**AMPHibia: CAuDATa: PLETHOdONTiDaE**

**Eurycea longicauda**

**Catalogue of American Amphibians and Reptiles.**


**Eurycea longicauda (Green) Long-tailed salamander**

*Salamandra*, longicauda Green, 1818:351. Type-locality, "New jersey," restricted to the "vicinity of Princeton" by Schmidt (1953:53). No type known to exist.

**Cylindrosoma longicauda**: Tschudi, 1838:58. New combination.

**Saurocerus longicauda**: Fitzinger, 1843:94. New combination.


**Content.** Three subspecies are recognized: *longicauda*, melanopleura, and guttolinea.

**Diagnosis.** Adults rarely exceed 70 mm snout to vent (SVL) and 155 mm total length. *Eurycea longicauda* differs from other metamorphosing *Eurycea* by: toes of adpressed limbs separated by fewer than three costal grooves but not overlapping; tail length usually greater than SVL (in 88% of 1017 specimens measured); yellow, yellow orange, or yellow brown ground color with many conspicuous dorsal black spots usually arranged in three irregular, continuous or discontinuous lines. Lateral black spots are numerous on the body and tail. The venter is pale yellow to cream, and immaculate to heavily mottled with irregular black spots which may coalesce. The modal range of costal grooves is 13–14 and the total observed range of venterine teeth is 12–39.

Parasphenoid teeth are in two elongated patches widely separated from the vomerine. Relative lengths of the hind toes are 1 < 5 < 2 < 4 < 3 or occasionally 1 < 5 < 2 < 4 < 3 < 4 in *E. l. melanopleura*.


**Illustrations.** Bishop (1941), Hubey and Stupka (1967), Cochran and Goin (1970) and Conant (1975) present photographs of *E. l. longicauda*. Fowler (1953) presents photographs of adults and eggs. Bishop (1941) and Anderson and Martino (1966) illustrate larvae and Martof and Rose (1962) present a drawing of a skull. Photographs of adult *E. l. guttolinea* are in Bishop (1943), Smith (1961), Hubey and Stupka (1967), Cochran and Goin (1970), Collins (1974), and Conant (1975). Cochran (1961) presents excellent photographs of *E. l. melanopleura* (labeled as *E. melanopleura*) and *E. l. longicauda*; however, *E. l. longicauda* is labeled as *E. lucifuga* (p. 40) and the color plate (13) of *E. lucifuga* is labeled as *E. longicauda*. See Valentine (1962) for photographs of *E. l. longicauda* × *E. l. guttolinea* intergrades and Smith (1961) for photographs of *E. l. longicauda* × *E. l. melanopleura* intergrades. Hutchinson (1956) has photographs of purported *E. l. longicauda* × *E. lucifuga* intergrades described by Mittleman (1942).

**Distribution.** *Eurycea longicauda* is widely distributed from New York south of the Adirondack Mountains, south in the Piedmont region, Blue Ridge and Allegheny Mountains, and the Appalachian Plateau, to western Florida, west to the Mississippi River Valley and north to southern Illinois. West of the Mississippi River *E. longicauda* occurs in the Ozark Plateau of Missouri, Kansas, Oklahoma, and Arkansas and in the Boston Mountains of Oklahoma and Arkansas. A record for *E. longicauda* in southwestern Arkansas (specimen in the University of Kansas Museum of Natural History, labeled Lewisville, Lafayette County, Arkansas) is not mapped. This record is 150 miles from the nearest verified population, and my repeated attempts to confirm it have failed. Dowling (1957) regarded this and other Lewisville records with suspicion.

