

# AMERICAN MUSEUM NOVITATES

Number 715

Published by  
THE AMERICAN MUSEUM OF NATURAL HISTORY  
New York City

April 20, 1934

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59.88, 1 B

## A REVIEW OF THE RACES OF *BUTHRAUPIS EXIMIA* (BOISSONNEAU)<sup>1</sup>

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Brabourne and Chubb, in 'The Birds of South America,' retained *Buthraupis eximia* (Boissonneau) and *Buthraupis chloronota* (Sclater) in the genus *Buthraupis* Cabanis and gave full specific rank to *chloronota*. Penard (1919, Auk., pp. 536-540) divided the genus *Buthraupis* into three genera, creating a new generic name, *Cnemathraupis*, to include both *eximia* and *chloronota*. However, he reduced *chloronota* to subspecific rank and called it *Cnemathraupis eximia chloronota*. In his 'Distribution of Bird-life in Ecuador,' 1926, p. 669, Dr. Chapman did not recognize *Cnemathraupis*, but recorded *chloronota* as a subspecies of *eximia*. He had previously noted<sup>2</sup> that birds from the central Andes of Colombia "have a slight trace of blue on the rump, indicating the probability of intergradation between these representative races" and that the birds from Paramillo of the western Andes "are without blue on the rump—the blue lesser wing-coverts" do not "cover the black bases of the greater coverts as they apparently do in 'Quito' " specimens. Most of the latter were trade-skins without reliable data. Lack of material with full data seemingly made him hesitate to describe the Paramillo bird as new. The securing of fresh material from Ecuador proves that the birds of the western Andes of Colombia are distinct, and that the specimens from the Mt. Sangay area of south Ecuador also constitute a new race. Therefore I describe these two as new and recognize the two previously described forms, *Buthraupis eximia eximia* (Boissonneau) from the eastern Andes of Colombia, and *Buthraupis eximia chloronota* (Sclater) of north Ecuador.

My thanks are offered to Dr. Frank M. Chapman for permission to examine the specimens in The American Museum of Natural History, and particularly for his gracious courtesy in allowing me to describe a new race from material on which he has previously worked. The specimens for the Mt. Sangay race are all from my own collection.

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<sup>1</sup> Contribution from the California Institute of Technology.

<sup>2</sup> 1917, 'Distribution of Bird-life in Colombia,' p. 603.

***Buthraupis eximia zimmeri***, new subspecies

Green-rumped Mountain Tanager

TYPE.—Male adult in partly molted plumage; No. 134377, American Museum of Natural History; Paramillo, western Andes, Antioquia, Colombia; alt. 12,500 feet; Jan. 25, 1915; Miller and Boyle, collectors.

SUBSPECIFIC CHARACTERS.—Nearest to *Buthraupis eximia eximia* (Boissonneau), but rump Cress Green<sup>1</sup> instead of Light Windsor Blue, and yellow of under parts darker. It differs markedly from *Buthraupis chloronota* (Sclater) of the western slope of the Andes of north Ecuador in that the wings and tail are shorter; pileum glittering, metallic Windsor Blue instead of much duller Acetin Blue; auriculars and sides of neck intense black with conspicuous sheen, instead of being veiled with dull Acetin Blue, the black sharply defined from blue of crown; throat and breast pure black with sheen instead of dull black; under wing-coverts bordered with dark green, instead of black or whitish buff.

GEOGRAPHICAL DISTRIBUTION.—Temperate Zone of western and central Andes of Colombia—Paramillo, Santa Isabel, and Almaguer.

DESCRIPTION OF TYPE.—Pileum glittering metallic Windsor Blue, mixed with black on anterior border of forehead, sharply defined by a narrow dull band of Dusky Violet Blue (2) along posterior border of nape; interscapular area, rump, and upper tail-coverts Cress Green; sides of neck, postocular and auricular regions, lores, superciliary line, throat, and upper breast black with a slight sheen; chin black, the fine shafts of the feathers whitish, creating hairlike lines; remainder of under parts except under tail-coverts, Light Cadmium streaked with darker; under tail-coverts Ochraceous-Tawny, the feathers margined with Yellow Ocher; lesser wing-coverts glittering metallic Light Windsor Blue in high light, Windsor Blue in low, not covering the black bases of the greater coverts, creating a broad black wing-bar; outer margins of greater coverts obliquely bordered with Chromium Green; primaries black; secondaries black, the outer webs bordered with Parrot Green; under wing-coverts black bordered with Nickel Green; bend of wing Windsor Blue changing to black posteriorly with faint or no yellow spot; rectrices black; bill, legs, and feet black.

