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A NEW (AND VERY OLD) SPECIES OF *LEPTOTYPHLOPS* FROM NORTHEASTERN BRASIL (SERPENTES, LEPTOTYPHLOPIDAE)

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ABSTRACT

Northeastern Brazilian populations of the complex of snake species traditionally assembled under the name Leptotyphlops albifrons are described as belonging to a new species, Leptotyphlops borapeliotes, characterized by having 256-276 scales between the rostral and the tail spine, 14-18 subcaudal scales, a general tan to brown body color, with 5-6 light zig-zag lines on the dorsum, a light rostral spot and a white caudal one, the latter more extensive ventrally than dorsally. The new species is widespread in northeastern Brasil, occurring certainly from Paraíba (most probably from Rio Grande do Norte) in the north to the middle São Francisco in the south. It occurs mostly in caatingas, but there are specimens from coastal Paraíba and Rio Grande do Norte.

Keywords: *Leptotyphlops*, Serpentes, Leptotyphlopidae, Northeastern Brasil.

INTRODUCTION

Hoogmoed and Gruber (1983) demonstrated that the snake then known as *Leptotyphlops tenellus* Klauber, 1939, should be called instead *Leptotyphlops albifrons* (Wagler, 1824). This left suddenly orphaned numerous populations that traditionally used to go under the latter name.

L. albifrons has been applied, since Boulenger's Catalogue (1893: 63) to a variety of forms occurring in "Tropical America, from Tehuantepec and the Lesser Antilles to Peru and Argentina". This is certainly a composite

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concept. I deal in the present paper with the northeastern Brazilian populations, which constitute a very well defined, common and widespread species, for which no name is available in the literature. I hope this may constitute a reasonable beginning for the dissection of the complex.

***Leptotyphlops borapeliotes*, sp. n.**

Holotype

MZUSP 9595, from Santo Inácio, Bahia, collected on October 1, 1987, field number Miguel Rodrigues 87.6701.

Paratypes

From the type locality: MZUSP 8958-8967, May 24, 1987; 8970-8973, January, 1986; 9593, September 29, 1987; 9594, 9624-9634, October 1, 1987; 10021-10023, February 7, 1989; 10544, 10545, November, 1990. All donated by Miguel Trefaut Rodrigues, Departamento de Zoologia, Universidade de São Paulo.

Referred specimens

Paraíba: MZUSP 5958, Junco do Seridó, April 23, 1976; 7973, Conde, October 1, 1940; 7974, Ponta do Seixas, May 12, 1979; 8161, João Pessoa, October 24, 1982; 8979, João Pessoa, June 15, 1983.

Alagoas: MZUSP 10947, Olho Dágua do Casado, June 8, 1994; 10948-10955, UHE (Usina Hidroelétrica) de Xingó, June 10-30, 1994.

Sergipe: MZUSP 10956-10959, UHE Xingó, June 11-14, 1994.

Bahia: MZUSP 7520, Catinga do Moura, January 25, 1980.

Etymology

The name is Greek for "northeastern". I thank Ulpiano Bezerra de Meneses for the suggestion.

Diagnosis

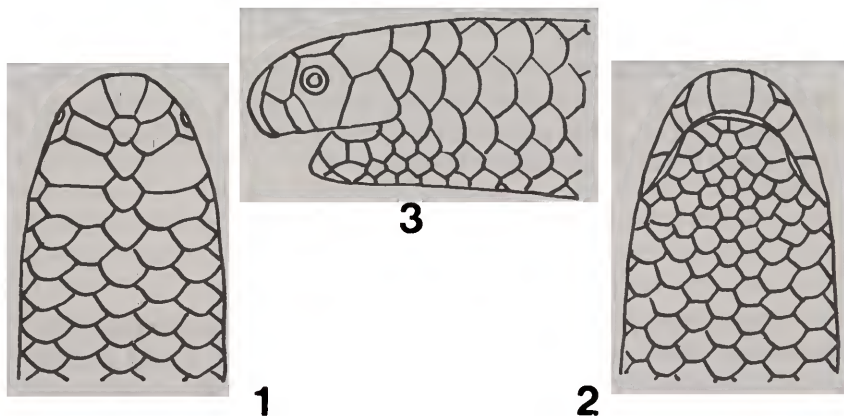
A very slender species; general color tan to brown, with light zigzag lines on the back. A light (white to dirty yellow) dorsal spot on the tip of the snout. A white spot on the tip of the tail, more extensive ventrally. Fourteen scales around midbody; 10 scales around the tail; 256-276 scales between the rostral and the tail spine; 14-18 scales on the ventral aspect of the tail.

