

A REVISION OF THE NEOTROPICAL FINCH  
ATLAPETES BRUNNEI-NUCHA

By KENNETH C. PARKES

The Chestnut-capped Atlapetes, *Atlapetes brunnei-nucha* (Lafresnaye), is a medium-sized finch with a range extending from central México to southern Perú. It and its closest allies are sometimes segregated as a separate genus, "*Buarremon*," but I agree with Hellmayr (1938:385) that it is not practical to subdivide the genus *Atlapetes*. The species *brunnei-nucha* is primarily an inhabitant of the Subtropical Zone, with an altitudinal distribution ranging, as shown by specimens I have examined, from 1200 feet on the Río Casanga, Ecuador, to 10,400 feet on Volcán Tajumulco, Guatemala. The bird lives in dense undergrowth and is usually collected along the borders of trails or clearings, "either because it or the collector selects such situations" (Chapman, 1923:246). Chapman, who observed the species in Colombia, Ecuador and Veracruz, considered it "by no means shy" (*loc. cit.*), whereas Lowery and Dalquest (1951:642) found it "a very shy and retiring species" in Veracruz.

In his monograph of the "genus *Buarremon*," Chapman (1923) referred several times to the fact that *brunnei-nucha*, in spite of its extended geographical range, showed remarkably little variation; what little variation he did observe he considered insufficient to warrant nomenclatorial recognition. This notion of the uniformity of *A. b. brunnei-nucha* from México to Perú (another subspecies being recognized from eastern Venezuela) was perpetuated by a number of later writers including Griscom (1932:370) and Hellmayr (1938:414). Griscom (1934:421) was aware of the large size of birds from southwestern México and Guatemala, but he considered that this size variation was best ignored. The first definite indication that the supposed uniformity of this finch might be untrue came from de Schauensee (1952:1214), who correctly pointed out a consistent color difference between Honduran and Colombian specimens. After examination of about 400 skins, I have found that the range customarily assigned to *Atlapetes brunnei-nucha brunnei-nucha* is actually occupied by no less than six subspecies.

All the subspecies of *Atlapetes brunnei-nucha* have greenish upper parts and white under parts bordered by a varying amount of gray. All have a brown crown and a black forehead, the latter bearing three longitudinal white marks. The black of the forehead is continued as a mask between the brown of the crown and the white of the throat. The principal color characters which vary geographically within the species include the presence or absence of a black pectoral band, presence or absence of a yellow border between the black mask and the brown of the crown, relative proportion of gray and white on the breast and abdomen, extent of the black forehead area, and presence or absence of a yellow spot on the nape. Certain color variations that appear in individuals throughout the range of the species occur with higher percentages of frequency in some populations than in others. Such geographically correlated variations include the presence of a marked brownish wash on the upper tail coverts and edgings of the rectrices and the presence of gray tips to some of the ventral white feathers that give a "scalloped" appearance. Color variations which appear to be entirely individual (or seasonal) in nature include the shade of green of the upper parts, the shade of brown of the crown, the width of the pectoral band when present, the amount of greenish wash on the gray flank feathers, and the presence of occasional yellow feathers in the white frontal spots.

In juvenal plumage, *Atlapetes brunnei-nucha* is similar in dorsal pattern to the adult but is much duller in color. The black frontal area and mask of the adult are dull gray

in the juvenile, and the white frontal markings are absent. The white of the throat is heavily spotted with dull olive. The breast and abdomen are heavily streaked with dull olive on a white or dull yellow background. The pectoral band is represented by a poorly defined unstreaked zone of dull olive between the throat and the streaked portion of the under parts; no juvenal specimen of any race lacking the pectoral band was available to me. Material of this species in full juvenal plumage was insufficient to attempt any study of geographic variation in color. In young birds, all or most of the lower mandible is dull yellowish horn in color; traces of this yellow remain well after the postjuvenal molt has been completed. All birds showing any signs of this yellow on the mandible have been excluded from the measurements.

