A Collection of Colombian Game Birds

Emmet R. Blake

Associate Curator, Division of Birds

The following remarks are based on a collection of game birds made in Colombia by Philip Hershkovitz, Assistant (now Associate) Curator of Mammals in Chicago Natural History Museum, at the request of the late Boardman Conover, a Trustee of the Museum and for many years a Research Associate in its Division of Birds. The specimens are incorporated in the Conover Collection of game birds, which, since Mr. Conover's death in 1950, has been maintained and administered by the Chicago institution.

As leader of the Museum's Colombian Zoological Expedition Mr. Hershkovitz was in the field almost continuously from November, 1948, until December, 1952. During this period he travelled widely and made extensive collections both at key localities in each of the life zones and in districts seldom if ever visited by naturalists.

Although primarily concerned with the study of mammals, Hershkovitz endeavored with considerable success to fulfill the specific requests of Museum colleagues in other fields. Encouraged by Mr. Conover to preserve the skins of birds shot for food, he collected well over one hundred specimens representing 29 kinds of game birds. One of these, a geographic variant of the notably distinct Peruvian tinamou, *T. osgoodi*, has been described (Blake, 1953) in honor of the collector. A number of birds in the collection represent important extensions of range, while others raise taxonomic problems that are discussed below.

Tinamus major saturatus Griscom

Córdova: Catival, upper Río San Jorge, 1; Socorré, upper Río Sinú, 8.
Chocó: Unguía, Golfo de Urabá, 2.
Antioquia: Villa Arteaga, Urabá, 2; Purí, above Cáceres, 1.

Fully developed eggs were found in the specimens collected at Villa Arteaga on January 21 and 29.

Tinamus major ruficeps Sclater and Salvin

Putumayo: Mecaya, 2.

One of these birds, collected on February 21, was accompanied by a newly hatched juvenile.

These specimens, representing a second locality for Colombia, are noteworthy only in respect to the conspicuous darkening of their crowns. While the deep chestnut pileum of one is approximated in several of the darkest individuals of a series from eastern Ecuador, the crown of the second Mecaya specimen is virtually uniform dusky brown, lacking even a tinge of rufescence. Two skins from Morelia (Caquetá), marking the northernmost limit of *ruficeps*, are identical with Ecuadorian birds.

Hellmayr and Conover (1942, p. 18, footnote) and Gyldenstolpe (1945, p. 30) have remarked on the similarity of *ruficeps* and *peruvianus*, and quite properly question the validity of the latter. Certainly the distinction between these forms is exceedingly fine, if it can be said to exist at all. Of the two, *ruficeps* proves to be much the more uniform and is readily separated from both *serratus* and *olivascens* except in areas of intergradation. On the other hand, a large series of specimens from Peru and Bolivia (*peruvianus*) is quite variable and lacks any distinctive character.

Birds from Santa Cruz are, on the average and by comparison with Ecuadorian skins, decidedly olivaceous above, and some examples are virtually identical with typical *olivascens*. Elsewhere, in northern Bolivia and southern Peru, many birds show a darkening of the upper parts that is characteristic of Ecuadorian specimens, and some examples are quite indistinguishable from typical *ruficeps*. The extremes of this cline (*olivascens* and *ruficeps*) are relatively distinct but, in my opinion, formal recognition of the intermediate population (*peruvianus*) is of doubtful merit.

Tinamus osgoodi hershkovitzi Blake

Huila: Aguas Claras, Río Suazo, near San Adolfo, Acevedo, 3.

This species, an addition to the Colombian fauna, was known previously only from the Marcapata Valley, Cuzco, Peru, some 1,200 miles to the southward. The Colombian bird differs from the nominate race in having the wing coverts and back virtually concolor and the feathers of the under tail coverts rich cinnamon medially (not ochraceous buff), with little or no distinct speckling, vermiculation, or barring.

