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## The Subspecies of *Tinamus tao* and *Tinamus solitarius* (Aves)<sup>1</sup>

BY DEAN AMADON

For the loan of specimens I am indebted to Dr. Kenneth C. Parkes of the Carnegie Museum, and to Dr. Charles G. Sibley of Cornell University. J. D. Macdonald, Esq., of the Bird Room at the British Museum (Natural History) very kindly placed the material in their collection at my disposal while I was in London in June, 1958.

### *Tinamus tao* Temminck

GREAT GRAY TINAMOU

### *Tinamus tao septentrionalis* Brabourne and Chubb

*Tinamus tao septentrionalis* BRABOURNE AND CHUBB, 1913, Ann. Mag. Nat. Hist., ser. 8, vol. 12, p. 578. Plains of Cumaná, northeastern Venezuela. Type: A.M.N.H. 458946.

DIAGNOSIS: Differs from the nominate race by lacking dorsal black barring. The general color of the back is slightly less slate gray than in *T. t. tao*. In size it is perhaps slightly smaller.

From *T. t. larensis* the race *septentrionalis* differs by being grayer, less olivaceous, on the back. It averages larger in size.

From *T. t. kleei* of Peru and Bolivia, *septentrionalis* differs only by the suppression of dorsal black barring.

WING: Type, female, 278 mm. Phelps and Phelps (1949) give the following wing lengths: males, 272, 275; three females, 280–293 (286).

RANGE: Venezuela from about the base of the Paria Peninsula east-

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<sup>1</sup> Dedicated to my friend Prof. Erwin Stresemann on the occasion of his seventieth birthday.

ward. Presumably the portion of British Guiana inhabited by this species is also in the range of this subspecies. Phelps and Phelps (1949) have mapped the localities in Venezuela from whence they have examined specimens of *septentrionalis*.

*Tinamus tao larensis* Phelps and Phelps

*Tinamus tao larensis* PHELPS AND PHELPS, 1949, Proc. Biol. Soc. Washington, vol. 62, p. 109. Cerro El Cogollal, Quebrada Arriba, Lara, Venezuela, 1600 meters. Type: No. 18385 Phelps Collection, on deposit at the American Museum of Natural History, where examined.

DIAGNOSIS: *Tinamus t. larensis* is similar to *septentrionalis* in lacking, more or less, the dorsal black barring, but the general tone of its upper parts is perceptibly more olivaceous or brownish than in that race. The ventrum also may tend to be less gray, and more vermiculated with brown. The size is perhaps somewhat smaller than in *septentrionalis*.

WING: Phelps and Phelps (1949) give the following measurements (in mm.) for Venezuelan birds: males, 255, 268; females, 273–285 (279.3). Two from the Carnegie Museum measure: male, 277; female, 276 plus. Two unsexed "Bogota" birds measure 264, 270. A third, without locality but probably Bogota, measures 293 mm.

RANGE: Venezuela from about the Caracas area (Puerto de la Cruz) westward. Phelps and Phelps (1949) have mapped Venezuelan localities for this race. Birds from central and northern Colombia are best assigned to this race.

Material examined consisted of the type and two others from Venezuela, the two "Bogota" skins, a third skin presumably from "Bogota," and one from San Antonio, between Buenaventura and Cali, Colombia.

REMARKS: Judging from very scanty material, birds from northern and northeastern Colombia are *larensis*; ones from central Colombia are intermediate towards *kleei* (of Ecuador, Peru, and Bolivia); and ones from southern Colombia will probably prove to be *kleei*. The only Colombian specimen with exact locality so far recorded was taken by L. A. Fuertes at San Antonio at 6600 feet on the eastern slopes of the western Andes on the trail between Buenaventura and Cali. Dr. Sibley kindly sent it down from Cornell for examination. It is intermediate between *kleei* and *larensis* but may be assigned to the latter. One "Bogota" skin is typical *larensis*. Another is like *larensis* in having the upper parts olivaceous, but it has pronounced dorsal, black barring, even exceeding that found in some Peruvian examples of *kleei*. Hence it also is intermediate but may be assigned to *larensis*.

*Tinamus tao kleei* (Tschudi)

*Crypturus kleei* TSCHUDI, 1843, Arch. Naturgesch., yr. 9, p. 387. Rio "Chanchamayo" and in "Chunchotambo" [Junin], Peru.

