

Catalogue of American Amphibians and Reptiles.

MARTOF, BERNARD S. 1973. *Siren lacertina*.*Siren lacertina* Linnaeus
Greater siren

Siren lacertina Linné, 1766: (Addenda, not paged). Type locality, "Carolinae paludosis," restricted to vicinity of Charleston, South Carolina (Schmidt, 1953:14). No type specimens designated.

Phanerobranchius dipus Leuckart, 1821:260. Substitute name.

Sirena lacertina: Harlan, 1827:321. Emendation.

Sirène lacertine: Vaillant, 1863a:295. Emendation.

Siren lacertina Cope (not of Linnaeus), 1889:226. Confused description based on both living species of *Siren*.

- CONTENT. No subspecies are recognized.

- DEFINITION. See generic account. This eel-like salamander lacks hind limbs but has small front limbs and external gills. It is one of the largest North American salamanders, slightly exceeded in length by *Amphiuma* and in stockiness by *Cryptobranchius*, but it is the heaviest. Adults attain a total length of 500 to 750 mm, maximum 950 mm. The body is stout, deeper than wide and with a slightly impressed middorsal line. The head is widest just anterior to the gills. The snout is broadly rounded. The nostrils are small, widely separated, and overhung by the corners of the snout. The gills are sometimes reduced in size but each is branched and has slender filaments. Digits rank 4-1-3-2 in order of increasing length, rarely 4-3-1-2. Costal grooves total 36 to 40, usually 38. The ventral fin is narrower than the dorsal fin and extends about 60% of the distance from tail tip to vent. The dorsum of living adults is olive to light gray, sometimes with black spots on the head. The sides are lighter than the back and have inconspicuous greenish-yellow dashes and blotches. The venter is bluish-gray, marked with many small greenish-yellow flecks (chromatophores), or mottled or spotted with pale green. The gills are greenish, the toes are yellowish tipped with black, and the snout is yellow or light brown.

Hatchlings measure 13 mm in snout-vent length and 16 mm in total length (Goin, 1947). The body and tail are strongly compressed; the tail is very short. The dorsal fin is broad and begins at the base of the head. The ventral fin extends all the way to the vent. The head is small, wider than the body but not flattened. The eyes and nostrils are small and indistinct. The gills are about as long as the head and each ramus has two rows of filaments. A distinct gular fold is present. The limbs lack digits. Hatchlings and young have a yellowish stripe on the side of the body and the dorsal fin is light in color. Also, they have a brownish postocular stripe and the labial-throat region is yellowish brown. All of these light markings disappear early in the first year of life.

- DIAGNOSIS. See generic account. *Siren lacertina* is biochemically unique having relatively more ceruloplasmin in its serum than any other vertebrate (Seal, 1964). *S. lacertina* differs from *S. intermedia* in many ways: the outer capsule of the egg is thicker, the eggs average about 1 mm larger in diameter; the tip of the tail is more rounded; young have a narrower head and lack the conspicuous reddish band over the snout as occurs in *S. intermedia*; instead, by usually having a light yellowish stripe on the side of the body and a light colored dorsal fin, they superficially resemble *Pseudobranchius* (Conant, 1958). *S. lacertina* differs from *S. i. intermedia* and *S. i. nettingi* by its larger size and its more numerous costal grooves. *S. lacertina* differs from *S. i. texana* by having a stockier body, a less gray dorsum, larger dorsal black spots, and darker axillae and lower surfaces of limbs, in addition to a more rounded tail (Goin, 1957). If light markings occur in adult *S. lacertina*, they chiefly form lateral and ventrolateral rows of narrow, short bars; whereas, in *S. i. texana* light spots are restricted to the venter and they occur on a larger percent of the population.

