

Catalogue of American Amphibians and Reptiles.

HIGHTON, RICHARD. 1987. *Plethodon wehrlei*.

***Plethodon wehrlei* Fowler and Dunn
Allegheny Plateau woodland salamander**

Plethodon glutinosus Green: Cope, 1889:141 (part). Reference to specimens with red spots from caves in Montgomery County, Virginia probably represent *P. wehrlei*.

Plethodon wehrlei Fowler and Dunn, 1917:23. Type-locality, "Two Lick Hills, Indiana County, Pennsylvania." Holotype, Academy of Natural Sciences of Philadelphia (ANSP) 19123, an adult female collected in September 1911 by R. W. Wehrle (examined by author).

Plethodon dixi Pope and Fowler, 1949:1. Type-locality, "Dixie Caverns, Roanoke County, Virginia." Holotype, Field Museum of Natural History (FMNH) 56510, an adult male collected 11 July 1948, by John W. Funkhouser, Sarah H. Pope, Clifford H. Pope, Hallowell Pope and Whitney Pope (examined by author).

Plethodon jacksoni Newman, 1954:9. Type-locality, "Trillium Vale, elevation 2100 feet, approximately one mile east of Blacksburg, Montgomery County, Virginia." Holotype, National Museum of Natural History (USNM) 134498, an adult male collected on 11 February 1950, by Walter B. Newman (examined by author).

Plethodon wehrlei wehrlei: Conant, 1958:234.

Plethodon wehrlei dixi: Conant, 1958:234.

● CONTENT. No subspecies are recognized.

● DEFINITION. *Plethodon wehrlei* is a member of the *P. wehrlei* group of eastern *Plethodon* as defined morphologically by Highton (1962) and biochemically by Highton and Larson (1979). Adults range from 45–70 mm (body) and 100–160 mm (total) length. *P. wehrlei* has much smaller dorsal white spots than the only other species in the group, *P. punctatus*, except in newly discovered Tennessee, Kentucky and Summers County, West Virginia populations of *P. wehrlei* that possess larger yellow dorsal spots. In all but the latter and the northern Pennsylvania and New York populations, there also may be dorsal red spots, particularly in the

young. There is often a small amount of brassy flecking on the gray dorsum and there is lateral white spotting. The chin is usually lighter than the belly. The modal number of trunk vertebrae is 18 compared to 17 in all members of the *P. glutinosus* group, the only other group in the east comprising large species of *Plethodon*. The *P. wehrlei* group also has more webbing between the toes than the species of the *P. glutinosus* group.

● DESCRIPTIONS. Descriptions are in Fowler and Dunn (1917), Dunn (1926), Bishop (1927, 1941, 1943), Netting (1936 a, 1936 b), Netting et al. (1946), Brooks (1945), Pope and Fowler (1949), Newman (1954), Highton (1962, 1971), Hoffman (1967), Conant (1975), Smith (1978), Behler and King (1979), Martof et al. (1980) and Cupp and Towles (1983).

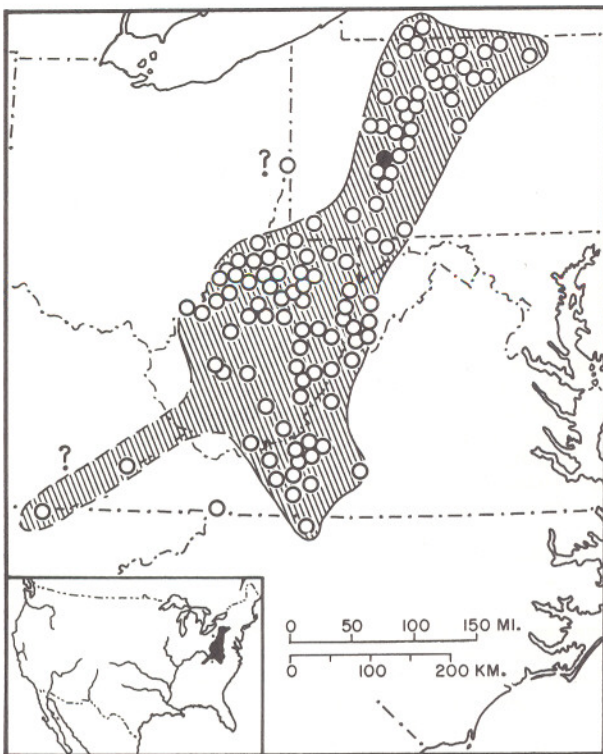
● ILLUSTRATIONS. Black and white photographs of dorsal, lateral and ventral views of specimens from northern Pennsylvania and New York are in Bishop (1941, 1943) and the Maryland specimen in Thompson and Chapman (1978). Pennsylvania specimens were illustrated by Harrison (1949, 1957) and Fegely (1973). Conant (1958, 1975) illustrated both the northern and Dixie Caverns types, and Cupp and Towles (1983) the yellow-spotted western variant. Color photographs are in Behler and King (1979) and Martof et al. (1980). Drawings of lateral and ventral aspects of the holotype are in Fowler and Dunn (1917). Color drawings of both northern and southern (red-spotted) types are in Smith (1978). Drawings of ventral and dorsal views of the holotype of *P. jacksoni* are in Newman (1954). Drawings of the inside of the mouth are in Fowler and Dunn (1917) and Bishop (1941) and the webbing of the toes in Highton (1962). Photographs of sections of the testis, vas deferens, cloaca and spermatheca are in Pauley and England (1969). A scanning electron micrograph of a maxillary tooth is in Coss (1974).

