wing 62.5–65.1 (av., 63.4). The white spot on the outermost tail-feathers of the males is present in four of the five males, being reduced in size in one of them but equal to that of *lanirostris* in the other three. The tail of the fifth bird, without the white spots, shows a slight brownish tinge and traces of pale brownish margins that suggest immaturity, at least of the member in question. The bill of *zopholega* is a little longer and heavier and the ventral coloration slightly paler and less brownish as is the tendency of the cap. Longer series of *zopholega* might overcome this apparent distinction, but for the present the form may be recognized as a possible entity.

Peruvian records are from Santa Ana and Maranura.

***Tanagra lanirostris hypoxantha***  
(Berlepsch and Taczanowski)

*Euphonia hypoxantha* BERLEPSCH AND TACZANOWSKI, 1883, Proc. Zool. Soc. London, p. 544—Chimbo, w. Ecuador; ♂, ♀; Warsaw Mus.

There is nothing of importance to add to the knowledge of this well-marked form except two additional localities in its range.

The occasional presence of a white spot on the subexternal rectrix of the males is to be noted in *hypoxantha*, varying from a slight trace on the inner margin to an area



equal in extent to that on the outermost feather. This maximum development is shown only by one of six males from Seques, at the southernmost end of the range, which also has prominent whitish tips on the inner secondaries. The other Seques birds all have some trace of white on the subexternal rectrices but no more than is shown by certain specimens from the rest of the range.

## SPECIMENS EXAMINED

*T. l. crassirostris*.—

PANAMÁ: 29 ♂, 9 ♀.

## COLOMBIA:

(Santa Marta region, Cali, Honda, Río Caquetá, Chicoral, Antioquia, Puerto Berrio, El Consuelo, Palmira, Puerto Valdivia, Río Umangi, and "Bogotá"), 68 ♂, 16 ♀, 13 (?).

## VENEZUELA:

(north; Mérida to Cristóbal Colón), 46 ♂, 15 ♀, 2 (?).

*T. l. melanura*.—

## COLOMBIA:

"Bogotá," 2 ♂;  
Florescia, 1 ♂.

## VENEZUELA:

Maipures, 1 ♂, 1 ♀.

## ECUADOR:

Zamora, 2 ♂;  
Pitaloma, 1 ♂;  
Macas region, 1 ♂;  
"Napo," 2 ♂;  
(no locality), 2 ♂.

## PERÚ:

mouth of Río Curaray, 3 ♂, 1 ♀;  
Pebas, 1 ♂;  
Puerto Indiana, 5 ♂, 1 ♀;  
Nauta, 1 ♂;  
Iquitos, 1 ♂;  
Orosa, 3 ♂, 1 ♀;  
Ucayali, 1 ♂;  
lower Ucayali, 1 ♂, 2 ♀;  
Sarayacu, 1 ♂;  
Lagarto, 1 ♂, 1 ♀;  
Santa Rosa, 1 ♀;  
Río Seco, west of Moyobamba, 4 ♂, 1 ♀.

## BRAZIL:

Rio Madeira, Rosarinho, 5 ♂, 2 ♀;  
Santo Antonio de Guajará, 2 ♂;  
Borba, 4 ♂;  
Igarapé Auará, 10 ♂;  
Villa Bella Imperatriz, 2 ♂.

*T. l. hypoxantha*.—

## ECUADOR:

(west; Esmeraldas to Alamor), 51 ♂, 33 ♀.

## PERÚ:

Lamor, 1 ♀;  
Paletillas, 1 ♂, 1 ♀;  
Palambra, 6 ♂, 2 ♀;  
Seques, 6 ♂, 1 ♀.

*T. l. zopholega*.—

## PERÚ:

La Merced, 2 ♂, 1 ♀;  
Perené, 1 ♂, 1 ♀;  
Tulumayo, 1 ♀;  
Candamo, 2 ♂;  
Astillero, 1 ♂.

*T. l. lanirostris*.—

## BOLIVIA:

Falls of the Madeira, 2 ♂.

## BRAZIL:

Chapada, 15 ♂, 1 ♀, 1 (?);  
Abrilongo, 2 (?);  
Rio Madeira, Calamá, 3 ♀;  
Humaythá, 1 ♂;  
Rio Machados, Jamarysinho, 1 ♂.