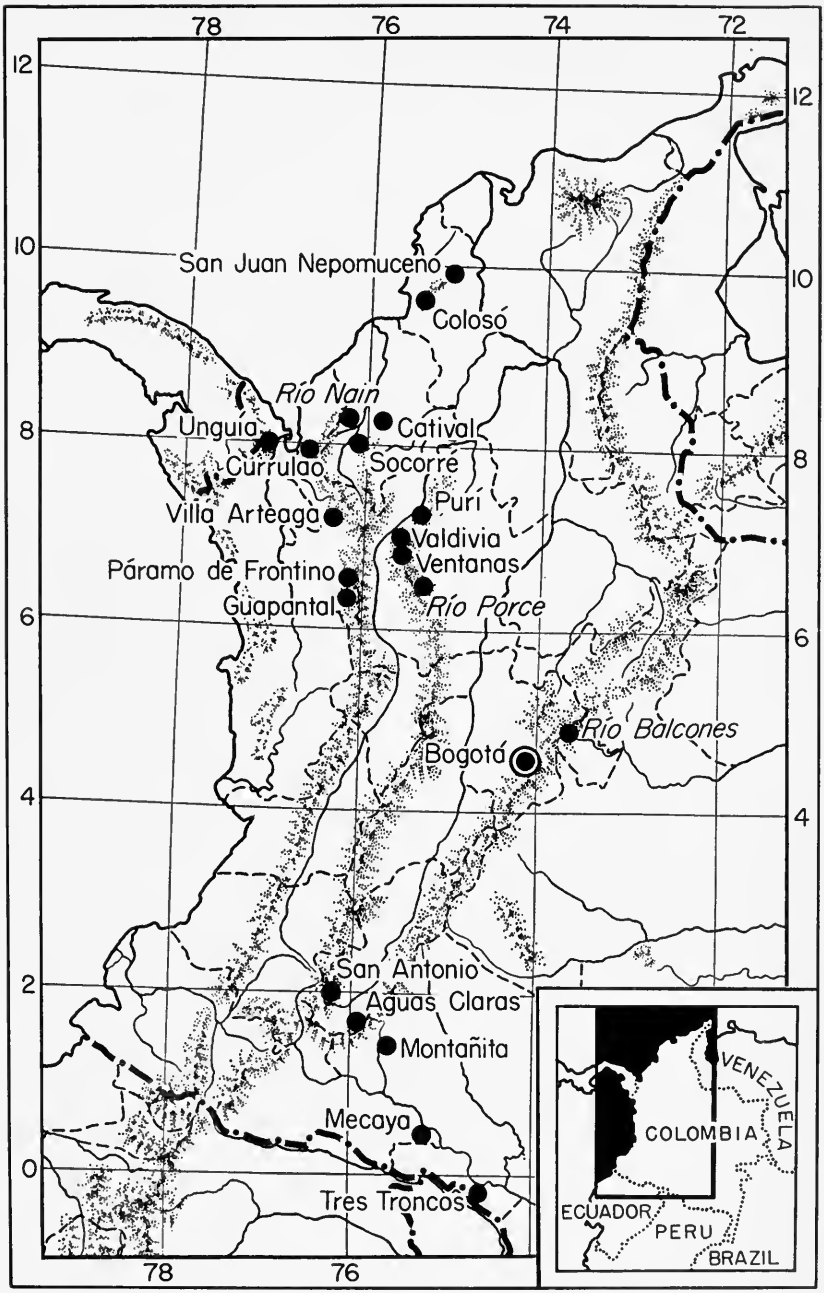

FIG. 1. Map showing collecting stations of Colombian Zoological Expedition.

The almost uniform slaty coloring of *osgoodi*, which is accentuated in *hershkovitzi*, suggests a melanistic form of *T. tao* or of *T. major*. Its measurements combine the characteristics of both. In length of tarsus *osgoodi* agrees closely with *tao*, but its much shorter wing relates it no less to *major*. In length of culmen it falls between the two. Traylor (1952, pp. 18, 19) has described the egg of *osgoodi* and compared its juvenile plumage with that of related species.

Tinamus guttatus Pelzeln

Putumayo: Mecaya, 1.

Probably not uncommon in lowland forests of southeastern Colombia, but previously reported only from Morelia, Caquetá. This specimen, like two Morelia skins in the Conover Collection, has the ground color of its upper parts deep chocolate brown, quite unlike the olivaceous coloring of many Brazilian specimens. As with wing-spotting, this variation apparently has no correlation with age, sex, or locality.

Nothocercus bonapartei bonapartei G. R. Gray

Antioquia: Ventanas, Valdivia, 1.