There is a striking color resemblance between those races of *Atlapetes brunnei-nucha* which possess the pectoral band and *Pipilo ocai*, a Mexican towhee. This resemblance led Chapman (1923:256-258) to conjecture that *Atlapetes brunnei-nucha* was derived from *Pipilo ocai* (= *P. torquatus* of Chapman's usage). Wetmore (1943:336, 337) and Sibley (1950:145) preferred to attribute this color similarity to parallelism. To my mind, none of the differences cited by Wetmore as reasons for believing that the two species are not actually closely related is as significant as a difference mentioned by Chapman himself. This is the fact that despite the color similarity of the adults, the juvenal plumages of the two species are quite unlike. Chapman admitted that he was unable to explain this difference, which I believe to be more fundamental than the difference in size and proportion listed by Wetmore. Before we can draw any definite conclusions as to the derivation and relationships of the species in question, however, we still have much to learn about the interrelationships of certain currently recognized genera of Fringillidae such as *Atlapetes*, *Pipilo*, *Chlorura*, *Torreornis* and *Melospiza*.

The species *Atlapetes brunnei-nucha* may be divided readily into two groups of subspecies—those with and those without the black pectoral band. Chapman (1923) discussed at length the significance of this character in this and related species of "*Buarremon*." It is my belief that the unbanded forms represent a mutation from banded stock which became fixed in three isolated populations. This was essentially Chapman's idea, and, considering the stage of our knowledge of population genetics in 1923, Chapman was far ahead of his time. It should be noted, however, that an alternate hypothesis exists, with perhaps an equal possibility of being the correct interpretation. Dr. Wetmore writes (letter of October 4, 1953) "I look on such matters as *Atlapetes apertus* [here considered a race of *brunnei-nucha*, as indicated beyond] as an ancient genetic inheritance that has carried an original pattern over as an underlying character, swamped out in the main in a newer population (with dark breast band) but cropping out when there is an inhibition or failure in the newer element for some reason . . . . In *Atlapetes apertus* we have a condition that is fixed in an isolated population." We thus agree on the mechanism of fixation in isolation; the moot question is whether the banded or unbanded pattern represents the ancestral condition.

Of the three races which lack the pectoral band, only one, *allinornatus*, was actually described as a subspecies of *brunnei-nucha* (Phelps and Phelps, 1949). Sclater and Salvin (1879) described *inornatus* at a time when the subspecies concept had not obtained a foothold in England. Chapman (1923) continued to give *inornatus* specific rank, but pointed out in detail that individual variation in the extent of the pectoral band almost completely bridges the gap between *inornatus* and *brunnei-nucha*, a fact which influenced Hellmayr (1938:415) to treat the two as conspecific. Wetmore (1942:108) described *apertus* as a full species, and later (1943:336, 337) explained his views in greater detail. The only supposedly unique character which he ascribed to *apertus* was the lack of the yellowish line bordering the brown crown. However, as will be shown

beyond, this absence is also characteristic of the Honduran race, a form possessing the pectoral band. Thus *apertus* has no characters uniquely its own, but merely exhibits a different combination of the characters found in other races. The three plain-breasted forms, then, are here considered to be subspecies of *Atlapetes brunnei-nucha*. It is of interest to note that all three of these races are exceptionally isolated, and that the plain-breasted mutation has apparently arisen and become fixed upon three independent occasions. It happens that there are certain characters by which we can separate these three populations in terms of their physical appearance. It is conceivable, however, that exploration of another isolated mountain range somewhere in South or Central America might reveal a plain-breasted form of *Atlapetes brunnei-nucha* indistinguishable from one of the known races, yet obviously independently derived by a parallel mutation. This would lead to certain unavoidable difficulties in reconciling nomenclature to relationships, a situation which has arisen in other groups of animals. But this is, at the moment, a theoretical bridge which we will try to cross when and if it becomes real.

All measurements given in this paper are in millimeters. The wing measurement is that of the flattened wing. The tail measurement was made in the usual way, with one point of the dividers at the base of a central rectrix and the other at the tip of the longest rectrix. The bill measurement was taken by placing one point of the dividers at the anterior margin of the nostril opening and the other at the tip of the upper mandible. It is felt that this measurement can be taken more accurately and consistently than any of the usual culmen measurements. All measurements are taken to the nearest half millimeter, and means are rounded off to one decimal place.

This study is based on the series of *Atlapetes brunnei-nucha* in the collections of Carnegie Museum and the American Museum of Natural History, supplemented by 175 specimens borrowed from other collections. I wish to thank the following persons for their courtesy in lending specimens from their respective institutions: Emmet R. Blake (Chicago Natural History Museum), William C. Dilger (Cornell University), Herbert Friedmann (United States National Museum), J. C. Greenway, Jr. (Museum of Comparative Zoölogy), George H. Lowery, Jr. (Louisiana State University), Frank A. Pitelka (Museum of Vertebrate Zoology), Robert W. Storer (University of Michigan), and Harrison B. Tordoff (University of Kansas). Specimens were also borrowed from the personal collections of George M. Sutton and William H. Phelps. John T. Zimmer kindly arranged to send certain critical specimens to Pittsburgh, after I had seen them in the American Museum of Natural History, and was especially helpful in locating collecting stations in South and Central America for me

#### *Atlapetes brunnei-nucha brunnei-nucha* (Lafresnaye)

*Embernagra brunnei-nucha* Lafresnaye, Rev. Zool., 2:1839:97. México.

