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A NEW NORTH AMERICAN SNAKE OF THE GENUS NATRIX[1]

BY FRANK N. BLANCHARD

No systematic treatment of the North American species of Natrix akin to the *Coluber fasciatus* of Linnaeus has been satisfactory, and the present reviewer is under no illusions as to the permanence of his present views on the subject. It is time, however, to point out the unity and relatively restricted range of *fasciata* and its nearest relatives, and the marked distinction between the southeastern and the Mississippian phases. For the latter there is apparently no name available, and it is therefore proposed that it be called:

Natrix fasciata confluens, new subspecies

1892 *Tropidonotus obliquus* Garman, S., Bull. Essex Inst., vol. 24, p. 6.

[1] Contributions from the Department of Zoölogy, University of Michigan.

1908 *Tropidonotus sipedon fasciatus* Strecker, Proc. Biol. Soc., Washington, vol. 21, p. 50; same, pp. 69, 76; Baylor Bull., vol. 18, no. 4, 1915, p. 28.

1911 *Natrix fasciata* Hurter, Trans. Acad. Sci., St. Louis, vol. 20, no. 5, p. 154.

Diagnosis: Similar in scutellation and proportions to *Natrix fasciata fasciata* (Linnaeus), but with the dorsal saddles very much larger and only about half as numerous, and with average differences as shown in the table, page 5.

Range: Eastern Louisiana north through southern and eastern Arkansas to southeastern Missouri, and west in Texas to about the 98th meridian (See map, page 7).

Type specimen: Museum of Zoology, University of Michigan, number 57707; Butler County, Missouri, April 16, 1905; J. Hurter, collector.

Description of type specimen: Ventral plates, 135; anal plate divided; caudal plates 70, all divided; dorsal scale rows, 21 on the anterior portion of the body, changing to 23 (on the left side at the level of the 30th ventral plate, by addition, apparently, of a 5th row, and on the right side at the level of the 33rd ventral scute, by addition, apparently, of a 6th row), then to 21 (on the left side at the level of the 67th ventral, and on the right side at the level of the 63rd ventral, by loss of the 5th row, apparently in each case), then to 19, and towards the posterior end to 17, the full formula being, therefore, 21-23-21-19-17; upper labials 8 on each side; lower labials, 10 on each side; 1 preocular; 3 postoculars, the lowest of which is on each side much the smallest; a single anterior temporal on each side, followed by 3 posterior temporals; posterior chin shields a little longer than the anterior, separated anteriorly by about the width of one small scale and diverging

posteriorly; other head shields normal for the genus; all of the dorsal scales keeled, but the first row less strongly than the others.

Total length, 558 millimeters; tail length, 130 millimeters; tail, therefore, 0.233 of total length. Sex, male.

The general color above is a very dark brown. Crossing this, more or less transversely, are about 13 light yellowish bands, one scale wide. These are more or less mottled with darker, especially posteriorly, where, also, they are mostly interrupted on the median dorsal line. The belly is rather heavily checked with black, especially posteriorly, and the under side of the tail is almost uniformly black. The head is dark brown above, light brown on the sides, and immaculate light yellow beneath. The labials are almost entirely unmarked, and the chin shields, gulars, and anterior ventrals are quite so. On the postoculars, temporals, and last two upper labials are a few mottlings representing the lower border of the light postocular band of *N. fasciata fasciata.*

Remarks: Thirty-one specimens have been examined, representing the following localities: Butler and Dunklin counties, Missouri; Miller and Jefferson counties, and Wheatley, Arkansas; Jefferson County, Mississippi; Jackson County, and New Orleans, Belair, Prairie Mer Rouge, and Avery Island, Louisiana; Brazoria, Cook, and Falls counties, Dallas, and Angelina River, Texas; and "New Orleans to Galveston." Published records that appear to refer definitely to this form name the following additional localities: Victoria, Tehuacana Bottoms, Laguna Lake, and Demings Bridge (Matagorda County), Texas; Hot Springs and Texarkana, Arkansas; and Stoddard County, Missouri. (See references in the synonomy.)

These specimens indicate a well-marked race, always recognizable at a glance by the peculiar pattern. The latter seems to have resulted from a fusion by twos of the dorsal blotches or saddles of *fasciata*. Furthermore the postocular light band is very prominent, and its lower dark border may be reduced to practical absence. Specimens from southeastern Louisiana show the closest relationship with *fasciata*. Indeed a few specimens examined by the writer and labelled "New Orleans" must be identified as *N. fasciata fasciata,* and Mr. Percy Viosca informs me that in this region both phases occur in the same localities in "almost infinite variation, sometimes apparently in the same brood." New Orleans is therefore within the region of subspecific intergradation.

Other characteristics of this form are tabulated below.

Discrimination of the subspecies of the fasciata group:— Perhaps the most constant feature by which the subspecies, *N. fasciata fasciata, N. fasciata confluens,* and *N. fasciata pictiventris* may be distinguished from other species of Natrix with similar scutellation is the light yellowish or brownish band extending backwards from the eye to the angle of the mouth. A specimen is rarely so melanistic that wetting the head will not reveal traces of this feature, and specimens of *confluens* may have it obscured only by its broadening and the practical disappearance of its lower dark border. But within the *fasciata* group it is not always so easy to distinguish *N. fasciata fasciata* from *N. fasciata pictiventris*. Indeed there is a real temptation to synonomize the latter with the former. Numerous average differences appear, however, which lead the writer to believe that more thorough study on large series of specimens will amply justify the separation here maintained.