Although notably small (wing 147 mm., culmen 25 mm.), this immature bird superficially resembles the adult in plumage. It differs from three mature Moscopán specimens chiefly in having a dingy (not buffy) throat, somewhat darker and less rufescent breast, and much finer barring on the lower belly and flanks. Some feathers of the forehead and post-ocular region are minutely white-tipped. Collected on June 18, and estimated to be about half grown.

Nothocercus julius Bonaparte

Antioquia: Caicedo, northeastern slope of Páramo de Frontino, 2.

Cundinamarca: Río Balcones, upper Río Guavio (Río Meta drainage), Guasca, 3.

Specimens collected on June 4 and 7 (Río Balcones) contained hard-shelled eggs.

This tinamou occurs at high altitudes from western Colombia to extreme western Venezuela (Páramo de Tamá) and southward in the mountains to eastern Ecuador. The three subspecies hitherto recognized agree in size but were described as differing consistently in pattern and, to some extent, in color.

Hellmayr and Conover (1942, pp. 25–27, footnotes) have shown that much of the variation found in this species is without geo-

graphical significance. Vermiculation of the upper parts and absence of spotting on the wing-quills (*fuscipennis*), and the brightness and uniformity of coloring on the head (*venezuelensis*) were found to be individual characteristics, apparently in no way related to age, sex, or locality. The instability of these characters is readily verified by examination of any representative series of skins, whether from a single locality or from distant parts of the range.

Since the elimination of the more striking features that once served to distinguish *fuscipennis* and *venezuelensis*, they have been supported by relatively obscure characters that invite critical analysis. The fresh material collected by Mr. Hershkovitz affords an opportunity to check the validity of both races and has led me to reconsider the taxonomic status of the species. This inquiry and my conclusions are based on a study of 39 specimens of *julius*, representing virtually all parts of its range.

The series now assembled includes eight of the nine birds from the Andes west of Popayán that previously were examined by Hellmayr and Conover. These authors, having little comparative material—and this not wholly representative—credited *fuscipennis* with diagnostic characters that I now find to be quite unreliable, since each obviously is an expression of individual variation. While certain (but not all) specimens from El Tambo and Cerro Munchique have decidedly dusky cheeks, napes, and hind necks, the degree of duskiness does not exceed that found in other individuals from areas occupied by the nominate race. Indeed, two specimens from Moscopán, a locality in the central Andes to the east of Popayán, have these parts darker than the duskiest of the western birds.

Similarly, I find no evidence that west Andean birds, *per se*, are "darker, more olivaceous" above, and "more extensively vermiculated with dusky" below than birds from the central and eastern Andes. While it is true that vermiculated birds are, by their very nature, more olivaceous and appear darker than barred individuals, it must be emphasized that both plumage types commonly occur in the same localities, and neither is distinguishable from its counterpart from other areas. The extent of dusky vermiculation on the under parts is largely determined by the "make" of the skin, and so proves to be an unreliable character at best. While Chapman erred in describing west Andean birds as specifically distinct from *julius*, by reason of the paucity of his comparative material, *fuscipennis* must now be merged with the nominate race for want of a distinguishing character.

A satisfactory evaluation of *venezuelensis* is difficult if not now impossible since it is known from but a single specimen.[1] The Venezuelan bird is obviously a very weakly differentiated race, and I fully concur with Hellmayr and Conover (1942, p. 27, footnote) in the opinion that it needs to be substantiated by further material. Although the type differs somewhat from any known bird, this circumstance alone is of doubtful significance. Specimens of strongly patterned and more-or-less colorful species, of which *julius* is an example, are especially difficult to match. Since, in the final analysis, no two bird skins are wholly identical, the Venezuelan specimen may or may not differ from others by reason of individual variation. In order to substantiate the Venezuelan form under present circumstances it therefore becomes necessary to find in its sole representative either one or more obviously distinctive characters, or to presuppose the stability and uniqueness of its multiple characters. The first of these requirements is not met by *venezuelensis* as we now know it; the second is very improbable.

In their study of the Venezuelan bird, Hellmayr and Conover (loc. cit.) concluded that no significance could be attached to the coloring of the head. Comparison of *venezuelensis* with the extensive series of *julius* now assembled from all three Andean ranges reveals that each of the other alleged characters thus far credited to the Venezuelan form is duplicated with notable fidelity here and there in the general population. It follows that the authenticity of *venezuelensis*, as we now know it, can be defended solely on the basis of the undemonstrated stability of its multiple characters as represented in the type. This possibility is so heavily discounted by the known variability of the species in other parts of its range that, on present evidence, it would seem unrealistic to consider *julius* other than monotypic.