**Fossil Record.** None.

**Pertinent Literature.** Brimley (1896, 1939), Dunn (1926), Bishop (1941, 1943), Peters (1946), Mittleman (1950), Martof (1955), Cochran (1961), Rubenstein (1969), Cochran and Goin (1970), Nickerson (1972), and Conant (1975) present general descriptions of habitat, range, and life histories. Fisher (1887) and Fowler (1943) discuss habitat and range in the District of Columbia. Hurter (1911), Myers (1958a), and Nickerson and Krager (1973) discuss habitat and range in Missouri. Hassler (1932) discusses the range in New York. Carr (1940) and Carr and Goin (1955) discuss habitat and range in Florida. Green (1937, 1941, 1955) and Green and Dowler (1950) discuss habitat and range in West Virginia. Wood (1947) and Eaton (1953) discuss habitat and range in North Carolina. Grimmer and Langebartel (1948), Stein (1954), Smith and Minton (1958), and Klimstra and Hutchinson (1965) discuss habitat and range in Illinois. Smith (1961) discusses range, habitat, and meristic and morphometric variation in Illinois. Sinclair (1950), Barr (1952), and Endsley (1954) discuss habitat and range in Tennessee. Heilman (1951), Bell (1960), and Welsh (1962) discuss habitat and range in Pennsylvania. Duellman (1951), Muchmore (1955), and Seibert and Brandon (1960) discuss habitat and range in Ohio. Maldonado-Koerdell (1951), and Collins (1974) discuss habitat and range in Kansas. Chernock (1952a, 1952b) and Mount (1973) discuss habitat and range in Alabama. Barbour (1953, 1955) and Bush (1959) discuss habitat and range in Kentucky. Anderson, Linder, and Etheridge (1953) discuss habitat and range in Missouri. Hassler (1932) discusses habitat and range in Ohio, Maldonado-Koerdell (1951) discusses habitat and range in Oklahoma. Smith and List (1958) discuss habitat and range in Illinois. Cooper (1955) and Reed (1956) discuss habitat and range in Mississippi. Martof (1955, 1956) discusses habitat and range in Georgia. Dowling (1957) discusses habitat and range in Arkansas. Holman (1960) discusses habitat and range in Indiana. Hubey (1965) and Hubey and Stupka (1967) discuss habitat and range in the Great Smoky Mountains National Park. Schlauch (1972) discusses variation in New Jersey. Minton (1972) discusses habitat and range in Indiana. Occurrence of cave populations is discussed by Deerolf (1956), Brode (1958), Myers (1958b), Hubey and Brandon (1960).

**Map.** Solid circles mark type-localities; open circles are other records; half-solid circles indicate areas of sympathy. Areas of intergradation are indicated by overlapping shading patterns.

**ETYMOLOGY.** The name longicauda combines two Latin words meaning “long” and “tail”; guttolineata combines two Greek words meaning “spots” or “marks” and “lines,” referring to the conspicuous three lined forms by spots on this form; melanopleura combines two Greek words meaning “black” and a “laterally positioned part of the body” referring to the dark sides of this form.

1. **Eurycea longicauda longicauda** (Green)

*(Salamandra). longicauda Green 1818:351. See species synonymy.*

**Eurycea longicauda longicauda:** Bailey, 1937:6. First use of trinomial.

**Eurycea longicauda pernix** Mittleman, 1942:101. Type-locality, “along Jimmie Strahl Creek (tributary of Salt Creek), Brown County State Park, two and five tenths miles southeast of Nashville, Brown County, Indiana.” Holotype, Mus. Comp. Zool., Harvard University, 25569, adult male, collected by M. E. and M. B. Mittleman, 22 August 1942 (not examined by author).

- **DEFINITION.** A moderate sized salamander rarely exceeding 70 mm SVL with an orange to yellow orange ground color with black or brown spots that tend to coalesce on the sides to form lateral bands that delineate a light dorsal stripe, usually bisected by a mid-dorsal dark stripe. Sides have elongate black spots that tend to form vertical bands especially on the tail. The belly is immaculate, cream to cream-yellow.

- **REMARKS.** Hutchison (1956) considered *E. l. pernix* a synonym of *E. l. longicauda* and I cannot distinguish *E. l. pernix* topotypes from *E. l. longicauda.*

2. **Eurycea longicauda guttolineata** (Holbrook)


**Cylindrosoma guttolineatum:** Duméril, Bibron, and Duméril, 1854:79. First use of combination.

**Geotrión guttolineata:** Garman, 1884:39. First use of combination.

**Eurycea guttolinea:** Stejneger and Barbour, 1917:19. First use of combination.

**Eurycea longicauda guttolineata:** Bailey, 1937:6. First use of trinomial.

- **DEFINITION.** A moderate sized salamander rarely exceeding 70 mm SVL with a tan to yellow ground color. A dark mid-dorsal stripe bisects a light dorsal band which is flanked by distinct lateral dark stripes. Vertical black bars are present on the tail. The belly is gray and mottled with numerous small irregular dark spots.