*Tanagra rufiventris* Vieillot

*Tanagra rufiventris* VIEILLOT, 1819, Nouv. Dict. Hist. Nat., nouv. éd., XXXII, p. 426—part; no locality; Rio de Janeiro suggested by Berlepsch and Hartert, 1902 (errore); Iquitos subst. Hellmayr, 1920; type in Paris Mus.

*Tanagra chrysogaster* LESSON (nec Cuvier, 1829), 1831, Traité d'Orn., p. 461—"Amérique"; ♂; Paris Mus.?

*Euphonia bicolor* STRICKLAND, 1850, Contr. Orn., p. 48, Pl. XLIX, lower fig.; ♂; Perú; Acad. Nat. Sci. Phila.

*Tanagra rufiventris colorata* TODD, 1913 (Aug. 8), Proc. Biol. Soc. Wash., XXVI, p. 169—Río "Turutu" [= Surutú], Prov. of Sara, Bolivia; ♂; Carnegie Mus.

This species exhibits much variation throughout its range, but it is questionable if any division into subspecies can be maintained. Males from southern Venezuela and northern Brazil average more deeply and uniformly brown on the lower under parts, with a very limited area on the sides of the breast yellow. Males from Ecuador and Perú average lighter and more golden brown on the same areas, and have a greater extension of the yellow of the sides. The two extremes are decidedly different, but there is an overlap involving a large part of the population. About one-third of the males from northern Brazil and southern Venezuela can be matched in the Ecuadorian-Peruvian series of which, in turn, only about one-third can be readily distinguished from their northern representatives. Thus, while there is a definite tendency toward darker coloration in the north, clear separation is not indicated.

Females from the two regions show no distinctive characters. There is considerable variation in the tone of the upper parts in this sex, and some examples have a de-

cidedly yellowish green coloration with little glaucous sheen on the occiput while others are darker, reaching an extreme where there are dark greenish reflections over most of the upper surface, and the occipital area is quite dark. These variations occur throughout the range.

In southeastern Perú and Bolivia, the males are indistinguishable from those of other regions, agreeing with the average Peruvian and Ecuadorian examples. The females have a tendency toward more whitish, less grayish, median under parts but the distinction is not perfectly maintained, although none of the females from this region is so dark below as the extreme examples from farther north. Mr. Todd, who kindly sent me topotypes of "*colorata*" for examination, writes that he had abandoned this form as inseparable from *rufiventris*, and with this disposition of it I am inclined to agree.

The "markedly larger bill" of "*colorata*" indicated by Hellmayr (1936, Field Mus. Nat. Hist. Publ., Zool. Ser., XIII, pt. 9, p. 58) is not borne out in the series at hand. The size of this member, as well as the violaceous or bluish coloration of the back of the males, is extremely variable throughout the entire range.

Peruvian records of *rufiventris* are from Río Tigre, Province of Maynas, Tarapoto, Pebas, Río Ucayali, La Gloria, Chanchamayo, and Yahuarmino.

#### SPECIMENS EXAMINED

##### *T. rufiventris*.—

##### VENEZUELA:

- Mt. Auyan-tepui, 1 ♂;
- Río Caura, Nícare, 2 ♂, 2 ♀;
- La Prisión, 2 ♂;
- Río Orinoco, Munduapo, 1 ♂, 1 ♀;
- Río Cunucumá, Boca de Sina, 2 ♂, 1 ♀;
- Mt. Duida (Playa del Río Base, Caño León, Caño Seco, Pie del Cerro, and Valle de los Monos), 7 ♂, 1 ♀;
- Río Cassiquiare, Solano, 1 ♂;
- opposite El Meray, 1 ♂;
- mouth of Río Ocamo, 1 ♂, 1 ♀;
- Río Huaynia, junction of Cassiquiare, 1 ♂.

##### COLOMBIA:

- opposite Tahuapunto (Brazil), 1 ♀;
- Loretayacu (formerly in Perú), 1 ♂.

##### BRAZIL:

- Río Uaupés, Tahuapunto, 2 ♂, 1 ♀;
- Ianarete, 1 ♀;
- Río Negro, Camanaos, 5 ♂, 4 ♀;

- Yucabí, 9 ♂, 3 ♀;
- San Gabriel, 6 ♂, 3 ♀;
- Tatú, 1 ♂;
- Mt. Curycuryari, 2 ♂;
- Río Madeira, Calamá, 1 ♂;
- Matto Grosso, Monte Cristo, 1 ♂;
- Río Roosevelt, mouth of Río Cherrie, 1 ♂.