While I find no evidence of speciation in *julius*, it is perhaps noteworthy that all three specimens from Páramo de Frontino, which represents a considerable northward extension of range in the western Andes, are more intensely rufescent (less tawny yellowish) below than are birds from other localities. Several "Bogotá" skins, the three Río Balcones specimens, and two from Ecuador have somewhat redder under parts (especially the lower breast) than the

[1] Since this was written Mr. William H. Phelps of Caracas, Venezuela, has called to my attention a second specimen, comprising only the head and severely mutilated left wing, that is deposited in the Phelps Collection. My examination of these fragments, for which I am indebted to Mr. Phelps, fails to verify *venezuelensis* as a distinct entity.

average, but all can be distinguished from the Antioquia birds by this factor alone. Additional material from Antioquia is needed to establish fully the significance of this variation, which, for the present, must be considered without geographic implications.

The type of *julius*, a Verreaux bird now in the Academy of Natural Sciences of Philadelphia, was obtained in Colombia, the specific locality being unknown. While it is futile to speculate on the origin of this specimen, I suggest the type locality be restricted to the vicinity of Bogotá, where, as Hershkovitz has demonstrated, the species still survives in a remnant of suitable habitat that undoubtedly formerly extended to the environs of the city itself.

Crypturellus cinereus berlepschi Rothschild

Antioquia: Villa Arteaga, Urabá, 1.

This specimen, caught in a rat trap, extends the known range of the west Colombian form almost two hundred miles north of the Baudó Mountains, Chocó, where it was previously reported. As with other Colombian specimens, it is indistinguishable from west Ecuadorian birds.

The relationship between *berlepschi* and *cinereus* is uncertain and is not likely to be resolved until the life histories of both are known. While they appear to be geographical representatives of a single species, supporting evidence is not conclusive and there is much that favors the opposing view. Anatomical differences reflected by the relative proportions of their toes and legs (tarsi) may well be fundamental, and it can be argued that the difference in their plumage is one of kind rather than of degree.

The distributional patterns of these birds may also be considered indicative of their separate origins. Andean ranges form a continuous barrier that is insurmountable for lowland tinamous and separate *berlepschi* and *cinereus* where they might otherwise meet. The lowlands of northern Colombia and Venezuela are, by virtue of their aridity, no less impassable for humid forest birds of sedentary habits. If these tinamous are conspecific, the mode of their dispersal can only be conjectured. Since there is so much uncertainty as to their relationship it seems best to deny them specific rank.

Crypturellus soui caucae Chapman

Bolívar: San Juan Nepomuceno, 2.
Córdova: Catival, upper Río San Jorge, 1; Socorré, upper Río Sinú, 3.
Caldas: Río Honda, Samaná, 1.

Crypturellus undulatus yapura Spix

Caquetá: Tres Troncos, Río Caquetá, 1.

Ovulating on February 3 when collected.

Crypturellus boucardi columbianus Salvadori

Bolívar: San Juan Nepomuceno, 3.

Córdova: Socorré, upper Río Sinú, 3.

These specimens establish beyond doubt the conspecificity of *columbianus* and *boucardi,* a relationship long suspected but hitherto open to question in the absence of sufficient comparative material. I have not seen the type of *columbianus,* but its description is clearly that of a subadult male in transition plumage that shows some characteristics of each sex.

Columbianus is a notably distinct race. It differs from its northern relatives most conspicuously in the rufous coloration of its lores, cheeks, and malar region, and in the dull rufous brown (not dusky) of its hind neck and mantle. The upper parts generally are more rufescent (less brownish) than in Central American birds and the breast of *columbianus* is but moderately tinged with gray. This does not extend over the sides and flanks as so often is the case in *boucardi.*

The unique adult male of *columbianus* (Socorré) is extensively reddish tawny below and in this respect is quite unlike males of *boucardi.* Females are less richly colored below than the male but they average somewhat tawnier than Central American birds. The wing-barring in females of this species shows considerable individual variation. Possibly some significance can be attached to the fact that the light areas between the dark bars of *columbianus* average slightly paler and less rufescent than in Central American birds. Wing: adult male, 172; adult females, 171–183 (average, 175).

