DWARF TINAMOU *Taoniscus nanus* **I**[7]

Rapid and extensive conversion of its grassland and cerrado habitat to agriculture appears to be threatening this poorly known small ground-dwelling bird from central and south-east Brazil (once recorded also in Argentina).

DISTRIBUTION The Dwarf Tinamou is known with certainty from a relatively small area of central Brazil, where it was only discovered in the 1960s, some scattered localities in south-east Brazil, almost all now from long ago, some vague records from Minas Gerais, and two skins from Argentina. The original description was based on one in de Azara (1802-1805) naming "Misiones" as the (presumed) provenance (de Azara said it was very scarce there, not necessarily implying that this was his source of birds), apparently assumed to indicate the province in Argentina (Hellmayr and Conover 1942, Pinto 1964, 1978) although presumably it might equally well have implied the department in Paraguay. Neither seems to have been widely accepted in the literature (see Remarks 1); however, the neglected records of the species from the Argentine "chaco" (see below) tend to heighten the possibility of de Azara's reports stemming from near-adjacent southern Paraguay. It is notable that several authorities mention Paraguay (e.g. Burmeister 1856, Pinto 1938), presumably believing that de Azara had been referring to that country and not Argentina; Podtiaguin (1941-1945) even listed, without supporting evidence, the departments of Misiones and Alto Paraná (and the records below from Mato Grosso do Sul show how close the species is known to approach the country).

Brazil On the assumption that the range of the Dwarf Tinamou in Brazil is continuous or nearly so, its area of occurrence has been judged very large (da Silveira 1967, Teixeira and Negret 1984). However, the map in da Silveira (1967) is a gross exaggeration and generalization of the known range (extending it hundreds of kilometres to the south of any record), and on current evidence the species has practically disappeared from the south-east of its range while its status in central Brazil remains to be clarified.

Federal District Records are from: near Brasília, in the IBGE Roncador Biological Reserve, 15°55'S 47°52'W, early 1980s (Teixeira and Negret 1984; see Remarks 2); and the vicinity of the city, mid-1960s (da Silveira 1967, 1968).

Goiás Records are from: Cristalina, 1965, and presumably at the same or adjacent (but unspecified) localities, 1966 (da Silveira 1967, 1968).

Minas Gerais Hellmayr and Conover (1942) explained why the listing of this state (e.g. by Pinto 1938) was based on a nineteenth-century error. Nevertheless, M. A. de Andrade (*in litt*. 1988) referred to old records of the species around Sete Lagoas and Lagoa Santa (the latter mentioned in Warming 1908), while in the late 1980s a local hunter at Poços de Caldas in the far south-west (relatively close to Orissanga, below) described the species convincingly and indicated that it occurred there locally (F. C. Straube verbally 1988), and in April 1973 a bird was seen at Lagoa Chapadão do Ferro, Serra Negra, near Patrocínio (G. T. de Mattos verbally 1987).

Mato Grosso do Sul There are two records: from Rio Brilhante (not clear if the river or the town), undated (Pinto 1978), and Bonito, August 1991 (J. F. Pacheco verbally 1992).

São Paulo Records (north to south) are from: Franca, before 1822 (Schlegel 1880); Sarandy (= Sarandi), the only one in São Paulo listed in OG (1963b) now being called Jurucê, at 21°04'S 47°45'W, May 1938 (specimen in MCZ); "Irisanga" (= Orissanga, 22°12'S 46°57'W in Paynter and Traylor 1991), January 1823 (von Pelzeln 1868-1871; see Remarks 3); Bartira, 22°15'S 51°02'W, in the west of the state, July 1922 (Pinto 1938; see Remarks 4); Itapetininga, July 1927, June and July 1928, May, June and July 1930 (Hellmayr and Conover 1942; nine specimens in AMNH, ANSP, BMNH, FMNH, MCZ); Buri, 1929 (Pinto 1964); Itararé, on the border with Paraná, January, February and March 1821 (von Pelzeln 1868-1871; see Remarks 5). E. O. Willis (*in litt*. 1986) mentioned having one recent locality for the species.

Paraná The only record appears to be from "Jaguaraiba" (= Jaguariaíva), in the north (not far from Itararé), September 1820 (von Pelzeln 1868-1871; see Remarks 6).

BirdLife International (1992) Threatened Birds of the Americas.
Cambridge, UK: BirdLife International.

Argentina Two specimens (in BMNH) are from "chaco austral, Argentina", one from the "coast of river Bermejo", the other also from "River Bermejo", i.e. in either Formosa or Chaco provinces; neither is dated but they were received in 1900 and 1901. Although first published in Collar and Andrew (1988), these records did not appear in Sibley and Monroe (1990) or Canevari *et al.* (1992).

POPULATION Already 50 and over 100 years ago the Dwarf Tinamou was being called "one of the rarest neotropical birds" (Hellmayr and Conover 1942) and the rarest of species (Schlegel 1880), although this was at a time when its range was believed to extend only through São Paulo, Paraná and Misiones in Argentina. In fact de Azara (1802-1805) had already made the point that its great scarcity (in Misiones) was probably more perceived than actual, given that it hides in the grass and only flies when about to be stepped on. Old reports spoke of it being common around Sete Lagoas and Lagoa Santa, Minas Gerais, but with no further records it is assumed to have become rare in the state (M. A. de Andrade *in litt*. 1988), as it was also in São Paulo (Pinto 1964); the local hunter at Poços de Caldas who apparently knew the species reported it uncommon in the area but common in Goiás (F. C. Straube verbally 1988), and indeed Teixeira and Negret (1984) reiterated the view that the species might be not so much rare as difficult to locate. However, the massive agricultural conversion of its habitat is such that confidence over its present situation cannot be high (Teixeira and Negret 1984), and the species seems likely to be in very steep decline.