##### BOLIVIA:

- Province of Sara, 1 ♀;
- Río Surutú, 1 ♂<sup>1</sup>, 2 ♀<sup>1</sup>;
- Río Yapacani, 2 ♂<sup>1</sup>, 1 ♀<sup>1</sup>.

##### PERÚ:

- Río Pávava, 1 ♀;
- Chuchurras, 2 ♂, 3 ♀;
- Tulumayo, 1 ♂;
- Río Mazán, 1 ♀;
- "Upper Amazon," 1 (?);
- Apayacu, 3 ♂;
- Orosa, 1 ♂, 1 ♀;
- Puerto Indiana, 1 ♂;
- mouth of Río Curaray, 2 ♂, 1 ♀;
- Jeberos, 1 ♂, 1 ♀;
- Chamicuros, 3 ♂, 2 ♀;
- Chayavitas, 1 ♂;
- Pomará, 1 ♂, 3 ♀.

#### *Tanagra mesochrysa tavaræ* Chapman

*Tanagra mesochrysa tavaræ* CHAPMAN, 1925 (Apr. 26), Amer. Mus. Novitates, No. 160, p. 9—Río Távava, southeastern Perú; ♂; Amer. Mus. Nat. Hist.

*Tanagra mesochrysa yungæ* BOND AND DE SCHAUENSEE, 1942 (July 7), Not. Nat., No. 105, p. 3—Palmar, Yungas of Cochabamba, Bolivia; ♂; Acad. Nat. Sci. Phila.

The type and a topotypical male are quite indistinguishable from two males from the Cochabamba region of Bolivia that, in turn, must represent "*yungæ*." A female from southeastern Perú, kindly lent by Mr. Bond, differs somewhat from two Bolivian females by its slightly darker and more greenish tone of yellow on the throat and flanks and the broader extent of gray on the breast and belly. One of the Bolivian females has this pale area very much reduced, and the other is less marked in this particular, while both have the lower belly tinged with a deeper shade of buff than that shown by the Peruvian specimens. In the hue of the upper parts, including the yellowish tone of the forehead and the near obsolescence of the dusky frontal bar, as well as in the relatively dark shade of gray on the breast, all four specimens are in close accord, especially in comparison with females from the more northern parts of Perú. The detailed

<sup>1</sup> Specimens in Carnegie Museum, Pittsburgh.

similarity of the southeast-Peruvian and Bolivian males adds weight to the belief that "*yungae*" is a synonym of *tavarae*.

In this connection it may be stated that the authors of "*yungae*" had no males of typical *tavarae* but accepted statements by earlier writers that birds from more northern Perú belong to that form. As a matter of fact, the northern birds are recognizably distinct and differ from *tavarae* not only by the characters pointed out (in reverse) by the authors of "*yungae*" but in other details. These characters are, in part, intermediate between those of *tavarae* and those of true *mesochrysa* but in part reach a different extreme. For this reason it appears desirable to apply a distinctive name to the population in question, as is detailed below.

Records from Perú that remain with *tavarae* are from Huaynapata, Río Cadena, and La Pampa. Mr. Bond writes me that the Academy of Natural Sciences of Philadelphia possesses a female from Calabatea, La Paz, Bolivia, which was not mentioned in the discussion of "*yungae*" but which tends to give a continuity of range between southeastern Perú and the Cochabamba region of Bolivia.

#### *Tanagra mesochrysa media*, new subspecies

TYPE from Chaupe, northern Perú; altitude 6100 feet. No. 181,666, American Museum of Natural History. Adult male collected February 19, 1923, by Harry Watkins; original No. 7026.

DIAGNOSIS.—Males differ from those of *T. m. mesochrysa* of Colombia by darker coloration; yellow of forehead broader and a little deeper; back of head darker plumbeous; back darker green; green of throat darker and more restricted; yellow of under parts deeper and of greater extent laterally and anteriorly. Females of *media* similarly darker than those of *mesochrysa* and with the green of the throat darker and more restricted; the gray of the belly broader; the green of the flanks darker.

