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REMARKS ON THE LIFE ZONES OF NORTHEASTERN VENEZUELA WITH DESCRIPTIONS OF NEW SPECIES OF BIRDS

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The American Museum has recently purchased from Mr. G. H. H. Tate a collection of 660 birds made by him in northeastern Venezuela between February and June, 1925.

Our interest in this region centers in its upper zonal life and its relations to that of the main Andean system. Previous collections have been made here chiefly in the Tropical Zone, none, so far as I know, above an elevation of 3000 feet. At this, and even lower elevations, numbers of Subtropical Zone forms have been found, but it was believed that by ascending to higher altitudes we should add to our knowledge of the distribution of these birds and perhaps to their numbers. Mr. Tate was, therefore, urged to ascend Mt. Turumiquire, so far as known the highest mountain in Venezuela east of the Mérida region, and it was on this mountain that his most interesting discoveries were made.

Here, at an elevation of 5600 feet and upward, he found a very distinct new species of *Diglossa* in numbers and secured two specimens of a striking new *Premnoplex* both of which extend the range of their respective genera eastward from the Caracas region. He also secured a race of *Myiarchus cephalotes*, a species previously unknown east of the Caracas Andes and specimens of nearly all the subtropical forms which have been recorded from the region. Far more work, however, must be done in northeastern Venezuela before we shall be in a position to deal satisfactorily with the faunal problems presented by its bird-life. We must know not only what species are present but what are absent. This is true not alone of the Tropical Zone but of the life above it.

When we have as exact a knowledge of the birds of the Paria Peninsula as we now have of those of the island of Trinidad we may determine not only the extent of the changes which have occurred in the island since its separation from the mainland, but also of those that have taken place on the mainland since the island was separated.

Intensive collecting above the Tropical Zone will also accurately reveal the faunal relations of the zonal life of northeastern Venezuela with that of central and western Venezuela, Santa Marta and the

main Andean system, and at the same time supply important evidence concerning the orographic affinities of these regions. Mr Tate's work, brief as it was, makes an acceptable contribution toward this end. So far as the tropics are concerned he adds nothing to the discoveries of Goering¹ and Phelps² and I shall therefore record here only the upper zonal forms which he secured.

The latest maps of Venezuela give Turumiquire an altitude of only 8530 feet; but Tate's aneroid made it 9750 to 9800 feet. He states that the upper slopes are covered with heavy forest which is replaced by brush at the top. The altitude of the mountain led to the hope that it might support a Temperate Zone avifauna, unknown in Venezuela east of the Mérida region, but Tate failed to discover one. Life at and near the summit, he reports, was limited, but nine species of birds and two of mammals being secured. Of the birds, only one, *Mecocerculus setaphagoides nigriceps*, is characteristic of the Andean Temperate Zone, but while the subtropical life of northeastern Venezuela has apparently been derived largely from the west, the occurrence of *Mecocerculus setaphagoides* in the Tropical Zone of both British³ and Dutch⁴ Guiana makes it not improbable that in this instance the Andean form has been derived from northeastern Venezuela rather than the reverse. This species is an inhabitant of open, scrubby growth, such as may be found in subtropical elevations in northern Venezuela but in the Andes is more typical of the borders of the humid and arid Temperate Zone where *setaphagoides* is abundant, and to which it may have ascended from lower levels in Venezuela. In any event, its presence in northeastern Venezuela, where it is found at least as low as 3000 feet, is not to be regarded as an evidence of the presence of a Temperate Zone element in that region. In the light of our present knowledge, therefore, the Subtropical is the only zone above the Tropical in northeastern Venezuela.

If we determine the zonal status of a species by its altitudinal distribution throughout the greater part of its range it is clear that numbers of subtropical species occur at lower elevations in northeastern Venezuela (and in some instances Trinidad) than elsewhere in tropical latitudes. Whether this is due to local climatic conditions as, for example, the cooling influences of trade winds, can be determined only from meteorological data as yet unavailable. We have also to consider

¹1868, Proc. Zool. Soc. London, pp. 168-173, 626-632.

²1897, The Auk, XIV, pp. 357-371. Includes an excellent description of the country visited and discussion of faunal problems.

³Chubb, 1921, 'Birds British Guiana,' II, p. 134.

⁴Penard, 1910, 'De Vogels van Guyana,' II, p. 205.

the results of subsidence (to which Trinidad owes its insulation) in lowering the levels of life-zone boundaries. But whatever the cause or causes the fact remains that some species, which in the main Andean chain inhabit the lower part of the Subtropical Zone or enter the upper Tropical, here descend to or near to sea-level, while others, which in the Colombian Andes we are not accustomed to find below four or five thousand feet, occur at as low as 2400 feet in northeastern Venezuela.