Description

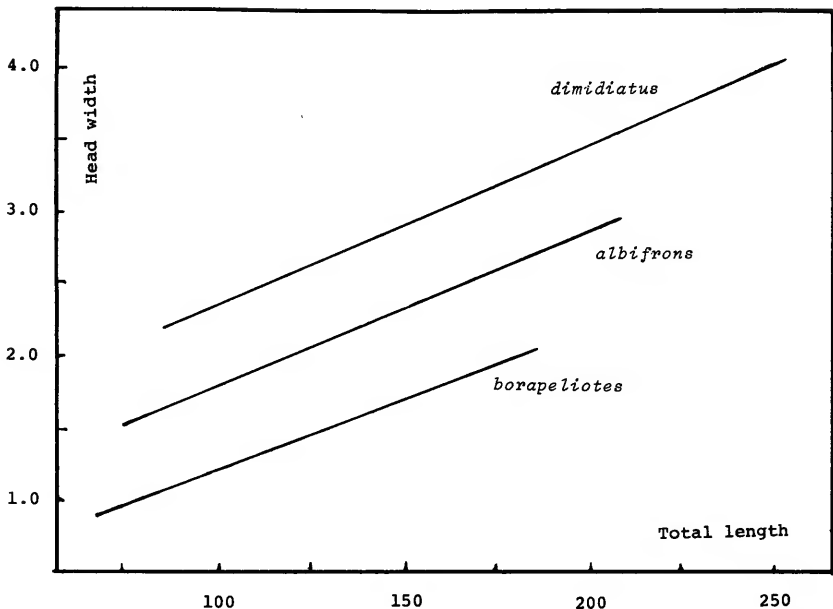
Head (figs. 1-3): rostral high and broad, reaching dorsally the level of the eyes. One small prefrontal, followed on the midline by a frontal, also small, one interparietal, and then the scales of the middorsal row. On each side of the frontal one supraocular, larger than the median scales. Behind each supraocular one anterior parietal, which is the largest scale on top of the head and meets the ocular, the frontal and the posterior labial. One posterior parietal (or nuchal), on each side. The interparietal sits on the junction of the four parietals. Four scales on each side reach the lip behind the rostral: first the nasal, which is high, in contact above with the prefrontal, behind with the ocular; it has a transverse, slightly sinuous, suture, on which sits the nostril; behind the nasal a narrow first labial; then the ocular; and, finally, a large polygonal labial, meeting the anterior parietal above.

Color pattern: the general color varies (not much) between tan and medium brown on the back, a little lighter on the belly. The margins of the scales are lighter than the centers; the contrast is more marked on the back, resulting in 5-6 longitudinal zig-zag light lines. The spot on the head is usually, but not always, limited to the rostral; it is yellowish to white, not bright. The spot on the tip of the tail is white, frequently starkly so, irregular, more extensive ventrally, extending on some subcaudal scales.

Biometry: Tables 1 to 3 show the data on scale counts and illustrate the essential homogeneity of the materials at hand. Table 4 and Graph 1 demonstrate the slenderness of *L. borapeliotes*, as compared to the two other species



Figures 1-3. *Leptotyphlops borapeliotes*, MZUSP 5958, Junco do Seridó, Paraíba, head, dorsal, ventral and lateral. From Vanzolini, Ramos-Costa and Vitt, 1980.



Graph 1. Regression of head width on total length, three species of *Leptotyphlops*.

occurring in Brasil of which we have adequate samples. The regressions show strictly parallel lines, which seems very interesting, but no ready explanation occurs to me at the moment.

