

# Reptilia, Squamata, Serpentes, Dipsadidae, *Tropidodryas striaticeps* (Cope, 1869): Latitudinal and altitudinal extension and geographic distribution map

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**ABSTRACT:** We report here the northernmost record of *Tropidodryas striaticeps* (Cope, 1869) extending the species distribution northwards from the previously known localities. We also provide data about altitudinal distribution of *T. striaticeps*, extending its occurrence to altitudes lower than 150 m a.s.l. In addition, this is the first confirmed record of *T. striaticeps* for the Caatinga ecoregion and the fourth one for the state of Bahia. An updated distribution map is also provided.

The Neotropical genus *Tropidodryas* Fitzinger, 1843 currently comprises the sister species *Tropidodryas serra* (Schlegel, 1837) and *T. striaticeps* (Cope, 1869) (Thomas and Dixon 1977). These dipsadid snakes are semi-arboreal, diurnal, and feed mainly on mammals and lizards (Sazima and Puerto 1993; Marques *et al.* 2001). The genus is considered endemic to the Atlantic Forest domain occurring from the states of Bahia to Rio Grande do Sul (Amaral 1937; Thomas and Dixon 1977; Argôlo 1999a, b; Marques *et al.* 2001; Hamdan and Lira-da-Silva 2007; Marques *et al.* 2009), though the available records and field data are restricted to southeastern Brazil (Amaral 1937; Thomas and Dixon 1977; Amaral 1978; Sazima and Puerto 1993; Marques *et al.* 2001; Marques and Sazima 2004; Cicchi *et al.* 2007; Bertoluci *et al.* 2009; Marques *et al.* 2009; São-Pedro and Pires 2009; Costa *et al.* 2010).

*Tropidodryas striaticeps* occurs in the states of Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo, Paraná, Santa Catarina, and Rio Grande do Sul, between the latitudes 14° S and 30° S (Amaral 1937; Thomas and

Dixon 1977; Argôlo 1999b; Marques *et al.* 2001; Cicchi *et al.* 2007; Bertoluci *et al.* 2009; Marques *et al.* 2009; São-Pedro and Pires 2009; Costa *et al.* 2010). During a study of the snake fauna of the Caatinga, one specimen of *T. striaticeps* was found in a herpetological collection. This specimen corresponds to the first confirmed vouchered record for the species in the Caatinga ecoregion and the fourth for the state of Bahia, extending the known distribution to ca. 260 km northward (Hamdan and Lira-da-Silva 2007). This snake was collected on 28 January 2002 in the municipality of Feira de Santana, state of Bahia (12°04'18" S, 39°01'05" W; 234 m a.s.l.).

The specimen (Figure 1) is a juvenile male (SVL = 421 mm, TL = 108 mm) with a yellowish tail and flared scales. It has 21 keeled dorsal scales with reduction and two apical pits, 195 ventrals, cloacal plate divided, 106 subcaudals, 8/8 supralabials, 10/10 infralabials, 1+3/1+3 oculars and 2+3/2+3 temporal scales. The specimen is housed in the Herpetological Collection of the Museu de Zoologia da Universidade Estadual de Feira de Santana (MZUEFS 1168). This record suggests that *T. striaticeps* occurs in ecotonal areas, since Feira de Santana is close to the limits of the Atlantic Forest domain (ca. 2 km), with lower altitudes (Figure 2).

The compiled data (Table 1) presented here shows that *T. striaticeps* is more abundant (N = 257 records, 73.2%) in higher altitudes (144 records of *T. striaticeps* in intermediate altitudes from 251 to 750 m a.s.l and 113 records above 750 m a.s.l.), with the maximum elevation recorded at 1052 m a.s.l. at Ouro Branco municipality, state of Minas Gerais (20°31'14" S 43°41'29" W, São-Pedro and Pires 2009). These data corroborate the literature (Thomas and Dixon 1977; Argôlo 1999b; Marques *et al.* 2001; Marques *et al.* 2009). However, our records of other 94 specimens (26.8%) indicate that *T. striaticeps* also occurs in lower elevations (0 to 250 m a.s.l.), from the sea level in Ribeirão do Largo, state of Bahia (15°28' S, 40°45' W, CZGB 6419, Argôlo 1999b) up to 250 m a.s.l.