Members of the first class are *Tyranniscus chrysops chrysops*, *Compsothlypis pitiayumi elegans* and *Xanthoura yncas cæruleocephala*. Members of the second group are *Penelope argyrotis*, *Geotrygon linearis parizæ*, *Turdus serranus cumanensis*, *Catharus melpomene birchalli*, *Myioborus verticalis pallidiventris*, *Atlapetes semirufus denisei*, *Buarremon torquatus phygas*, *Chlorophonia frontalis minusculus*, *Tangara viridissima viridissima*, *T. guttata guttata*, *T. cyanopectus* and *Thlypopsis fulviceps fulviceps*, all of which were taken at Neverí, altitude 2400 feet.

Viewed as a whole, the subtropical bird-life of northeastern Venezuela is of Andean origin. Of the thirty-three species here recorded twenty-seven are present as identical or representative forms in the Subtropical Zone of the Colombian Andes. Of this number ten occur in the main Andean system but not in the Santa Marta group, and on the other hand, five additional species are represented in the Santa Marta group but not in the Andes.

The distinctive Andean element, therefore, appears to be stronger than the distinctive Santa Martan element. But in considering the significance of this fact Todd and Carriker's very thorough work¹ on the birds of the Santa Marta region should be consulted. One species, *Siptornis subcristata*, is found only in northeastern and north-central Venezuela leaving but one, *Basileuterus griseiceps*, of the Subtropical Zone of northeastern Venezuela, which has no known representative elsewhere.

With the Subtropical Zone of north-central Venezuela (Caracas² and Cumbre de Valencia³) the corresponding zone in northeastern Venezuela has the closest faunal affinity. Excluding *Basileuterus griseiceps*, and *Tyranniscus chrysops* is the only species found in subtropical northeastern Venezuela which is not known to be represented in subtropical north-central Venezuela. Sixteen of these forms are identical, twelve are represented by subspecies, and two (both Mr. Tate's discoveries), by species.

¹1922, Ann. Carn. Mus., XIV.

²Hellmayr, 1924, Archiv für Naturg., pp. 132-204.

³Hellmayr and Seilern, 1912, Archiv für Naturg., pp. 34-164.

Zoögeographers know that such close faunal relationship is not fortuitous or due to casual range extension but has a definite bearing on the geological history of the areas concerned. It seems evident, therefore, that the subtropical portions of northeastern and central northern Venezuela, now separated by not less than 150 miles of tropical lowlands, were at one time more closely connected.

While we doubtless have much yet to learn concerning the Subtropical Zone bird-life of northeastern Venezuela it is probable that our knowledge of the bird-life of Trinidad is reasonably complete. When, therefore, we observe that only six subtropical forms have been recorded from this island, we may assume that this number fairly represents the subtropical element in its avifauna. Three of these are identical with, three very slightly differentiated from, the mainland forms. This similarity shows that but little differentiation has occurred since the island was separated from the mainland and this fact in turn indicates that the small subtropical element in Trinidad is not due to the separation of the island before this life was developed on the mainland but to existence of unfavorable conditions for its extension eastward. The mountains of Trinidad do not exceed 3000 feet in altitude and are generally lower, while the unsubmerged mountain tops between the island and the Paria Peninsula—Monos, Huevos, and Chacachacare—have an elevation at the most of only a few hundred feet. The small number of subtropical species in Trinidad may possibly be attributed, therefore, to the restriction in area of the zone itself. Increased distance from the probable source of geographic origin must also be taken into account. The Caracas-Valencia region, for example, has some twenty-five¹ subtropical species not as yet recorded from northeastern Venezuela and this region in turn lacks numbers known from the Subtropical Zone of the Méridan Andes.

While known geologic history explains the continental affinities of the Subtropical Zone in Trinidad we are at a loss to account for the presence or representation of certain northeast Venezuelan birds on Mt. Roraima. Of the five species in this group, two, *Tangara guttata guttata* and *Myioborus verticalis pallidiventris* are said to be identical; *Mecocerculus setaphagoides nigriceps* is represented by *M. s. roraimæ*, *Chlorophonia frontalis minusculus* by *C. f. roraimæ*, and *Tangara cyanoptera* by *T. whiteleyi*. Of the five, therefore, only one is specifically represented. Unless these forms (as may have been the case with *Meco-*

¹Including such common, zonally characteristic, birds as *Myadestes ralioides*, *Buarremon brunneinucha*, and *Compsocoma somptuosus*.

cerculus setaphagoides) have arisen from a common tropical ancestor, I am at a loss to account for their occurrence in subtropical islands separated by over 300 miles of the Tropical Zone.

It should be noted that while *Tangara cyanoptera* and *Chlorophonia frontalis* reach the Santa Marta region, neither is known from the Andes west of Venezuela, evidence in support of their eastern rather than western origin.

The conclusions drawn from this brief study may be summarized as follows.

1. There are no Temperate Zone birds in northeastern Venezuela.
2. Between thirty and forty Subtropical Zone species occur there.
3. Several of these descend to sea-level and most of them occur at lower levels than is customary in the Andes; numbers to as low as 2400 feet.
4. As a whole this life is of Andean origin, but there is evidence that some species may have come from the east.
5. The distinctive Andean element is stronger than the distinctive Santa Marten element.
6. Six species are represented in Trinidad.
7. Five species are represented on Mt. Roraima.
8. The exceedingly close relations between the Subtropical Zone life of northeastern and north-central Venezuela suggest that the subtropical portions of these regions were at one time more closely connected.

