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29 ART. I. LIST OF THE TINAMOUS IN THE COLLECTION OF  
THE CARNEGIE MUSEUM

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INTRODUCTION

The Tinamous (Family Tinamidae) in the Carnegie Museum total 412 specimens, belonging to 61 species and subspecies. Although only about half of the known forms are represented, so many interesting findings have come to light in the course of their determination that I have thought it well to put the results on record for the benefit of other workers. The Tinamous are an especially difficult group, and their study has been unduly handicapped not only by the paucity of material, but also by its (generally) poor quality. Few collections can boast satisfactory series of more than a few species, and it is usually necessary to assemble material from several sources for purposes of study and comparison. While the Tinamou material in the Carnegie Museum is above the average in quality, the series of most forms are small. In identifying some of them I have had to draw on the collections of other museums, in particular the American Museum of Natural History and the Academy of Natural Sciences of Philadelphia. To the authorities of these institutions my acknowledgments are due. I am particularly indebted also to Mr. N. B. Kinnear, who in June, 1938, enabled me to examine the Tinamous in the collection of the British Museum (Natural History). Also, Dr. C. E. Hellmayr and Mr. Ludlow Griscom have been good enough to make comparisons of specimens sent them for that purpose.

It should be explained that the present list includes all the specimens of Tinamous entered in the Museum catalogue, whether now in the collection or alienated therefrom by exchange. Remarks on forms not represented in our collection are also inserted at their proper places. The sequence of the list closely follows that of Mr. J. L. Peters' "Check-List of Birds of the World," not because I consider this the final word but merely a standard work of reference and a convenient point of departure.

Since the publication of Mr. Peters' list, several papers dealing with the systematics of certain species have appeared. Some new forms have been

MAR 3 1942

described, and changes in the status of other forms have been proposed. Some authors manifest an increasing tendency to combine related forms under one specific head and to alter their nomenclature accordingly, as the "formenkreis" theory demands. With these views I cannot always agree. While subspecies are of course "representative forms," the converse is not necessarily true. Thus to enlarge and change the original concept of the subspecies is to go far beyond and outside the plan and purpose of the trinomial system of nomenclature, for the adoption of which a bygone generation of zoologists had to contend so long and so vigorously. We realize—all too keenly—the shortcomings of the system to express all the facts as we find them in Nature, but if the present tendency to load too much on the names continues, the system will fall of its own weight. I can only deplore the proposals to reduce a number of well-characterized forms of this particular group to subspecific rank, and in the present paper I have indicated what I consider to be their true status, insofar as my material would justify an opinion.

Two papers dealing with the taxonomy of the Tinamous in general have appeared in the last decade and merit special notice. Dr. Hans von Boetticher has a very important paper in German, published in 1934 (see bibliography). In this paper the author discusses the relationships of the group, the color patterns of the several genera, and the characters exhibited by the bill, nostrils, tarsi and toes, and tail. He takes into consideration also the ecological distribution of the genera before presenting his scheme of classification and a genealogical tree. He divides the family into three subfamilies: Tinaminae, to include *Crypturellus*, *Tinamus*, and *Nothocercus*; Rhynchotinae, with *Rhynchotus*, *Nothura*, *Nothoprocta*, and *Taoniscus*; and Eudromiinae, with *Tinamotis* and *Eudromia*. This arrangement has been carefully worked out, and it has much to commend it. The author makes no attempt to arrange the species within the genera.

Sr. Alipio de Miranda-Ribeiro's paper in Portuguese appeared in 1938. Although obviously prepared without reference to Dr. von Boetticher's 1934 paper, it covers the same ground (in some respects more fully), but he bases the systematic discussion solely on the forms found in Brazil. These are treated in some detail and are accompanied by lists of specimens and references to the literature. Significantly, he groups the Brazilian genera into subfamilies just as Dr. von Boetticher does, although not exactly on the same basis. In addition, he splits *Crypturellus* and sets up a new genus, *Orthocrypturus*, for *C. variegatus* and its allies. For *C. cinereus* he accepts *Crypturornis*. (To these groups I would give

subgeneric status.) This paper embodies certain good suggestions for the proper arrangement of species and races, although the nomenclature is faulty in some respects, and at least two of the new names proposed were anticipated.

In this paper all measurements are in millimeters, and the names of colors are in the main taken from Ridgway's "Color Standards and Color Nomenclature."

#### LIST OF SPECIES

##### ***Tinamus tao tao*** Temminck.

One specimen: Apacy, Rio Tapajóz, Brazil.

The upperparts are purer gray than in the other races of this species, and the black bars are distinct. Our single specimen comes from the west bank of the Rio Tapajóz. However, the range of this race is actually more extensive than Peters (1931b, 12) allows, since two specimens from Santarem, on the east bank of the same river, are recorded by Oliveira Pinto (1938, 2), and one from Cussary, farther down on the Amazon, is listed by Sneath (1914, 46). Temminck's type-specimen came from the "province of Pará."

##### ***Tinamus tao septentrionalis*** Brabourne and Chubb.

Four specimens: La Cumbre de Valencia, Lagunita de Aroa, and Puerto La Cruz, Venezuela.

This appears to be a valid race, easily distinguished from typical *tao* by its more uniform upperparts, which are vermiculated rather than barred and have a slight olive wash in evidence. A young bird (September 24) resembles the adults except for the very small whitish spots on the wings.

##### ***Tinamus tao kleei*** (von Tschudi).

Four specimens: Cerro del Amboró and Cerro Hosáne, Bolivia.

These are fully as heavily barred above as our single specimen of typical *tao*, but they have a decided olive wash. They have not been directly compared with toptypical Peruvian specimens of *kleei*, but are referred thereto on the authority of Hellmayr, who (so H. B. Conover writes me) is now inclined to consider Bolivian birds the same. The latter were described under the name *Tinamus weddelli* by Bonaparte (1856, 881, 954), which name will thus become a synonym of *kleei*, as suspected by Peters.

**Tinamus major robustus** Sclater and Salvin.

Ten specimens: Manatee Lagoon, Quamin Creek, Toledo District, and Cockscomb Mountains, British Honduras.

"Iris hazel: bill leaden brown [brownish plumbeous?]; feet plumbeous" (Peck).

There is considerable individual variation affecting the precise shade of the upperparts, as well as the amount of black barring thereon. A British Honduras bird mentioned by Salvin and Godman (1904, 449) is paler than Guatemala skins, but this is doubtless without significance. A half-grown young bird, readily distinguished by the small buffy spots on the upperparts, is dated July 12. These indications of immaturity persist on the tertiaries of another fully grown bird taken as late as December 7.