Hellmayr (1938:412) correctly pointed out that the "Bogotá" specimen listed by Bangs (1930. 393) cannot possibly be the type of Lafresnaye's *Embernagra brunnei-nucha*, since the original description states "Hab. Mexico" and was explicitly based on a Mexican specimen in the collection of Charles Brelay at Bordeaux. In the present revision four races of this species are recognized as occurring within the borders of México, so it became necessary to determine, if possible, the identity of the type specimen. I have been informed by Dr. J. Berlioz (letter of April 16, 1953) that this type specimen and, indeed, the entire Brelay collection have disappeared. A restriction of the type locality of *Embernagra brunnei-nucha* thus becomes necessary. I designate Jalapa, Veracruz, a source of many early Mexican collections, and a locality well represented by specimens in modern museums.

*Characters.*—Pectoral band present. Under parts extensively gray, with white often confined to a narrow midventral area. Most similar to the Costa Rican subspecies, from which it is separated geographically by two others, and from which it differs chiefly in lesser extent of the black forehead area (see description of the Costa Rican race, beyond). Similar in color to the subspecies of Chiapas

and Guatemala, but smaller, especially the tail. Occasional individuals resemble the form which inhabits Oaxaca and Guerrero in possessing a yellow nape spot, but this is a rare variant in *A. b. brunnei-nucha*. I have examined the two Presidio specimens described by Bangs and Peters (1927:485), which these authors characterized as having unusually dark crowns. One can be matched by several other specimens, but the other is a dark extreme and must, of course, be regarded as an individual variant. For measurements, see table 1.

*Distribution*.—Subtropical zone of eastern México in the Sierra Madre Oriental from southeastern San Luis Potosí to southwestern Veracruz.

*Specimens examined*.—MÉXICO. GUERRERO: Cuapongo, mountains above Chilpancingo, Omil-San Antonio, Tamazunchale, Xilitla. VERACRUZ: Jalacingo, Jalapa, Jico, Ojochico, Orizaba, Presidio, Teocelo, Tezuitlan.

#### *Atlapetes brunnei-nucha suttoni*, new subspecies

*Type*.—Adult male, no. 115581, Museum of Vertebrate Zoology, University of California; La Cumbre (9000 feet), 5 miles northeast of Cerro San Felipe, Oaxaca, México; April 1, 1948; collected by Charles G. Sibley, original number 3140; weight 36.3 grams; testes 4 mm.

*Characters*.—Similar to *A. b. brunnei-nucha*, but the brown of the crown, instead of being abruptly delimited from the green of the back, is continued onto the back as two irregular lines which enclose a yellow spot; the median longitudinal white line of the forehead does not terminate within the black portion of the frontal area as in *brunnei-nucha*, but at or beyond the junction of the black and brown portions of the crown; in some specimens there is a suggestion of a yellowish coronal stripe connecting this median white frontal line with the yellow nape spot; yellow lines at lateral borders of crown more prominent and sometimes nearly confluent with the lateral white markings of the frontal area; white of under parts more extensive; average size larger, especially tail length.

*Distribution*.—The "Sierra Madre del Sur Biotic Province" (Goldman and Moore, 1945) in the states of Guerrero and Oaxaca, México.

*Specimens examined*.—MÉXICO. GUERRERO: Cuaponga, mountains above Chilpancingo, Omilteme. OAXACA: Cerro San Felipe, La Cumbre.

*Remarks*.—Although an indication of the yellow nuchal spot characteristic of this subspecies may appear as a rare variant in other races, especially those of México, only in *suttoni* is it consistent. Among the specimens examined the extreme development of this yellow spot is illustrated by U.S.N.M. 143589, collected by Nelson and Goldman near Chilpancingo, Guerrero. The yellow nuchal spot is projected into a line extending half the length of the crown, while the median white frontal stripe is continued onto the brown of the crown by three or four yellow feathers. This is obviously an approach to the striped crown typical of several related species of *Atlapetes*.