Compared with *T. m. tavarae* of southeastern Perú and northern Bolivia, males of *media* are quite similar in the color of the back of the head and the back but have the forehead less deeply yellow marked by dusky specks visible on the subterminal portion of the feathers at the shaft (present also in *mesochrysa*); dark frontal bar wider; throat darker and greener than in *tavarae*, more contrasting with the yellow of the belly which, in turn, is less orange-tinted; flanks more broadly green of a darker hue. Females much like those of *tavarae* on the upper parts but

with the green of the throat and flanks darker, less yellowish and the gray of the middle of the breast darker; forehead darker green.

RANGE.—Subtropical Zone of central and northern Perú from the mouth of the Río Curaray and the Chinchipe Valley to the Chanchamayo region.

DESCRIPTION OF TYPE.—Moderately broad frontal band, lores, and anterior part of cheeks dark Olive Citrine; rest of forehead and anterior part of crown occupied by a coronal patch of Lemon Chrome  $\times$  Light Cadmium with dusky subterminal specks on the feathers, more or less concealed under the yellow tips; back of the head with dusky centers on the feathers, edged with glossy bluish green giving an effect of Dark Grayish Blue-Green to the area; back glossy Leaf Green on the broad margins which conceal the duller green subterminal areas. Posterior part of the sides of the head lighter than the lores; chin and throat Warbler Green, the color continued broadly down the sides and flanks; middle of breast and belly Lemon Chrome with a somewhat deeper hue medially; under tail-coverts Lemon Chrome. Remiges blackish with outer margins of the tertials and upper wing-coverts like the back; secondaries with outer margins narrower and brighter; outer primaries edged with a still yellower hue; under wing-coverts white with a tinge of yellow on carpal margin; inner margins of the remiges whitish. Tail dusky; median rectrices and outer margins of the remainder, except the outermost, tinged with green. Bill (in dried skin) blackish; feet dark brown. Wing, 59 mm.; tail, 32; exposed culmen, 6.5; culmen from base, 10; tarsus, 15.5.

REMARKS.—Female somewhat similar to the male above but without the yellow coronal patch; this area about like the back or darker; frontal bar and lores duller and a trifle browner; back duller and a little less glossy than in the male. Throat and flanks similar to those areas in the male or sometimes lighter, approaching Pyrite Yellow; under tail-coverts deeper than Wax Yellow; middle of breast and belly pale gray, with a tinge of pinkish buff on the lower abdomen. Size not appreciably different from that of the males.

A single male from the mouth of the Río Curaray agrees with the rest of the series of *media* except that the yellow frontal patch is lighter yellow as in *mesochrysa*. The general darkness of coloration in other parts of the plumage and the broad extension of the deep yellow color on the belly are noticeable even in comparison with two Ecuadorian males from Oyacachi. The transition between *mesochrysa* and

*media* apparently occurs somewhere near the boundary between Perú and Ecuador.

Three males from Eneñas, Junín region of central Perú, kindly lent by Mr. Bond, agree closely with the birds from northern Perú in distinction from *tavarae*. The distinction of *tavarae* from *media* therefore takes place between the Junín region and the Marcapata district.

Records that presumably belong to *media* are from Huambo, Chirimoto, Gualama (sight record), Huayabamba, and Río Jelashte.

It may be interesting to note that among the specimens of *mesochrysa* at hand is a female, apparently the first example of that sex to be recorded. It was in the Rothschild Collection in material obtained from Dalmas, a "Bogotá" skin, dated 1896, and once [mis]identified as "*Euphonia saturata*," although the error was detected without the discovery of the bird's true identity.

Since the female of *mesochrysa* has not been described, a short account of its characters may be of value. Back near Serpentine Green, without obvious gloss; narrow frontal bar inconspicuous, brownish, and with a touch of whitish on the nasal feathering; forehead and crown colored like the back but with dusky sub-terminal areas exposed, giving a spotted appearance; back of head Deep to Dark Gull Gray. Throat light Pyrite Yellow; sides and flanks broadly similar but brighter and under tail-coverts still brighter, near bright Sulphine Yellow; middle of breast narrowly light gray; middle of belly Deep Colonial Buff × Chamois. Wings and tail exteriorly margined with Warbler Green; under wing-coverts white with a tinge of yellow along the carpal margin; inner margins of remiges whitish.

#### SPECIMENS EXAMINED

##### *T. m. mesochrysa*.—

###### COLOMBIA:

"Bogotá," 6 [♂], 1 [♀].

###### ECUADOR:

Oyacachi, 2 ♂.

