

This small bird is a bamboo specialist within its limited range in south-east Brazil, Paraguay and Argentina, and is consequently difficult to find and probably genuinely rare, suffering from both habitat loss and the cagebird trade.

DISTRIBUTION Temminck's Seedeater is endemic to the Atlantic Forest region of south-east South America, extending from Bahia to Paraná in Brazil into eastern Paraguay and Misiones, Argentina, these last two countries having only recently been included in its range.

Brazil The map in Ridgely and Tudor (1989) indicates a range extending continuously from central coastal Bahia south through all Espírito Santo and Rio de Janeiro (and easternmost Minas Gerais) through eastern São Paulo and across the entire central region of Paraná; yet all of this is based on very few records, and for some states only one.

Bahia Apart from nineteenth-century reports from coastal forests (Wied 1831-1833, Burmeister 1856, Cabanis 1874, Stresemann 1954), the species has been recorded only once, in Una Biological Reserve, 8 October 1987 (LPG).

Espírito Santo Records (north to south) are from: São Mateus, undated (specimen in MNRJ); Lagoa Juparanã, Linhares, "July" (Sick 1985); and Pau Gigante (now Ibiracu), October 1940 (specimen in USNM; also Pinto 1944).

Minas Gerais One specimen in MNRJ from the Lagoa Piçarra, rio Casca, Caratinga, 15 July 1936, represents the only known record.

Rio de Janeiro Localities (east to west) include: Ribeirão Vermelho, Santa Maria Madalena, 700 m (i.e. in Desengano State Park), August 1986 (J. F. Pacheco *in litt.* 1987); Nova Friburgo (von Pelzeln 1872, Cabanis 1874); Teresópolis (Sick 1985); Santo Aleixo, July 1975, April and July 1976, July 1981 (LPG; also Gonzaga 1986); Tinguá, March 1955 (specimen in MNRJ) and February 1981 (J. F. Pacheco *in litt.* 1986); Itatiaia National Park, October 1981 (D. F. Stotz *in litt.* 1988; also Ridgely and Tudor 1989) and August 1989 (D. Macdonald *per* B. C. Forrester *in litt.* 1992); and São Roque, Parati, November 1990 (J. F. Pacheco *in litt.* 1991).

São Paulo Records (north to south) are: Lagoinha, October 1991 (D. F. Stotz *in litt.* 1991); Picinguaba, December 1990 (D. Willis *per* J. F. Pacheco *in litt.* 1991); near Ubatuba, November 1943 (Pinto 1944) and October 1991 (B. M. Whitney *in litt.* 1991; see Population) and March 1992 (M. Pearman *in litt.* 1992); Ribeirão Pires, December 1921; Alto da Serra (near Ribeirão Pires; see Pinto 1945), July 1906; Fazenda Poço Grande, Juquiá, May 1940 (these last three sites all in Pinto 1944); Fazenda Palmeira, Iguape, February 1977 (specimen in MZUSP); and Cajati, March 1977 (specimens in CIAL). Sick (1985) mentioned Santos as a locality from which the species has been extirpated.

Paraná The only documented record seems to be one from Fazenda Monte Alegre, Tibaji, 900 m, 11 March 1930 (specimen in AMNH). However, the record from Iguazú Falls in Argentina (see below) suggests the likelihood of its occurrence across the river in the Brazilian Iguaçu National Park.

Argentina Records are from arroyo Uruguayí km 10 and km 30, November 1957 and August 1958 (Navas and Bó 1987), and Iguazú National Park, Misiones, where the species "can at times be found" (Ridgely and Tudor 1989), e.g. August 1977 (R. S. Ridgely *in litt.* 1992), October 1989 and October 1990 (B. M. Whitney *in litt.* 1990, 1991), with breeding recorded in August 1988 (Castelino 1990).

Paraguay Ridgely and Tudor (1989) mentioned Canindeyú department, this being based on observations of the species (common, singing) in bamboo-dominated forest along the road to Salto de Guairá, 14-18 July 1977, although less forest and no birds were present along the same road in May/June 1991 (R. S. Ridgely *in litt.* 1991).

POPULATION From the evidence of the records above, mostly based on the collection or observation of single or a few individuals at any given locality, the view that Temminck's Seedeater is a rare species (Hellmayr 1938, Ridgely and Tudor 1989) seems fully justified; indeed, it has already been on lists of threatened birds (Greenway 1958, Sick 1969). Although it has also been considered common locally (J. Vielliard *in litt.* 1986, D. M. Teixeira *in litt.* 1987), with 5-20 seen daily over four days in Canindeyú

(R. S. Ridgely *in litt.* 1991; see Distribution) and “more than 30 individuals... seen and/or heard” near Ubatuba in October 1991 (B. M. Whitney *in litt.* 1991), it has been pointed out that this species never seems to have been as numerous as the similarly distributed Buffy-throated Seedeater *Sporophila frontalis* (see relevant account), being at best uncommon, and usually irregular at any single locality (Ridgely and Tudor 1989). At both Tinguá and Itatiaia in 1981, as well as at Ubatuba in 1991, the species was much less common than the Buffy-throated Seedeater (J. F. Pacheco *in litt.* 1986, D. F. Stotz *in litt.* 1988, B. M. Whitney *in litt.* 1991), which would make it appear more vulnerable than the latter (D. F. Stotz *in litt.* 1988). A statement that the species has disappeared from certain localities, e.g. Santos and Iguape (Sick 1985), seems at least partially based on a misvaluation of its nomadic habits (see Ecology).