From the northernmost part of its range in México to Guatemala, *Atlapetes brunnei-nucha* exhibits a cline of increasing size, manifested particularly in tail length. Oaxaca specimens of *suttoni* thus average larger than those from Guerrero, but it does not appear practical to separate them on this basis.

It is a pleasure to name this distinctive Mexican subspecies for Dr. George M. Sutton.

#### *Atlapetes brunnei-nucha apertus* Wetmore

*Atlapetes apertus* Wetmore, Proc. Biol. Soc. Wash., 55, 1942:108. Cerro de Tuxtla (about 2500 feet), Sierra de Tuxtla, Veracruz, México.

*Characters*.—Pectoral band absent. Differs from the South American plain-breasted races *inornatus* and *allinornatus* in that the yellow lines at the lateral borders of the crown are absent or but faintly indicated, resembling in this respect the Honduran race, in which the pectoral band is present. The two specimens of *apertus* and one of *allinornatus* I have examined show no traces of the pectoral band; on the other hand, *inornatus* of Ecuador often exhibits an indication of the band (see Chapman, 1923: plate 14, fig. *d*). The under parts of *apertus* resemble those of the geographically neighboring *brunnei-nucha* in being mostly gray, with the white restricted to a narrow midventral zone. The other plain-breasted subspecies are more extensively white below, resembling in this respect the widely distributed South American banded race *frontalis*.

*Measurements*.—One male—wing, 86; tail, 78.5; bill, 12; 1 female—wing, 80.5; tail, 72.5; bill, 11.5. Wetmore's original measurements were taken by methods differing from mine. His figures, taken

from the original description of *apertus*, are here appended as an indication of the range of variation in this subspecies, since only one specimen of each sex was available to me. Two males—wing (chord), 81, 81.8; tail, 72.8, 75; culmen from base, 16.8, 17.4; 3 females—wing, 76.8–78.2 (77.7); tail, 70–72.9 (71.2); culmen from base, 16.7–16.9 (16.8).

*Distribution*.—Volcán San Martín and Cerro de Tuxtla, Sierra de Tuxtla, southern Veracruz, México.

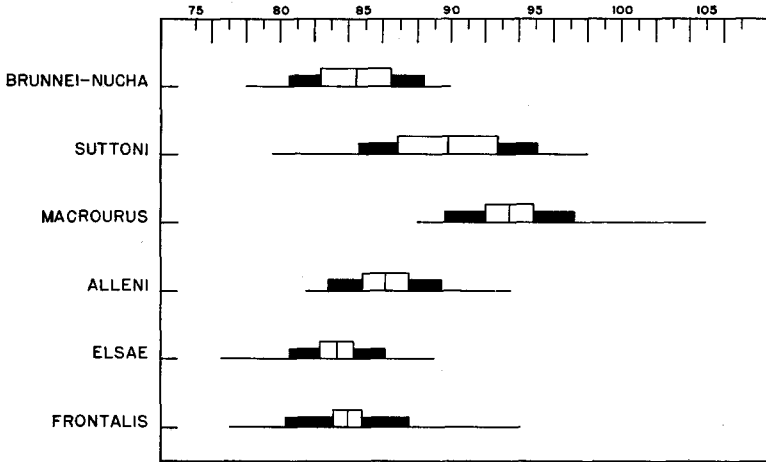


Fig. 1. Tail length in millimeters of adult males of *Atlapetes brunnei-nucha*. The base line represents the observed range; vertical line, mean; white rectangle, two standard errors on either side of mean; black rectangle, one standard deviation on either side of mean. When the rectangles for standard deviation neither overlap nor are separated, about 84 per cent of the specimens of one group is separable from about 84 per cent of the other. The separation of these rectangles in *brunnei-nucha* and *macrourus* indicates that an even higher number is separable.

*Specimens examined*.—MÉXICO. VERACRUZ: Volcán San Martín.

*Remarks*.—My reasons for considering *apertus* as a subspecies of *brunnei-nucha* rather than as a full species as originally described are given in the introductory paragraphs of this paper.

#### *Atlapetes brunnei-nucha macrourus*, new subspecies

*Type*.—Adult male, no. 94150, Chicago Natural History Museum; Volcán Tajumulco (9200 feet), San Marcos, Guatemala; February 16, 1934; collected by Emmet R. Blake, original number 1193.

*Characters*.—Similar to *A. b. brunnei-nucha*, but tail decidedly longer; other measurements averaging greater; white of under parts more extensive, as in *suttoni*.