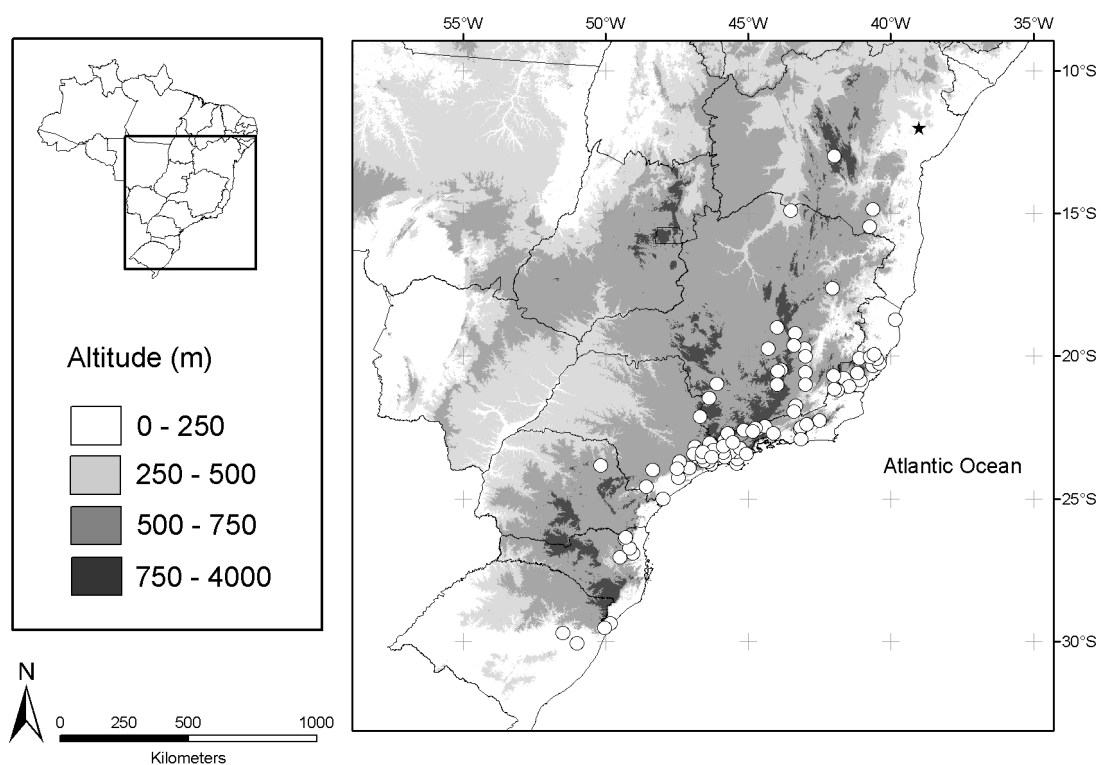
**FIGURE 1.** A male specimen of *Tropidodryas striaticeps* (MZUEFS 1168) collected in the municipality of Feira de Santana, State of Bahia, Brazil.

*Tropidodryas striaticeps* also occurs in forested areas and ecotonal regions of Atlantic Forest/Cerrado in the Espinhaço Mountain range, state of Minas Gerais (Assis 1999; Bertoluci *et al.* 2009; São Pedro and Pires 2009), and ecotones of Atlantic Forest/Caatinga in the state of Bahia (Hamdan and Lira-da-Silva 2007). The records of three specimens (IBSP 45930, IBSP 45939, IBSP 45943) from dry forests of Caatinga/Cerrado ecotone in Matias Cardoso municipality, state of Minas Gerais confirm that *T. striaticeps* also occurs in more arid regions.