THE SUBTROPICAL BIRDS OF NORTHEASTERN VENEZUELA

As a contribution to our information concerning the distribution of the subtropical birds of northeastern Venezuela I present here a list of all the birds of this zone which Mr. Tate secured. I am greatly indebted to Mr. Outram Bangs and Mr. W. E. Clyde Todd for the loan of specimens and to the latter for his kindness in making certain comparisons.

Mr. Tate describes his collecting stations in the Subtropical Zone as follows.

NEVERI VALLEY (2400 feet). This valley lies beyond the divide southwest from Cumanacoa. It is very humid and covered with dense forest.

LA LATAL. A coffee plantation with an altitude of 3000 feet among the mountain ranges which are thrown off to the northwest of Turumiquire. The tops of the ridges are forested and rather humid, but the aridity of the Cumanacoa Valley has followed up the valleys. The region is very hilly.

CARAPAS (5600 feet). Here and in an adjacent coffee plantation, La Trinidad, on the flanks of Turumiquire, we found the first tree-ferns.

A few natural clearings filled with bramble and bracken-fern intervene between extensive stands of tall forest.

TURUMIQUIRE (altitude 9750 feet—our camp at 7900 feet). Five days were consumed in cutting a trail from Carapas to the summit of Turumiquire, for, owing to tangled vegetation and precipitous slopes, the mountain had not been previously explored. I found the upper slopes carrying heavy forest which is replaced by brush at the top. The fauna is very limited; only nine species of birds and two of mammals were taken there.

LIST OF SPECIES

Penelope argyrotis (Bonaparte) subspecies.—An immature specimen from Neverí certainly represents this species (hitherto unknown east of Caracas) but is doubtless separable. Compared with an example from the Mérida region it is less rufescent throughout, the breast is olive fuscous-black, there is only a trace of white on the forehead and but little above and below the bare orbital region.

Geotrygon linearis pariae Chapman.—Neverí, 2 ♂, 1 im. The adults agree with the type from an altitude of 1500 ft. on the Paria Peninsula and differ from a male topotype of *trinitatis* only in having the throat more extensively white, the breast grayer. The two forms are very near and perhaps not separable.

Cyanolesbia kingii berlepschi Hartert.—Carapas, 2 ♂, 1 ♀.

Pharomacrus festatus Bangs.—Carapas, 1 ♂, 1 ♀. This is the form of northeastern and north-central Venezuela and Santa Marta, while the form of the Mérida region and thence southward to Bolivia is *P. anti-siensis*.

Veniliornis oleaginus tectricialis, new subspecies

SUBSPECIFIC CHARACTERS.—Differs from all recognized races of *Veniliornis oleaginus* in having the tectrices barred on both webs. 2 ♀: wing, 92; tail, 55; culmen, 21.5 mm.

TYPE.—No. 188,017, Amer. Mus. Nat. Hist.; ♀ ad.; Turumiquire, 7900 ft., northeastern Venezuela; April 9, 1925; G. H. H. Tate.

SPECIMENS EXAMINED

Veniliornis oleaginus tectricialis.—VENEZUELA: Turumiquire, 1 ♀; Carapas, 5600 ft., 1 ♀.

Veniliornis oleaginus reichenbachi.¹—VENEZUELA: El Liman, Valley of Puerto La Cruz, 1 ♂.

Veniliornis oleaginus oleaginus; *o. sanguinolentus*; *o. fumigatus*; *o. aureus*, 50 ♂ and ♀.

¹Mr. Todd writes me that none of their specimens of this form, the nearest geographically to the one here described, has the tectrices barred.

In general coloration the members of this group are so variable that large series are required to distinguish between racial and individual variation. While our two specimens of this proposed new form resemble *Veniliornis oleaginus aureus* in tone this resemblance may or may not be constant. From *aureus* as well as from all other known members of the group they differ in having the three inner feathers of the wing barred with white or whitish on both webs. The two inner feathers have two bars each, the third (longest) feather has three bars. In the type these bars, while weaker internally, cross the feather. In the second specimen they do not reach the shaft. All the tectrices have pale tips.

Grallaricula nana cumanensis Hartert.—Latal, 1. This race is very near *G. n. olivascens* Hellmayr of the Caracas region in color, but has a smaller bill. Chubb has described *G. n. kukenamensis* from an altitude of 5000 ft. in the Kukenam mountains adjoining Mt. Roraima, British Guiana.

***Premnoplex tatei*, new species**

SPECIFIC CHARACTERS.—Differs from *Premnoplex brunescens* of the Subtropical Zone from Caracas to Bolivia and Costa Rica in having the underparts largely ivory-white instead of rufous-ochraceous; the nape streaked with whitish.