*Distribution*.—Mountains of Chiapas, México, and the adjacent Sierra Madre of southwestern Guatemala; the "Chiapas Highlands Biotic Province" of Goldman and Moore (1945).

*Specimens examined*.—MÉXICO. CHIAPAS: El Phenix, Letrero, Monte Ovando, Pico de Lora, Pinabete, San Cristóbal, Triunfo, Tumbala, Volcán de Tacaná. GUATEMALA. Chimaltenango, Sierra Santa Elena, Tecpam, Volcán San Lucas, Volcán Tajumulco.

*Remarks*.—This subspecies represents the large extreme of a north-south cline of increasing tail length. It is isolated from the closely related *brunnei-nucha* by the lowlands of the Isthmus of Tehuantepec. This isolation, together with the minor, but readily apparent, difference in the color of the under parts and the pronouncedly greater tail length, justifies, in my opinion, formal separation of the Chiapas-Guatemala population as a subspecies. I have seen no specimens from eastern Guatemala, where *macrourus* presumably intergrades with the distinctive subspecies of Honduras and El Salvador, described herein.

*Atlapetes brunnei-nucha alleni*, new subspecies

*Type*.—Adult male (breeding), no. 135261, Carnegie Museum; San Juancito, Honduras (cloud forest, 6500 feet); August 4, 1951; collected by Arthur C. Twomey and Roland W. Hawkins, original number 15399.

*Characters*.—Differs from all other races of *Atlapetes brunnei-nucha* except *apertus* in lacking the yellow lines at the lateral margins of the brown coronal area. Differs from *apertus* in possessing a pectoral band. Under parts average somewhat whiter than in *suttoni* and *macrourus*, decidedly whiter than in *brunnei-nucha* and *apertus*.

Table 1

Measurements in Millimeters of Adult Specimens of *Atlapetes brunnei-nucha*

Sex	No. of specimens	Wing		Tail		Bill	
		Mean with standard error	Standard deviation	Mean with standard error	Standard deviation	Mean with standard error	Standard deviation
<i>brunnei-nucha</i>							
♂	17	84.9±0.72	2.9	84.4±1.04	3.9	11.6±.11	0.46
♀	18	80.8±0.66	2.7	81.3±0.95	3.9	11.4±.09	0.40
<i>suttoni</i>							
♂	15	85.2±0.81	3.0	89.8±1.44	5.2	11.5±.11	0.41
♀	10	81.5±0.88	2.8	84.7±1.36	4.3	11.1±.12	0.37
<i>macrourus</i>							
♂	33	88.5±0.45	2.6	93.4±0.69	3.8	11.8±.09	0.54
♀	17	83.0±0.66	2.7	85.1±0.85	3.3	11.4±.18	0.72
<i>alleni</i>							
♂	32	86.6±0.44	2.4	86.1±0.67	3.3	11.3±.08	0.45
♀	15	83.3±0.85	3.2	83.1±1.12	3.7	11.2±.14	0.52
<i>elsae</i>							
♂	36	84.6±0.45	2.5	83.3±0.49	2.8	11.5±.08	0.47
♀	12	80.9±0.73	2.4	79.7±1.27	4.2	11.3±.19	0.62
<i>frontalis</i>							
♂	79	85.0±0.31	2.7	83.9±0.42	3.6	12.2±.06	0.54
♀	53	80.9±0.36	2.5	80.0±0.55	3.5	11.9±.07	0.52
"xanthogenys"							
♂	12	83.9±1.11	3.5	86.5±0.66	2.1	12.3±.30	1.00
♀	7	78.0	....	79.2	....	12.0	.....

*Distribution*.—Mountains of northern El Salvador, Honduras, and western Nicaragua.

*Specimens examined*.—EL SALVADOR. Los Esesmites, Mt. Cacaguatique. HONDURAS. Cantoral, La Cueva, La Libertad, Muye, Portillo Grande, San Juancito, San Pedro (Copan), Soluteca. NICARAGUA. Matagalpa, Muy Muy, Peña Blanca, Río Coco, Río Tuma, San Rafael del Norte.

*Remarks*.—The characteristics of this form were first noted by de Schauensee (1952:1214), who perceived the difference between Honduran and South American specimens. Lack of material prevented his coming to any definite conclusions.