ADULT FEMALE.—Similar to male in color and size.

REMARKS.—The new race differs from typical *Buthraupis eximia chloronota* (Sclater) in the characters mentioned under "subspecific characters," and in addition the dull band of dusky violet on the nape is sharply defined from the green of the back, whereas in *chloronota* the Acetin Blue of the hind neck gradually merges into Dark Tyrian Blue posteriorly, which itself merges into the green of the interscapular region; the blue of the lesser wing-coverts is a darker blue, on the average. Most specimens of *chloronota* from the Quito region exhibit a small spot of yellow on the edge of wing about an inch and a half below bend of wing; but eight of the ten specimens of the new race do not reveal any spot and only two have the faintest trace of it.

<sup>1</sup> Names of colors in this paper when capitalized are taken from Ridgway's 'Color Standards and Color Nomenclature,' 1912.

The birds of the central Andes of Colombia do show a trace of blue on their rumps, but they are much closer to *zimmeri* than to true *eximia*. In fact, a female from Paramillo in the western Andes has a faint trace of blue and represents the extreme tendency toward green. Therefore it seems best at present, until the securing of more material throws further light on the problem, to classify the birds of the central Andes as *zimmeri*. If they prove to be true intermediates, it seems certain that they intergrade between *eximia* and *zimmeri*. Two of the eight specimens which I have examined come from Almaguer in southern Colombia, 200 miles closer to the range of *chloronota* than Paramillo, which is the type locality of *zimmeri*, and yet these birds of Almaguer are much closer to *zimmeri* than to *chloronota*. It may be unwise to forecast from this that *zimmeri* will be found to occur in the southern extension of the western Andes. At any rate I do not feel confident of evidence of intergradation between *eximia* and *chloronota*, nor, on the other hand, do I deem it wise in our present lack of knowledge to reëlevate *chloronota* to specific rank.

I take pleasure in dedicating this form to Mr. John T. Zimmer of The American Museum of Natural History.

SPECIMENS EXAMINED.—COLOMBIA: Paramillo, western Andes, 1 ♂ (type), 1 ♀; Santa Isabel, Quindio Andes, 4 ♂, 2 ♀; Almaguer, central Andes, 1 ♂, 1 ♀.

***Buthraupis eximia eximia* (Boissonneau)**

Blue-rumped Mountain Tanager

SUBSPECIFIC CHARACTERS.—Nearest to *Buthraupis eximia zimmeri*, but rump light Windsor Blue instead of Cress Green and yellow of under parts lighter.

GEOGRAPHICAL DISTRIBUTION.—Temperate Zone of the eastern Andes of Colombia.

REMARKS.—I have only inadequate material at hand. A female from El Piñon not only has a blue rump, but the interscapular area is faintly mottled with blue, the outer margins of the secondaries are duller—Pois Green—and there is a small concealed patch of white on the throat. These may be individual variations.

SPECIMENS EXAMINED.—COLOMBIA: eastern Andes, El Piñon, 1 ♀; Palo Hueco, 1 ♀; Aguaditas, 1 (?); "Bogotá," 2 (?).

***Buthraupis eximia cyanocalyptra*, new subspecies**

Blue-veiled Mountain Tanager

TYPE.—Male adult; No. 7027, collection of Robert T. Moore; San Luis, near Mt. Sangay, Ecuador; July 8, 1932; original field number, Ec-016k.

SUBSPECIFIC CHARACTERS.—Nearest to *Buthraupis eximia chloronota* (Sclater), but black mask of throat and chest extending farther posteriorly on the under parts, the rather dull Cyanine Blue of the nape bordered posteriorly by a wider band of Deep

Medici Blue, the latter extending in a triangular point farther around on the sides (partly concealed) into the black of the chest; under wing-coverts margined with a rather wide border of bright yellow, in many specimens creating continuous bars, which reach the border of the wing and form a large yellow spot about an inch below the bend of the wing. Females resemble the males, but the yellow borders of the under wing-coverts are more extensive, and the tail seems to be smaller, at least than the tail of the single female which is available, with full data, from north Ecuador.