On the status and relationships of the Central American races compare Chapman, 1917, 187, and Griscom, 1929, 150. These authors insist that the forms with rufous heads (*major*, etc.) and those with gray heads (*robustus*, *fuscipennis*) are conspecific. Nevertheless, it is interesting to note that both types (according to Griscom) occur in the Canal Zone and still maintain their respective characters. In western Ecuador, according to Chapman (1926, 146), both types are also found indiscriminately.

**Tinamus major fuscipennis** Salvadori.

Five specimens: Cuabre, Rio Sicsola, Carrillo, and El Hogar, Costa Rica.

No. 23,886 (Cuabre) is practically indistinguishable from British Honduras *robustus*, to which form both Carriker and I at one time referred it. This specimen has the same olivaceous color above as *robustus*, and grayish shading below, with little buff. But since the other two specimens from this region are clearly *fuscipennis*, it seems better to consider this odd example an extreme individual variant such as sometimes occurs within the range of a given form. The only other alternative would be to give both *robustus* and *fuscipennis* specific rank—a manifest absurdity. The remaining four specimens, although varying considerably among themselves, exhibit the differences pointed out by Griscom (*l.c.*) fairly well as a series. One has the back very nearly uniform. The markings on the secondaries vary from fine vermiculations to prominent bars, but the series is much too small to say whether or not this is a character due to age.

*Tinamus salvini* of Underwood (type-locality Carrillo), as maintained by Salvin and Godman, is unquestionably *fuscipennis* in immature dress.

**Tinamus major castaneiceps** Salvadori.

Five specimens: Pozo Azul de Pirris and El Pozo de Terraba, Costa Rica.

Clearly this form is only a race of the South American *T. major*, with which it is connected through *latifrons* and probably through *ruficeps* also. Our Pozo Azul adult is decidedly brownish above; the others are more olivaceous. A young bird, dated May 16, resembles the adults but has buffy spotting above, as is usual in this group.

**Tinamus major saturatus** Griscom.

Two specimens: Murindo and Malagita, Colombia.

On geographical grounds these should belong to *saturatus*, but they fail to show the comparative characters claimed for that race, except for an obvious occipital crest. Their coloration is slightly lighter than that of Costa Rican specimens of *castaneiceps*, especially on the underparts, which are more uniform, with the barring less in evidence; the crown, however, is not appreciably different. Mr. Griscom has been kind enough to compare these two specimens with the type-series and writes as follows: "Your two specimens agree in coloration with the paler extremes of our excellent series of *saturatus*; in other words, they are not really typical of this subspecies. You will note, however, that the development of the occipital crest in your two specimens is very much less than in *saturatus*, nor am I able to see that this difference is due to any defects in your two specimens."

Pending the receipt of more material I shall provisionally refer these examples to *saturatus*. It is entirely possible that they may prove to belong to a race intermediate between *saturatus* and *latifrons*.

**Tinamus major zuliensis** Osgood and Conover.

Seven specimens: Valparaiso, La Tigrera, Las Vegas, and Pueblo Viejo, Colombia; Rio Mocho, Venezuela.

I had at one time (following Chapman) identified these as *ruficeps* (type from eastern Ecuador), but I now agree with Osgood and Conover that they should be referred to their race *zuliensis*, a form which ranges from the Caura Valley in Venezuela to the Magdalena Valley in Colombia (in the Tropical Zone). Compared with typical *major*, it is a pale race; this pallor appears on both the upper- and underparts; the occipital crest is not strongly marked. The Arid Tropical habitat of this race is reflected

in these characters. *T. m. zuliensis* is very different from *castaneiceps*, the range of which it touches on the west.

***Tinamus major major* (Gmelin).**

Eight specimens: Rio Yuruan, Venezuela; Tamanoir and Pied Saut, French Guiana; Upper Araucaua and Obidos, Brazil.

Salvadori (1895, 504) calls this form *subcristatus* Cabanis, mainly on the ground that so-called *major* had not been found in recent times at Cayenne, and because of the misidentification of the name. But von Berlepsch (1908, 298) insists on the pertinence of the earlier name, after throwing out Marcgrave's reference.

This form has the following comparative characters: buffy suffusion below; a decided occipital crest; dark-colored head, with the sides and front more or less dusky or ashy, contrasting with the crown; and little or no rufescent barring or squamation on the lower neck in front. The color of the upperparts varies greatly, also the extent and heaviness of the barring. A slightly immature bird from Obidos is heavily barred above and deeply washed with brown, whereas an adult female from the same place is decidedly more olivaceous above and lightly barred.

***Tinamus major serratus* (Spix).**

Two specimens: Tonantins and Manacapurú, Brazil.

Hellmayr (1906, 699 *et seq.*) argues at length to prove the specific distinctness of *serratus* and *major*. He argues that since birds with long occipital crests and ashy foreheads occur together with others having no crests and plain rufous foreheads, there must be two species (this in the Rio Negro region). Evidently he has changed his mind since, if one may judge from Conover's later remarks (1937, 192). Conover has handled both specimens here listed. They are very different from each other but agree in having a bright rufous and uniform pileum, the sides of the head distinctly rufous, and much buffy and rufous suffusion and squamation on the neck in front; the occipital crest is short.

The specimen from Tonantins is almost immaculate above as compared with the Manacapurú bird, which is strongly barred.

***Tinamus major olivascens* Conover.**

Nine specimens: Rio Surutu (near Buena Vista) and Buena Vista, Bolivia; Villa Braga (Rio Tapajóz), Hyutanahan (Rio Purús), and Nova Olinda (Rio Purús), Brazil.

This name has been set up by Conover to cover all the birds of this species from south of the Amazon, from Pará to Bolivia. The above specimens agree in generally dark coloration—dark olive gray breast and sides, less buffy, more whitish abdomen, and deep rusty (and uniform) pileum with virtually no occipital crest. The amount of barring above and the exact shade of color are variable characters, as in other forms of this species; accordingly the name *olivascens* is not entirely appropriate. The sides of the head are strongly rufescent, as in *serratus*, but this shading does not extend to the neck in front, as in that form.

#### ***Tinamus guttatus* von Pelzeln.**

Sixteen specimens: Benevides, Colonia do Mojuy, Villa Braga, Bella Vista, Hyutanahan, Nova Olinda, Arimã, São Paulo de Olivença, and Tonantins, Brazil.

If the female is constantly larger than the male, as is usual with Tinamous, then several of our skins must be wrongly sexed.

