A Study of the Variations of Dorsal Markings of *Bufo w. woodhousei*

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During the 1955 summer session of the University of Oklahoma Biological Station, Lake Texoma, near Willis, Marshall County, a study was made of the variations of the conspicuous dorsal blotch markings of *Bufo w. woodhousei* (Woodhouse's toad). The objects of the study were to investigate pattern consistency and pattern relationship to toad size.

The toads studied were collected during the summer of 1954 by S. G. Hanson. These collections were made at Arrowhead Point, located ¼ mile east of the station, near the east bank of Buncombe Creek; and from Engineer's Flats, located 5 miles west of the station near West Keeton Creek. Toads ranged in size from 2.68—9.05 cm. (snout-vent length) with an average of 4.20 cm. The greatest number of individuals was in the 3-4 cm. range.

The dorsal markings were studied by sketching individual blotch patterns on outline drawings of the dorsal surface of the animal. The dorsal pattern records were then subdivided into 12 quadrates (Fig. I.) using an etched celluloid overlay, and the number of dark blotches counted for each quadrate (Table I.)

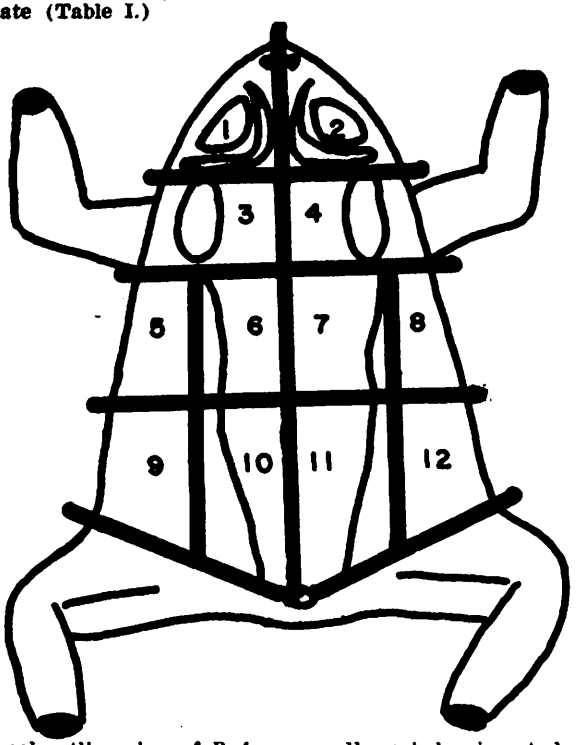

Fig. 1. Dorsal outline view of *Bufo w. woodhousei* showing study quadrates.

The dorsal blotches are more abundant near the dorsal midline in *Bufo w. woodhousei*, and average a little larger in this area also (quadrates 1, 2, 3, 4, 6, ,7, 10, 11). The lateral areas (quadrates 5, 8, 9, 12) have a lesser number of blotches. There is no single blotch pattern that appears to be significantly more abundant than any other.

In this study of 111 toads, the 25 largest (4.25—9.05 cm.) were compared to the 25 smallest (2.68—3.39 cm.), and in turn these two groups compared to the entire sample. (Table I.) It was found that the largest 25 toads averaged more blotches per toad than did the small 25 and also the entire sample. The average number of blotches for the smallest 25 toads was below that of the entire sample.

These data indicate that there may be selection for the larger number of blotches. Similar studies on larger samples would be necessary to substantiate this assumption.

TABLE I. Variation in the Dorsal Pattern of *Bufo w. woodhousei*.

		Blotches		Size (cm.) of Toads (Snout-vent Length	
		Average	Range	Average	Range
Total for all toads		37.46	20-73	4.20	2.68-9.05
Largest 25		46.92	27-73	6.37	4.25-9.05
Smallest 25		34.72	25-46	3.21	2.68-3.39
QUADRATES	1	2.69	0-6		
	2	2.66	0-6		
	3	4.00	1-9		
	4	4.02	1-8		
	5	1.72	0-7		
	6	4.87	1-11		
	7	5.46	1-12		
	8	1.91	0-8		
	9	1.48	0-6		
	10	3.50	0-13		
	11	3.98	0-12		
	12	1.39	0-5		