##### *T. m. media*.—

###### PERÚ:

mouth of Río Curaray, 1 ♂;  
Chaupe, 4 ♂ (incl. type), 3 ♀;  
Uchco, 1 ♂;

Huachipa, 1 ♀<sup>1</sup>;

Eneñas, 3 ♂<sup>2</sup>.

##### *T. m. tavarae*.—

###### PERÚ:

Río Tavera, 2 ♂ (incl. type);

La Pampa, 1 ♀<sup>2</sup>.

###### BOLIVIA:

Yungas, Cochabamba, 2 ♂, 2 ♀.

#### *Tanagra chrysopasta chrysopasta* Sclater and Salvin

*Tanagra chrysopasta* SCLATER AND SALVIN, 1869, Proc. Zool. Soc. London, p. 438, Pl. xxx, figs. 1, 2—[lower] Ucayali, Perú; ♂; British Mus.

This form ranges through eastern Perú from the base of the Andes to the eastern border of the country, and descends the southern bank of the Amazon in Brazil to the right bank of the Madeira at Borba. The allied form, *nitida*, reaches the north bank of the lower Amazon east of the Río Negro. It is found on both banks of the Negro far upstream but may reach that area only by way of the Cassiquiare and Orinoco valleys; I have no specimens or records from the middle reaches of the Negro.

I have no topotypes of *nitida* (Lelydorp, Surinam) but, judging by the series at hand, *nitida* is very little smaller than *chrysopasta* (♂, wing, 54–57.8 mm.; av., 55.3, as compared with 55.4–63.3; av., 58.4), but there are certain distinctions of color in both sexes that aid in the recognition of this form. Both sexes of *nitida* are rather noticeably darker and more glaucous on the back. Males of *nitida*, furthermore, have a more pronounced olive shading across the breast and down the sides and flanks, whereas those of *chrysopasta* are brighter yellow in ground color but have more distinct dark bars on the feathers, giving a noticeably different appearance, with very few exceptions. The white throat patch of *nitida* is usually duller and less sharply marked, and the edges of the primaries are darker and more greenish, less yellowish. Females of *nitida*, in addition to the darker and more glaucous back, have the breast a slightly darker shade of

<sup>1</sup> Specimen in Field Museum of Natural History, Chicago.

<sup>2</sup> Specimens in Academy of Natural Sciences, Philadelphia.

gray than is shown by females of *chrysopasta*.

Records of *chrysopasta* from Perú are from La Merced, Borgoña, Chanchamayo, upper and lower Ucayali, Río Cosireni, and Yahuarmayo.

#### SPECIMENS EXAMINED

##### *T. c. chrysopasta*.—

###### COLOMBIA:

"Bogotá," 3 ♂, 2 ♀;  
Villavicencio, 1 ♂, 2 ♀;  
Buena Vista, 1 ♂.

###### ECUADOR:

Gualaquiza, 1 ♂;  
Río Suno (lower), 1 ♂;  
Lonambo, 1 ♀.

###### PERÚ:

mouth of Río Curaray, 1 ♂, 1 ♀;  
Puerto Indiana, 3 ♂, 1 ♀;  
Apayacu, 1 ♂;  
Sarayacu, 2 ♂, 1 ♀;  
Santa Rosa (Ucayali), 1 ♂;  
Huachipa, 1 ♂<sup>1</sup>;  
Río Colorado (Chanchamayo), 2 ♀<sup>1</sup>;  
Perené, 1 ♀;  
Astillero, 2 ♂, 1 ♀.

###### BOLIVIA:

Todos Santos, 1 ♂;  
Province Sara, 1 ♂, 1 ♀.

###### BRAZIL:

Roosevelt River, 1 ♂;  
Borba, 2 ♂, 1 ♀;  
Teffé, 1 ♂, 1 ♀.

##### *T. c. nitida*.—

###### VENEZUELA:

Mt. Auyan-tepui, 1 ♂;  
Río Orinoco, Maipures, 3 ♂, 3 ♀;  
Munduapo, 1 ♂;  
Lalaja, 1 ♂;  
Río Caura, La Prición, 2 ♂, 2 ♀;  
Suapure, 1 ♂;  
Mt. Duida, Esmeraldas, 1 ♂;  
Río Cassiquiare, El Merey, 3 ♂, 1 ♀.