It should be mentioned that Table 2 hints at bimodality of the number of subcaudal scales, which is in its turn suggestive of sexual dimorphism, but I found no way of sexing the preserved specimens. Fortunately the character is not important in the present state of knowledge.

DISCUSSION

Leptotyphloid systematics is usually based on color pattern and on the relationships of the cephalic scales. Little attention has been paid to scale counts. I personally find the latter extremely useful, and begin with them the validation of the new species.

The materials at hand, 48 specimens from 8 localities, comprising a little

mogeneous enough to allow the use of scale count ranges in comparing species.

Only one species has scale counts almost overlapping those of *L. borapeliotes*: *L. weyrauchi* Orejas - Miranda, 1964, from Tucumán in Argentina, with 251 to 254 scales (2 specimens) between the rostral and the tail spine. In other characters, however, there are decisive differences: *L. weyrauchi* has 12 scales around the tail, and no light spot on the rostral.

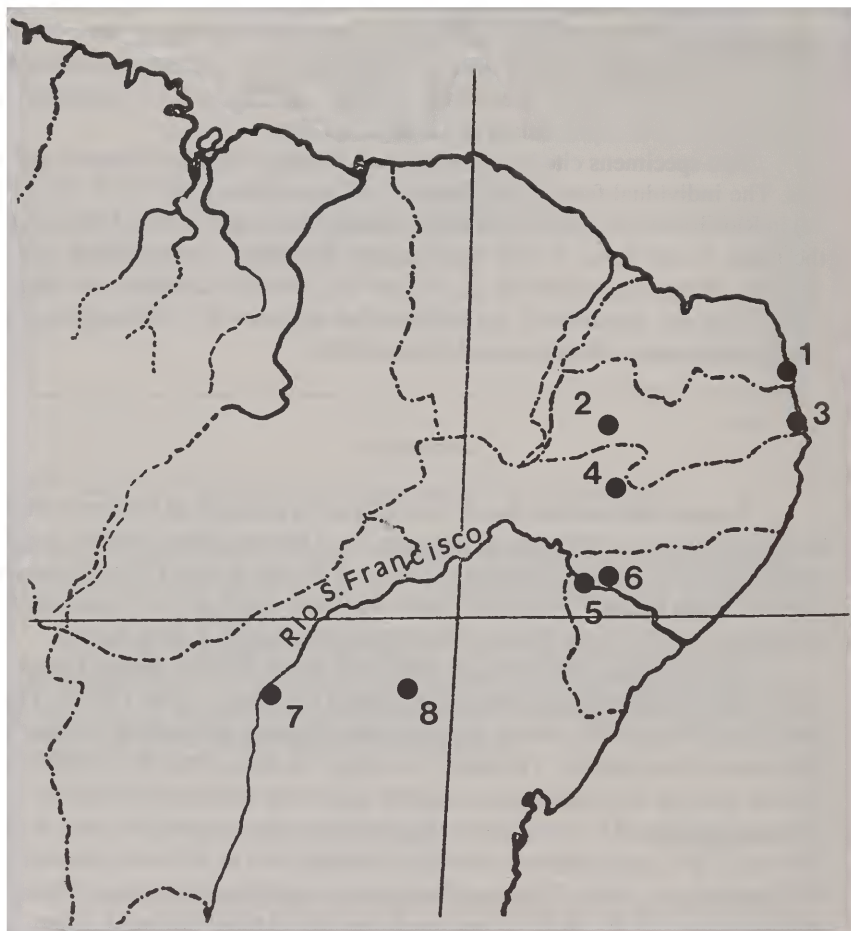
L. cupinensis Bailey and Carvalho, 1946, from the Central Brazilian cerrados, is known to have 279-289 scales, more than *L. borapeliotes*; more materials may bring the two forms closer together. But again there are marked differences, such as the number of scales around the tail, 14 in *L. cupinensis*, and the absence of supraoculars in the latter species.