TYPE.—No. 188,018, Amer. Mus. Nat. Hist.; ♂ ad.; Mt. Turumiquire, 7900 ft., N. E. Venezuela; April 8, 1925; G. H. Tate.

DESCRIPTION OF MALE.—Crown Prout's brown, the feathers with lighter margins; forehead with minute whitish streaks; a narrow but well-defined whitish superciliary from the bill to the nape, auriculars and lores grayish; nape conspicuously streaked with whitish, the outer borders of the white streaks tinged with chestnut and margined with blackish; back, rump and upper tail-coverts chestnut-auburn deeper and richer in tone than in *P. brunescens brunescens*; tail darker than back, agreeing in color with that of *coloratus*; remiges fuscous-black with their coverts margined with the color of the back; underparts, sides of the throat and breast largely ivory-white (pale olive-buff of Ridgway), the throat practically unmarked; the malar region chestnut narrowly margined with black, these margins becoming broader and more pronounced on the breast and sides of the breast and reducing the white area to a guttate mark on the abdomen and linear streak on the sides; ground color of the flanks, ventral region and crissum cinnamon-brown; feet and maxilla black, mandible horn-color, its cutting edge and tip blackish. 2 ♂: wing, 59-61; tail, 58; tarsus, 20.5; culmen, 17.7-18 mm.

RANGE.—Subtropical Zone; Mt. Turumiquire, northeastern Venezuela.

SPECIMENS EXAMINED

Premnoplex tatei.—VENEZUELA: Mt. Turumiquire, 7900 ft., 2 ♂.

Premnoplex brunescens rostratus.¹—VENEZUELA: Cumbre de Valencia, 2 ♂, 4 ♀; Guarico, Estado Lara, 1 ♀; Paramo de Rosas, 1 ♂.

Premnoplex brunescens brunescens, *b. coloratus*, *b. brunneicauda*, *P. stictonata*.—Adequate series.

¹All from the Carnegie Museum.

While this new form doubtless represents *Premnoplex brunnescens* it is obviously specifically distinct from it. In the size of the bill it resembles its nearest geographic ally, *P. b. rostratus* Hellmayr and Seilern¹ from the Cumbre de Valencia, but in color it appears to be less like that race than any of the remaining races of the species. While the white instead of rufous-ochraceous markings of the underparts may be considered a difference of degree, the pronounced streaking of the nape is a positive character emphasizing the bird's distinctness from *brunnescens*.

It gives me pleasure to name this bird for its collector, Mr. G. H. H. Tate, who has so effectively represented the Museum in Ecuador as a collector of mammals. Before leaving New York Mr. Tate was urged to reach the summit of Mt. Turumiquire, and only those with experience in cutting trails through subtropical forests can realize the determination and persistence that were required to attain this objective.

Xiphocolaptes procerus procerus Cabanis and Heine.—Carapas, 1; Latal, 1. These specimens resemble topotypes. I agree with Todd and Carriker that this bird is specifically distinct from *promeropirhynchus*. While these authors give the range of the Santa Martán *X. p. fortis* as between the altitude of 5000 and 9000 feet, Todd describes *X. p. rostratus*² from Jaraquiel, Bolívar as "further west along the coast of Colombia."

Dendrocolaptes validus seilerni Hartert and Goodson.—Trinidad, 1; Latal, 1. The Mérida and Colombian form is *D. v. multostrigatus*. Possibly we should consider *D. plagosus* of the Tropical Zone of Guiana the ancestral form of this group.

Siptornis subcristata (Sclater).—Neverí, 1; Carapas, 2. Phelps secured this species at Caripe, and it appears therefore to be a subtropical species in northeastern Venezuela as well as in the Caracas region whence it was described, and the only other locality from which it has been recorded. I have seen no Caracas specimens.

Mecocerculus leucophrys nigriceps Chapman.—Carapas, 5; Turumiquire, 9800 ft., 1. This form is distinguished by its small size and pale wing-bars which, in the adult, average whiter than in any other form of the group known to me.³ In this respect they more nearly approach *leucophrys* of southeastern Peru to northern Argentina and they further agree with that race in having the secondaries externally margined with whitish or buffy rather than ochraceous as in true *setophagoides*, *rufimarginata* and *brunneimarginata*. In the color of the upperparts *nigri-*

¹1912, Archiv für Naturg., p. 107.

²1917, Proc. Biol. Soc. Wash., XXX, p. 5.

³I have not seen *M. l. roraimæ*.

ceps is between true *setophagoides* and *leucophrys*, nearer the latter. In its pale yellow abdomen *nigriceps* is nearer *setophagoides* but the breast averages paler than in any of the other forms.

It appears, therefore, that as in the case of *Buarremon torquatus phygas*, the forms of Bolivia and northeastern Venezuela more nearly resemble each other than they do any others of the group to which they belong. The former¹ certainly do not intergrade; the latter probably do not²; and although in the papers referred to I have treated them both as species, their relationships are doubtless best expressed by ranking them as subspecies of the groups to which they respectively belong.