*Tinamus tao weddelli* BONAPARTE, 1856, Compt. Rendus Acad. Sci. Paris, vol. 42, pp. 881, 954. La Paz, Bolivia. Type said to be from Tipuani Valley (latitude 16° S., longitude 68° W.) in the tropical forests at the Amazonian foot of the cordillera of La Paz (Hellmayr and Conover, 1942, p. 8).

**DIAGNOSIS:** Similar to *larensis* but upper parts grayer, less olivaceous. Back usually barred with blackish, though less sharply than in nominate *tao*. Back as a rule not so clear a slate gray as in the latter. Smaller than nominate *tao* and probably averaging somewhat smaller than *larensis* and *septentrionalis*.

**WING:** Peru: males, 252, 260 plus, 262, 276, 276; females, 264, 276, 276, 281. Traylor (1952, p. 18) gives wing lengths of four males of *kleei* as 265–295 (281), indicating that the average may be somewhat larger than I have indicated. One female measured by Traylor had a wing length of 265 mm.

Other measurements, particularly of Bolivian specimens, are given below.

**RANGE:** Southern Colombia; Ecuador; northern and eastern Peru; eastern Bolivia, south to about latitude 17° S.

Specimens examined from Peru were from the following localities: Rio Chinchipe (latitude 5° S., longitude 79° W.); Pozuzo (latitude 10° S., longitude 76° W.); Boca de Urubamba (latitude 11° S., longitude 74° W.); Rio Comerciato (latitude 12° S., longitude 73° W.); Rio Chanchosmayo (latitude 13° S., longitude 72° W.); Rio Cosireni (latitude 13° S., longitude 73° W.).

No specimens were examined from Ecuador. All those recorded from that country have come from the eastern tropical lowlands, but in view of the Colombian specimen listed above from San Antonio, the subspecies probably occurs in western Ecuador also.

**REMARKS:** Bolivian birds were considered the same as Peruvian ones by Todd (1942a, p. 3), who thus made *weddelli* a synonym of *kleei*. In this I think he was correct.

Bond and de Schauensee (1942, p. 168) recognized *weddelli* on the basis of supposed larger size. They give the wing lengths of two birds from Palmar, Cochabamba, Bolivia (latitude 17° S., longitude 65° W.), as 268 and 270 mm. as compared with 230 and 244 for a pair from Sandia in southeastern Peru. As will be seen by comparison with measurements given below, the two Palmar birds agree well enough in size with ones from Peru. The two Sandia birds are extraordinarily small.

Sandia is scarcely 125 miles from Tipuani, Bolivia, the type locality of *weddelli*. Furthermore, Traylor (1958) states that the Sandia birds are immature.

Three Bolivian birds in the Carnegie Museum (one of which we have now obtained through exchange) measure: males, 260, 290; female, 275. All three are from near Buena Vista (latitude 17° S., longitude 64° W.). Traylor (1952, p. 18) gives wing lengths up to 295 mm. for Bolivian birds, and Gyldenstolpe (1945, p. 29) gives: male, 272, female, 295, for a pair from that country.

Curiously, the three Bolivian skins examined are near the brownish extreme of *kleei*. On geographical premises one would have expected them to be farthest removed from the brownish northern race *larensis*. Yet Gyldenstolpe, who had a pair of Bolivian birds, states that they are grayer dorsally than Peruvian ones. This agrees with the evaluation of Hellmayr and Conover (1942, p. 8) that Bolivian birds are intermediate towards nominate *tao*. Gyldenstolpe's birds were from northeastern Bolivia, nearer Amazonia, which probably accounts for their grayish coloration.

#### *Tinamus tao tao* Temminck

*Tinamus tao* TEMMINCK, 1815, Histoire naturelle générale des pigeons et des gallinacés, vol. 3, pp. 569, 749. Province of Para, Brazil.

DIAGNOSIS: Upper parts a clearer slate gray, more sharply banded with black, than in the other subspecies. Size noticeably larger than in *T. t. kleei* and somewhat larger than in the other two races.

WING: Seven males, 283–298 (294) mm.; three females, 286, 287, 292 mm.

Traylor (1952, p. 18) gives wing lengths of four males as 277–300 (288.5) mm., and of four females as 292–301 (298) mm.

As noted above, this race intergrades with *kleei* and perhaps *larensis* towards the west. An unsexed specimen from San Carlos, a stop on the railroad east of the Rio Madeira in the northwestern Mato Grosso at about latitude 9° S., longitude 64° W., has a wing of 270 mm. and is definitely smaller than Amazonian examples of the nominate race, to which, however, it is here assigned.