At first glance these seem to fall into two series, according to locality. The lower Amazon birds appear whiter below, while those from the upper Amazon and Rio Purús are more buffy, less vinaceous. Also, the buffy spotting on the neck in the latter is richer, more ochraceous. These differences are better marked in the males, but since certain specimens from both regions are virtually indistinguishable, I do not think the discrimination of an eastern race is feasible. The upperparts also vary in ground-color from rich umber brown to decidedly olivaceous, and in the extent and width of the black barring, but I am not convinced that these variations are geographical. They parallel those shown in *T. major*.

Borba, Rio Madeira, has been fixed as the type-locality by Hellmayr (1907, 409), hence if any subdivision of the species were made, the eastern birds would constitute the new race.

#### ***Nothocercus nigrocapillus nigrocapillus* (Gray).**

One specimen: Incachaca, Bolivia.

This example differs from Salvadori's description and plate (1895, 511, pl. 8) in being more brownish, less rufescent throughout, and in having the sides of the head dusky slate-color like the crown. These discrepancies must be of an individual character, however, since the type, although ascribed by Gray to Chile, could have come only from Bolivia. Carriker (1933, 2) has described a race from Peru.

**Nothocercus julius julius** (Bonaparte).

One specimen: "Bogotá," Colombia. A young bird.

**Nothocercus bonapartei frantzii** (Lawrence).

Two specimens: Volcano Turrialba and Ujarás de Terraba, Costa Rica.

The Turrialba specimen is much more rufescent throughout than the other, but a series would be necessary to establish geographical variation. Incidentally, this particular specimen was originally labeled "Guacimo" and later "Cartago." However, in Carriker's list (1910, 377) it is said to come from the "Volcan Turrialba, 4,000 feet," which locality is probably correct, since the species belongs to the Subtropical Zone. It is best regarded as a race of the South American *N. bonapartei*, in spite of its separated range.

**Nothocercus bonapartei bonapartei** (Gray).

Two specimens: La Cumbre de Valencia and Paramo de Rosas, Venezuela.

The first is a young bird (September 12); it closely resembles the adult in coloration, but the dusky of the crown is flecked with grayish, and the throat is grayish, although sparsely feathered. In the adult the outer primaries are rufescent, grayish-tinged, and have narrow dusky bars, precisely as in the "Bogotá" specimens mentioned by Salvadori (1895, 512). The wing is about nine inches long—longer than in the type. A "Bogotá" skin in the American Museum Collection has the wing 210 mm. long.

**Crypturellus cinereus cinereus** (Gmelin).

Four specimens: Cayenne and Pied Saut, French Guiana; Upper Araucaua, Brazil.

Having already discussed the taxonomy of *Crypturellus cinereus* at some length (1938, 123-126), I shall need to give here only an abstract of my conclusions.

Our specimens correspond closely to the description of *Tetrao cinereus* Gmelin (*ex* Buffon), which came from Cayenne, French Guiana. The name was later extended to apply to birds from other parts of the range, which was traced southward into Brazil and westward to the Andes. Several writers had noted certain variations in color characters, but it

remained for Brabourne and Chubb (1914, 320) to discriminate a dark-colored form of Tinamou from British Guiana under the name *Crypturus macconnelli*. Their description was elaborated by Chubb two years later (1916, 8, pl. 1, fig. 1), in connection with the form supposed by him to be the true *C. cinereus*, which was figured also on the same plate. But I am convinced that in describing *macconnelli* Chubb merely renamed *cinereus*, mistaking for the latter the lighter-colored rufescent form which ranges from the interior of British Guiana to the Amazon Valley. Our topotypical specimens from French Guiana obviously belong to this dark-colored form, which must be called *cinereus*, of which *macconnelli* is thus a pure synonym. Miranda-Ribeiro (1938, 758) has reached precisely the same conclusion.

Since my paper appeared, I myself have examined the series in the collection of the British Museum and found my conclusions verified. The differences between the dark and light birds are entirely bridged over in the series of British Guiana specimens. Some marked "*macconnelli*" (by Chubb himself) are decidedly rusty brownish above. Two supposed Cayenne birds (very old skins) are more rusty than ours, but they were probably dark-colored birds originally. The plate of *macconnelli* is somewhat misleading, since the type-specimen is actually not so dark-colored as thereon depicted. The light-colored bird of the plate will stand as

#### ***Crypturellus cinereus rufescens* Todd.**

Seven specimens: Villa Braga, Miritituba, Hyutanahan, and Arimã, Brazil.

Miranda-Ribeiro (1938, 760) correctly discriminated this race but wrongly called it *assimilis* Schlegel—a name which has no standing whatever, since it is based on a misidentification of *Nothura assimilis* Gray.

In addition to these specimens I have handled the series in the British Museum, as already said, and certain specimens from the collection of the American Museum of Natural History. "Chubb's plate is somewhat overdrawn; the differences between the two forms, while perfectly obvious on comparison, are not so conspicuous as there indicated" (Todd, 1938, 125). Two adults from the Rio Purús vary in the direction of the Bolivian race (*cinerascens*), while three Peruvian examples (in the British Museum) vary among themselves, but are probably referable to *cinerascens* or *fumosus*. The several forms of this group are certainly very close to each other and are subject to considerable variation.

**Crypturellus cinereus** subsp.

One specimen from Benevides (near Pará), Brazil, as already remarked, may represent an undescribed race, but more specimens are needed to determine its status. Incidentally, I have examined the type-specimen of *Crypturus megapodius* Bonaparte (1856, 954), now in the British Museum, and I have found it to be a young bird of some form of *C. cinereus*, but which one is quite indeterminable.

**Crypturellus berlepschi** Rothschild.

One specimen: Potedo, Colombia.

Examination of additional material of this form in the British Museum confirms my belief that it is a perfectly distinct species, peculiar to the Colombian-Pacific Fauna. "Its darker coloration, pure black pileum, lack of white shaft-stripes on the throat, and differently colored bill seem to be good specific characters when compared with *cinereus*" (Todd, 1938, 126).

**Crypturellus castaneus** (Sclater).

As shown by material in the British Museum, this species resembles *C. obsoletus*, but the upper- and underparts are chestnut; the head is darker gray.

**Crypturellus cerviniventris** (Sclater and Salvin).

After examining the type-specimen in the British Museum, I am decidedly of the opinion that this form is not conspecific with either *C. castaneus* or *C. obsoletus*. I think it should stand as a full species.

**Crypturellus obsoletus punensis** (Chubb).

Nine specimens: Cerro Hosáne, Locotal, San José, and Incachaca, Bolivia.