Mérida, Venezuela birds are to be referred to *nigriceps*, but with only one Santa Marta specimen I am uncertain whether to follow Bangs and Penard³ in referring birds from this region to *nigriceps* or Todd and Carriker⁴ who record them as *setophagoides*. Our specimen is nearer the latter in size but agrees with the former in color.

MEASUREMENTS OF ADULTS

Name	Place	No. and Sex	Wing	Tail
<i>M. l. nigriceps</i>	Carapas, Venezuela	3 ♂	59-62	61-62
" "	" "	1 ♀	58	59
" "	Galipan, "	3 ♂	60-63.5	61-61.5
" "	" "	3 ♀	58	59-59
" <i>setophagoides</i>	Near Bogotá, Col.	6 ♂	69-72	68-73
" "	" " "	2 ♀	65-66	65
" <i>leucophrys</i>	Dept. Cochabamba, Bolivia	3 ♂	65-69	62-65
" "	" " "	2 ♀	58-61.5	57-59

Mionectes olivaceus venezuelensis Ridgway.—Trinidad, 1 ♂ ad. We have also the type from Guácharo (Caripe). There is valuable material for a paper in a study of the distribution of *Mionectes olivaceus* and *M. striaticollis*. The latter is always subtropical; the former is tropical in the main Andes from Colombia to Peru and northward into Central America but subtropical from Santa Marta to northeastern Venezuela, including the Mérida region.

Tyranniscus chrysops chrysops (Sclater).—Cuchivano, 1; San Antonio, 1. While subtropical throughout the greater part of its range, this species descends to the tropics in western Ecuador and northeastern Venezuela. Santa Martán birds are small (*T. c. minimus* Chapman) but the specimens listed above agree with true *chrysops*. The species has not been recorded from north-central Venezuela.

¹1923, Bull. Amer. Mus. Nat. Hist., XLVIII, pp. 271, 273.

²1924, Amer. Mus. Novit., No. 118, pp. 1-3.

³1921, Proc. Biol. Soc. Wash., XXXIV, p. 90.

⁴1922, Ann. Carn. Mus., XIV, p. 388.

Myiarchus cephalotes caribbæus Hellmayr.—Carapas, 1 ♂. Extends the known range of this species from Caracas.

Myiodynastes chrysocephalus intermedius Chapman.—Carapas, 2.

***Euchlornis formosa rubidior*, new subspecies**

SUBSPECIFIC CHARACTERS.—Similar to *Euchlornis formosa formosa* (Hartlaub) of the Subtropical Zone of north-central Venezuela but male with the chest-spot more intense, the breast more suffused with orange, the white tips to the tertials about half as wide. Female, "chest-spot deeper crimson; throat distinctly spotted or barred with dusky greenish; tertials more narrowly tipped with white." (Todd, *in litt.*).

TYPE.—No. 188,020, Amer. Mus. Nat. Hist.; ♂ ad.; La Trinidad, near Carapas, 5600 ft.; Mt. Turumiquire, northeastern Venezuela.

SPECIMENS EXAMINED

Euchlornis formosa rubidior.—VENEZUELA: La Trinidad, 1 ♂, 1 ♀; Carapas, 2 ♂, 1 ♀.

Euchlornis formosa formosa.—VENEZUELA: La Cumbre de Valencia, 1 ♂.¹

Ampelis formosa was described by Hartlaub under the title 'Description de deux nouvelles espèces d'Oiseaux de Venezuela.'² No definite locality is mentioned for the *Ampelis* but the second bird (*Turdus vulpinus* = *Rhodinocichla rosea*) is said to have been received from M. A. Rojas, a commercial naturalist of Caracas. In the immediately preceding paper Hartlaub describes a *Conurus* and an *Icterus* from Caracas and mentions the receipt of other species from that locality and the evidence, therefore, indicates that Caracas is the type locality of *E. f. formosa*.

I am indebted to Mr. W. E. Clyde Todd for the results of a comparison of a pair of birds of the form here described with nine males and eight females of true *formosa* in the collection of the Carnegie Museum.

Pygochelidon cyanoleuca (Vieillot).—San Antonio, 1.

Turdus serranus cumanensis (Hellmayr).—Carapas, 4 ♂, 4 ♀; Neverí, 1 ♀; Turumiquire, 7900 ft., 2 ♂.

Catharus melpomene birchalli Seeböhm.—Neverí, 2; Cocallar, 1. I have seen no topotypical Trinidad specimens and follow Hellmayr in referring northeastern Venezuelan specimens to that form.

Compsothylpis pitiayumi elegans Todd.—Cocallar, 3. Descends to sea-level in northeastern Venezuela and Trinidad.

Myioborus verticalis pallidiventris Chapman.—Neverí, 2; Latal, 1; La Trinidad, 1. There has been some difference of opinion in regard to the status of the northeastern Venezuelan form due to the wide variability in the color of the underparts. Aside from this character, I have

¹Coll. Carnegie Mus.

