

- LEE, M.R. and F.F.B. ELDER, 1980. – Yeast stimulation of bone marrow mitosis for cytogenetic investigation. *Cytogenet. Cell Genet.*, 26 : 36-40.
- MORIELLE-VERSUTE, E., M. VARELLA-GARCIA and V.A. TADDEI, 1996. – Karyotypic patterns of seven species of molossid bats (Molossidae, Chiroptera). *Cytogenet. Cell Genet.*, 72 : 26-33.
- SILVA, F., 1984. – *Guia para determinação de morcegos : Rio Grande do Sul*. Porto Alegre : Martins Livreiro.
- TOLEDO, L.A., 1973. – *Estudos citogenéticos em morcegos brasileiros (Mammalia : Chiroptera)*. Doctoral thesis, Faculdade de Ciências Médicas e Biológicas de Botucatu, SP.
- VARELLA-GARCIA, M., E. MORIELLE-VERSUTE and V.A. TADDEI, 1989. – A survey of cytogenetic data on Brazilian bats. *Rev. Bras. Genética*, 12 : 761-794.
- WARNER, J.W., J.L. PATTON, A.L. GARDNER and R.J. BAKER, 1974. – Karyotypic analysis of twenty-one species of molossid bats (Molossidae : Chiroptera). *Can. J. Genet. Cytol.*, 16 : 165-176.

**Southernmost records of *Sturnira tildae* de la Torre, 1959
(Chiroptera : Phyllostomidae) in Brazil**

by M. MIRETZKI¹, A.L. PERRACHI² and G.V. BIANCONI³

¹*Museu de Historia Natural Capao da Imbuia, Prefeitura Municipal de Curitiba,
Rua Professor Benedito Conceicao 407, 82820-080, Curitiba/PR - Brasil
E-mail : nictaris@terra.com.br*

²*Universidade Federal Rural do Rio de Janeiro,
23851-970, Seropedica/RJ - Brasil*

³*Pontificia Universidade Catolica do Parana, CP 16210,
80215-901, Curitiba/PR - Brasil*

The genus *Sturnira* presents a wide distribution in the Neotropical region. It occurs from Mexico to northern Uruguay (Anderson and Jones 1984 ; Koopman 1993) and includes 12 species (Koopman 1993). Traditionally, only species, *S. lilium* (E. Geoffroy, 1810), is listed to the southern Brazil (Parana, Santa Catarina and Rio Grande do Sul States) (Marinho-Filho 1996). This condition is being altered by the discovery of the occurrence of *S. tildae* in Parana State. The present record represents a 100 km southwards extension in the species distribution.

On March 16th, 1987 Maria Bernadete R. Lange, Vanessa G. Persson and Emerson Suemitsu captured some specimens of *Sturnira* during the project « Vertebrate Surveys of the Area de Relevante Interesse Turistico do Marumbi ». These specimens were deposited in the mammal collection of the Museu de Historia Natural Capao da Imbuia (MHNCI, Curitiba, Parana) and were originally identified as *S. lilium*. Recently, this material was revised (Miretzki 2000) and it was observed that one of the specimens, MHNCI 3231, was an exemplar of the species *S. tildae* de la Torre, 1959 instead of

S. lilium, as stated previously. This specimen was collected at the locality known as Mae Catira, Morretes municipality (25°25' S and 048°52' W ; 35 km NE Curitiba), in an area of Atlantic Forest at an elevation of 395 meters. The measurements of the specimen, a male preserved in alcohol, which had the skull separated, are presented in Table 1.

TABLE 1. - External and cranial measurements (in millimeters) of *Sturnira tildae* and *S. lilium* of eastern Paraná, southern Brazil. The values indicate the media and the minimum and maximum values of the analyzed specimens are between brackets. The measurements in which *S. tildae* overcomes the maximum values of *S. lilium* are represented in bold numbers.