## MEASUREMENTS

No.	Sex	Wing	Bill	Tarsus
79409.....	(♀ im.)	154	23	42
85274.....	♀	158	24	44
85284.....	♂	152	23	45
85584.....	♂	144	23	43
85641.....	♀	157	25	46
85676.....	♀	151	24	43
119582.....	♀	154	24	45
120420.....	♂	149	23	45

As represented by specimens in the British Museum, *C. obsoletus obsoletus* has the head gray all around, and the back and scapulars olive brown, and the underparts dull rufous, posteriorly barred with buff and dusky. *C. obsoletus punensis* does not differ greatly, but the posterior underparts are somewhat deeper buffy. Three Bolivian birds examined appeared to be the same as those from Peru. The type of *punensis* is close to the type of *castaneus*, but is paler, with less chestnut above and below, while the slaty gray of the head extends over the back as a wash. The throat appears grayer, but in the type of *castaneus* this color may have faded somewhat. In size the two forms agree.

Our specimens have been compared with four in the Rothschild Collection from southern Brazil (Paraná, Minas Geraes, São Paulo) which supposedly represent true *obsoletus*. The Brazilian birds are appreciably different, in that they are paler, more ochraceous, less cinnamomeous, below, with the abdomen and crissum more buffy. The upperparts, too, are lighter brown (less rufescent), especially the wings and tail, and lack the grayish wash evident in the Bolivian skins. Our series of the latter have not been directly compared with topotypical material from Peru; they have been identified as *punensis* on the basis of their agreement in size and coloration with the description, and of the comparisons made at the British Museum. Chubb's name was based on birds from Puno, Peru, in the same general faunal region from which our birds came. Very recently, Bond and de Schauensee (1941, 1), after examining topotypes of *punensis*, have described the Bolivian bird as a distinct race, *crucis*, on the basis of its larger size, darker gray throat, and duller underparts. My measurements do not agree with theirs, but this may well be due to the personal equation. The proposed new race may indeed be a valid one, but I am reluctant to accept it on the present evidence.

#### ***Crypturellus griseiventris* (Salvadori).**

Nine specimens: Santarem and Colonia do Mojuy, Brazil.

The series is fairly uniform; the extent and intensity of the vinous chestnut of the breast is the most variable feature. No. 72,421 (April 30), a young bird, shows some fine white spots above and obsolete bars below.

Admittedly this form is related to *C. obsoletus*, but in my judgment not so closely as to be reduced to a subspecies thereof, as given by Peters. The ranges of these two forms are not known to approximate each other, since *griseiventris* is confined to the lower Amazon Valley east of the Rio

Tapajóz. Representatives of this form in the British Museum have been compared with *cerviniventris*, *punensis*, and *castaneus*; in my opinion they are not conspecific with any of these forms.

### **Crypturellus soui meserythrus** (Sclater).

Three specimens: Manatee Lagoon, British Honduras.

In addition to these, I have handled (in the Museum of Comparative Zoölogy) two other specimens from the same locality.

"Iris dull yellow or yellowish brown; bill leaden brown, paler below; feet dull greenish yellow or yellowish brown" (Peck).

Sclater's name was originally applied to birds from Playa Vicente, Oaxaca, Mexico, from which region I have seen no specimens. The male of this form is noticeably duller and browner than the female.

### **Crypturellus soui modestus** (Cabanis).

Five specimens: Guapiles, Cuabre, Carrillo, Buenos Aires, and Tucuriqui, Costa Rica.

Costa Rican specimens, sex for sex, are darker, less rufescent below than either *meserythrus* or *mustelinus*. Males are browner, less rufescent than females, but the average sexual difference, so it appears, is less than in the allied races. Peters (1931a, 296) calls attention to the fact that the color phases in this species are not definitely correlated with age or sex.

### **Crypturellus soui caucae** (Chapman).

Twelve specimens: Jaraquiel, La Palmita, and El Tambor, Colombia.

These agree in all essential respects with a pair of birds in the American Museum collection from Las Lomitas and Rio Frio, Colombia. Four specimens from Jaraquiel closely resemble the Santa Marta race (*mustelinus*) in the color of the underparts, but they are much darker above, less rufescent, and have a grayish cast. The specimens from La Palmita and El Tambor show the characters of *caucae* as remarked by Griscom in his review (1932, 308). Coming as they do from the Magdalena Valley, they may be taken as representing that form correctly. The pileum is darker in these birds than in those from Jaraquiel, which latter are probably to be considered intergrades between *caucae* and *mustelinus*.

***Crypturellus soui harterti*** (Brabourne and Chubb).

Six specimens: Soatata, Potedo, Heights of Caldas, and Yumbo, Colombia.

Griscom (1932, 307) has shown that this is the race of *soui* which ranges from western Ecuador and western Colombia into eastern Panama. The present series conform with this allocation. The single male specimen is much darker than the same sex of either *caucæ* or *mustelinus*, as Griscom says, and the females are also dark-colored by comparison and have a decided dusky or grayish wash on the neck.

***Crypturellus soui caquetæ*** (Chapman).

Two specimens in the collection of the American Museum have been examined in this connection (Florencia and La Murelia, Caqueta, Colombia). The female is similar to the same sex of *mustelinus*, but it is very dark above (dark chestnut brown), with the pileum dusky slate-color. This race is evidently perfectly distinct.

***Crypturellus soui nigriceps*** (Chapman).

One specimen: São Paulo de Olivença, Brazil.

Reference of this specimen to *nigriceps* involves an extension of the heretofore known range of the race to western Brazil, south of the Amazon. On the north bank it is replaced by typical *soui*.

***Crypturellus soui mustelinus*** (Bangs).

Fourteen specimens: Don Amo, Don Diego, Cincinnati, Minca, and Palmar, Colombia; El Hacha, El Trompillo, Sierra de Carabobo, and Guamito, Venezuela.

A well-marked race, whose differential characters I have already discussed at some length (1922, 165). The above listed specimens from Venezuela are clearly referable to this race, the range of which extends eastward to that country, to and beyond the Andes of Merida to the region south of the coast range. Moreover, much to my surprise, I find that our two females from Palmar, east of the Eastern Andes in Colombia, are *mustelinus* and not *caquetæ*. Hence *caquetæ* does not occupy all of Colombia east of the Andes, as supposed by Chapman. It is odd, however, to find *mustelinus* on both sides of the Venezuelan Andes.

No. 36,271, El Hacha, Venezuela, December 1, is a downy chick. Its

head pattern is characteristic: the front (broad) and sides of the crown are buff, enclosing a median rufous crown patch, produced down the neck, and itself enclosing a longitudinal area of buff; the back is rich rufous, freckled anteriorly with buffy feather-tips; the throat is white; and the rest of the underparts are buffy and the crissum rufescent.