In the state of Rio Grande do Sul, *T. striaticeps* is considered an endangered species (Di-Bernardo *et al.* 2003) and there are records in the municipality of Dom Pedro de Alcântara (MCN 1718, MCN 1740, MCN 2686, MCN 2765, MCN 4211, MCN 4676, MCN 4864, MCN 4911, MCN 5116, MCN 5131, MCN 6240, MCN 6490, MCN 6671, MCN 6992, MCN 7155, MCN 7161, MCN 8430, MCN 8719,

MCN 10721, MCN 11955-56, MCN 11966, MCN 11974, MCN 15570-79, MCN 15583), Montenegro (IBSP 10576), Três Forquilhas (MCN 8863) and Viamão (MCN 9054). Although there are records published in literature mentioning the occurrence of *T. striaticeps* in the municipality of Torres, state of Rio Grande do Sul (see Lema 1994, 2002), there is no specimens deposited in scientific museums. Thus, these records were not included in the present article.

*Tropidodryas striaticeps* was suggested to be a mimic of the pit viper *Bothropoides jararaca* (Sazima 1991). The later species inhabits Atlantic Forest and was registered in the region of “Reconcavo Bahiano” in the municipality of Amelia Rodrigues, *ca.* 25 km far from Feira de Santana (Lira-da-Silva *et al.* 2009). Thus, these two species may be sympatric throughout the entire distribution of *T. striaticeps*.



**FIGURE 2.** Altitudinal distribution map of *Tropidodryas striaticeps* indicating the previously known localities (white circles) and the present record (black star). Records were obtained from the following collections: Instituto Butantan (290 specimens), Coleção Herpetológica do Museu de Zoologia da UNICAMP (10 specimens), Coleção Zoológica Gregório Bondar of the Centro de Pesquisas do Cacau/CEPLAC (eight specimens), Museu de Zoologia da Universidade Estadual de Feira de Santana (one specimen) and Museu de Ciências Naturais da Universidade Federal do Rio Grande do Sul (36 specimens) and literature cited (see Table 1).

**TABLE 1.** Herpetological collection and literature data records of the geographic distribution of *Tropidodryas striaticeps* in Brazil. Acronyms: CGZB (Coleção Zoológica Gregório Bondar of the Centro de Pesquisas do Cacau/CEPLAC); FUNED (Fundação Ezequiel Dias); IBSP (Instituto Butantan); LZV (Laboratório de Zoologia dos Vertebrados, Universidade Federal de Ouro Preto); MCN (Museu de Ciências Naturais da Universidade Federal do Rio Grande do Sul); MZUEFS (Museu de Zoologia da Universidade Estadual de Feira de Santana); MZUFBA (Museu de Zoologia da Universidade Federal da Bahia); MZUFV (Museu de Zoologia da Universidade Federal de Viçosa); VESALQ (Coleção de Vertebrados da Escola Superior de Agricultura Luiz de Queiroz, Universidade de São Paulo); ZUEC (Museu de Zoologia, Universidade Estadual de Campinas).

MUNICIPALITY	ADMINISTRATIVE UNIT	ECORREGION	LATITUDE	LONGITUDE	REFERENCE
Barra do Choça	Bahia	Atlantic Forest	14°54'12" S	40°34'43" W	CGZB (Argôlo 1999)
Feira de Santana	Bahia	Caatinga	12°11'13" S	39°02'15" W	MZUEFS
Palmeiras	Bahia	Atlantic Forest/Caatinga	12°31'00" S	41°33'00" W	MZUFBA (Hamdan and Lira-da-Silva 2007)
Ribeirão do Largo	Bahia	Atlantic Forest	15°25'29" S	40°38'12" W	CGZB (Argôlo 1999)
Afonso Cláudio	Espírito Santo	Atlantic Forest	20°05'17" S	41°07'40" W	IBSP
Cachoeiro de Itapemirim	Espírito Santo	Atlantic Forest	20°45'59" S	41°11'17" W	IBSP

TABLE 1. CONTINUED.