Two specimens cited in the literature certainly belong to the new species. The individual from "Lake Papery" (= Lagoa Papari, 06° 07' S, 35° 11' W) in Rio Grande do Norte, reported by Schmidt and Inger (1951: 450) under the name *L. albifrons*, is very convincingly described. The specimen from Sertânia, Pernambuco (08° 05' S, 37° 16' W), listed by Cordeiro and Hoge (1974: 272) as *L. brasiliensis*, is a misidentified specimen of *L. borapeliotes*, as already discussed by Rodrigues and Puerto (1994).

DISTRIBUTION

Present data indicate that *L. borapeliotes* is a species of hot areas, with good tolerance to conditions of moisture. It is known (Map 1) from seven localities in the area of the caatingas (Junco do Seridó, Xingó, Olho D'água do Casado, Santo Inácio, Catinga do Moura, Sertânia) and from four localities on the coast or near it (João Pessoa, Ponta do Seixas, Conde, Lagoa Papari).

The caatingas constitute the semi-arid, some 800,000 square kilometers in area, morphoclimatic domain of Brasil (Ab'Saber, 1977a, 1977b). The area is characterized by, among of course other features, a hot and dry climate, with years of no rainfall. The name "caatinga" is taken from the (originally Indian) term for the vegetation, eminently adapted to semi-arid conditions. In the caatinga area of *L. borapeliotes* the yearly average temperatures vary from 25.5 to 27.5° C; precipitation from approximately 500 to 800 mm (Escritório de Meteorologia, 1969). The coastal and near-coastal localities enjoy a climate almost as hot (25.4 - 26.2° C) but much less dry (1100-1700 mm). There is thus among the localities of *L. borapeliotes* a marked degree of isothermy, but wide variation in humidity.



Map. 1. Localities of *Leptotyphlops borapelotes*. 1, Lagoa Papari (0607, 3511). 2, Junco do Seridó (0700, 3643). 3, João Pessoa (0707, 3452); Ponta do Seixas (0709, 3448); Conde (0716, 3454). 4, Sertânia (0805, 3716). 5, Xingó (0924, 3758). 6, Olho Dágua do Casado (0930, 3750). 7, Santo Inácio (1106, 4244). 8, Catinga do Moura (1058, 4045). Latitudes South, longitudes West.

Table 1. *Leptotyphlops borapeliotes*. Distributions of frequencies of the number of scales between the rostral and the tail spine

	Santo Inácio	Xingó	Paraíba	Catinga do Moura	Sum
256				1	1
257	1				1
258	-				-
259	-	2			2
260	1	-			1
261	3	-			3
262	-	1			1
263	-	2	1		3
264	3	-	-		3
265	2	-	-		2
266	2	1	-		3
267	1	1	1		3
268	4	-	2		6
269	2	1	-		3
270	1	-	-		1
271	1	-	1		2
272	1	1			2
273	-	1			1
274	2	-			2
275	2	-			2
276	1	-			1
277		-			-
278		-			-
279		1			1
280		-			-
281		-			-
282		1			1
Sum	27	12	5	1	45

Table 2. *Leptotyphlops borapeliotes*. Distributions of frequencies of the number of subcaudal scales

	Santo Inácio	Xingó	Paraíba	Catinga do Moura	Sum
14	4	3	1	1	9
15	8	4	1		13
16	4	4	1		9
17	11	2	2		15
18	1				1
Sum	28	13	5	1	47

ACKNOWLEDGMENTS

The hypodigm of this species was collected by Miguel Trefaut Rodrigues (Instituto de Biociências, Universidade de São Paulo) and his graduate students. It is only part of a large and priceless body of materials that they have been donating to the Museum over the years.

Although I have been aware of this problem for quite some time, what decided me to come out in print was the need to name a collection from Xingó, made during the filling of the large hydroelectric dam on the Rio São Francisco, where it makes the border between the states of Alagoas and Sergipe. For this most valuable collection we are indebted to CHESF, Companhia Hidro Elétrica do São Francisco, and to Dr. Nelson Jorge da Silva Jr., Universidade Católica de Goiás.

Ron Heyer and Charles W. Myers have kindly read and improved the manuscript.