***Crypturellus soui soui*** (Hermann).

Nineteen specimens: El Peru Mine, Venezuela; Cayenne, Mana, and Pied Saut, French Guiana; Obidos, Tonantins, Manacapurú, and Rio Manacapurú, Brazil.

I judge that the brighter-colored birds are females and the duller-colored ones males, but the sex marks on the labels do not all correspond. This race is richly colored by comparison, as indicated by Griscom (1932, 308). The females are chestnut or bay above, the pileum is ashy or sooty blackish, the throat is decidedly buffy, and the breast and sides are rich rusty buffy (between Mars yellow and tawny of Ridgway's "Color Standards"), without any trace of dusky or ashy color. No. 34,139, an immature bird from El Peru Mine in Venezuela, is referred here on geographical grounds. Manacapurú and Obidos specimens are a little brighter above than those from French Guiana, but they are not sufficiently different in my opinion to deserve a name. Miranda-Ribeiro (1938, 769) refers a single specimen from Manacapurú to his new race *lyardi*. All his other specimens of that form come from south of the Amazon. Also, a single bird from Tonantins, on the north bank of the upper Amazon, obviously belongs here, although another race (*nigriceps*) lives across the river. The range of typical *soui*, therefore, extends from Guiana and Brazil, north of the Amazon, westward to the frontiers of Colombia and Ecuador.

***Crypturellus soui andrei*** (Brabourne and Chubb).

Nine specimens: Santa Lucia, San Rafael, and Mirasol, Venezuela.

These birds, coming from the region north of the coast range in Venezuela (in the states of Miranda and Sucre), are not *mustelinus*, than which they are darker-colored above and below, with a decided dusky band across the neck, and a restricted white throat patch. On the other hand, they are certainly not referable to *soui*. Upon comparison they prove to be substantially identical with a pair of birds from Trinidad in the collection of the American Museum of Natural History. Incidentally,

these specimens do not agree precisely with the original description of *andrei*, but they must nevertheless belong to that very distinct race, which is thus shown to reach the north coast of Venezuela.

***Crypturellus soui hoffmannsi*** (Brabourne and Chubb).

Ten specimens: Benevides, Santarem, Villa Braga, and Miritituba, Brazil.

The name *Crypturellus soui decolor* Griscom and Greenway (1937, 417) was based on the above series and one other specimen (the type) from the same region.

A few months later birds from this region were described by Miranda-Ribeiro (1938, 767) under the name *Crypturornis soui lyardi* (*layardi?*). It is a pale, washed-out race, as the name implies. The pileum is brown, rather than ashy, with the sides of the head similar but paler. In the most richly colored female (No. 75,816) the back is argus brown, and the underparts are deep ochraceous buff. A small young bird (No. 72,079, April 16) is spotted with black above and below, and has some buff on the wings; the pileum still retains some of the rufous feathers of the natal stage.

These have been compared with five specimens (wretched skins!) from the Rio Madeira which Hellmayr calls *hoffmannsi*, and in my judgment they are the same form. Variation in exact coloration is in evidence, but since all the Rio Madeira birds can be closely matched by others of the lower Amazon series, I can see no point in keeping them apart. Consequently *decolor* falls as a synonym of *hoffmannsi*, the recognized range of which must be accordingly extended.

***Crypturellus soui inconspicuus*** Carriker.

Nine specimens: Buena Vista (Rio Surutu and Rio Yapacani) and Cerro Hosáne, Bolivia; Hyutanahan (Rio Purús), Brazil.

According to Carriker (1935, 315) these represent his new race *inconspicuus*, described from the Rio Beni in Bolivia, but since the Rio Purús specimen seems to be the same, comparison with *hoffmannsi* of the Rio Madeira is indicated. I have recently made this comparison, and I have found that the two series are racially distinct. *C. s. inconspicuus* is darker, more rufescent, less buffy below, while its upperparts are also darker-colored on an average. I continue to refer the specimen from the Rio Purús here, although I am at a loss to explain the range thereby involved. The form is quite distinct racially from *nigriceps*.

**Crypturellus undulatus adpersus** (Temminck).

Seven specimens: Santarem, Villa Braga, Goyana Island (Rio Tapajóz), Miritituba, and Apacy, Brazil.

Pará (the state) is the type-locality, but Hellmayr (1929, 477) says that Rio Tapajóz birds are typical. The back, neck, and even the pileum are more or less rufescent, with the rump, upper tail-coverts, and wing-coverts grayish olive, in decided contrast. All are vermiculated on these latter areas, and some have decided bars—this character tending thus toward *confusus*. The breast and underparts generally are plain grayish buffy, becoming decidedly buffy on the tibiæ, lower abdomen, and crissum.

**Crypturellus undulatus yapura** (Spix).

Six specimens: Arimã, Manacapurú, and Caviana, Brazil.

These specimens agree with each other, and differ from a series from the Rio Tapajóz (*adpersus*) in being darker, more decidedly grayish, less buffy, below, and also in being darker brown above, with the pileum dusky plumbeous, in decided contrast; the vermiculations on the back are finer.

This form was described from the Rio Yapura, one of the northern affluents of the Amazon coming in not so far above Manacapurú but that specimens from that point would be referred to it on geographical grounds. Its range appears to include also the region south of the Amazon, since the specimen from Arimã on the Rio Purús is perfectly typical. Farther up that river, at Hyutanahan, however, it is replaced by *confusus*, but according to Hellmayr (1929, 477) the Rio Juruá race is *yapura*.

In its characters this race is farthest of all from *undulatus*, with which it is connected through *adpersus* and *confusus*; otherwise it could stand as a species.

*C. balstoni* (Bartlett) is a synonym, according to Hellmayr. Examination of the type in the British Museum shows that the colored plate in the "Catalogue" is not a good representation. There is too much cross-barring on the underparts; whereas the breast and abdomen are nearly plain medially.

**Crypturellus undulatus confusus** (Brabourne and Chubb).

Twelve specimens: Hyutanahan, Brazil.

This form is a connectant between *undulatus* and *adpersus*; its characters, as shown by the present series, vary now toward the one, and now

toward the other. Heretofore it has been known only from the type, which was taken at Humaythá, on the left bank of the Rio Madeira. (Peters' ascription of it to the Rio Purús is based on specimens from the above series examined by him.) Some examples are decidedly grayish-tinged below (like *yapura*), others are more buffy (like *adspersus*). The barring above varies considerably; some specimens are almost as heavily barred as *undulatus*, while others are more nearly like *adspersus* in this respect. The pileum tends to be brownish plumbeous; the upperparts and neck behind are strongly rufescent. Young birds (Nos. 87,043-4) are more or less barred and spotted below with blackish.