###### BRAZIL:

Rio Negro, San Gabriel, 2 ♂, 1 ♀;  
Yucabí, 2 ♂, 2 ♀;  
Igarapé Cacao Pereira, 1 ♂;  
Faro, 4 ♂, 2 ♀.

#### Tanagrella callophrys (Cabanis)

*Hypothlypis callophrys* CABANIS in Schomburgk, "1848" = 1849, Reisen Brit. Guiana, III, p. 668, note—Brazil; type probably in Berlin Mus.

I am inclined to the view that there is a possible error in the record of this species from the Rio Negro, Brazil (Sclater, 1862, Cat. Coll. Amer. Birds, p. 61). The origin of the specimen is not given nor is the Rio

Negro included in the range of the species by Sclater (1886, Cat. Birds Brit. Mus., XI, p. 89). The species was not obtained by Pelzel nor, apparently, by Wallace in their explorations of the river, nor is it represented in the extensive collections from the Rio Negro in The American Museum of Natural History. *T. velia iridina* is, however, found commonly on the Rio Negro as is discussed under that form.

Two young males from Perené, Perú, are interesting as showing the immature plumage. Both birds are nearly uniform dull black on the under parts, with only a slight tinge of blue in a few places. Above, the color also is black, but both birds have a pale, silvery bluish superciliary stripe and one of them has also a band across the fore part of the crown of the same dull color, although the forehead remains black. The rump is similarly pale silvery blue without the brilliance of the adult plumage in that area. The edges of the remiges and rectrices and the upper tail-coverts are blue though not so deeply hued as in the adults.

I find no recognizable distinctions in the examples at hand from Ecuador and Perú, which is not surprising in view of the relatively limited range of the species even beyond the borders of these two countries.

Peruvian records are from Iquitos, Ucayali, Sarayacu, and Yahuarmayo.

#### SPECIMENS EXAMINED

##### *T. callophrys*.—

###### ECUADOR:

Coca, 1 ♂;  
Napo, 1 (?);  
Río Tigre, 1 (?);  
"Sarayacu" (errore ?), 2 ♂;  
"Ecuador," 3 (?).

###### PERÚ:

Orosa, 1 ♀;  
Apayacu, 1 ♀;  
Perené, 3 ♂;  
"Upper Amazon," 1 (?).

#### Tanagrella velia iridina (Hartlaub)

*Tanagra Iridina* HARTLAUB, 1841, Rev. Zool., IV, p. 305—"Prov. Mogobamba, Perú" = Moyobamba; Bremen Mus.

*Tanagrella elegantissima* J. AND E. VERREAUX, 1853, Rev. Mag. Zool., (2) V, p. 195—le Pérou.

This form is wide-ranging over a good portion of Amazonia and the Orinoco region

<sup>1</sup> Specimens in Field Museum of Natural History, Chicago.

without any appreciable differentiation. As pointed out by Hellmayr (1936, Field Mus. Nat. Hist., Zool. Ser., XIII, pt. 9, p. 71, footnote) a little uncertainty exists in the neighborhood of Roraima where there is intergradation with *T. v. velia* of the Guianas. Hellmayr referred four birds from Roraima to *velia* although admitting their larger size, in which they agreed with the present form. I have only a single male from Roraima but have three examples of the same sex from the nearby Auyan-tepui. Although all four birds are intermediate in varying degree between *velia* and *iridina*, the Auyan-tepui birds are definitely closer to *iridina* as has already been noted by Gilliard (1941, Bull. Amer. Mus. Nat. Hist., LXXVII, p. 498). The single Roraima skin is quite problematical. The color of the outer margins of wing and tail is more violaceous than in any *velia* examined, and like the brightest *iridina*. The flanks are lighter and brighter than in most *iridina* but not so extreme as in average *velia*. The throat and sides of the head may be matched in one or two examples of *iridina* of the opposite sex but not in any males, while they are matched in various specimens of *velia*, and the color of the forehead is that of *velia* but too light for *iridina*. The size is that of *iridina*, too large for *velia*. Without a good series of Roraima examples, it is impossible to assign the local population to one form or the other with any certainty, but since the neighboring highlands of Auyan-tepui support *iridina*, albeit in an atypical extreme, the Roraima bird may be assigned to the same form with a query.