RANGE: Brazil from left (north) bank of lower Amazon (Monte Alegre, latitude 2° S., longitude 54° W.); thence south of the Amazon east at least to the south (east) bank of the Rio Xingu at a point about 15 miles from its junction with the Amazon; and west and south to the western Mato Grosso. Intergrading with *kleei* towards the borders of Peru and Bolivia.

Pinto (1938, p. 2) is the only author to record it from north of the Amazon. He cites a bird from Monte Alegre, but does not state who collected it there. The nature of the country doubtless prevents it from extending northwestward from the Amazon to British Guiana, where *T. t. septentrionalis* is found.

South of the Amazon the species is often said to range eastward only to the Rio Tapajos. Todd (1942, p. 3) noted that it gets farther east. Two birds in the American Museum from Villarinho do Monte, on the south (east) back of the lower Rio Xingu, evidently represent the eastern limit as presently known.

#### SUMMARY OF VARIATION

*Tinamus tao* is not a highly variable species geographically. There are really only two well-marked races: nominate *tao* from south of the Amazon, of large size, with clear gray, black-barred upper parts; and *larensis* of western Venezuela, which is brownish above, lacks bars, and is a little smaller. All the other areas have intermediate birds, but the two isolates, *septentrionalis* in eastern Venezuela and British Guiana and *kleei* in the area from Ecuador to Peru and Bolivia, are perhaps separable.

#### *Tinamus solitarius* (Vieillot)

##### SOLITARY TINAMOU

#### *Tinamus solitarius pernambucensis* Berla

*Tinamus solitarius pernambucensis* BERLA, 1946, Bol. Mus. Nac. Rio de Janeiro, Zool., no. 65, p. 2. Usina São José, Igarapé, Pernambuco, Brazil.

DIAGNOSIS: This form was not examined. According to Berla and later Pinto (1954, p. 18) it differs from the nominate race by having the upper parts more ashy olivaceous in color, by lacking postocular stripes, and by having more pronounced black and ochraceous squamulations on the sides of the neck. The general color is paler, and the black bars on the back are said to be longer. Berla gives photographs of dorsal and lateral views of a specimen of *pernambucensis* next to one of *T. s. solitarius*.

RANGE: Evidently known only from the type and cotype collected in the municipality of Igarapé in Pernambuco and from one specimen taken at Mangabeira (Usina Sinumbu) in the state of Alagoas just to the south (Pinto, 1954, p. 18). Pinto states that the southern limits of the range of this race are probably formed by the Rio São Francisco, that is, the southern boundary of Alagoas. He conjectures that it may

once have extended farther south into the states of Sergipe and north-eastern Bahia.

The nominate race now occupies southern Bahia.

*Tinamus solitarius solitarius* (Vieillot)

*Cryptura solitaria* VIEILLOT, 1819, Nouveau dictionnaire d'histoire naturelle, nouvelle édition, vol. 34, p. 105; based on Azara. Paraguay.

*Tinamus solitarius nattereri* MIRANDA-RIBEIRO, 1938, Rev. Mus. Paulista, vol. 23, p. 738. Humboldt, Santa Catharina.

*Tinamus solitarius farinosus* MIRANDA-RIBEIRO, 1938, *loc. cit.* Serra de Friburgo, state of Rio de Janeiro, Brazil.

*Tinamus solitarius organorum* MIRANDA-RIBEIRO, 1938, *loc. cit.* Serra dos Orgãos, state of Rio de Janeiro, Brazil.

DIAGNOSIS: This race differs from the isolated, northern *pernambucensis* as noted under that form.

Half of the dozen examined specimens of this *Tinamus* were from São Paulo, with one each from the states of Espiritu Santo, Rio de Janeiro, Parama, Santa Catharina, and Rio Grande do Sul. This encompasses most of the range, with the conspicuous exception of Paraguay, the type locality. The material lends no support to the three races described by Miranda-Ribeiro and cited above in the synonymy of the nominate race. Pinto (1954) has stated categorically that they were based on individual variants.

We have an old specimen without locality taken by Prince Maximilian of Wied. It is conspicuously more rufous throughout than any other skin examined. That this is not a result of age is shown by an equally old specimen from the Verreaux Collection, which is normally colored. Probably Wied's bird is an extreme individual variant, as his itinerary seems to have been within the range of the nominate race.

RANGE: Paraguay (forests), Misiones province of Argentina, and eastern Brazil from southern Bahia south to Rio Grande do Sul.

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