The range of this race embraces the region between the rivers Madeira and Purús, south of (about) 5° S. The Amazonian race, *yapura*, apparently occupies both banks of the Amazon between the mouths of these two tributaries, and ranges up the Rio Purús as far as Arimã.

#### ***Crypturellus undulatus undulatus* (Temminck).**

Sixteen specimens: Buena Vista (including Rio Surutu), Bolivia.

These fit the description and plate of *Crypturus scolopax* in the British Museum "Catalogue," as of course they should do, since they come from the type-locality. But according to Hellmayr (1929, 477) this name is a synonym of the earlier *undulatus*, based on the bird of Paraguay. It is recognized, however, by Miranda-Ribeiro (1938, 748).

The series shows much individual variation, affecting the color-tone of the underparts, the extent and intensity of the barring on the upperparts, neck, breast, and flanks, and the coloration of the pileum, which in some specimens is distinctly barred, in others plain slaty gray. A young bird (94,670) shows a little dark spotting on the breast.

Bolivian specimens in the British Museum are much more heavily barred above than those from Chapada, Matto Grosso, Brazil, but examples in the American Museum of Natural History from these respective regions are practically indistinguishable.

No. 80,932, February 28, is a chick, colored as follows: above mummy brown, with slight buffy feather-tipping; broad front and sides of head deep buffy, with a dark stripe through the eye; this stripe behind the ear centered with a median stripe of raw umber; crown raw umber, this color reaching the nape, bordered on either side by a narrow black edge, and divided by a median buffy stripe; throat white; rest of underparts dull buffy.

**Crypturellus boucardi boucardi** (Sclater) (?)

Two specimens: San Pedro Sula, Honduras; Cockscomb Mountains, British Honduras.

The British Honduras specimen should belong to the recently described race *blancaneauxi* Griscom (1935, 543) but it does not fit the description, since it is much darker and grayer below than the Honduras skin. I have compared it directly with a specimen from Secanquim, Guatemala (Am. Mus. No. 393,410), than which it is slightly darker above, with pronounced black bars on the wings, tail, and lower back. I have examined also the type and one other specimen of *blancaneauxi* in the British Museum. Both seem to be females. They are more rufescent above and buffier below than Guatemala skins. In the type the pileum is mostly brown; in the other it is slaty. Judging from these two skins alone, I would call *blancaneauxi* a valid race, but I should like to see more material before finally accepting it.

**Crypturellus variegatus variegatus** (Gmelin).

Twenty-two specimens: El Llagual, Venezuela; Pied Saut, French Guiana; Cayari Island, Upper Araucaua, Obidos, Tonantins, and Manacapuru, Brazil.

This species and its component races I have already discussed at some length in a former paper (1937, 175-178). To my remarks there I have only to add that a series from British Guiana in the collection of the British Museum shows much variation in the coloration of the underparts, the barring on the flanks and back, etc. I have examined also the type of *Tinamus bimaculatus* Gray. It is a young bird in spotted dress, without indication of locality, and absolutely indeterminable as to subspecies, so that the name may be disregarded.

**Crypturellus variegatus transamazonicus** Todd.

Seventeen<sup>1</sup> specimens: Santarem, Colonia do Mojuy, Villa Braga, Hyutanahan, Arima, and São Paulo de Olivença, Brazil.

To the remarks in my paper above cited I have only to add that this is obviously the same form that was described a few months later by Miranda-Ribeiro under the name *Orthocrypturus variegatus superciliosus*

<sup>1</sup> In my former paper I listed nineteen specimens of this form, but I inadvertently included two specimens of *C. bartletti* in the total.

(1938, 741). This author designates no type-specimen, and the example from Manacapurú which he lists is undoubtedly referable to true *variegatus*, as is our own from the same locality. The range of this pale-colored race would seem to reach the Rio Gy-Parana in western Matto Grosso.

#### ***Crypturellus variegatus salvini* (Salvadori).**

The type-series in the British Museum conforms to the description with respect to the barring on the upperparts. They are in fact by comparison very blackish above and richly colored below (the type especially); however, the barring on the flanks is not very distinct. As I have already said, *salvini* is merely a darker race of *variegatus*, and it is not a very strongly marked one at that.

#### ***Crypturellus brevirostris* (von Pelzeln).**

Four specimens: Tamanoir, French Guiana; Hyutanahan, Brazil.

Since my previous account of this species appeared (*l.c.*), a second specimen from Tamanoir, French Guiana, which had been inadvertently disposed of by exchange, has been located and returned for study. H. B. Conover, whose specimen it is now, writes that Peters' ascription of "Cayenne" in the range of this species was probably based on this specimen, although it did not come from that exact locality. It agrees perfectly with the other bird from the same place in having white posterior underparts; this fact increases the probability that two races are represented in the series, as I have already suggested. It is a male, and measures: wing, 129; tail, 39; bill, 19; tarsus, 41. The flanks and tibiae show some barring, although not so much as in the Rio Purús skin.

Oliverio Pinto (1938, 500) records a specimen of this rare species from the Rio Vaupes, on the Colombian frontier of Brazil—a record which considerably extends the known range.

#### ***Crypturellus bartletti* (Sclater and Salvin).**

Eleven specimens: Hyutanahan, Nova Olinda, and Arimã, Brazil.

Compare my previous remarks on this species (1937, 178). To the list of specimens there given two more must be added. Compare also the remarks by Miranda-Ribeiro (1938, 750).

**Crypturellus cinnamomeus mexicanus** (Salvadori).

Two specimens: Rio Sabinas, near Gomez Farias, Tamaulipas; and Valles, San Luis Potosi.

These examples are not alike, but I judge the differences to be sexual and not geographical. While at the British Museum I made a study of the races of this species, and reached precisely the same conclusions as Griscom announced (1935, 541-3).

**Crypturellus cinnamomeus vicinior** Conover.

One specimen: Monte Redondo, Honduras.

**Crypturellus cinnamomeus præpes** (Bangs and Peters).

One specimen: Bebedero, Costa Rica.

**Crypturellus idoneus** (Todd).

Two specimens: Bonda, Colombia.

For a full description and critical remarks on this form compare my former account (1922, 166). Although it was originally described as a full species, Peters (1931b, 21) reduces it to a race of *cinnamomeus*. Conover (1933, 113) dissents, but Zimmer (1938, 50) insists that this view is correct. My material representing *cinnamomeus* is scanty I admit, but I should certainly keep *idoneus* as a species distinct both from the former on the one hand and from *erythropus* on the other. In my opinion *idoneus* does not fit in well with either of these and ought to stand alone. It occupies a semi-insular range in the Santa Marta region of Colombia.