Specimens from central and eastern Nicaragua are quite variable, apparently representing intergrades toward the Costa Rican form, although separated from the latter by fairly extensive lowland areas unsuited to this species. Western Nicaraguan specimens are almost as uniform as those from Honduras and El Salvador, although an occasional specimen shows a fairly well marked yellow edge to the brown of the crown. Even in Honduran birds, the edges of the crown are sometimes perceptibly lighter in color than the center, but the well demarcated yellow line of the other races is absent.

This subspecies is named in honor of Dr. Arthur A. Allen of Cornell University.

*Atlapetes brunnei-nucha elsae*, new subspecies

*Type*.—Adult male, no. 11230, Carnegie Museum; Volcán de Irazú [between 8000 and 10,000 feet], Costa Rica; April 16, 1902; collected by M. A. Carriker, Jr., original number 381.

*Characters*.—Most nearly resembles the geographically distant *A. b. brunnei-nucha*, which it closely matches in size. The chief difference lies in the proportion of black and brown on the crown. In *brunnei-nucha* the line of demarcation between black and brown lies anterior to the center of the eye, while in *elsae* this line is posterior to the center of the eye. When viewed from above, the black area in *brunnei-nucha* appears to occupy no more than the anterior quarter of the crown, while in *elsae* one-third or more of the crown is black. In addition, the white area of the under parts is somewhat more extensive in *elsae* than in *brunnei-nucha*, but far less than in *frontalis*, the subspecies found to the east of *elsae*.

*Distribution*.—Mountains of Costa Rica and western Panamá.

*Specimens examined*.—*Atlapetes brunnei-nucha alleni-elsae* intergrades: NICARAGUA. Ocotol, Volcán Mombacho. *Atlapetes brunnei-nucha elsae*: COSTA RICA. Agua Caliente, Azahar de Cartago, Bonilla, El Sauce, Estrella de Cartago, Grecia, La Hondura, Moravia, Navarro, Ojuras de Terraba, San Marcos, Santa Cruz de Turrialba, Villa Quesada, Volcán de Irazú, Volcán Turrialba. PANAMÁ. Boquete, Cerro Campana, Mt. Chiriquí.

*Remarks*.—It is a pleasure to dedicate this subspecies to Dr. Elsa Guerdum Allen.

*Atlapetes brunnei-nucha frontalis* (Tschudi)

*Arremon frontalis* Tschudi, Arch. Naturg., 10, (1), 1844:289. Perú.

*Buarremon xanthogenys* Cabanis, Mus. Hein., 1, 1851:141. Caracas, Venezuela.

*Characters*.—Similar in size to *brunnei-nucha*, but bill averaging longer. Similar also in color to *brunnei-nucha*, but white of under parts much more extensive. Yellow border of crown deeper in color, near Yellow Ocher (Ridgway, 1912) rather than Primuline Yellow as in *brunnei-nucha*.

*Distribution*.—Mountains of eastern Panamá, Colombia, Ecuador, Perú and western and northern Venezuela, except those portions of Ecuador and Venezuela occupied by *inornatus* and *allinornatus*, respectively.

*Specimens examined*.—PANAMÁ. Mt. Pirri, Mt. Tacarcuna. COLOMBIA. Aguadita, Andalucía, Bitaco Valley, Buena Vista, Cauca, Cerro Munchique, El Eden, El Roble, Fusagasugá, Gallera, Heights of Caldas, La Candela, La Florida, La Sierra, Las Lomitas, Las Ventanas, Miraflores, Palmira, Peña Blanca, Primavera, Ramirez, Ricaurte, Río Negro, Salento, San Antonio, Santa Elena. ECUADOR. Baeza, Corazon, El Chiral, Macas region, Mindo, Río Cosanga, Río Sardinies, Río Oyacachi, Salvias, San José de Sumaco, Santa Rosa, Sumaco Abajo, Zamora, Zaruma. PERU. Idma, Matchu Picchu, Oconeque. VENEZUELA. Cerro del Avila, Coloia Tovar, Culata, Cumbre de Valencia, El Escorial, El Limon, Galipan, Guamito, Guarico, La Cuchilla, Pico Naiguata.