	<i>S. tildae</i>		<i>S. lilium</i>	
	male (n=1)	males (n=6)	females (n=18)	
	Morretes, Mãe Catira	Tijucas do Sul, Lagoinha (25°55'S - 49°11'W)	Tijucas do Sul, Lagoinha	
EXTERNAL MEASUREMENTS				
Forearm length	47.27	42.41 (41.36-43.99)	42.62 (40.15-44.92)	
Third metacarpall	44.35	39.46 (38.67-40.05)	40.12 (37.91-43.79)	
Fourth metacarpall	44.61	38.8 (37.18-40.22)	39.75 (37.35-43.82)	
Fifth metacarpall	45.72	41.21 (39.79-43.15)	41.47 (38.86-45.19)	
Thumb length	8.86	8.37 (7.80-8.74)	8.16 (7.06-9.29)	
Tibia length	20.83	18.31 (17.28-19.69)	17.73 (15.62-19.19)	
Hindfoot length	12.66	11.78 (10.74-13.50)	11.58 (9.81-12.92)	
Ear length	20.58	14.97 (13.60-15.55)	15.42 (13.14-17.43)	
CRANIAL MEASUREMENTS				
Greatest length of skull	23.49	22.8 (22.09-23.63)	22.32 (21.65-23.11)	
Condylobasal length	21.71	20.66 (19.79-21.43)	20.28 (19.72-20.94)	
Condylocanine length	21.02	19.87 (19.06-20.51)	19.62 (19.14-20.15)	
Basal length	18.50	17.55 (16.67-18.35)	17.32 (16.79-17.93)	
Palatal length	9.45	8.86 (8.43-9.62)	8.86 (8.61-9.37)	
Upper tooth-row	7.09	6.69 (6.43-6.95)	6.47 (6.22-6.77)	
Lower tooth-row	7.66	7.49 (7.24-7.66)	7.12 (6.72-7.54)	
Mandible length	16.02	15.16 (14.47-15.95)	14.72 (14.14-15.01)	
Width across cingula canines	6.61	6.4 (6.02-6.7)	6.15 (5.93-6.41)	
Width across molars	8.62	8.39 (8.08-8.67)	8.18 (7.82-8.52)	
Interorbital constriction	6.86	6.46 (6.13-6.84)	6.27 (5.94-6.71)	
Postorbital breadth	6.55	6.23 (5.88-6.67)	6.06 (5.79-6.39)	
Zygomatic breadth	14.80	14.12 (13.22-14.83)	13.87 (13.48-14.42)	
Braincase breadth	10.96	10.68 (10.22-11.01)	10.53 (10.25-10.84)	
Mastoid breadth	12.92	12.17 (11.82-12.60)	12.29 (11.42-13.37)	
Palatal breadth	5.63	5.57 (5.37-5.71)	5.57 (5.19-5.91)	

S. tildae may be considered a common species along its distribution area (Peracchi and Albuquerque 1993 ; Fazzorali-Correa 1995 ; Wilson 1996), presenting evidence of close relationship with little or non-altered forest (Brosset *et al.* 1996 ; Simmons and Voss 1998), such as the locality where the studied specimen was collected. This species is exclusively South American (Eisenberg 1989) with records for southeastern Colombia, southern Venezuela, Guianas, Peruvian and Brazilian Amazon, as well as, southeastern Brazil (Koopman 1993). The southernmost known occurrence for the species until

the present study were Iporanga (24°34' S and 48°41' W) (Trajano 1984) and Ilha do Cardoso (25°05' S and 47°53' W) (Fazzolari-Correa 1995), both in Sao Paulo State. These localities are to the western and eastern slopes of the Serra do Mar, respectively.

S. tildae differs externally from the congeneric *S. lilium* by the lighter color of the ventral fur (Fazzolari-Correa 1995), by the higher measurements of the ear, tibia, wing and condilobasal length (Table I) (Goodwin and Greenhall 1961 ; Davis 1980). Another important diagnostic feature observed in *S. tildae* is the bilobed and wider superior incisivis (Eisenberg 1989). However, Simmons and Voss (1998) found it difficult to distinguish these species based on these characters, mainly among subadults, in which there was an overlap between measurements of both species, and among old animals, due to the natural decay of the incisivis. The authors concluded that these characters are not completely reliable to distinguish both species. Additionally, according to them, the differences between the lingual cuspids of the molar teeth of the mandible were 100 % confident to the bats of Paracou (French Guiana). *S. lilium* is characterized by the presence of high lingual cuspids that are separated by a deep vertical notch between m1 and m2. In contrast, these cuspids are low and separated by shallow notches in *S. tildae* (Simmons and Voss 1998, fig. 50, p. 122). Analysis of skulls of *S. lilium* from east Parana (n = 24), deposited in MHNCI, showed that this character was confident in all specimens, even in the old animals.

Finally, it is recommended that mammalogists working in southern Brazil should pay great attention and care in the identification of this species, mainly when individuals are captured, identified and released in the field ; and also that researchers revise collections in order to evaluate the populations and distributional range of this species.

Acknowledgements. – Thanks to the Sociedade de Pesquisa em Vida Selvagem e Educacao Ambiental (SPVS) that gave the collected material to the collection of the MHNCI. Many thanks to Fernanda Stender, Renato S. Bernils and Paulo H. Labiak for the criticism and suggestions to the manuscript. Thanks to Juliana Quadros for the helpful translation and Marina Anciaes for english text review.

Bibliography.