**Crypturellus noctivagus** (Wied).

This form is unrepresented in our collection, but I have examined three authentic specimens from the states of São Paulo and Bahia, Brazil, lent by the American Museum of Natural History. The male differs from the same sex of *C. erythropus* in its darker general coloration and the more decided barring of the lower back, upper tail-coverts, wings, flanks, and posterior underparts. Adult males of *erythropus* are almost devoid of barring, nearly "solid" brown in fact. The female is still more different from the other species, since it has the superciliaries and cheeks white, the throat rufescent, barred with dusky, the breast dull rufescent ochraceous (with no grayish), and the rest of the underparts rich buff, the sides barred

with black. The wings and tail are conspicuously barred with buff and the back is black, barred with rufous; the feet (in the skin) are yellowish, instead of dark-colored, as in the male. I consider these differences of specific value.

***Crypturellus erythropus erythropus* (von Pelzeln).**

Fourteen specimens: San Esteban, Venezuela; Obidos, Brazil.

Zimmer (1938, 50) reduces this form to a subspecies of *C. noctivagus* without apparent hesitation, but I think that he goes too far. According to Hellmayr (quoted by him), *C. dissimilis* is the same as *C. erythropus*. Our San Esteban specimen was examined by Hellmayr some years ago and was pronounced *dissimilis*. On geographical grounds it should be referable to *C. spencei* Chubb, but I am unable to distinguish it from the series from Obidos, on the Amazon River. Zimmer recognizes *spencei*, but not on the basis of topotypical material, since all his specimens but one came from points much farther east in Venezuela. Indeed, he says that females of the two forms (*erythropus* and *spencei*) are not certainly distinguishable. In describing *spencei*, Chubb compares it with *cinnamomeus* of Middle America, instead of with the South American *erythropus*. I have examined the type and one other specimen of *spencei* in the British Museum. They are in my judgment the same as *erythropus*, despite the rather prominent buffy bars on the back and wings. Specimens of the latter in the British Museum vary considerably among themselves. Some are almost uniform buffy below, while others have a more or less grayish wash on the breast. Again, some are almost uniform olive brown above; others (females or young birds ?) are decidedly barred with buff and black, especially on the lower back and wings, like *variegatus*. The head is rufescent all around, and the forehead usually slaty.

Our specimens are all sexed as males. Rufescent throats are the rule, but in several individuals this part is white, either partially or wholly. The depth of the rufescent shade below, the amount of grayish wash on the breast, the dark barring of the flanks, the shade of brown on the back, and the black barring on the lower back and upper tail-coverts all vary considerably.

***Crypturellus erythropus garleppi* (von Berlepsch).**

Two specimens: Buena Vista (Rio Surutu), Bolivia.

These fit the original description fairly well, and coming as they do from the type-locality (virtually), they could scarcely be anything else. The

form proves to be so close to *C. erythropus* as to be only subspecifically separable, in my opinion. It differs from *erythropus* in the general color of the underparts, which averages darker, deeper rufous, and in the more olive brown (rather than cinnamon brown) shade of the upperparts, with the black vermiculation much more distinct.

The type-specimen of *C. garleppi affinis* Chubb, examined by me in the British Museum, has been marked by Hellmayr as the female of *garleppi*. Chubb was evidently misled by von Berlepsch's statement that *garleppi* was close to *atrocapillus*. The latter I have seen (in the British Museum), and I consider it a well-marked and perfectly distinct species.

### ***Crypturellus strigulosus strigulosus* (Temminck).**

Ten specimens: Santarem, Villa Braga, and Hyutanahan, Brazil.

I cannot accept Zimmer's arrangement making *strigulosus* and *erythropus* conspecific (1938, 50). The differences are far too great, and moreover, as I have just shown, *erythropus* is represented in Bolivia by an allied race, with *strigulosus* coming in between. One female of the latter (No. 75,306) is decidedly buffy below, while another (No. 78,199) is the whitest of the series. A young bird (No. 78,200, September 16) is also whitish below. Two males from the Rio Purús are practically indistinguishable from the Rio Tapajóz specimens. This fact suggests that the unique type of *hellmayri* from the Rio Madeira may be only an individual variant. In our series the shade of brown in the upperparts varies considerably.

### ***Crypturellus parvirostris* (Wagler).**

Thirteen specimens: Buena Vista (also Rio Surutu and Rio Yapacani), Santa Cruz de la Sierra, Guanacos, and Rio Quiser, Bolivia; Santarem, Brazil.

Most recent writers on this species admit no racial variation, but certain characters shown by our series are at least suggestive of such. Two birds (a pair) from Santarem are darker, more grayish below, sex for sex, than the "general run" of Bolivian specimens. They may possibly represent the lately described *C. p. fuscus* of Miranda-Ribeiro (1938, 775), based on two females from the island of Marajó. Compared with two specimens from Bahia (fixed as the type-locality by Hellmayr [1929, 478]) in the collection of the American Museum of Natural History, Bolivian

skins are paler above; they have slaty (instead of brownish) pileum and sides of the head, and grayer, less brownish sides and breast. If separable, they may be entitled to the name *cervinus* of Bonaparte from Chiquitos, Bolivia—unless, indeed, as is possible, this name applies to *C. tataupa*. (The description is brief and unsatisfactory.) However, Hellmayr (1907, 410) says that in young birds of *parvirostris* the pileum is mainly pale brown, as it is indeed in our specimen from Santa Cruz de la Sierra, so that the Bahia skins above mentioned may be immature.

Three skins from Chapada, Matto Grosso, and one from Bolivia, in the British Museum, are pale as compared with other skins from Brazil.

No. 79,109 (January 12) is emerging from the natal down, but it still shows traces of the characteristic head pattern of this early stage. No. 43,763 is immature, with the breast obsoletely squamate, and with black subterminal spots, partially concealed, on the feathers of the back and wing-coverts. Females are uniformly darker and more richly colored than males.

Miranda-Ribeiro (*l.c.*) has described also a third race of this species (*superciliaris*) from the "Planalto Parecis" of Brazil, from which he had a single specimen. In view of the observable differences depending on age, sex, and individual, I feel that no geographical races of this species should be recognized unless on the basis of a very much larger series of specimens than are at present available.

#### ***Crypturellus tataupa tataupa* (Temminck).**

Eight specimens: Puerto Suarez, Palmarito, Rio Grande, and Samaipata, Bolivia.

