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A MALFORMED FOWLER'S TOAD (*BUFO FOWLERI*) FROM THE SHENANDOAH VALLEY OF VIRGINIA -- Deformities and malformations in anurans are manifested in a variety of ways (Meteyer, 2000; Meteyer et al., 2000). Most of those described in the literature are visible externally and include ectromelia, brachydactyly, polydactyly, brachygnathia of both sets of limbs and kyphosis of the vertebral column (Ouellet et al., 1997; Ouellet, 2000). The North American Reporting Center for Amphibian Malformations website (http://frogweb.nbii.gov/) includes several observations of deformities in frogs. The most commonly-reported malformation in *Bufo fowleri* is an extra forelimb reported from Illinois, Indiana, Maryland, North Carolina, and Tennessee. Most examples reported in this web site for Virginia are limb malformations in ranids. Only one Virginia example was reported for toads through 2003, an American Toad (*Bufo americanus*) with multiple limbs and one extra forelimb from Haysi, Dickenson County. This note describes a forelimb malformation in a Fowler's Toad from the Shenandoah Valley.

On 14 July 2004, one of us (BB) found a malformed juvenile *B. fowleri* (32 mm SVL) among hundreds of others that had been observed between 1 and 22 July at a Clarke County, Virginia, residence (4.8 km W Millwood; 39° 03' 76.7" N, 78° 00' 09.9" W). This was the only toad of many that had fallen into the swimming pool or entered the house that had a malformation. The habitat is mostly artificial, with gardens, lawn, swimming pool, and goldfish pond. The residence is surrounded by mostly mature hardwood forest except for a three-acre pasture containing water from a run-off pond. Other anurans in this area include American Bullfrogs (*Rana catesbeiana*), American Toads, Eastern Gray Treefrogs (*Hyla versicolor*), Eastern Spadefoots (*Scaphiopus holbrookii*), Northern Green Frogs (*Rana clamitans*), Pickerel Frogs (*Rana palustris*), and Spring Peepers (*Pseudacris crucifer*).

The juvenile toad had a partially-developed left forelimb with a severely malformed hand, in addition to the two normal forelimbs (Fig. 1). The extra limb was shorter than the two normal limbs and projected outward anterior to the normal left forelimb and near the margin of the throat. The articulation with the pectoral girdle was not ascertained because the frog was maintained alive. The humerus appeared shortened and underdeveloped, as did the radius and ulna. The hand had only the base, with seven, short undeveloped finger buds attached.

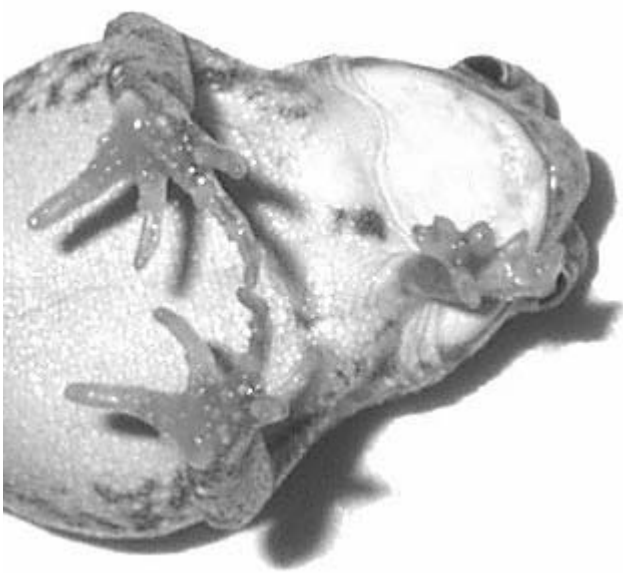

Fig. 1. Malformed Fowler's Toad (*Bufo fowleri*) from Clarke County, Virginia.

The toad did not seem hindered in any way because the extra limb was shorter than the other two and did not touch the ground during locomotion. Feeding behavior was normal. The toad was kept alive for photographs and educational presentations and then released at the point of capture. This is the first description of brachydactyly and polydactyly in *Bufo fowleri* from Virginia and the second report of an extra forelimb in toads from the state.

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