²1849, Rev. et Mag., I, p. 275, Pl. xiv.

found in working on the birds of Ecuador that in true *verticalis* the white on the inner vane of the two outer rectrices measured along the shaft, averages 11.5 and 16.5 mm. respectively, while the corresponding measurements in Colombian birds are 23 and 32 mm., and in the type of *pallidiventris*, 18 and 25 mm. I have therefore referred all birds from northern Peru northward to *pallidiventris*. I have seen no specimens from Roraima.

Basileuterus griseiceps Sclater.—Carapas, 3; La Trinidad, 3; Turumiquire, 7900 ft., 1. This well-marked species has no known representative.

Brachyspiza capensis capensis (P. L. S. Müller).—Carapas, 9; Cocallar, 2. Hellmayr and Seilern substitute "Cayenne" as the type locality for this race and refer north-central Venezuela specimens to it. This distribution of the species, including its presence in the islands of Curaçao, Aruba and Santo Domingo, presents an exceptionally interesting faunal problem.

Atlappetes semirufus denisei Hellmayr.—Carapas, 4; Neverí, 1.

Buarremon torquatus phygas Berlepsch.—Carapas, 2; Neverí, 1. Closely allied to and representing *B. t. phæopleurus* of the Caracas region but even more closely resembling *B. t. torquatus* of Bolivia.

Diglossa venezuelensis, new species

• SPECIFIC CHARACTERS.—Most nearly related to *Diglossa albilateralis*; size of *Diglossa humeralis*; the male resembling *Diglossa aterrima* in general color but with the white markings of *Diglossa albilateralis*; the female wholly unlike any recognized species; general color grayish, the head strongly washed with olive-green.

TYPE.—No. 188,021, Amer. Mus. Nat. Hist.; ♂ ad.; Carapas, alt. 5600 ft.; March 28, 1925; G. H. H. Tate.

DESCRIPTION OF ADULT MALE.—Uniform jet-black with a slight gloss as in *Diglossa aterrima*; wing-quills from below paler; lower outer primary coverts black or grayish black; remaining lower wing coverts, axillars and lateral plumes snowy white; bill and feet black. Seven specimens: wing, 66-69; tail, 56-59; culmen, 9.5-10.5 mm.

DESCRIPTION OF IMMATURE MALE.—Three males have the black duller, the white markings less developed, the bend of the wing, center of the abdomen, and ventral region with traces of olive-citrine.

DESCRIPTION OF ADULT FEMALE.—Whole head including nape and auriculars olive-green (Roman-green to Krönberg's green); the feathers (particularly of the crown) with darker centers; back (sharply defined from the nape) deep mouse-gray with darker centers and olivaceous edgings, the whole grayish olive in tone; rump and upper tail-coverts washed with brownish olivaceous; tail fuscous-black with slightly lighter outer margins; wings fuscous-black, the outer margins of the quills and ends of coverts narrowly grayish or brownish; bend of the wing tinged with

yellowish; outer lower wing-coverts grayish; remainder with the axillars and some lateral plumes (less than in the male) snowy white; throat and malar region strongly tinged with the color of the crown; the breast, sides and ventral region and crissum washed with Isabella color; the center of the abdomen light gray; feet and bill black. Three specimens: wing, 62.5-65.5; tail, 52.5-55; culmen, 8.5-10 mm.

RANGE.—Subtropical Zone; Mt. Turumiquire, northeastern Venezuela.

SPECIMENS EXAMINED

Diglossa venezuelensis.—VENEZUELA: Carapas, 8 ♂, 3 ♀.

Diglossa albilatera federalis.—VENEZUELA: Las Cienegas de Aguilon, 1 ♂.

Diglossa albilatera albilatera.—COLOMBIA: Adequate series.

Few birds are better indicators of the limits of zonal boundaries than the species of the genus *Diglossa*. The discovery of a distinct new species of this genus, which at the same time considerably extends the known range of the group, is therefore an event of faunal importance.

The nearest point at which *Diglossa* has heretofore been found is the Silla de Caracas, distant some 250 miles to the west, whence Hellmayr has recently described *Diglossa albilatera federalis*,¹ a slightly differentiated form of a species which ranges thence to northern Peru.

Geographically, therefore, as well as physically, the new bird is nearest *Diglossa albilatera*. Nevertheless it seems too unlike that species to be considered a representative of it. However this may be, the discovery of this species further emphasizes the close relationships of the subtropical fauna of the Caracas and northeastern Venezuela while the extension of the range of the genus adds another faunal island to those which mark its distribution from Mexico to Argentina and eastward to Roraima.

Chlorophonia frontalis minusculus Hellmayr.—Neverí, 1 ♂; Cuchivano, 1 ♀. One of the species ranging from Roraima to Santa Marta.

Tangara viridissima viridissima Lafresnaye.—Neverí, 1 ♂, 1 ♀. Ranging from the island of Trinidad to Santa Marta.

Tangara guttata guttata (Cabanis).—Neverí, 2; Latal, 1; Carapas, 1. The species ranges from Trinidad and Roraima to Santa Marta and south to Peru.