MUNICIPALITY	ADMINISTRATIVE UNIT	ECORREGION	LATITUDE	LONGITUDE	REFERENCE
Cariacica	Espírito Santo	Atlantic Forest	20°17'24" S	40°26'44" W	IBSP
Castelo	Espírito Santo	Atlantic Forest	20°32'59" S	41°12'12" W	IBSP
Domingos Martins	Espírito Santo	Atlantic Forest	20°18'30" S	40°50'46" W	ZUEC
Guacuí	Espírito Santo	Atlantic Forest	20°45'46" S	41°42'17" W	IBSP
Mimoso do Sul	Espírito Santo	Atlantic Forest	21°05'11" S	41°22'40" W	IBSP
Santa Leopoldina	Espírito Santo	Atlantic Forest	20°07'19" S	40°32'23" W	IBSP
Santa Maria de Jetibá	Espírito Santo	Atlantic Forest	20°05'05" S	40°48'13" W	IBSP
São Mateus	Espírito Santo	Atlantic Forest	18°44'54" S	40°01'06" W	IBSP
Santa Teresa	Espírito Santo	Atlantic Forest	19°52'37" S	40°37'57" W	IBSP
Belmiro Braga	Minas Gerais	Atlantic Forest	21°59'08" S	43°28'08" W	IBSP
Cabo Verde	Minas Gerais	Atlantic Forest	21°58'54" S	46°23'29" W	IBSP
Caiana	Minas Gerais	Atlantic Forest	20°43'33" S	41°54'30" W	IBSP
Carmo do Rio Claro	Minas Gerais	Atlantic Forest/Cerrado	20°58'23" S	46°05'57" W	IBSP
Congonhas	Minas Gerais	Atlantic Forest	20°30'58" S	43°51'41" W	IBSP
Esmeraldas	Minas Gerais	Atlantic Forest/Cerrado	19°43'58" S	44°18'28" W	IBSP
Guaraciaba	Minas Gerais	Atlantic Forest	20°33'19" S	43°01'16" W	IBSP
Jaboticatubas	Minas Gerais	Atlantic Forest/Cerrado	19°26'26" S	43°43'06" W	FUNED (Assis 1999)
Jeceaba	Minas Gerais	Atlantic Forest	20°33'09" S	44°02'50" W	IBSP
Juiz de Fora	Minas Gerais	Atlantic Forest	21°44'42" S	43°27'53" W	IBSP
Matias Cardoso	Minas Gerais	Caatinga/Cerrado	14°54'15" S	43°45'45" W	IBSP
Morro do Pilar	Minas Gerais	Atlantic Forest/Cerrado	19°14'07" S	43°24'10" W	IBSP
Nova Era	Minas Gerais	Atlantic Forest	10°43'08" S	43°00'49" W	IBSP
Ouro Branco	Minas Gerais	Atlantic Forest/Cerrado	20°31'14" S	43°41'29" W	LZV (São Pedro and Pires 2009)