For purposes of comparison of these three races a table of extremes and averages has been prepared for certain of the features which show a significant degree of subspecific constancy.

Summary of certain characteristics of the fasciata group

	Ventrals					
Subspecies	Males			Females		
	no.	extremes	average	no.	extremes	average
confluens	13*	129-138	134.0	18	128-138	134.1
fasciata	22	126-137	129.6	26	127-133	130.6
pictiventris	21	123-129	125.7	32	121-131	126.2

	Caudals					
Subspecies	Males			Females		
	no.	extremes	average	no.	extremes	average
confluens	13	67-81	74.9	13	63-67	65.5
fasciata	15	70-83	77.7	24	63-76	68.8
pictiventris	13	77-89	82.4	17	65-78	71.9

	Tail length divided by total length					
Subspecies	Males			Females		
	no.	extremes	average	no.	extremes	average
confluens	13	.226-.265	.248	13	.212-.242	.224
fasciata	14	.234-.291	.271	22	.193-.270	.242
pictiventris	13	.260-.298	.279	17	.229-.281	.253

				Maximum number of scale rows			
	Dorsal blotches on body			Males		Females	
	no.	extremes	average	25	23	25	23
confluens	29	10-19	13.4	1	12	2	16
fasciata	41	19-33	23.6	2	20	7	15
pictiventris	40	24-35	29.1	4	17	23	9

Fasciata, it will be seen, is strictly intermediate between *confluens* and *pictiventris,* except that in proportional tail length it is much closer to *pictiventris.* In general appearance also these two are much more like each other than either is like *confluens.*

* Number of specimens examined.

The more useful features for the separation of these races are embodied in the following synopsis of the *fasciata* group:

a_1 Dorsal saddles on body about 11 to 17..... .....*Natrix fasciata confluens* Blanchard. (Eastern Louisiana north to southeastern Missouri, eastern and southern Arkansas, and west in Texas to about the 98th meridian).

a_2 Dorsal saddles on body about 20 to 33.

b_1 Dorsal saddles on body commonly about 24; ventral plates usually more than 128; belly often with dark quadrate spots; often small lateral spots alternating with the dorsal saddles. .....*Natrix fasciata fasciata* (Linné). (Northern Florida and the coastal regions from North Carolina to southeastern Louisiana.)

b_2 Dorsal saddles on body commonly about 29; ventrals usually less than 128; belly with dark, sometimes reddish, anterior borders on the ventral scales; often reddish markings with black edges particularly on the ends of the ventrals; no small lateral alternating spots.....*Natrix fasciata pictiventris* Cope. (Peninsular Florida.)

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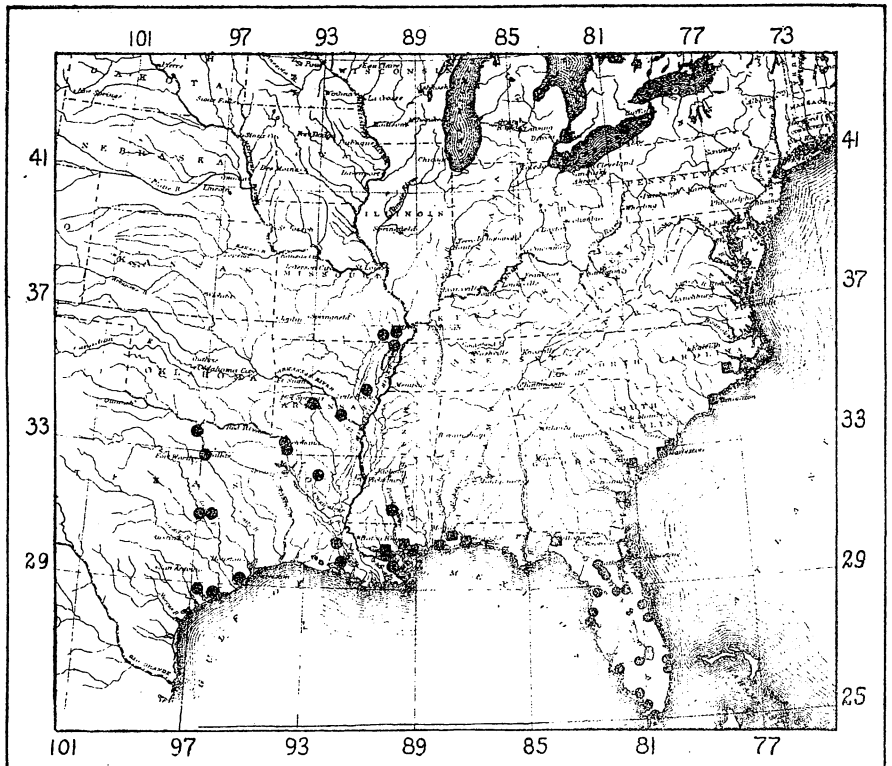

Map showing locality record for *Natrix fasciata fasciata* (squares), *N. fasciata pictiventris* (small circles), and *N. fasciata confluens* (large circles).