These require comparison with specimens from Brazil and Paraguay, although Hellmayr (1929, 478) discounts the chance of any racial variations in this region.

#### ***Rhynchotus rufescens rufescens* (Temminck).**

Nine specimens: Buena Vista, Bolivia.

The buffy barring on the underparts is subject to considerable variation in these specimens. They have not been compared as yet with birds from São Paulo, Brazil, which Mrs. Naumburg accepts as the type-locality (1930, 60).

**Rhynchotus maculicollis** Gray.

Three specimens: Samaipata, Cerro San Benito, and Incachaca, Bolivia.

I see no reason for reducing this form to subspecific rank, even if the neck markings in one specimen are somewhat less prominent. Its range closely approximates that of *R. rufescens*, and drops down to 1200 meters at Samaipata.

**Nothoprocta ornata ornata** (Gray).

Eight specimens: La Paz, Colomi, Guaqui, and Incachaca, Bolivia.

In this species the breast is decidedly gray, but this feature is not well shown in the plate (17) in the "Catalogue of the Birds in the British Museum." The spotting and barring above vary; they are less prominent in the Incachaca specimen, which may possibly belong to a different race.

**Nothoprocta cinerascens** (Burmeister).

Five specimens: Miraflores and Machomuerto, Argentina.

**Nothoprocta curvirostris** Sclater and Salvin.

Two specimens: Mount Pichincha, Ecuador.

A chick, collected January 28, is assumed to belong to this species. Above it is mottled and striped with black, brown, and white; the superciliaries, malar region, and throat are white; the underparts are dull gray, mottled with brown.

**Nothoprocta pentlandi pentlandi** (Gray).

Thirteen specimens: Cochabamba, Tiraque, Comarapa, and Pocona, Bolivia.

At first glance these fall into two series, according to size and coloration. In the larger birds (wing 130-155 mm.) the forehead, the sides of the head (except a postocular streak), and the throat and breast are decidedly grayish (the latter with some white spots); the prevailing tone of the upperparts is grayish brown; the white streaking is present but not prominent, especially on the upper back; the sides and flanks are shaded and more or less barred with buffy. In the smaller birds (wing 127-139 mm.) the forehead, the sides of the head, and the throat and breast are buffy with

brownish streaking (the breast more grayish buffy, with white spots); the prevailing tone of the upperparts is dull Brussels brown to rich tawny olive (especially in evidence on the tertiaries); the black bars and white streaks are conspicuous, even on the upper back; the sides and flanks are spotted and barred with dusky brown. In one specimen (No. 81,333) the breast is similarly spotted with brownish black. The two lots look like two species, but this could hardly be true, because there is one specimen (No. 120,132) which is clearly intermediate, since it has rich tawny olive tertiaries and brown-spotted sides combined with grayish forehead, sides of the head, and breast. Moreover, the smaller birds (with one exception) were shot at the same time as the larger ones, as I judge from the continuity of the collector's numbers. These smaller birds fit the description of *Nothoprocta moebiusi* von Berlepsch, but I agree with Salvadori that this must be the young of *pentlandi*.

Three birds shot in September and February are obviously more rufescent buffy below than those taken in June. This character I believe is one that has been used for discriminating a Peruvian race of this form, which race needs re-investigation.

Females appear to have the throat spotted with grayish, but some doubt attaches to the sexing of the specimens.

#### ***Nothoprocta perdicaria perdicaria* (Kittlitz).**

One specimen: Valparaiso, Chile.

#### ***Nothura maculosa agassizi* Bangs.**

Five specimens: La Paz (market), Guaqui, and Desaguadero, Bolivia.

Mr. Griscom, to whom four of the above specimens were sent for comparison with the type, writes as follows: "Our specimens of this race of *maculosa* consist of the type and one other specimen. Your specimen marked, '♂,' from Desaguadero, matches our two specimens of *agassizi* exactly. Your other three specimens, however, take on the hue of difficulty. They come from a different locality, which may or may not be faunally isolated or distinct from the other." He goes on to suggest that, being females, they may be different on that account, or else that they are nearer *boliviana*. Comparison with this latter form suggests that they do actually tend somewhat towards it. Peters reduces both *agassizi* and *boliviana* to races of *N. maculosa*, as also does Laubmann (1934, 280). Pending further study I accept this arrangement provisionally, although

somewhat doubtful of its propriety. Compare also, in this connection, Wetmore's remarks on the affinities of these forms (1926, 37). At any rate, *agassizi* and *boliviana* appear to be very distinct from each other, in spite of variation in both forms. I am not prepared to discuss their relationships to the recently described *Nothura maculosa oruro* Bond and de Schauensee (1941).

#### ***Nothura maculosa boliviana* Salvadori.**

Five specimens: Cochabamba, Chocaya, Tiraque, and Totorá, Bolivia.

These specimens were sent to Hellmayr at the British Museum for comparison with the type of *boliviana*. He reported that they were the same.<sup>2</sup> The specimen from Tiraque is a very good match for the type, particularly in the deep coloration below. The Cochabamba birds as well as the original series of *boliviana* are indeed easily distinguished from *agassizi*, of Lake Titicaca, which is blacker above and much more coarsely marked with black on the chest and sides. He goes on to say that Bridges' type-series probably came from the Valley of Cochabamba. The form ranges from Bolivia through the Chaco to Paraguay and Argentina (compare Wetmore, *l.c.*).

#### ***Nothura boraquira* (Spix).**

Eleven specimens: Santa Cruz de la Sierra and Buena Vista, Bolivia.

These agree with the figure of *N. marmorata* Gray (in Salvadori, 1895, pl. 18). According to Hellmayr (1906, 705), however, this name is a synonym of *Tinamus boraquira* Spix—an opinion which he reiterates (1929, 478) after seeing specimens from the same locality from which our own come. Miranda-Ribeiro (1938, 704) renames this form *spixi*, on the ground that "*boraquira*" is "bad Portuguese"—which reason under present rules is of course no reason at all. Wetmore (1926, 37, note) would refer this species to *Nothoprocta* on account of the posterior aspect of the tarsal envelope as shown on Spix's plate. This plate is incorrect in this particular respect, however, although it is otherwise a fair representation.

Two sizes of birds are represented in our series, but not according to sex (as marked). The smaller ones may be younger birds, as I judge from our specimen No. 79,124, which is rather prominently spotted below.

<sup>2</sup> In sending these I inadvertently overlooked the fact that Dr. Hellmayr had already compared Bolivian specimens from Mr. H. B. Conover.

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