Crax globulosa Spix

Caquetá: Tres Troncos, Río Caquetá, 1.

A second Colombian record for this curassow, advancing its range well into the country. Previously recorded only from Isla de Mocagua (Amazon River), which is doubtfully a Colombian locality. The base of the bill has faded considerably, but after almost three years its bright orange coloring is still strongly tinged with red. In life the knob and wattles were moderately developed.

Crax alberti Fraser

Bolívar: Colosó, 1.
Córdova: Catival, upper Río San Jorge, 1; Socorré, upper Río Sinú, 1.

A specimen recently taken at Quimarí in the upper Sinú Valley (de Schauensee, 1952, p. 1156) apparently was the first record of this curassow west of the Magdalena-Cauca drainage systems. Hershkovitz's specimens from Socorré and Colosó, the latter in the coastal drainage of the Cordillera de Maria, demonstrate the occurrence of *alberti* west of the western Andes on a broad front.

It is interesting to note that the ranges of *C. alberti* and *C. rubra* apparently meet in the region of the upper Sinú, where *rubra* was also collected by Hershkovitz on a small tributary of the Sinú (Río Nain) only a few miles distant from Socorré.

Crax rubra rubra Linnaeus

Chocó: Unguía, Golfo de Urabá, 1.
Córdova: Río Nain, upper Río Sinú Valley, 2.
Antioquia: Villa Arteaga, Urabá, 2.

Not previously reported east of the Atrato drainage system. The negligible extension of this curassow's range to the upper Sinú Valley where Hershkovitz also obtained *Crax alberti* is noteworthy in that it verifies the specific distinctness of these birds.

Penelope purpurascens aequatorialis Salvadori and Festa

Chocó: Unguía, Golfo de Urabá, 1.
Bolívar: Colosó, 1.
Córdova: Catival, upper Río San Jorge, 5; Socorré, upper Río Sinú, 3.
Antioquia: Villa Arteaga, Urabá, 1.

It is surprising that only one specimen of this series, which would be expected to represent an intermediate population, shows any of the characteristics of *brunnescens*. A Socorré bird resembles the Santa Marta-Magdalena form in the coloring of its upper parts, but in all other respects it conforms with *aequatorialis*. I question that *brunnescens* will prove to be the bird of Atlántico, as suggested by Dugand (1947, p. 575), since a specimen from extreme northern Bolívar (Colosó) is indistinguishable from Chocó and west Ecuadorian birds. While *brunnescens* certainly occupies the Santa Marta region, birds from the whole of the lower Río Magdalena should be re-examined.

When characterizing *aequatorialis* and *brunnescens* it has been customary to refer to the alleged difference in the coloring of their middle rectrices. In *brunnescens*, as in *perspicax*, these feathers are

in varying degrees reddish brown or coppery auburn, while the middle rectrices of *aequatorialis* are generally described as bronze green. This alleged distinction proves to be quite unfounded. In the large series of *aequatorialis* now assembled there is a wide range of variation in the coloring of the middle rectrices, including colors identical with those attributed to *brunnescens* and *perspicax*. In only one specimen, a female from Pichincha, Ecuador, are the rectrices so conspicuously bronze green as to resemble those of the nominate form.

Penelope purpurascens jacquacu Spix

Putumayo: Mecaya, 2.

This guan has been treated both as a distinct species and as a geographic representative of *P. obscura*. In proposing the latter, Peters evidently minimized the importance of certain fundamental morphological differences which I am inclined to accept as indications of separate origins of the birds. In my opinion these differences are of greater significance than are the points of similarity. While *jacquacu* and *obscura* agree in size and are somewhat alike in certain of their plumage characteristics, these circumstances are offset by the dissimilarity of their proportions. This has been discussed by Hellmayr and Conover (1942, p. 141, footnote) and need not be repeated here.

In allying *jacquacu* with *purpurascens* I have been guided only in part by the similarity of their gross morphology. The plumage of *purpurascens* is notably variable, as witness the diversity of colors and patterns represented by *brunnescens, perspicax,* and the nominate race. In *jacquacu* we find greater or less modification of the very features that distinguish these birds, but it shows no character that is wholly alien to the species complex as hitherto recognized. Since the differences between *jacquacu* and birds of the *purpurascens* group apparently are those of degree and not of kind, it seems appropriate to formalize their natural affinity.