Santa Bárbara	Minas Gerais	Atlantic Forest	20°01'45" S	43°28'31" W	IBSP
São Gonçalo do Rio Abaixo	Minas Gerais	Atlantic Forest/Cerrado	19°49'03" S	43°19'18" W	VESALQ (Bertoluci <i>et. al.</i> 2009)
Sapucai-Mirim	Minas Gerais	Atlantic Forest	22°47'10" S	45°50'54" W	IBSP
Setubinha	Minas Gerais	Atlantic Forest	17°42'11" S	42°16'57" W	IBSP
Viçosa	Minas Gerais	Atlantic Forest	20°45'00" S	42°52'00" W	MZUFV (Costa <i>et. al.</i> 2010)
Ibatití	Paraná	Atlantic Forest	23°46'47" S	50°17'07" W	IBSP
Itaperuna	Rio de Janeiro	Atlantic Forest	21°13'27" S	41°53'40" W	IBSP
Itatiaia	Rio de Janeiro	Atlantic Forest	22°26'18" S	44°35'01" W	IBSP
Magé	Rio de Janeiro	Atlantic Forest	22°36'44" S	43°06'48" W	IBSP
Nova Friburgo	Rio de Janeiro	Atlantic Forest	22°19'10" S	42°30'05" W	IBSP
Petrópolis	Rio de Janeiro	Atlantic Forest	22°24'06" S	43°09'40" W	IBSP
Resende	Rio de Janeiro	Atlantic Forest	22°26'27" S	44°29'14" W	ZUEC
Rio Claro	Rio de Janeiro	Atlantic Forest	22°46'55" S	44°04'42" W	IBSP
Rio de Janeiro	Rio de Janeiro	Atlantic Forest	22°46'23" S	43°09'25" W	IBSP
Teresópolis	Rio de Janeiro	Atlantic Forest	22°18'48" S	42°52'24" W	IBSP
Dom Pedro de Alcântara	Rio Grande do Sul	Atlantic Forest	29°22'03" S	49°51'16" W	MCN
Montenegro	Rio Grande do Sul	Atlantic Forest	29°42'24" S	51°30'05" W	IBSP
Três Forquilhas	Rio Grande do Sul	Atlantic Forest	29°25'39" S	50°05'07" W	MCN
Viamão	Rio Grande do Sul	Atlantic Forest	30°09'58" S	50°52'05" W	MCN
Blumenau	Santa Catarina	Atlantic Forest	26°53'11" S	49°05'51" W	IBSP
Corupá	Santa Catarina	Atlantic Forest	26°26'19" S	49°19'39" W	IBSP
Ibirama	Santa Catarina	Atlantic Forest	27°00'56" S	49°32'01" W	IBSP
Pomerode	Santa Catarina	Atlantic Forest	26°43'43" S	49°10'22" W	IBSP
Arujá	São Paulo	Atlantic Forest	23°23'07" S	46°19'05" W	IBSP
Barueri	São Paulo	Atlantic Forest	23°30'18" S	46°52'34" W	IBSP