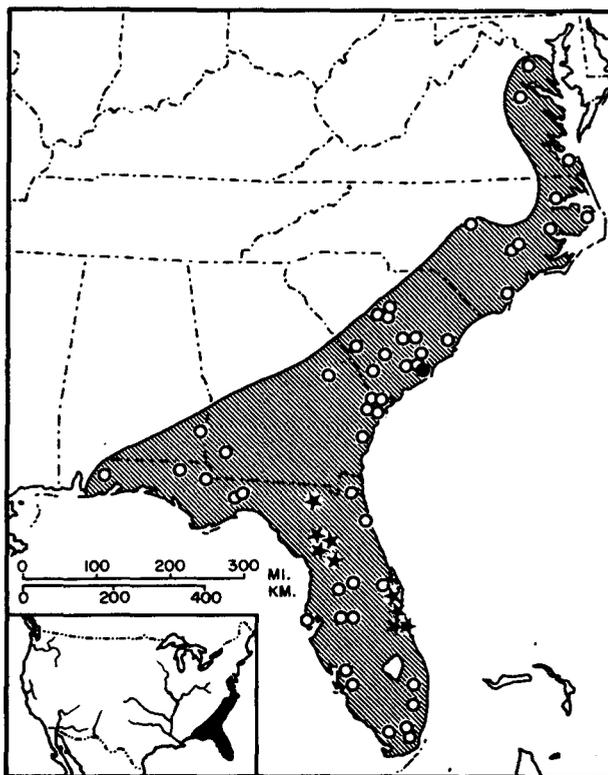
- ILLUSTRATIONS. For black-white photographs, see Bishop (1943); Conant (1958); Goin and Goin (1962, 1971); and the excellent closeups by Smith (1969). Many line drawings are available: Adults, showing mainly the head, Cope (1889), Bishop (1943); a comparison with *Pseudobranchius* and the effect of iodothyrene treatment, Noble (1931). Internal

anatomy, Vaillant (1863a). Skull, Parker (1885). Distribution of fat deposits, Martof (1969). Heart showing the numerous fingerlike processes of the atria, Noble (1931). Arteries, Darnell (1949). Urogenital system of male, Willett (1965). Epaxial trunk musculature, Auffenberg (1959). Skin, cross-section and comparison with other salamanders, Bernstein (1953). Choroid plexus of the lateral and 3rd ventricles and comparisons with other salamanders, Hilton (1953). Egg capsules, Salthe (1963); and comparison with *Pseudobranchius*, Noble and Richards (1932). Larva, Goin (1947); comparison with *Pseudobranchius*, Noble (1927:43); comparison with *S. intermedia*, Neill (1949).

- DISTRIBUTION. This species inhabits the Coastal Plain from the District of Columbia southward through Florida, into southern Alabama. It inhabits sites often muddy and weed-choked: shallow ditches, rice fields, swamps, ponds, lakes, and streams. During the day these nocturnal animals may be found in or under logs, drain pipes, and rocks, as well as burrowed in mud or dense vegetation. The young are often abundant among water-hyacinth roots.

- FOSSIL RECORD. This species is known from Pleistocene deposits in Florida (Goin and Auffenberg, 1955).

- PERTINENT LITERATURE. Comprehensive studies are unfortunately few. The earliest dissertation is by Oesterdam (1769). For the best treatise on anatomy see Vaillant (1863a). For the best account of general biology, see Bishop (1943); other useful accounts include Carr (1940); Conant (1958); Freytag (1965); Cochran and Goin (1970). Geographic distribution: District of Columbia: Noble and Marshall (1932). Virginia: Burch and Wood (1955). North Carolina: Brimley (1944), Hurst and Parnell (1964). South Carolina: Noble and Marshall (1932). Georgia: Neill (1949), Martof (1969). Florida: Carr (1940), Telford (1952), Carr and Goin (1955), Duellman and Schwartz (1958), Funderberg and Lee (1967). Alabama: Chermock (1952). Collecting: see familial account. Sound production: Carr (1940). Food and feeding behavior: Dunn (1924), Carr (1940), Hamilton (1950), Burch and Wood (1955), Duellman and Schwartz (1958). Comparative gross



MAP. The solid circle marks the designated type-locality, open circles indicate other records. The stars mark Pleistocene fossil localities.

anatomy of digestive tract: Wonderly (1963). Skull: Parker (1885). Mechanics and efficiency of respiration: Guimond (1970). Epaxial musculature and a comparison with *Amphiuma means* and *Necturus maculosus*: Auffenberg (1959). Vulnerability to *Saprolegnia*: Goin (1961), Guttman (1965); to trematode infestation: Elkan (1960), Vaillant (1863b). Aestivation: Carr (1940), Freeman (1958); and fat deposits: Martof (1969). Growth, maximum size and longevity: Noble (1931), Goin (1961), Nigrelli (1954). Description of eggs and egg-laying: Noble and Richards (1932), Goin (1947); and a comparison with the eggs of *S. intermedia*: Noble and Marshall (1932). Description of hatchling: Goin (1947), Neill (1949); and juveniles: Duellman and Schwartz (1958).

• ETYMOLOGY. The name *lacertina* (Latin, pertaining to a lizard) probably refers to the serpentine body (Oesterdam, 1769).

• COMMENTS. Life history data are especially fragmentary.

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B. S. MARTOF, NORTH CAROLINA STATE UNIVERSITY, RALEIGH, NORTH CAROLINA 27607.

Primary editor for this account, James D. Anderson.

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