GEOGRAPHICAL DISTRIBUTION.—The humid Temperate Zone of the great labyrinth of ash canyons of Mt. Sangay on the eastern slope of the Andes in south-central Ecuador, the valley of San Luis and probably other Temperate Zone valleys in its vicinity. I have not seen the "three pairs" of this species, which Stolzmann<sup>1</sup> secured in 1885 at San Rafael on the eastern slope of Mt. Tunguragua to the north of Sangay, nor the specimens which Dr. Chapman noted that Menegaux<sup>2</sup> reported as having come from Macas to the southeast of Sangay. Taczanowski and Berlepsch, who recorded Stolzmann's specimen, state that San Rafael has an elevation of 9000 feet. Therefore it may well be in the humid Temperate Zone and specimens taken there or above it may represent this race. On the other hand, Macas is reported by Dr. Chapman<sup>3</sup> to have an elevation of only 3448 feet, which would indicate that it is at the lower limit of the Subtropical Zone. As *Buthraupis eximia* and all its known races come from the Temperate Zone, I doubt the occurrence of this race at such a low altitude. Menegaux's report covered not only specimens with full data, obtained by Dr. Rivet, but also a heterogeneous lot from various sources. Dr. Chapman points<sup>4</sup> out that many of these "native-made skins" and many of the localities are "often obviously erroneous."

DESCRIPTION OF TYPE.—Crown Deep Dull Violaceous Blue, hind neck (occiput) and nape Cyanine Blue with only very slight or no sheen, not sharply defined from the succeeding band of Deep Medici Blue of the anterior portion of the interscapular region, which band is nearly 15 mm. wide and extends around to the sides of the neck in a triangular point, whose apex is concealed by the black feathers of middle throat; remainder of back Parrot Green with dark shaft-streaks; rump Forest Green with one or two feathers very faintly tinged with blue; upper tail-coverts Parrot Green, the posterior ones very finely tipped with yellow; chin, malar region, throat, upper breast and sides of neck black, with gray shaft-streaks of the feathers of chin and throat rather prominent; black feathers of sides of neck and upper breast bordered with very fine tips of gray; middle of throat with a concealed pure white patch, the feathers around it having their bases gray; feathers of chin developed into a prominent brush of very stiff extrorse bristles; feathers of lores black with buffy centers; feathers of anterior border of forehead black at base, buff in the center and margined with blue; eye-ring and subocular region black, the feathers of the latter with wide buffy shaft-streaks; auricular region with feathers black faintly tipped with dark blue; remainder of under parts, except under tail-coverts, Light Cadmium streaked with darker; under tail-coverts Ochraceous-Tawny, the feathers tipped with Primuline Yellow; feathers of legs greenish black with very wide tips of Empire Yellow; lesser wing-coverts brilliant metallic Light Grayish Violet-Blue in high light, Dull

<sup>1</sup> 1885, Proceedings of the Zoological Society of London, p. 8.

<sup>2</sup> 'Étude des Oiseaux de l'Équateur, Zoologie,' IX, pp. 1-128.

<sup>3</sup> 1926, 'Distribution of Bird-life in Ecuador,' p. 712.

<sup>4</sup> 1926, 'Distribution of Bird-life in Ecuador,' p. 734.

Violet-Blue in low, nearly covering the black bases of the greater coverts; the outer margins of greater coverts obliquely bordered by Chromium Green, the primary coverts black, bordered with a very fine line of Eton Blue; primaries black, the second to the ninth having a touch of green on the center of the outer margin; secondaries black, the entire outer edge margined by a fine border of Parrot Green, the border increasing in width on the inner secondaries; axillars black broadly tipped with green; under wing-coverts grayish black, broadly tipped with Reed Yellow, creating a yellow-barred effect, the lower bar reaching to the edge of the wing and ending in a bright spot of Empire Yellow; rectrices black; bill, legs, and feet black.

ADULT FEMALE.—Similar to male, but the yellow borders of the under wing-coverts more extensive, in one specimen covering half the exposed surface of the coverts.

REMARKS.—In addition to the “subspecific characters” mentioned above, there are several incipient or well-developed ones; every one of my thirteen specimens possesses a very prominent brush of very stiff extrorse bristles on the chin, which seem to be absent from *eximia zimmeri*, and only slightly apparent in *chloronota*. A concealed white patch appears in the center of the black throat, quite large in some specimens and represented in *eximia chloronota* by grayish bases to the feathers, with the exception of my specimen from the eastern side of the Andes at Papallacta, which possesses an incipient white spot. This spot is also faintly represented in a specimen of true *eximia*. It reaches its greatest development in *cyanocalyptra*, where it appears prominently in six of my seven males, but in only one of the females, although all of them have extensive gray bases to the feathers of the throat and upper breast. In all of my male specimens, the feathers of the black mask, particularly those of the sides of the neck, possess a fine border of gray. This border wears off in worn plumage; however, the birds were collected from July to September, and five females collected in the same period do not show it. There is no trace of it in my specimen of *chloronota* collected in September nor in a January specimen of *zimmeri*. Five of the males have very fine yellow tips to the longer upper tail-coverts. Only one female exhibits this. The crown and nape in *cyanocalyptra* show slightly darker with less sheen in series and the rump averages darker. Wing and tail measurements of *chloronota* are somewhat larger than those of *cyanocalyptra*—five and six per cent, respectively. The yellow border to the under wing-coverts is very prominent in the latter, differentiating it from *chloronota*, but a single specimen from Mt. Corazon displays a narrow yellow border to the posterior row only of the coverts. The others from Mt. Pichincha and “Quito” have none or only faint traces.