*Remarks*.—Friedmann and Deignan (1942:53) give the type locality of *Arremon frontalis* Tschudi as "Peru = eastern wooded region between 8° and 9° lat. south and Jaen de Bracamoras, Peru." This restriction was based on Tschudi's discussion of the species in his "Untersuchungen über die Fauna Peruana," 1844-46. In this work, "Jaen de Bracamoras" (probably an error for Jaén, Dept. Cajamarca) was merely cited as an additional locality from which the species was known, not as a source of Tschudi's specimens. Dr. John T. Zimmer has informed me (letter of October 8, 1953) that he believes "between 8° and 9° lat." to have been a *lapsus calami* on the part of Tschudi, since there is no evidence that Tschudi ever got that far north in Perú. Dr. Zimmer believes that Tschudi's "wooded region of the interior" was the area between 10° and 12°, and on that basis I hereby propose to restrict the type locality of *Arremon frontalis* to the vicinity of the Río Vitoc and Río Tulumayo, an area where Tschudi spent much time.

Within a range as extensive as that ascribed above to *frontalis*, a certain amount of geographic variation is to be expected. Such variation exists, as will be shown later, but it is nowhere sufficiently great, in my opinion, to warrant nomenclatorial recognition. In their Venezuelan check-list, Phelps and Phelps (1950) employed the name *Buarremon xanthogenys* Cabanis for the somewhat isolated population of the coastal ranges of Venezuela. Hellmayr (1938:414) also accepted this race with provision that "this form is perhaps not worthy of recognition." The supposed characteristics of *xanthogenys*, according to Hellmayr, are "longer, slenderer bill and whiter underparts . . ." Hellmayr correctly pointed out that, although these northern Venezuela birds are quite constant in

the extreme whiteness of the under parts, they can be matched by specimens from other parts of the range of *frontalis* in so many instances that it does not appear feasible to separate "*xanthogenys*" on the basis of color. As for the supposed size difference, some specimens do exhibit particularly slender bills, but most cannot be distinguished from *frontalis* from Colombia, Ecuador and Perú. The size and shape of the bill is especially variable in this species, and the only generalization which can safely be made is that the bills of South American specimens average longer than those of México and Central America. See table 1 for measurements of specimens from the range of "*xanthogenys*."

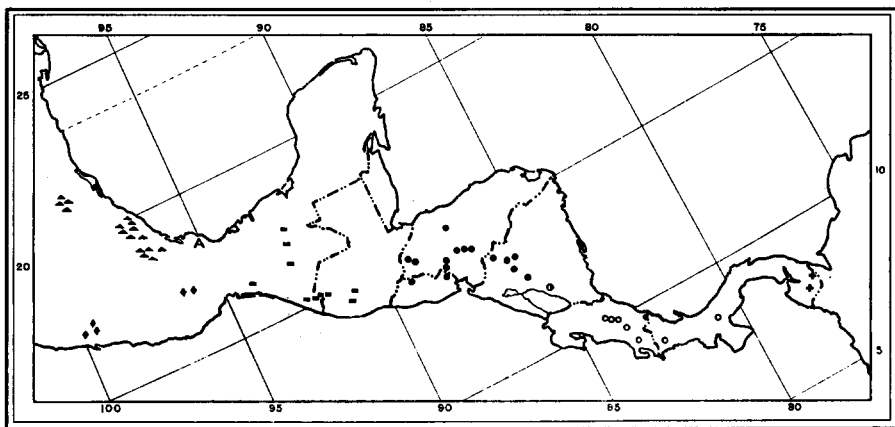


Fig. 2. Distribution of Central American races of *Atlapetes brunnei-nucha*. Each symbol represents a locality from which specimens have been examined. Triangles = *brunnei-nucha*; diamonds = *suttoni*; A = *apertus*; rectangles = *macrourus*; solid circles = *alleni*; half-solid circle = *alleni-elsae* intergrade; open circles = *elsae*; crosses = *frontalis*.

Certain other trends are visible within the range of *frontalis* as here understood. Specimens from eastern Panamá average somewhat smaller than those from elsewhere in the range of the subspecies and have rather slender bills. They are uniform in having a decided brownish wash on the upper tail-coverts and edges of the rectrices. This color character appears sporadically throughout all the populations of *Atlapetes brunnei-nucha*; only in eastern Panamá is it characteristic of the majority of individuals examined. Peruvian specimens at the opposite end of the species' range from the Venezuelan "*xanthogenys*" represent the opposite extreme in average color of under parts, but some Peruvian birds are almost as white below as some Venezuelan birds. The large series of specimens from Colombia and Ecuador runs the gamut of variation in color of under parts. Even the grayest of the Peruvian specimens has a greater extent of white ventrally than any Mexican specimen of *A. b. brunnei-nucha*. A color variation occurring somewhat more frequently among the Peruvian specimens than among others examined is the presence of narrow gray edgings to the white feathers of the breast and abdomen, giving a somewhat "scalloped" appearance.