A single specimen from Manaos is referable to *velia*, but an example from across the Rio Negro, at Igarapé Cacao Pereira, is *iridina*. Other examples from the upper Rio Negro, both banks, agree with Duida, Cassiquiare, and Caura skins in their inclusion in *iridina*. One female from Villa Bella Imperatriz and one male from Caxiricatuba, east bank of the Rio Tapajoz, likewise belong to *iridina* with no apparent trend toward *signata* of the Pará district. These birds help to close the supposed gap in the distribution of the species between

the Purus and Pará and suggest the probability that the remaining hiatus also will be closed at some future time.

Peruvian records of *iridina* are from Iquitos, Moyobamba, Ucayali, Río Javarri, Marcapata, and Yahuar Mayo.

#### SPECIMENS EXAMINED

##### *T. v. velia*.—

###### FRENCH GUIANA:

"Cayenne," 1 ♂, 2 (?).

###### BRITISH GUIANA:

Potaro Landing, 1 ♂, 2 ♀;

Wismar, 2 ♂, 2 ♀;

Rockstone, 1 ♂, 1 ♀;

Tumatumari, 1 ♂, 1 ♀;

(no locality), 3 (?).

###### BRAZIL:

Manaos, 1 ♂.

##### *T. v. iridina*.—

###### COLOMBIA:

"Bogotá," 1 ♂, 1 (?).

###### ECUADOR:

lower Río Suno, 1 ♂;

Sarayacu, 3 (?);

"Napo," 1 (?).

###### PERÚ:

Pomará, 1 ♂, 1 ♀;

Orosa, 2 ♂;

Apayacu, 1 ♀;

Puerto Indiana, 1 ♂;

mouth of Río Cinipá, 1 ♂.

###### VENEZUELA:

Mt. Auyan-tepui, 3 ♂;

(?) Mt. Roraima, 1 ♂;

Río Caura, La Unión, 1 ♂;

Suapure, 2 ♂;

Mt. Duida, Río Pescada, 1 ♀;

Playa del Río Base, 1 ♂, 1 ♀;

Campamento del Medio, 1 ♂, 2 ♀;

Río Cassiquiare, Buena Vista, 2 ♂, 1 ♀;

between the Huaynía and the Cassiquiare, 1 ♂;

Río Huaynía, 1 ♂.

###### BRAZIL:

Río Negro, Yucabí, 3 ♀, 1 (?);

Camanaos, 1 ♂, 1 ♀;

San Gabriel, 3 ♂, 2 ♀;

Tatú, 1 ♂, 1 ♀;

Yavanari, 1 ♂;

Mt. Curucuryari, 1 ♀;

Igarapé Cacao Pereira, 1 ♂;

Villa Bella Imperatriz, 1 ♀;

Río Tapajoz, Caxiricatuba, 1 ♂.

##### *T. v. signata*.—

###### BRAZIL:

Pará, 1 ♂ (type), 1 (?) (paratype);

Utinga, 1 ♂, 1 ♀.

##### *T. v. cyanomelaena*.—

###### BRAZIL:

(Pernambuco, Bahia, Espirito Santo, and Rio de Janeiro), 28.

***Chlorochrysa calliparaea bourcier***  
Bonaparte

*Calliste Bourcier* BONAPARTE, 1851 ("Jan."), Compt. Rend. Acad. Sci. [Paris], XXXII, p. 76—Baños, near Tunguragua, Ecuador; Paris Mus.

*Tanagrella dubusi* DUBOIS, 1867, Arch. Cosmol., I (4), p. 118, Pl. VII—Ecuador; coll. of C. F. Dubois.

The specimens from Huachipa which I assigned to *calliparaea* in the absence of material for comparison (1930, Field Mus. Nat. Hist. Publ., Zool. Ser., XVII, p. 438) actually belong to *bourcier* and represent the most southerly records of this form. These and the Chaupe birds now at hand are the only specimens recorded from Perú.

***Chlorochrysa calliparaea calliparaea***  
(Tschudi)

*C[allopiza] calliparaea* TSCHUDI (ex Lichtenstein MS.), 1844 (May), Arch. Naturg., X (1), p. 286—Perú [= Junín region]; Berlin Mus.

*Chlorochrysa calliparaea caeruleipectus* CARRIKER, 1930 (Dec. 15), Proc. Acad. Nat. Sci. Phila., LXXXII, p. 375—Eneñas, Perú; ♂; Acad. Nat. Sci. Phila.