Tangara cyanoptera (Swainson).—Neverí, 1 ♂. While evidently represented on Roraima by *T. whiteleyi* the two seem to me to be specifically distinct.

Sporathraupis cyanocephala subcinerea (Sclater).—Carapas, 9; Turumiquire, 7900 ft., 3. The Caracas form, *olivicyanea*, is very distinct, the Trinidad race but slightly differentiated.

¹1922, Ann. Orn. Gesell., Bayern, No. 6, p. 45.

Thlypopsis fulviceps fulviceps Cabanis and Heine.—Neverf, 2; Carapas, 1.

***Hemispingus frontalis iteratus*, new subspecies**

SUBSPECIFIC CHARACTERS.—Most nearly resembling *Hemispingus frontalis ignobilis* (Sclater) of the Subtropical Zone of western Venezuela but entire underparts with a stronger ochraceous tone, this difference particularly pronounced on the abdominal region. Similar to *Hemispingus frontalis hanieli* Hellmayr and Seilern of the Subtropical Zone of north-central Venezuela but more yellow throughout, the upperparts greener; the superciliary more orange anteriorly, more yellow posteriorly; the underparts richer, more ochraceous, less buffy.

TYPE.—No. 188,022, Amer. Mus. Nat. Hist.; ♂ ad.; Carapas, Mt. Turumiquire, N. E. Venezuela; April 13, 1925; G. H. H. Tate.

RANGE.—Subtropical Zone, northeastern Venezuela.

SPECIMENS EXAMINED

Hemispingus frontalis iteratus.—VENEZUELA: Carapas, 1 ♂ ad., 2 ♀ ad., 3 ad., 3 im.

Hemispingus frontalis hanieli.—VENEZUELA: Galipan, Cerro de Avila, 3 ♂, 3 ♀ (topotypes); Cotiza, near Caracas, 1 ♂, 1 ♀.

Hemispingus frontalis ignobilis.¹—VENEZUELA: Guamito, Trujillo, 1 ♂, 1 ♀; La Cuchilla, Mérida, 1 ♀; Paramo de Rosas, 1 ♂, 1 ♀; Tabay, Mérida, 1 ♀.

Hemispingus frontalis frontalis.—COLOMBIA, ECUADOR, and PERU: a large series.

MEASUREMENTS

Name	No. and Sex	Wing	Tail
<i>H. f. iteratus</i>	2 ♂	71-74	63-65 mm.
" "	1 ♀	68	59
" <i>hanieli</i>	3 ♂	73-75	64-66
" "	3 ♀	68-71	59-63
" <i>ignobilis</i>	2 ♂	70-73	59-64
" "	3 ♀	66-69	58-60

Evidently because of inadequate material Dr. Hellmayr² has referred a specimen of this species from Los Palmales, northeastern Venezuela to *H. f. ignobilis* and, influenced by the belief that the forms from northeastern and northwestern Venezuela were the same, he has accorded specific rank to *hanieli*, the race occupying the intervening subtropical area. The latter, however, seems beyond question to be a representative of *ignobilis* and as such to have given rise to *iteratus*, the resemblance of which to *ignobilis* may be attributed to parallelism or to atavism.

All three agree with one another, and differ from *H. f. frontalis* in having a well-pronounced superciliary with the supraloral ochraceous-

¹All from the Carnegie Mus.

²1924, Archiv für Naturg., p. 202.

orange. In both *ignobilis* and *iteratus* the postocular stripe is yellow, in *hanieli* more creamy; in the first two the underparts are yellow-ochre, deeper in *iteratus*, in *hanieli* they vary from antimony-yellow to cinnamon-buff. Above, *ignobilis* and *iteratus* are alike and are greener than *hanieli*. While, therefore, the geographically intermediate form differs more from the extremes than they do from each other, the faunal relations existing between the ranges of the three forms indicate that *hanieli* was derived from *ignobilis* and *iteratus* from *hanieli* and that consequently all are representative of each other, while the differences between them are certainly racial in character.

Xanthoura yncas cæruleocephala Dubois.—Cuchivano, 3; Neverí, 1; San Antonio, 1; Latal, 3; Carapas, 1.

Distribution of the Subtropical Zone Birds of Northeastern Venezuela and Their Representatives