TABLE 1. CONTINUED.

MUNICIPALITY	ADMINISTRATIVE UNIT	ECORREGION	LATITUDE	LONGITUDE	REFERENCE
Biritiba-Mirim	São Paulo	Atlantic Forest	23°37'25" S	46°01'15" W	IBSP
Capão Bonito	São Paulo	Atlantic Forest	24°02'19" S	48°17'22" W	ZUEC
Caraguatatuba	São Paulo	Atlantic Forest	23°38'20" S	45°29'17" W	ZUEC, IBSP
Diadema	São Paulo	Atlantic Forest	23°41'48" S	46°36'39" W	IBSP
Espírito Santo do Pinhal	São Paulo	Atlantic Forest	22°11'30" S	46°47'35" W	IBSP
Guarulhos	São Paulo	Atlantic Forest	23°24'07" S	46°27'13" W	IBSP
Igaratá	São Paulo	Atlantic Forest	23°08'04" S	46°08'59" W	IBSP
Cananéia	São Paulo	Atlantic Forest	25°49'57" S	47°54'33" W	IBSP (Cicchi <i>et. al.</i> 2007)
Itaporanga	São Paulo	Atlantic Forest	23°40'21" S	49°27'28" W	ZUEC
Itaquaquetuba	São Paulo	Atlantic Forest	23°27'38" S	46°20'02" W	ZUEC
Jacaré	São Paulo	Atlantic Forest	23°17'53" S	45°59'26" W	ZUEC
Jambeiro	São Paulo	Atlantic Forest	23°16'43" S	45°42'36" W	IBSP
Jundiaí	São Paulo	Atlantic Forest	23°11'39" S	46°54'45" W	IBSP
Juquitiba	São Paulo	Atlantic Forest	23°57'17" S	47°01'26" W	IBSP
Mairiporã	São Paulo	Atlantic Forest	23°19'01" S	46°33'39" W	IBSP
Mauá	São Paulo	Atlantic Forest	23°39'54" S	46°26'46" W	IBSP
Miracatú	São Paulo	Atlantic Forest	24°11'40" S	47°23'39" W	IBSP
Moji das Cruzes	São Paulo	Atlantic Forest	23°34'05" S	46°11'14" W	IBSP
Monteiro Lobato	São Paulo	Atlantic Forest	22°56'09" S	45°48'14" W	IBSP
Natividade da Serra	São Paulo	Atlantic Forest	23°24'52" S	45°22'52" W	IBSP
Nazaré Paulista	São Paulo	Atlantic Forest	23°11'28" S	46°21'58" W	IBSP
Osasco	São Paulo	Atlantic Forest	23°31'42" S	46°47'19" W	IBSP
Paraibuna	São Paulo	Atlantic Forest	23°28'39" S	45°38'29" W	IBSP, ZUEC
Piedade	São Paulo	Atlantic Forest	23°47'11" S	47°26'16" W	IBSP
Piquete	São Paulo	Atlantic Forest	22°35'23" S	45°10'23" W	IBSP
Piracaia	São Paulo	Atlantic Forest	23°02'47" S	46°18'08" W	IBSP
Queluz	São Paulo	Atlantic Forest	22°32'00" S	44°47'05" W	IBSP
Ribeirão Pires	São Paulo	Atlantic Forest	23°42'02" S	46°24'08" W	IBSP
Salesópolis	São Paulo	Atlantic Forest	23°34'46" S	45°50'32" W	IBSP
Santa Branca	São Paulo	Atlantic Forest	23°25'31" S	45°51'47" W	IBSP
Santa Isabel	São Paulo	Atlantic Forest	23°17'18" S	46°14'30" W	IBSP
Santana de Parnaíba	São Paulo	Atlantic Forest	23°26'57" S	46°54'54" W	ZUEC, IBSP
Santo André	São Paulo	Atlantic Forest	23°43'40" S	46°26'29" W	IBSP
São Bento do Sapucaí	São Paulo	Atlantic Forest	22°40'52" S	45°41'10" W	IBSP
São Bernardo do Campo	São Paulo	Atlantic Forest	23°48'44" S	46°33'00" W	IBSP
São José dos Campos	São Paulo	Atlantic Forest	23°05'24" S	45°55'41" W	IBSP
São Luís do Paraitinga	São Paulo	Atlantic Forest	23°14'22" S	45°15'12" W	IBSP
São Paulo	São Paulo	Atlantic Forest	23°38'58" S	46°38'50" W	IBSP
São Sebastião	São Paulo	Atlantic Forest	23°45'06" S	45°36'20" W	IBSP
Silveiras	São Paulo	Atlantic Forest	22°44'02" S	44°50'26" W	IBSP
Suzano	São Paulo	Atlantic Forest	23°36'50" S	46°18'43" W	IBSP
Tapiraí	São Paulo	Atlantic Forest	24°00'29" S	47°37'08" W	IBSP
Taubaté	São Paulo	Atlantic Forest	23°05'12" S	45°30'06" W	IBSP
Ubatuba	São Paulo	Atlantic Forest	23°22'42" S	45°01'23" W	IBSP