- ANDERSON, S. and J. K. JONES, JR, 1984. – *Orders and families of recent mammals of the World.* John Wiley and Sons, New York. 686 p.
- BROSSET, A., P. CHARLES-DOMINIQUE, A. COCKLE, J.F. COSSON and D. MASSON, 1996. – Bat communities and deforestation in French Guiana. *Can. J. Zool.*, 74 : 1974-1982.
- DAVIS, W.B., 1980. – New *Sturnira* (Chiroptera, Phyllostomidae) from Central and South America, with key to currently recognized species. *Occ. Pap. Mus. Tex. Tech Univer.*, 93 : 1-16.
- EISENBERG, J.F., 1989. – *Mammals of the Neotropics : the northern Neotropics.* Vol. 1. The University of Chicago Press, Chicago and London. 449 p.
- FAZZOLARI-CORREA, S., 1995. – *Aspectos sistematicos, ecologicos a reproductivos de morcegos na Mata Atlantica.* Tese de Doutorado. Universidade de Sao Paulo, Instituto de Biociencias, Sao Paulo. 168 p.
- GOODWIN, G.G. and A.M. GREENHALL, 1961. – A review of the bats of Trinidad and Tobago : descriptions, rabies infection and ecology. *Bull. Amer. Mus. Nat. Hist.*, 122(3) : 187-302.
- KOOPMAN, K.F., 1993. – Order Chiroptera. Pp. 137-241, in : *Mammals species of the World : a taxonomic and geographic reference.* 2nd Ed. Eds. Wilson, D.E. and D. Reeder. Smithsonian Institution Press, Washington and London. 1207 p.
- MARINHO-FILHO, J., 1996. – Distribution of bat diversity in the southern and southeastern Brazilian Atlantic Forest. *Chiroptera Neotropical*, 2(2) : 51-54.

- MIRETZKI, M., 2000. – *Morcegos do Estado do Parana, Brasil (Mammalia, Chiroptera)*. Dissertação de Mestrado. Universidade Federal do Parana, Departamento de Zoologia, Curitiba. 99 p.
- PERACCHI, A.L. and S.T. ALBUQUERQUE, 1993. – Quiropteros do Municipio de Linhares, Estado do Espírito Santo, Brasil (Mammalia, Chiroptera). *Rev. Brasil. Biol.*, 53(4) : 575-581.
- SIMMONS, N.B. and R.S. VOSS, 1998. – The mammals of Paracou, French Guiana : a neotropical rainforest fauna, part I. Bats. *Bull. Amer. Mus. Nat. Hist.*, 237 : 1-129.
- TRAJANO, E., 1984. – Ecologia de populações de morcegos cavenicolos em uma região cárstica do Sudeste do Brasil. *Rev. bras. Zool.*, 2(5) : 255-320.
- WILSON, D.E., 1996. – Neotropical bats : a checklist with conservation status. Pp. 167-177, in : *Neotropical biodiversity and conservation*. Ed. A.C. Gibson. Mildred E. Mathias Botanical Garden, University of California, Los Angeles, California. 202 p.

An observation of Bush Dog (*Speothos venaticus*) hunting behaviour

by R.B. WALLACE¹, R.L.E. PAINTER¹ and A. SALDANIA²

¹Wildlife Conservation Society, 185th Street and Southern Boulevard,
Bronx, New York, 10460 U.S.A.,

Address Correspondance to : Robert Wallace, Wildlife Conservation Society-Madidi,
Casilla 3-35181, San Miguel, La Paz, Bolivia

e-mail : wcsmadidi@zuper.net

²Park Guard Corps, Parque Nacional Noel Kempff Mercado, Santa Cruz, Bolivia

The bush dog (*Speothos venaticus*) is considered a rare carnivore (CITES Appendix 1) and is notoriously difficult to observe in the wild, with very few first hand reports of behaviour (Emmons and Feer 1990 ; Ginsberg and Macdonald 1990 ; Eisenberg 1989). Bush dogs are known to occur in Amazonian tropical forests, southern Amazonian semi-deciduous forests, Andean foothill forests, Cerrado forest and humid savannas (Eisenberg 1989 ; Emmons and Feer 1990 ; Ginsberg and Macdonald 1990). Nevertheless, most observations occur in lowland Amazonian tropical forest, often in the vicinity of water (Peres 1991 ; Strahl *et al.* 1992 ; Aquino and Puertas 1997 ; Silveira *et al.* 1998).

According to the literature, *Speothos* prey on small mammals, birds and larger caviomorph rodents such as paca (*Cuniculus paca*) and even capybara (*Hydrochaeris hydrochaeris*) (Deutch 1983 ; Eisenberg 1989 ; Peres 1991 ; Strahl *et al.* 1992 ; Aquino and Puertas 1997 ; Silveira *et al.* 1998). Various authors have reported pack hunting by bush dogs (Defler 1986 ; Eisenberg 1989 ; Peres 1991) and captive studies have suggested that *Speothos* is a social carnivore living in extended family groups (Biben 1982 ; Macdonald 1996).

The following observation was made by A.S. during the dry season in August of 1989 at « Mediomonte », which is situated just off the old main road from Trinidad to