#### *Atlapetes brunnei-nucha inornatus* (Sclater and Salvin)

*Buarremon inornatus* Sclater and Salvin. Ibis, 4th series, 3, 1879:427. Pallatanga, Ecuador.

*Characters*.—Pectoral band absent. As noted above under *apertus*, *inornatus* differs from that subspecies in having more white, less gray on the under parts, and in possessing the yellow line bordering the brown of the crown. From both *apertus* and *allinornatus*, *inornatus* differs in that a large percentage of specimens exhibits traces of the pectoral band at the sides. I confess that I am completely unable to understand one of the characters listed by Wetmore (1943:336, 337) for *inornatus*: "brown of crown extending only to back of head, not reaching the hind neck . . ." With the exception of *suttoni*, no subspecies of *Atlapetes brunnei-nucha* appears to me to exhibit any appreciable variation in the line of demarcation between the brown of the crown and the green of the back. The brown



area of the crown of *inornatus* is somewhat restricted, to be sure, but at the anterior rather than the posterior margin. The black area of the crown is increased at the expense of the brown, much as in the banded race *elsae* of Costa Rica.

*Measurements*.—One male—wing, 77.5; tail, 72.5; bill, 12; 2 females—wing, 76, 79; tail, 72, 73.5; bill, 11.5, 12. Measurements of a slightly larger series, taken from Chapman (1923:253) are here appended; this series includes the four birds listed above, and differences in our respective figures are attributable to different methods of measuring. Males—wing, 74, 74, 79, 79.5; tail, 72, 73, 75; culmen, 17.5, 18, 18.3, 18.3; females—wing, 74, 74, 75, 77; tail, 71, 72, 73, 73; culmen, 17.3, 17.3, 18.

*Distribution*.—Subtropical zone of the Chimbo—Chanchan river system of western Ecuador.

*Specimens examined*.—ECUADOR. Coco, Los Llanos, Pallatanga.

#### *Atlapetes brunnei-nucha allinornatus* Phelps and Phelps

*Atlapetes brunnei-nucha allinornatus* Phelps and Phelps, Proc. Biol. Soc. Wash., 62, 1949:120. San Luis, State of Falcón, Venezuela.

*Characters*.—Pectoral band absent. Similar to *inornatus* of Ecuador, but wing and tail longer. The one specimen of *allinornatus* I examined showed no trace of a rudimentary pectoral band, nor does the original description mention one; such a partial band is often present in *inornatus*. Differs from *apertus* in possessing the yellow margin to the crown (although this is not mentioned in the detailed color description of the type specimen), and in being whiter below.

*Measurements*.—One male—wing, 83; tail, 84; bill, 11.5. Measurements given by Phelps and Phelps (1949:120), including the specimen above, are as follows: 2 males—wing, 81, 82; tail, 80, 82; culmen from base, 18, 20; 1 female—wing, 80, tail, 81; culmen from base, 19.

*Distribution*.—"The San Luis mountains of Falcón and Bucaral, Yaracuy [Venezuela], in the Subtropical Zone at altitudes from 1300–1360 meters." (Phelps and Phelps, *loc. cit.*).

*Specimen examined*.—VENEZUELA. Bucaral.

#### SUMMARY

The Chestnut-capped Atlapetes (*Atlapetes brunnei-nucha*) is a medium-sized finch inhabiting the Subtropical Zone from central México to southern Perú. Standard ornithological reference works divide this extensive range between two subspecies: *A. b. brunnei-nucha* and *A. b. xanthogenys*, the latter race supposedly confined to the coastal ranges of Venezuela. In addition, there are three forms which differ from typical *brunnei-nucha* by their lack of a black pectoral band. Two of these, *inornatus* of Ecuador and *allinornatus* of Venezuela, have been placed in the species *brunnei-nucha* by earlier authors; the third, *apertus* of Veracruz, is here placed as a race of *brunnei-nucha* for the first time. Differentiation in *Atlapetes brunnei-nucha* has taken place to a greater extent in Central America than in South America, and four new Central American subspecies are described herewith: *suttoni* from Guerrero and Oaxaca, *macrourus* from Chiapas and Guatemala, *alleni* from Honduras, El Salvador and Nicaragua, and *elsae* from Costa Rica and western Panamá. All the South American birds with the black pectoral band are considered to belong to a single, somewhat variable subspecies, for which the name *frontalis* Tschudi is revived; *xanthogenys* Cabanis is considered a synonym.

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