● DISTRIBUTION. This species is known from Monroe and Washington counties, Ohio, and Cattaraugus County, New York, south in the Allegheny Plateau through western Pennsylvania, western Maryland and West Virginia to southwestern Virginia (where it also occurs in parts of the Valley and Ridge, Blue Ridge and Piedmont provinces) to Stokes County, North Carolina. The newly discovered yellow-spotted morph is known from Summers County, West Virginia; Letcher County, Kentucky; and Campbell County, Tennessee. Erroneous records are Fowler and Dunn (1917), a paratype from Juniata Co., Pennsylvania (Netting, 1936b); Lachner (1942) for Mercer County, Pennsylvania; Netting et al. (1946) for Raleigh Co., West Virginia; and Grobman (1949) for Nelson County, Virginia. The record from Hancock County, in the northern panhandle of West Virginia, needs confirmation.

● FOSSIL RECORD. None.

● PERTINENT LITERATURE. Summaries of the known distribution of *P. wehrlei* in Ohio were given by Walker (1933) and Thomas (1951); in New York by Bishop (1927, 1941) and Johnson (1961); in Pennsylvania by Highton (1971) and McCoy (1982); in Maryland by Thompson and Chapman (1978); in North Carolina, West Virginia and Virginia by Hoffman (1967) and Highton (1971); in Kentucky by Cupp and Towles (1983); and in Tennessee by Redmond and Jones (1985). Distributional interactions with other species were discussed by Grobman (1944) and Highton (1971). The relationships of *P. wehrlei* were discussed by Fowler and Dunn (1917), Dunn (1926), Grobman (1944), Newman (1954) and Highton (1962, 1971). Highton and Larson (1979) compared electrophoretic variation in 29 proteins with that in all 25 other species of *Plethodon* recognized at that time. Its albumin was compared immunologically to several other species of *Plethodon* in Maxson et al. (1979) and Maxson et al. (1984). Chromosomal morphology, genome size and DNA sequence homologies to eastern and western species of *Plethodon* were studied by Mizuno and Macgregor (1974). Larson (1984) reviewed patterns of evolution in the salamander family Plethodontidae and made a number of comparisons of *P. wehrlei* to other species. Wake (1981) discussed the advisability of recognizing isolated allopatric species such as *P. wehrlei* and *P. punctatus* on the basis of allozyme data.

Wake (1963, 1966) included one *P. wehrlei* from Virginia in his osteological studies of the family Plethodontidae. Thurow (1968) studied morphometrics. Vertebral variation was given by Highton (1962, 1971). Coss (1974) did a comparative scanning electron microscopic study of maxillary and premaxillary dentition. Hilton (1951) studied the nasal gland. Dodd and Brodie (1976) described



MAP. The solid circle shows the type locality. Hollow circles indicate other records.

the mental gland. Habitat distribution was given by Brooks (1945, 1948), Bishop (1927, 1941, 1943), Netting (1936a, 1936b), Netting et al. (1946), Newman (1954), and Pauley (1980). Netting (1933), Reese (1933, 1934), Jackson (1944), Fowler (1951) and Cooper (1961) recorded its occurrence in caves in Virginia and West Virginia. Life history data are in Bishop (1927, 1941), Fowler (1951), Johnson (1961), Pauley and England (1969) and Hall and Stafford (1972). Food records are in Bishop (1941), Johnson (1961), Hall (1976) and Pauley (1977). Pauley (1977, 1978a, 1978b, 1978c, 1978d) studied the ecological interaction of *P. wehrlei* and *P. cinereus* in West Virginia. Pauley (1980) studied its altitudinal distribution in the mountains of West Virginia. Thurow (1976) studied interspecific aggression.

● ETYMOLOGY. *P. wehrlei* is a patronym honoring the person who was probably the first to collect the species in Pennsylvania, Richard W. Wehrle, a jeweler and naturalist from Indiana, Pennsylvania.

COMMENT

Dorsal red spotting is rare or absent in northern populations of *P. wehrlei*, but in some southern populations it is common and this was the basis for the description of *P. jacksoni* Newman (1954). Recently Cupp and Towles (1983) reported a new yellow spotted variant from Summers County, West Virginia, and Letcher County, Kentucky. It has also been found in Campbell County, Tennessee by Redmond and Jones (1985).

The ranges of *P. wehrlei* and its close relative *P. punctatus* were believed by Highton (1971) to be separated by 45 km of uninhabited territory. *P. wehrlei* has recently been taken about midway between the closest records of the two species. It should be sought at lower elevations on the western slopes of Shenandoah Mountain, West Virginia to determine if the ranges of the two forms contact or overlap.

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