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#### LITERATURE CITED

- Ab'Saber, A.N. 1977. Os Domínios Morfoclimáticos na América do Sul. Primeira aproximação. *Geomorfologia* 52: 1-159.
- Amaral, A. 1937. Contribuição ao conhecimento dos ophidios do Brasil. 9. Nova espécie de colubrideo opisthoglypho confundível com *Philodryas serra* (Schlegel, 1837). *Memórias do Instituto Butantan* 11: 1-7.
- Amaral, A. 1978. *Serpentes do Brasil: Iconografia colorida*. 2ª ed. São Paulo: Melhoramentos e EDUSP. 247p.
- Argôlo, A.J.S. 1999a. Geographic distribution. *Tropidodryas serra*. *Herpetological Review* 30(1): 55-56.
- Argôlo, A.J.S. 1999b. Geographic distribution. *Tropidodryas striaticeps*. *Herpetological Review* 30(1): 56.
- Assis, V.B. 1999. Introdução às serpentes da Serra do Cipó (municípios de Santana do Riacho e Jaboticatubas). *Bios, Caderno do Departamento de Ciências Biológicas da PUC Minas* 7(7): 69-71.
- Bertoluci, J., M.A.S. Canelas, C.C. Eiseberg, C.F.S. Palmuti and G.G. Montingelli 2009. Herpetofauna da Estação Ambiental de Peti, um fragmento de Mata Atlântica do estado de Minas Gerais, sudeste do Brasil. *Biota Neotropica* 9(1): 147-155.
- Cicchi, P.J.P., M.A. Sena, D.M. Peccinini-Seale and M.R. Duarte 2007. Snakes from coastal islands of State of São Paulo, Southeastern Brazil. *Biota Neotropica* 7(2): 1-14.
- Costa, H.C., D.L. Pantoja, J.L. Pontes and R.N. Feio 2010. Serpentes do município de Viçosa, Mata Atlântica do sudeste do Brasil. *Biota Neotropica* 10(3): 353-377.
- Di-Bernardo, M., M. Borges-Martins and R.B. Oliveira. 2003. Répteis; p 165-188. In C.S. Fontana, G.A. Bencke and R.E. Reis (org.). *Livro Vermelho da Fauna Ameaçada de Extinção no Rio Grande do Sul*. Porto Alegre: EDIPUCRS.
- Hamdan, B.S. and R.M. Lira-da-Silva 2007. Geographic distribution. *Tropidodryas striaticeps*. *Herpetological Review* 38(1): 107
- Lema, T. 1994. Lista comentada dos répteis ocorrentes no Rio Grande do Sul, Brasil. *Comunicações do Museu de Ciência e Tecnologia da PUCRS, Série Zoológica* 7: 41-150.
- Lema, T. 2002. *Os répteis do Rio Grande do Sul*. Porto Alegre: EDIPUCRS. 264 p.
- Lira-da-Silva, R.M., Y.F. Mise, L.L. Casais-e-Silva, J. Ulloa, B. Handam and T.K. Brazil. 2009. Serpentes de importância médica do nordeste do Brasil. *Gazeta Médica da Bahia* 79: 7-20.
- Marques, O.A.V., A. Eterovic and I. Sazima 2001. *Serpentes da Mata Atlântica: Guia ilustrado para a serra do mar*. Ribeirão Preto: Holos. 184 p.
- Marques, O.A.V. and I. Sazima 2004. História natural dos répteis da Estação Ecológica Juréia-Itatins; p. 254-274 In O.A.V. Marques and W. Duleba (ed.). *Estação Ecológica Juréia-Itatins: ambiente físico, flora e fauna*. Ribeirão Preto: Holos.
- Marques, O.A.V., D.N. Pereira, F.E. Barbo, V.J. Germano and R.J. Sawaya. 2009. Os répteis do município de São Paulo: diversidade e ecologia da fauna pretérita e atual. *Biota Neotropica* 9 (2): 139-150.
- São-Pedro, V.A. and M.R.S. Pires 2009. As serpentes da região de Ouro Branco, extremo sul da Cadeia do Espinhaço, Minas Gerais. *Revista Ceres* 56(2): 166-171.
- Sazima, I. 1991. Caudal luring in two Neotropical pitvipers, *Bothrops jararaca* and *B. jararacussu*. *Copeia* 1: 245-248.
- Sazima, I. and G. Puerto. 1993. Feeding technique of juvenile *Tropidodryas striaticeps*: probable caudal luring in a Colubrid snake. *Copeia* 1: 222-226.
- Thomas, R.A. and J.R. Dixon. 1977. A new systematic arrangement for *Philodryas serra* (Schlegel) and *Philodryas pseudoserra* Amaral (Serpentes, Colubridae). *The Pearce-Sellards Series* 27: 1-20.

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