NORTHEASTERN VENEZUELA	NORTH CENTRAL VENEZUELA	COLOMBIA	SANTA MARTA
<i>Penelope argyrotis</i>	<i>P. argyrotis</i>	<i>P. argyrotis?</i>	<i>P. colombiana</i>
<i>Geotrygon linearis pariae</i> ¹	<i>G. l. venezuelensis</i>	<i>G. l. linearis</i>	<i>G. l. infusca</i>
<i>Cyanolesbia kingii berlepschi</i>	<i>C. k. margarethæ</i>	<i>C. k. kingii</i>	
<i>Pharomacrus festatus</i>	<i>P. festatus</i>	<i>P. antisiensis</i>	<i>P. festatus</i>
<i>Veniliornis oleaginus tectricialis</i>	<i>V. f. reichenbachi</i>	<i>V. o. fumigatus</i>	<i>V. o. exiguus</i>
<i>Grallaricula nana cumanensis</i>	<i>G. n. olivaceus</i>	<i>G. n. nana</i>	
<i>Premnoplex tatei</i>	<i>P. b. rostrata</i>	<i>P. b. brunnescens</i>	<i>P. b. colorata</i>
<i>Xiphocolaptes p. procerus</i>	<i>X. p. procerus</i>	<i>X. p. rostratus</i>	<i>X. p. fortis</i>
<i>Dendrocolaptes validus seilerni</i>	<i>D. v. seilerni</i>	<i>D. v. multostrictatus</i>	<i>D. v. seilerni</i>
<i>Siptornis subcristata</i>	<i>S. subcristata</i>		
<i>Mecocerculus leucophrys nigriceps</i> ²	<i>M. l. nigriceps</i>	<i>M. l. setaphagoides</i>	<i>M. l. nigriceps</i>
<i>Mionectes olivaceus venezuelensis</i>	<i>M. c. venezuelensis</i>	<i>M. o. pallidus</i>	<i>M. o. galbinus</i>
<i>Tyranniscus chrysops chrysops</i>		<i>T. c. chrysops</i>	<i>T. c. minimus</i>
<i>Myiodynastes chrys. intermedius</i>	<i>M. c. intermedius</i>	<i>M. c. minor</i>	<i>M. c. intermedius</i>
<i>Myiarchus cephalotes caribbæus</i>	<i>M. c. caribbæus</i>	<i>M. c. cephalotes</i>	
<i>Euchlornis formosa rubidior</i>	<i>E. f. formosa</i>	<i>E. jucunda</i> (Ecuador)	
<i>Pygochelidon cyanoleuca</i>	<i>P. cyanoleuca</i>	<i>P. cyanoleuca</i>	<i>P. cyanoleuca</i>
<i>Turdus serranus cumanensis</i>	<i>T. s. atrosericeus</i>	<i>T. s. fuscobrunneus</i>	
<i>Catharus melpomene birchalli</i> ³	<i>C. m. aurantirostris</i>	<i>C. m. aurantirostris</i>	<i>C. m. aurantirostris</i>
<i>Compsothlypis pitiayumi elegans</i> ⁴	<i>C. p. elegans</i>	<i>C. p. elegans</i>	<i>C. p. elegans</i>
<i>Myioborus verticalis pallidiventris</i> ⁵	<i>M. v. pallidiventris</i>	<i>M. v. pallidiventris</i>	<i>M. v. pallidiventris</i>
<i>Basileuterus griseiceps</i>			
<i>Brachyspiza capensis capensis</i>	<i>B. c. capensis</i>	<i>B. c. peruviana</i>	<i>B. c. peruviana</i>
<i>Atlapetes semirufus denisei</i>	<i>A. s. denisei</i>	<i>A. s. semirufus</i>	
<i>Buarremon torquatus phygas</i>	<i>B. t. phæopleurus</i>	<i>B. assimilis</i>	<i>B. basilicus</i>
<i>Diglossa venezuelensis</i>	<i>D. albilateralis federalis</i>	<i>D. a. albilateralis</i>	<i>D. a. albilateralis</i>
<i>Chlorophonia frontalis minusculus</i> ⁶	<i>C. f. frontalis</i>		<i>C. f. psittacina</i>
<i>Tangara viridissima viridissima</i> ⁷	<i>T. v. toddi</i>		<i>T. v. toddi</i>
<i>Tangara guttata guttata</i> ⁸	<i>T. g. guttata</i>	<i>T. g. bogotensis</i>	
<i>Tangara cyanoptera</i> ⁹	<i>T. cyanoptera</i>		<i>T. cyanoptera</i>
<i>Sporathraupis cyan. subcinerea</i> ¹⁰	<i>S. c. olivicyanea</i>	<i>S. c. hypophæa</i>	<i>S. c. margaritæ</i>
<i>Thlypopsis fulviceps fulviceps</i>	<i>T. f. fulviceps</i>	<i>T. f. intensa</i>	
<i>Hemispingus frontalis iteratus</i>	<i>H. f. hanieli</i>	<i>H. f. frontalis</i>	
<i>Xanthoura yncas cæruleocephala</i>	<i>X. y. cæruleocephala</i>	<i>X. y. cyanodorsalis</i>	

¹Trinidad, *G. l. trinitatis*. ²Roraima, *M. s. roraimæ*. ³Trinidad, *C. m. birchalli*. ⁴Trinidad, *C. p. elegans*. ⁵Roraima, *M. v. pallidiventris*. ⁶Roraima, *C. f. roraimæ*. ⁷Trinidad, *T. v. viridissima*. ⁸Trinidad, *T. g. trinitatis*; Roraima, *T. g. guttata*. ⁹Roraima, *T. whiteleyi*. ¹⁰Trinidad, *S. c. busingi*