ECOLOGY The species has been claimed to occur in "gallery forest, savannah country and the cerrados... in small flocks" (da Silveira 1967, 1968; see Remarks 7); de Azara (1802-1805) reported it from dense scrub and grassland ("campos muy cerrados de broza y pasto alto y espeso"). Teixeira and Negret (1984) never found other than singles and pairs, however, and mentioned cerrado and campo sujo as habitat, the latter being defined as scattered bushes less than 2 m in height on dense grassland composed mainly of Gramineae (*Axonopus*, *Echinolaena*, *Paspalum*, *Panicum* and *Schizachyrium*), the birds most often being seen (not as a habitat preference but because of relative ease of observation) in open, burnt-over vegetation and along trails; they seemed to be more active in the early morning or afternoon, especially after or during drizzle. In general it would seem likely to be a campo sujo specialist (TAP). A specimen originally in MNRJ from the IBGE reserve, Brasília, November 1982, was in campo limpo at 1,000 m; an observation in Minas Gerais was when a bird crossed a road in partially cleared, weed-invaded cerrado (G. T. de Mattos verbally 1987).

At the Fazenda Carneiro (see Remarks 6) the species was recorded from grassland; a bird was so unwilling to fly that it was caught by hand, and its stomach and crop were found to contain seeds (von Pelzeln 1868-1871). Elsewhere the species has been reported to spend most of its time searching through the vegetation for small arthropods (pecking at nests of termites *Proconitermes araujoi* to catch the emerging insects) and grass seeds (Teixeira and Negret 1984). It is notable that two of five specimens from the mid-1960s were caught alive, apparently by hand, while a third was killed by a dog (da Silveira 1968); Teixeira and Negret (1984) attributed their being able to capture specimens by hand to the dizzying effects of smoke on the birds (see Threats), but it is clear from the above that they react to approaching danger by freezing, whether dizzy or not. De Azara (1802-1805) kept a bird briefly which would eat only spiders.

Both birds from the Argentine "chaco" (the habitat in question may rather have been remnant campo areas, not dry forest or monte scrub), neither dated, were "full of eggs" on dissection (BMNH label data). A non-moulting male from September (a time when songs were very common) was very fat, with testes starting to develop; an adult with two tiny chicks was seen in October (Teixeira and Negret 1984). Males from Itararé, January and March, were "young" (von Pelzeln 1868-1871), and indeed that from January is juvenile (specimen in NHMW: C. G. Violani *in litt*. 1987; also Teixeira and Nacinovic 1990).

THREATS Grasslands both in south-east Brazil (São Paulo and Paraná) and in the country's vast central planalto are under enormous pressure from agriculture (see Threats under Lesser Nothura *Nothura minor*). Moreover, these birds are directly harmed by extensive grass fires, and may also suffer predation by raptors when fleeing them (Teixeira and Negret 1984).

MEASURES TAKEN The Dwarf Tinamou is protected under Brazilian law (Bernardes *et al.* 1990). The species occurs in the IBGE Roncador Biological Reserve, where it shares its habitat with the Lesser Nothura (Teixeira and Negret 1984; see relevant account).

MEASURES PROPOSED Teixeira and Negret (1984) indicated that the voice of this species is now known, and that much singing, albeit difficult to distinguish from crickets, can be heard in the breeding season. This will aid the needed surveys for this species, which should, however, be integrated into a major scheme of terrestrial reconnaissance and biological survey as adumbrated in the equivalent section under Lesser Nothura.

REMARKS (1) Sibley and Monroe (1990) referred to reports from north-east Argentina (Misiones) as needing confirmation, citing Teixeira and Negret (1984); Teixeira and Negret (1984) referred to "recent observations" from the same area as needing confirmation, citing Olrog (1979); Olrog (1979) contains nothing on this matter. It may be that all this refers to the original citation based on de Azara (1802-1805). (2) In addition to the material considered by Teixeira and Negret (1984), the IBGE collection in Brasília contains a male and female from the Roncador reserve, dated August 1984 (C. Yamashita *in litt.* 1987). (3) The skin in NHMW is actually dated 25 February 1823 (C. G. Violani *in litt.* 1987). (4) Paynter and Traylor (1991) quoted Pinto (1964) as saying that Bartira is in "the campos of Capivari" (this is in fact based on the label in MZUSP, which says "Bartyra, campos de Capivary"), and pointed out that the only Bartira they could trace (coordinates as given) was nowhere near Capivari, and assumed therefore it was incorrect; however, GQR (1991) shows a ribeirão Capivara extending close to the coordinates for Bartira, and it is assumed here that the grasslands in its headwaters were what was intended. (5) These specimens were, of course, all collected by J. Natterer; an undated, uncredited skin in AMNH from Itararé very likely also proceeds from Natterer at this time. (6) It is possible to assume from both von Pelzeln (1868-1871) and Hellmayr and Conover (1942) that a second locality, "Fazenda do S. Coronel Luciano Carneiro", existed in the state (the latter authors qualified it as being equivalent to or near "Boa Vista" and gave the "other" locality as "Rio Jaguaraiba"); but the absence of a specimen labelled from the fazenda or of its mention in von Pelzeln's account of J. Natterer's itinerary suggests that it was the particular site at which Natterer stayed when at Jaguariaíva; Paynter and Traylor (1991) omitted the locality, perhaps having reached a similar conclusion. (7) The published text in da Silveira (1968) reads "secondary forest", but the author amended this in providing a copy to H. Sick (LPG).