3. **Eurycea longicauda melanopleura** (Cope)

*S(pelerpes) melanopleura* Cope, 1893:383. Type-locality, “Raley’s [Riley’s?] Creek, one of the head tributaries of the White River,” Missouri. Syntypes: Acad. Natur. Sci. Philadelphia 10456-60 (10457-10459, examined by author, are recently transformed individuals that do not show the adult color pattern.

**Spelerpes stejnegeri** Eigenmann, 1901:189. Type-locality, “Rock House Cave [Barrie County, Missouri].” Location of holotype unknown. “Cotype” (paratype) Mus. Comp. Zool. 2551 identified by author as *E. l. melanopleura.*

**Eurycea melanopleura:** Stejneger and Barbour, 1917:19. First use of combination.

**Eurycea longicauda melanopleura:** Bishop, 1943:428. First use of trinomial.

- **DEFINITION.** A moderate sized salamander smaller than the other subspecific forms of this species. The largest specimen examined by the author was 64 mm SVL. The ground color is yellow to yellow brown. The numerous black dorsal spots are frequently arranged in a very irregular broad mid-dorsal row flanked by equally broad and irregular lateral rows that are marked with numerous white flecks and spots. The lateral bands extend down to the edge of a pale yellow belly which is mottled with irregular, often indistinct, light brown to gray spots.

**COMMENT**

**Eurycea l. longicauda** and *E. l. guttolineata* apparently intergrade in northern Alabama and adjacent states (Valentine, 1962), but along the Blue Ridge escarpment they are sympatric without evident intergradation (see map). Some workers feel that *guttolineata* and the apparent intermediate populations found in northern Alabama both warrant recognition as species but the evidence is inconclusive. *E. l. guttolineata* is considered a form of the coastal plain and piedmont but it reaches elevations up to 975 m (3200 ft). *Eurycea l. longicauda* is typically found at higher elevations but it extends well into the piedmont in the northeastern and southeastern part of its range. *Eurycea longicauda* crosses the Mississippi River Valley only in southern Illinois and eastern Missouri where *E. l. longicauda* and *E. l. melanopleura* intergrade in an apparent zone of secondary contact. West of the Mississippi River Valley, *E. l. melanopleura* is restricted to the Boston Mountains and Ozark Plateau.

Mittleman (1942) reported *E. l. melanopleura × E. lucifuga* intergrades and treated *lucifuga* as a subspecies of *longicauda.* The reported *longicauda × lucifuga* intergrades (Univ. Michigan Mus. Zool. 56388, 77393, 86578) have been examined by many workers without a consensus of opinion. This material may be hybrid or it may be unusually patterned *E. l. longicauda.* Smith (1964) reported *E. l. melanopleura × E. lucifuga* intergrades from Arkansas. This material was deposited in the Museum of Biology at Arkansas College, Batesville, Arkansas, where I located two specimens (now nos. 1092-1093 in my personal collection) identified as “*E. lucifuga-E. longicauda* hybrids” collected by C. C. Smith from Foshee Cave, 5 miles West of Locust Grove, Independence County, Arkansas, April 24, 1958. I identify these as recently transformed *E. l. melanopleura.* Recently transformed *E. l. melanopleura* are difficult to distinguish from *E. lucifuga* (see discussion in Ireland, 1971).

**LITERATURE CITED**


Tschudi, J. J. 1838. Classification der Batrachier, mit Berueck­


PATRICK H. IRELAND, RADFORD COLLEGE, RADFORD, VIRGINIA 24142.

Primary editor for this account, Richard G. Zweifel.

Published 6 September 1979 by the SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES.