

## Catalogue of American Amphibians and Reptiles.

ALTIG, RONALD AND LOHOEFENER, REN. 1983. *Rana areolata*.***Rana areolata* Baird and Girard**  
Crawfish frog

*Rana areolata* Baird and Girard, 1852:173. Type-locality, "Indianola" (Calhoun County), Texas. Holotype and collection data not given, but Harper (1935) and Cochran (1961) list United States Nat. Mus. 3304 as the type. Collected by J. H. Clark (not examined by authors).

• CONTENT. Five subspecies are recognized: *Rana a. areolata*, *R. a. aesopus*, *R. a. capito*, *R. a. circulosa* and *R. a. sevosia*.

• DEFINITION. *R. areolata* (to 105 mm SVL for males, 113 mm for females) is stocky and large-headed with short legs, a prominent sacral hump, and smooth to warty dorsum. Ground color ranges from creamy white to black. Spots are generally round to irregular in shape, often with light borders. The upper jaw is mottled and the legs are banded. A post-tympanic ridge is present, the tympanum is smaller than the eye, and dorsolateral folds that vary in prominence extend posteriorly from the eye. Males have lateral vocal sacs. Ventral pigmentation varies from immaculate to heavily mottled. The groin and concealed portions of the limbs are often yellow to greenish-yellow.

• DESCRIPTIONS. Adults: LeConte (1855), Cope (1889), Dickerson (1906), Boulenger (1919, 1920), Wright (1932), Goin and Netting (1940), H. M. Smith (1934, 1978), Wright and Wright (1942, 1949), Neill (1957), Mount (1975), Conant (1975), Behler and King (1979). Tadpoles: H. M. Smith (1934, 1950), Wright (1932), Goin and Netting (1940), H. M. Smith et al. (1947, 1948), Wright and Wright (1949), Volpe (1958), Altig (1970). Eggs: Wright (1932), Livezey and Wright (1947), Wright and Wright (1949). P. W. Smith (1961) and Bragg (1953, 1955) discussed juveniles.

• ILLUSTRATIONS. Color photographs: Martof et al. (1980), Behler and King (1979), Cochran and Goin (1970), R. W. Barbour (1971). Black and white photographs: Wright (1932), Wright and Wright (1942, 1949), H. M. Smith (1950), Collins (1974), Mount (1975), Johnson (1977).

• DISTRIBUTION. *R. areolata* ranges from North Carolina to southeastern Louisiana, throughout Florida, and from eastern Texas northward to Wisconsin and Indiana. Introduced in Hawaii, according to Flint (1972), but not mentioned by McKeown (1978). Ranges and zones of intergradation are poorly known.

• FOSSIL RECORD. Wilson (1968) tentatively referred fronto-

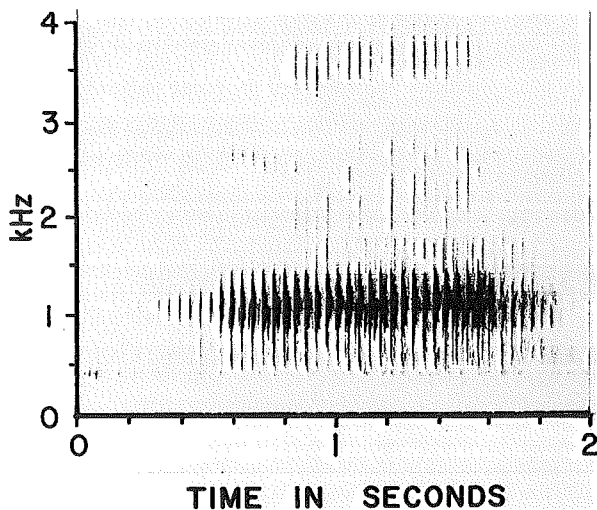


FIGURE. Audiospectrogram of call of *Rana areolata*: 4 mi west of Hawthorne, Putnam Co., Florida, 21 February 1975, water 18°C; 300 Hz filter; Florida State Mus. Bioacoustics Archives Master Tape 112.

parietal bones from a lower Pliocene site (Ogallala Formation, Wakeeney site) in Trego County, Kansas to *R. areolata*.