Relatively limited in distribution, being confined to the Subtropical Zone above the Chanchamayo Valley and the upper affluents of the Pachitea River. This latter region is just across the divide from the upper Huallaga where *bourcier* is found, so that this portion of the Eastern Andes here forms the distributional barrier between the two forms.

Records are from Garita del Sol, Amable Maria, Pumamarca, cinchona forests of central-eastern Perú (Tschudi), and Eneñas.

***Chlorochrysa calliparaea fulgentissima***  
Chapman

*Chlorochrysa fulgentissima* CHAPMAN, 1901 (Aug. 9), Bull. Amer. Mus. Nat. Hist., XIV, p. 225—Inca Mine, Perú; ♂; Amer. Mus. Nat. Hist.

*Chlorochrysa hedwigae* BERLEPSCH, 1901 (Oct.), Ibis, (8) I, p. 716, Pl. xv—Huaynapata, Perú; ♂; Warsaw Mus.

This form is a little farther removed from *calliparaea* than that bird is from *bourcier*, but the apparent relationship is obvious enough to warrant the placement of all three in a single species, in which treatment I follow Dr. Hellmayr's arrangement.

Peruvian records are from Huaynapata and Oroya (Río Inambari).

SPECIMENS EXAMINED

*C. c. bourcier*.—

COLOMBIA:

near San Augustin, 2 ♂;

"Bogotá," 3 ♂;

"Granada," 2 ♂.

ECUADOR:

(Sabanilla, Baeza, lower Sumaco, below San José, Macas region, Mirador [Baños], Güilca, Gualaquiza Valley, Río Yamisa, "Napo," "Ecuador,"), 18 ♂, 3 ♀.

PERÚ:

Chaupe, 2 ♂;

Huachipa, 3 ♂<sup>1</sup>.

*C. c. calliparaea*.—

PERÚ:

Cushi Libertad, 1 ♂;

Chanchamayo, 1 ♂.

*C. c. fulgentissima*.—

PERÚ:

Inca Mine, 2 ♂ (incl. type);

Río Inambari, 3 ♂;

Santo Domingo, 3 ♂, 1 ♀, 4 (?);

Marcapata, 1 ♂, 1 ♀;

Caradoc, 1 ♀.

BOLIVIA:

Yungas, Cochabamba, 3 ♂, 2 ♀.

***Pipraeidea melanonota venezuelensis***  
(Sclater)

*Pipraeidea venezuelensis* SCLATER, "1856" = 1857 (Jan. 26), Proc. Zool. Soc. London, XXIV, p. 265—Caracas, Venezuela; Paris Mus.

*Pipraeidea melanonota sztolcmani* DUNA-JEWSKI, 1939 (May 20), Act. Orn. Mus. Zool. Pol., III (3), p. 12—Idma, Perú; ♂; Warsaw Mus.

Chugur, 1 ♂; Cueva Seca, 1 [♀]; San Miguel, Urubamba, 1 ♂.

Compared with a series of over seventy examples from Venezuela, Colombia, Ecuador, Bolivia, and western Argentina and with twenty-eight specimens of *melanonota* from eastern Argentina and southeastern Brazil. The San Miguel specimen is readily referable to *venezuelensis* whose variations, in all parts of its range, cover the characters ascribed to "*sztolcmani*"—those of supposed intermediacy between *venezuelensis* and *melanonota*. The most deeply colored examples from all parts of the range exceed the San Miguel bird which is nearly topotypical of "*sztolcmani*."

The Chugur specimen presents an ex-

<sup>1</sup> Specimens in Field Museum of Natural History, Chicago.

treme in coloration that I am unable to match in any other adult male at hand. The top of the head is unusually pale and less violaceous than in the others, being Calamine Blue  $\times$  Pale Cerulean Blue away from the light and near Light Methyl Blue toward the light. This grades imperceptibly into a more violaceous hue on the hind neck, although even there it is rather less violaceous than the whole of the crown in the other adult males. The rump also is near the color of the crown. The under parts of this specimen are unusually pale but not beyond the extreme exhibited by various other skins. Since

females and young males often have a tone of blue on the cap and rump much lighter and less violaceous than that of the adult males, it is possible that this Chugur bird may simply show some retardation in its color, not of taxonomic significance. The locality is just far enough to one side of the known range of the form to hold open the possibility that a separate form is involved, but the question must remain unanswered until more material is available from the vicinity.

Peruvian records are from Tambillo, Cutervo, Socota, Huambo, Idma, and Iscaybamba.