

Scalation of the Eastern Mudsnake (*Farancia abacura abacura*) in Virginia

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Four road-killed Eastern Mudsnakes (*Farancia abacura abacura*) were collected from the counties of Prince George, Isle of Wight, Charles City and New Kent from 2007-2010. The Charles City County and New Kent County specimens represent the northernmost records and the only recorded occurrences north of the James River (Kleopfer and Watson, 2009; Kleopfer, 2010). Here we describe scalation for each specimen for comparison to the descriptions by Mitchell (1994) and Palmer and Braswell (1995). We also report on scalation not described by these authors.

Although our observations (Table 1) were similar to those described by Mitchell (1994) and Palmer and Braswell (1995), two novel morphological characteristics were noted. In all four specimens we found the last ventral scute was divided giving an appearance of having two divided anal plates. Palmer and Braswell (1995) describe the ventral scutes of the Eastern Mudsnake as undivided with the anal plate and last ventral scute being divided. This description

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has also been noted in unpublished data from Eastern Mudsnakes inhabiting the Upper Coastal Plain of South Carolina (J.D. Willson and C. T. Winne, pers. comm. 2010). However, an undivided last ventral scute was not noted by Mitchell (1994).

Partial or incomplete ventral scutes were found in the Isle of Wight County, New Kent County and Charles City County specimens and can be described as a ventral scute that appears to have not completely developed and only partially extends across the ventrum. This abnormality may indicate the possibility of a partial or extra vertebrae (A. Savitzky, pers. comm. 2010), as the number of ventral scutes is a 1:1 correlation with the number of vertebrae (Johnson, 1955). However, X-rays were taken of these specimens at VCU-Medical Center and no partial or extra vertebrae were observed.

In most snakes, females have higher ventral and lower subcaudal counts, whereas males have the reverse (Shine et al., 1999). Female Eastern Mudsnakes have fewer subcaudals indicating a relatively short tail (Mitchell, 1994; Palmer and Braswell, 1995). Our findings were consistent with this. The three females we examined had fewer subcaudals with the male having fewer ventrals. This supports Mitchell's findings that the only sexually dimorphic characteristic is the tail/total length ratio and that Eastern Mudsnakes with 40 or more subcaudals are most likely males. Although no notable variation was observed among individuals or those found north and south of the James River, the New Kent County specimen was found to have an extra temporal scale.

All specimens were individually tagged and preserved in 95% ethanol. They are currently stored at Virginia Commonwealth University's Inger and Walter Rice Center for Environmental Life Sciences.

Table 1. Size and scalation of four Eastern Mud Snakes from Virginia. All measurements in mm.

Specimen	Prince George Co. (♀)	Isle of Wight Co. (♀)	New Kent Co. (♀)	Charles City Co. (♂)	Mitchell, 1994	Palmer and Braswell, 1995
Total Length (TL)	1135	997.5	1210	823	max. 1489	max. 1650
Snout Vent Length (SVL)	1097	986	1080	689	max. 1350	max. 1488
Ventral	193	197	189	177	169-199	173-198
Subcaudal	37	37	37	46	31-51	32-49
Ventrals + subcaudals	229	233	225	222	200-237	no description
Dorsal scale row at midbody	19	19	19	19	19	19
Infralabial	8/9	8/8	9/9	9/9	8/8, 8/9 or 9/9	9/9, 8/8, 8/9, 7/9, 9/10, 10/10
Supralabial	7/7	7/7	7/7	7/7	7/7 or 7/8	7/7, 6/7, 7/8, 5/6, 7/9
Internasal	1	2	1	1	1	no description
Prefrontal	2	2	2	2	no description	no description
Frontal	1	1	1	1	no description	no description
Supraocular	2	2	2	2	no description	no description
Parietal	2	2	2	2	no description	no description
Postocular	2/2	2/2	2/2	2/2	2/2	2/2, 1/2, 1/1 usually
Preocular	no	no	no	no	no	absent
Loreal present	yes	yes	yes	yes	yes usually	usually
Temporal	1+2/1+2	1+2/1+2	1+1+2/1+2	1+2/1+2	1+2/1+2	no description

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Figure 1. Anal plate and divided last ventral scutes of *Farancia a. abacura*.

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