Table 3. *Leptotyphlops borapeliotes*. Statistics of the distributions of frequencies of the scale counts

Scales between the rostral and the tail spine						
	N	R	M	s	V	I(M)
Santo Inácio	27	257-276	267.33 ± 0.970	5.04	1.88	265.34-269.33
Xingó	12	259-282	267.83	7.46	2.78	263.10-272.77
Paraíba	5	263-271	267.40	2.88	1.08	263.82-270.98
Catinga do Moura	1	256	256			
General	45	256-282	267.67	5.43	2.03	266.03-269.30
Subcaudal scales						
Santo Inácio	28	14-18	15.89	1.20	7.53	15.43-16.26
Xingó	13	14-17	15.38	1.04	6.79	14.75-16.02
Paraíba	5	14-17	15.80	1.30	8.25	14.18-17.42
Catinga do Moura	1	14	14			
General	47	14-18	15.70	1.18	7.50	15.36-16.36

N, individuals in sample. R, range of the variable. M, mean and its standard deviation. s, sample standard deviation. V, coefficient of variation. I (M), 95 % confidence interval of the mean (t standard deviations to each side).

Table 4. Statistics of the regression of head width on total length in three species of *Leptotyphlops*

	N	R (x)	R (y)	b	a	F	r ²
<i>orapeliotes</i>	44	70-186	0.9-2.3	0.0099 ± 0.00055	0.22 ± 0.056	328.829	0.8867
<i>lbifrons</i>	16	74-208	1.4-3.0	0.011 ± 0.000025	0.73 ± 0.574	153.840	0.9166
<i>imidiatus</i>	19	87-253	2.1-4.2	0.011 ± 0.00065	1.22 ± 0.143	293.414	0.9452

l, individuals in sample. R (x), R (y), ranges of the variables. b, regression coefficient (slope), and its standard deviation. a, regression constant (intercept), and its standard deviation. F, Fisher's quotient of variances (significance of the regressions: all significant at the 0.001 level). r² coefficient of determination.

REFERENCES

- Ab'Saber, A. N. 1977a. Os domínios morfoclimáticos na América do Sul. Primeira aproximação. *Geomorfologia* (Inst. Geogr. Univ. S.Paulo) 52: 21 p.
- Ab'Saber, A. N. 1977b. Espaços ocupados pela expansão dos climas secos na América do Sul, por ocasião dos períodos glaciais Quaternários. *Paleoclimas* (Inst. Geogr. Univ. S.Paulo) 3: 19 p.
- Boulenger, G. A. 1893. Catalogue of the snakes in the British Museum (Natural History). Volume 1. London: Trustees of the British Museum. xiii + 448 p., pls.
- Cordeiro, C. L. & A. R. Hoge 1974. Contribuição ao conhecimento das serpentes do estado de Pernambuco. *Mem. Inst. Butantan* 37 (1973): 261-290.
- Escritório de Meteorologia (Brasil, Ministério da Agricultura) 1969. Normais climatológicas. Vol. 2 (Piauí - Ceará - Rio G. do Norte - Paraíba - Pernambuco) (Alagoas - Sergipe - Bahia). Rio de Janeiro. 69 p.
- Hoogmoed, M. S. & U. Gruber 1983. Spix and Wagler type specimens of reptiles and amphibians in the Natural History Museum in München (Germany) and Leiden (The Netherlands), p. 319-415 in E. J. Fittkau, ed., *Festschrift zu Ehren von Dr. Johann Baptist Ritter von Spix*. *Spixiana Suppl.* 9: 441 p.
- Rodrigues, M. T. & G. Puerto 1994. On the second specimen of *Leptotyphlops brasiliensis* Laurent, 1949 (Serpentes, Leptotyphlopidae). *J. Herp.* 28 (3): 393-394.
- Schmidt, K. P. & R. Inger 1951. Amphibians and reptiles of the Hopkins-Branner Expedition to Brazil. *Fieldiana Zool.* 31 (42): 439-465.
- Vanzolini, P. E., A. M. M. Ramos-Costa & L. J. Vitt 1980. Répteis das caatingas. Rio de Janeiro: Academia Brasileira de Ciências. 161 p.

