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VENTRAL SCUTE ANOMALIES IN A POPULATION OF *OPHEODRYS AESTIVUS*

In the course of collecting *Opheodrys aestivus* for ecological studies I noticed consistent frequencies and patterns of ventral scute anomalies while clipping these scales for marking purposes. Specimens ($n = 182$) which were collected for reproductive autopsy from a population at Bald Knob Lake in White County, Arkansas, during the summers of 1977–78, were examined for anomalous ventrals.

Twenty-eight snakes (15.4%) ranging from 18.1 to 51.0 cm snout-vent length, had anomalies. There was no significant difference ($P > .10$) in frequency of anomalies in males (10 of 72) and in females (18 of 110). Only one snake had anomalies involving any ventral other than the three scutes immediately anterior to the anal plate. According to Peters' (1960) classification of anomalous ventrals in the Dipsadinae, 18 *O. aestivus* had Type 1 anomalies in which a "half ventral" was inserted between the ends of two normal ventrals. Two snakes had Type 2 anomalies in which a single ventral was divided into left and right portions. No *O. aestivus* exhibited Peters' Types 3 or 4. Seven snakes had Type 5 anomalies in which a single ventral was bifurcated. The bifurcation suture extended from the lateral margin of the ventral to near the midline. In addition a complete longitudinal suture separated the normal portion of the ventral from the bifurcated portion. Two snakes had Type 6 anomalies which were similar to Type 2 but there was no contact between the inner ends of the two half scutes. If, in fact, Type 6 is the result of two scutes of Type 1 occurring opposite each other (Peters, 1960), then more than 70% of the anomalies in *O. aestivus* directly involved the insertion of a half ventral. King (1959) indicated that each half ventral corresponded to a duplicated vertebrae and rib on the respective side of a body segment in *Natrix natrix*. Clearing and staining procedures revealed normal vertebrae and ribs in all *O. aestivus* with anomalous ventrals near the vent. However, in one snake with a half ventral inserted between ventral nos. 6 and 7 (Dowling system, 1951) a duplicated vertebrae and rib was found corresponding to the anomalous ventral as described by King (1959). In the same snake a second half ventral inserted between ventral nos. 36 and 37 had normal corresponding vertebrae. Clark and Callison (1967) found that half ventrals did not necessarily indicate vertebral anomalies in a specimen of *Coluber constrictor*.

These data indicate a moderate frequency of anomalous ventrals can occur in some snake populations. While extreme variations in ventral scutulation may be detrimental (Clark and Callison, 1967), lesser variations such as seen in *O. aestivus* probably do not constitute a great selective disadvantage and thus may be maintained in the population. The fact that most anomalous ventrals were less extreme (i.e., not associated with anomalous vertebrae) supports this contention. The constancy of anomaly type and of anomaly location favors a genetic rather than environmental cause.

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