Penelope montagnii montagnii Bonaparte

Cundinamarca: Río Balcones, upper Río Guavio (Río Meta drainage), Guasca, 4.

Three of these specimens, collected May 29, are in various stages of tail-molt. The progression of molt is inward, with the loss and replacement of alternate pairs (left and right side) of rectrices beginning with the outermost.

Albinism among cracids is rare. In the Conover Collection there is an adult female of this species, collected December 20, 1929, by the Olallas at Pucara, western Ecuador, that is almost wholly white. The forepart of its head, including the bristly feathers of the chin and upper throat, is dusky brownish. Its rump, lower thighs, and tail coverts are very faintly tinged and barred with pinkish buff. There is no record of the eye-color. From its abraded plumage I judge this bird had been caged.

Ortalis guttata guttata Spix

Caquetá: Tres Troncos, Río Caquetá, 1.
Putumayo: Mecaya, 1.

Ovulation was noted in a Río Mecaya bird collected February 28.

Chapman's separation of east Colombian birds from the nominate race on the basis of a number of alleged color differences has been widely followed by subsequent writers. The somewhat unrealistic distribution accorded *caquetae* in its relation to that of other populations of the species induced me to appraise the Colombian form in the light of the fresh and quite representative material now available.

In this study, based on a detailed comparison of 13 specimens from Caquetá and Putumayo with a much larger series (30) of typical *guttata*, I find no evidence of geographic variation. Birds selected at random from either series can be matched in every respect by specimens in the other, and it is clearly evident that each of the distinctive characters hitherto credited to *caquetae* is but a manifestation of individual variation. The range of *guttata* must therefore be emended to include the Tropical Zone of Colombia near the eastern base of the eastern Andes.

Ortalis guttata columbiana Hellmayr

Huila: El Crucero, Río Magdalena, 5 kilometers below San Antonio, 1.

In this specimen the long feathers of the forehead are conspicuously tawny buff and there is hardly a trace of gray on the pileum and hind neck, where brownish olive is the dominant color. A bird from Moscopán, on the Cauca-Huila border, is quite similar, but has a somewhat paler (less tawny) forehead and a gray hind neck. A second Moscopán specimen is indistinguishable from typical examples of *columbiana*.

Ortalis guttata caucae Chapman

Antioquia: Valdivia, 2; Río Porce, 4 kilometers northeast of Bella Vista, 2.

The distinction between *caucae* and *columbiana* is finely drawn, and I am not certain that these birds are typical of either. In the uniformity of their crowns and foreheads they resemble the former, but the feet of one of the Valdivia skins are red even in their dried state. Some degree of admixture with *columbiana* is also suggested by the color of their under tail coverts, which are much duller (less rufescent) than in typical *caucae*.

Ortalis garrula garrula Humboldt

Bolívar: San Juan Nepomuceno, 2.

Córdova: Catival, upper Río San Jorge, 5; Socorré, upper Río Sinú, 1.

Specimens from southwestern Bolívar agree in every respect with more northern examples of *garrula* and serve to establish the identity of the population in the lower Sinú Valley; de Schauensee had queried its status.

In the Conover Collection there are eight typical representatives of this form collected at Nechí and on the Río Cuturú, a western tributary of the middle Río Nechí. These are the first records for Antioquia and extend the range of the species considerably south of Boca de Chimí (Bolívar), the southernmost locality on the lower Río Magdalena for which there is a specific record.

Ortalis garrula chocoensis > mira

Chocó: Unguía, Golfo de Urabá, 1.

This bird apparently represents an intermediate population that links the recently described Juradó form with that of eastern Darien. The latter, as de Schauensee has noted (1950, pp. 2, 3), intergrades with *garrula* at the Río Sinú. In the color of its upper parts the Unguía specimen agrees most closely with *chocoensis*, but in all other respects it appears to be nearer *mira* as represented in the Conover Collection by a series of skins from Puerto Obaldía, Panama.

De Schauensee (loc. cit.) relates *chocoensis* to *frantzii* of Nicaragua and Costa Rica rather than to either *cinereiceps* or *mira* of Panama. Although *chocoensis*, a rather weakly differentiated race at best (eight specimens examined), averages somewhat browner than other races, its similarity to the northernmost form apparently is fortuitous. If additional material from the region west of the Golfo de Urabá verifies my present concept of a simple clinal relationship between *mira* and its terminal population (*chocoensis*), the desirability of recognizing the latter nomenclaturally will be open to question.