SPECIMENS EXAMINED.—ECUADOR: San Luis, 1 ♂ (type), 2 ♂; Culebrillas Valley, near Mt. Sangay, 4 ♂, 6 ♀.

***Buthraupis eximia chloronota* (Sclater)**

Green-backed Mountain Tanager

SUBSPECIFIC CHARACTERS.—Nearest to *Buthraupis eximia cyanocalyptra*, but black mask of throat and chest less extensive posteriorly on under parts, the Medici Blue of the interscapular area more extensive, the under wing-coverts without yellow borders or only faint traces. It differs from *eximia eximia* in having green rump instead of blue; from *zimmeri* in having darker, duller pileum, and is larger in size.

RANGE.—Humid Temperate Zone of western slope of Andes of north Ecuador.

REMARKS.—*Buthraupis eximia chloronota* was described by Sclater as *Buthraupis chloronota* in the Proceedings of the Zoological Society of London, 1854, pp. 97–98, Pl. LXIV. The habitat was given as “In Republ. Equatoriana.” Sclater remarks: “I have seen only one specimen of this species, which was received by the Frères Verreaux of Paris from Ecuador. It is closely allied to *B. eximia*, but is larger in all its dimensions, nearly equalling in size *B. cucullata*.” The plate adds conclusive evidence that Sclater had a specimen of the north Ecuadorian bird. It is the largest of all the races of *eximia* and the only one approaching *B. cucullata* in size. The plate shows the nape without the dusky violet border, the crown a dark blue, the lesser wing-coverts covering the black bases of the greater coverts—all characters distinguishing this race from *eximia zimmeri* of Colombia. It seems equally certain that Sclater’s specimen was not from the eastern humid Temperate Zone of south-central Ecuador. The black throat and chest-patch are much restricted posteriorly, the auriculars are jet black, the nape is sharply defined from the green back, and the chin, throat, and sides of the neck lack the gray cast, caused by the whitish shaft-streaks and gray margins of the feathers of these areas in the south Ecuadorian bird. Sclater has given the measurement of the type in inches, which, when transposed into the metric system, indicates the larger size of the north Ecuadorian bird. The only problem left is whether the type came from the humid Temperate valleys of the western or the eastern Andes. In the middle of the nineteenth century many collections were made on the easily accessible Mt. Pichincha within sight of Quito, the capital of Ecuador. Quite a number of expeditions have secured specimens of *chloronota* from Mt. Pichincha, and Dr. Chapman found them at Yanacocha on the northwest side of that mountain in 1922. Pichincha was the most accessible hunting ground of the native collectors of the Quito area. I designate the type locality of *Buthraupis eximia chloronota* (Sclater) as the humid Temperate Zone of Mt. Pichincha near Quito, Ecuador.

I have seen only one specimen of *chloronota* from eastern north Ecuador—a male collected by my own party in the valley of Baños just

above Papallacta. Goodfellow obtained one or two specimens near there. My specimen is intermediate between *chloronota* and *cyanocalyptra*. Although it has the large wing measurements and restricted black mask of *chloronota*, it resembles the Sangay birds in other characters. As the Baños Valley is on the same slope of the Andes as the Sangay canyons, a closer relationship would be anticipated. No final decision as to its status can be made until a larger series is assembled.

SPECIMENS EXAMINED.—ECUADOR: Yanacocha, 1 ♂, 1 ♀; "El Corazo," 1 ♂; "Quito," 2 ♂; "Ecuador," 3 ♂; Baños de Papallacta, east Ecuador, 1 ♂.