ECOLOGY The species has been recorded around stands of bamboo crops (in one case identified as *Chusquea bambusoides*: Gonzaga 1986; in another *Guadua* sp.: M. Pearman *in litt.* 1992) in secondary or disturbed forest and at forest borders (J. F. Pacheco *in litt.* 1986, E. O. Willis *in litt.* 1986, D. F. Stotz *in litt.* 1988, B. M. Whitney *in litt.* 1990, 1991, LPG; also Ridgely and Tudor 1989), where it keeps in the middle and higher strata (Sick 1985, J. F. Pacheco *in litt.* 1991, B. M. Whitney *in litt.* 1991, LPG), thus being rather an arboreal seedeater (Ridgely and Tudor 1989). In the hot lowlands around Lagoa Juparanã in July it was associated with Capped and Rusty-collared Seedeaters *S. bouvreuil* and *S. collaris*, meeting Buffy-throated (see Ecology in relevant account) in the mountains of Rio de Janeiro and São Paulo (Sick 1985).

This bird eats bamboo seeds (Sick 1985, Ridgely and Tudor 1989), being watched at Ubatuba foraging in dense bamboo stands surrounding the trunks of large trees, sometimes clinging head-down apparently to take the seeds, mostly about 5-10 m above ground (B. M. Whitney *in litt.* 1991). In Iguazú National Park its presence coincided with the flowering of *Guadua trinitii* (Castelino 1990). It is said to be fond of the seeds of the navalha-de-macaco *Hypolirum* sp. (Cyperaceae), which grows in forest clearings, and to travel from the forest, flying high over open ground, to swampy areas and rice plantations (Sick 1985).

The nest is placed high up in the vegetation at the forest edge (Sick 1985); but the only one found in Argentina (August) was in a small specimen of *Sorocea ilicifolia* (= *S. bonplandi*) 5 m from the ground (Castelino 1990). There are no further data on breeding, except that the testes of the AMNH specimen from Paraná, March, were fairly enlarged, while the gonads of a pair from São Paulo, also March, were undeveloped. In October at Ubatuba many birds were singing, including several in subadult plumage (B. M. Whitney *in litt.* 1991).

It is clear that the species undertakes movements following bamboo flowerings, as it disappears afterwards (Gonzaga 1986; also Sick 1985).

THREATS This and two other bamboo-specialists (Purple-winged Ground-dove *Claravis godefrida* and Buffy-throated Seedeater; see relevant accounts) seem to be in difficulties even with moderate deforestation, which extends the intervals between major bamboo flowerings and nestings (E. O. Willis *in litt.* 1986), and it seems also that its erratic wanderings must render it more vulnerable and not fully protectable even in reserves. That the species is uncommon or infrequent in the cagebird trade (Sick 1969, C. E. Carvalho *in litt.* 1987) must not be taken as evidence that “it was never in demand as a cagebird” (Ridgely and Tudor 1989: 36), but as a probable consequence of its relative rarity, as is also the case, for instance, with the Black-legged Dacnis *Dacnis nigripes* (see relevant account). Specimens offered for sale in Rio de Janeiro were said to come from Espírito Santo, Rio de Janeiro (Tinguá) and Paraná, and were sometimes alongside its Amazonian representative, the Slate-coloured Seedeater *S. schistacea* (Sick 1969).

The species was seen in cages but not in the wild during a survey in 1980/1981 (Scott and Brooke 1985). In Santa Maria Madalena, close to the Desengano State Park, caged birds were reportedly trapped in and around the locality (J. F. Pacheco *in litt.* 1987).

MEASURES TAKEN The species is protected under Brazilian law (Bernardes *et al.* 1990). Occurrence in Desengano State Park, Una and Tinguá Biological Reserves, Itatiaia and Iguazu National Parks, and possibly several other parks and reserves along the Serra do Mar, may give it partial protection but cannot avert trapping and problems with deforestation elsewhere in its range. Its presence in Iguazú National Park on at least an occasional (but perhaps regular) basis is encouraging.

MEASURES PROPOSED A complete ban on the capture of wild birds for the pet trade, as partial controls would be so open to abuse as to be ineffective, has been called for, very much with this species in mind (Scott and Brooke 1985). Effective control in and around already created forest reserves, mainly during bamboo flowerings, would almost certainly enhance its chances of survival, but, on current knowledge at least, identification and protection of stands of even secondary forest in areas outside reserves (such as the Santo Aleixo area) seem to be of equal importance in view of the species's movements, a better understanding of which, through further study, is probably crucial to its long-term conservation. This bird would be targeted under a programme of research on (threatened) bamboo specialist birds in Atlantic Forest (see the equivalent section under White-bearded Antshrike *Biatas nigropectus*).