Chamaepetes goudotii goudotii Lesson

Antioquia: Santa Bárbara, Río Urrao, eastern base of Páramo de Frontino, 1; Guapantal, Río Urrao, Urrao, 2; Valdivia, 2.

Cundinamarca: Río Balcones, upper Río Guavio (Río Meta drainage), Guasca, 2.

Huila: San Antonio, Río Magdalena (2,500 meters), San Agustín, 3; Río Magdalena (2,300 meters), San Agustín, 1; Río Ovejeras, Río Magdalena, 2 kilometers above San Antonio, 1; Aguas Claras, Río Suazo, near San Adolfo, Acevedo, 1.

A hippoboscid fly, *Ornithoctona erythrocephala* Leach, was taken on the Aguas Claras bird. According to Dr. J. Bequaert (in litt.), of the Museum of Comparative Zoology, this fly has also been collected on *goudotii* at Valdivia, and more than 100 species of birds are now known as its host.

Pipile cumanensis cumanensis Jacquin

Caquetá: Tres Troncos, Río Caquetá, 4.

A bird collected January 29 contained a hard-shelled egg.

Aburria aburri Lesson

Huila: Aguas Claras, Río Suazo, near San Adolfo, Acevedo, 3; San Antonio, Río Magdalena (2,500 meters), San Agustín, 1.

Odontophorus gujanensis marmoratus Gould

Bolívar: San Juan Nepomuceno, 1.

Antioquia: Río Currulao, Golfo de Urabá, 3.

A newly hatched juvenile, one of four in a family group, was collected on May 3.

Odontophorus gujanensis buckleyi Chubb

Caquetá: Montañita, Florencia, 2.

Putumayo: Mecaya, 2.

Ovulation was noted in a Mecaya bird collected February 20.

Odontophorus erythrops parambae Rothschild

Antioquia: Río Porce, 4 kilometers northeast of Bella Vista, 1.

De Schauensee limited the Colombian range of *parambae* to the region west of the western Andes, apparently having overlooked Hellmayr and Conover's reference (1942, p. 270, footnote) to a typical example taken at Puerto Valdivia, Antioquia, on the western side of the central Andes. The Bella Vista specimen is from the same general region. Although it is somewhat paler above than a

series from the Pacific lowlands, the distinction is slight and undoubtedly can be attributed to individual variation.

Odontophorus hyperythrus Gould

Antioquia: Encarnación, northwest slope of Páramo de Frontino, 3.
Huila: San Antonio, Río Magdalena (2,500 meters), San Agustín, 1.

A bird collected at Encarnación in May, date undesignated, contained a hard-shelled egg.

Rhynchortyx cinctus hypopius Griscom

Córdova: Socorré, upper Río Sinú, 2.
Antioquia: Villa Arteaga, Urabá, 2.

Previously reported in Colombia only at Murucucú, a low mountain in southwestern Bolívar between the valleys of the upper Río Sinú and Río San Jorge.

REFERENCES

Blake, E. R.

1953. A Colombian race of *Tinamus osgoodi*. Fieldiana, Zool., **34**: 199–200.

Dugand, Armando

1947. Aves del Departamento del Atlántico. Caldasia, **4**, no. 20, pp. 499–647.

Gyldenstolpe, Nils

1945. A contribution to the ornithology of northern Bolivia. K. Svensk. Vetens. Akad. Handl., **23**, no. 1, 300 pp.

Hellmayr, Charles E. and Conover, Boardman

1942. Catalogue of birds of the Americas. Field Mus. Nat. Hist., Zool. Ser., **13**, pt. 1, no. 1, 636 pp.

de Schauensee, Rodolphe M.

1948. The birds of the Republic of Colombia. Caldasia, **5**, no. 22, pp. 251–380.

1949. The birds of the Republic of Colombia. Caldasia, **5**, no. 23, pp. 381–644.

1950. Colombian zoological survey. Part V. New birds from Colombia. Not. Nat., no. 221, pp. 1–13.

1952. The birds of the Republic of Colombia. Caldasia, **5**, no. 26, pp. 1115–1214.

Traylor, Melvin A.

1952. Notes on birds from the Marcapata Valley, Cuzco, Peru. Fieldiana, Zool., **34**: pp. 17–23.