#### GENERAL SUMMARY

There are, therefore, four forms in the *Buthraupis eximia* group, ranging from northeastern Colombia to the eastern slopes of the south-central Andes in Ecuador. We have in the extreme northeast *eximia eximia*, a small bird with a blue rump and brilliant metallic light-blue pileum. In the central Andes of Colombia the blue rump begins to change to green, and when it reaches the western Andes the blue is entirely replaced, but the size is unchanged. In the humid Temperate valleys of the western slopes of the Andes in north Ecuador a larger bird has developed, retaining the green rump of *zimmeri*, but losing the glittering metallic Windsor Blue crown possessed by both *zimmeri* and *eximia eximia*. The green border to the under wing-coverts is also lost. Finally, on the eastern slopes of the south-central Andes of Ecuador there is a tendency for the greens to change to yellows and the black areas to become duller. The border to the under wing-coverts is bright yellow instead of the green of *zimmeri*, the long upper tail-coverts are faintly bordered with yellow, the green of the upper part of the interscapular area is veiled by a wide band of Medici Blue, which now extends deep into the black of the chest and covers the auricular area; and the black of the throat and chest area is dulled by gray tips to some of the feathers and the development of a partially concealed white spot on the throat.

My experience with *cyanocalyptra* and *chloronota* in Ecuador leads me to believe that it is confined to the humid Temperate Zone. Like so many species of this zone, which Dr. Chapman has shown<sup>1</sup> are wholly unlike those of the arid Temperate being derived from the arid South Temperate, the races of *eximia* are probably derived from forms in Colombia. It has been shown that the Temperate Zone appears as detached areas in the western Andes of Colombia, and that on the other hand the arid Temperate occupies a considerable area between north-

<sup>1</sup> 1926, 'Distribution of Bird-life in Ecuador,' p. 109.

central Ecuador and southern Colombia, which is accentuated as a barrier by the large and arid canyon of the Guailabamba, running east and west. Whether or not the humid Temperate Zone is sufficiently discontinuous between Almaguer and Mt. Pichincha to prevent the extension of *zimmeri* directly south along the western slopes of the Andes, is still a question that cannot be answered. Dr. Chapman's<sup>1</sup> conclusion in his highly illuminating discussion of the Temperature Zone affinities of Ecuador seems to be well-founded in its claim that the "faunal connection of the humid Temperate Zone of the eastern Andes of Ecuador appears to be with the Central Andes of Colombia." If, therefore, there is an area of intergradation between the representatives of *zimmeri* of Almaguer, Colombia, and *chloronota* of the Mt. Pichincha area, I suspect it will be found on the eastern slopes of the Ecuadorian Andes, rather than on the western. It seems a reasonable speculation that *chloronota* arrived in the Mt. Pichincha area via the humid Temperate Zone of the eastern Andes rather than from the north.

TABLE OF COMPARATIVE MEASUREMENTS

MALES	WING	TAIL	EXPOSED	
			CUL- MEN	TAR- SUS
3 specimens (not sexed, presumably males) from eastern Andes, Colombia ( <i>eximia</i> ) . . . . .	107.9	83.9		
6 adults from central and western Andes, Colombia ( <i>zimmeri</i> ) . . . . .	107.1	86.3	14.8	30.4
1 adult from Mt. Pichincha, western slope of Andes, north Ecuador ( <i>chloronota</i> ) . . . . .	121.2	98.8	15.1	31.9
4 trade skins from "Quito" ( <i>chloronota</i> ) . . . . .	119.1	97.9	15.0	32.3
Type of <i>chloronota</i> , inches reduced to mm. <sup>2</sup> . . . . .	116.8	96.5		
1 adult from Papallacta, eastern slope of Andes, north Ecuador ( <i>chloronota</i> ?) . . . . .	121.6	92.4	16.1	33.8
7 adults from Sangay area, eastern slope of Andes, south Ecuador ( <i>cyanocalypta</i> ) . . . . .	113.5	92.6	14.7	31.7
FEMALES				
2 adults from eastern Andes, Colombia ( <i>eximia</i> ) . . . . .	105.8	82.2		
4 adults from central and western Andes, Colombia ( <i>zimmeri</i> ) . . . . .	106.9	87.0	14.6	
1 female from Mt. Pichincha, western slope, north Ecuador ( <i>chloronota</i> ) . . . . .	115.2	101.3	16.4	
6 adults from Sangay area, south Ecuador ( <i>cyanocalypta</i> ) . . . . .	110.5	90.3	15.4	

<sup>1</sup> 1926, 'Distribution of Bird-life in Ecuador,' p. 97.<sup>2</sup> 1854, Proceedings of the Zoological Society of London, p. 97.