• PERTINENT LITERATURE. *Taxonomy*—Baird and Girard (1852), LeConte (1855), Davis and Rice (1883), Cope (1875, 1886, 1889), Dickerson (1906), Boulenger (1919, 1920), Harper (1935), Goin and Netting (1940), Wright and Wright (1942, 1949), Schwartz and Harrison (1956), Neill (1957), Case (1978). *Range*—Thompson (1915), Wright (1923), H. M. Smith (1950), Burt (1938), Wright and Wright (1938), Chamberlain (1939), Carr (1940), Gentry (1955), Dowling (1957), Minton (1972), Raun and Gehlbach (1972), Collins (1974) and numerous notes. *Ecology*—Altig (1974), Bragg (1953, 1954, 1955), Burt (1935), Carr (1940), Duellman and Schwartz (1958), Einem and Ober (1956), Funderberg and Lee (1968), Gentry and Smith (1968), Gibbons, Coker, and Bennett (1974), Lee (1968, 1973), Wright (1926). *Anatomy*—Internal pigment and ultraviolet transmission: Hunsaker and Johnson (1959). Vestigial oviducts: J. A. Moore (1966). Adult teeth: Parsons and Williams (1962). Tadpole teeth: Altig and Pace (1974), Gosner (1959). Snout morphology: Ruibal (1957). Osteology: Chantell (1970), Holman (1962). *Physiology and genetics*—Insecticide susceptibility: Ferguson (1963). Ionic balance: Gourley (1962). Nuclear DNA: Olmo (1973), O. B. Goin et al. (1968). Hybridization: Han-Po (1951), Cuellar (1971), B. C. Moore (1950), J. A. Moore (1943, 1955), McAlister (1961). Electrophoretic patterns: Wallace et al. (1973). *Call recordings*—Anon. (1982), Bogert (1958), Bradley (1978).

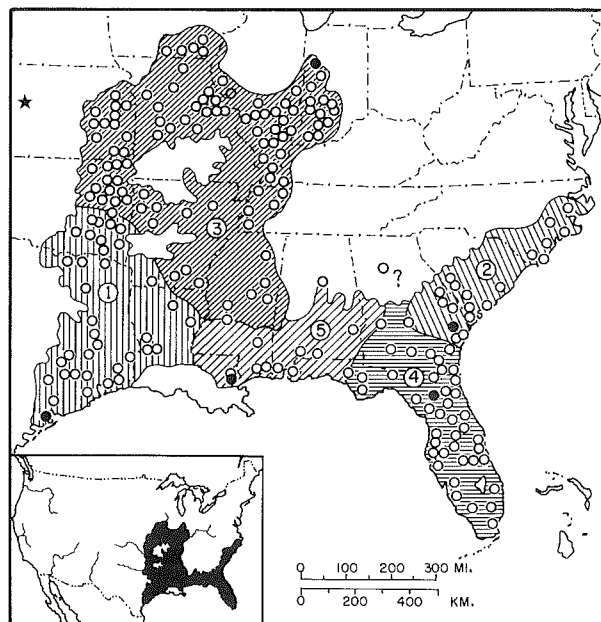
• ETYMOLOGY. The name *areolata* is derived from the Latin diminutive *areola* (a small area around something) and refers to light-margined dorsal spots of the nominate form. Subspecies names are *aesopus*, a dwarf or organism of spurious occurrence; *capito*, large headed; *circulosa*, refers to light-margined spots; and *sevosia*, refers to slimy or tallowy appearance.

• REMARKS. Harper (1935) placed Indianola in Matagorda County (actually Calhoun County). Records from Rio San Pedro, a tributary of the Gila River, Arizona (Baird and Girard, 1852) and a tentative record for "northeast of Edinburg, Texas" (Wright and Wright, 1949) are considered erroneous.

**1. *Rana areolata areolata* Baird and Girard**

*Rana areolata* Baird and Girard, 1852:173. See species synonymy.

*Rana areolata areolata*: Cope 1875:32. First use of combination.



MAP. Solid circles mark type-localities; open circles indicate other selected localities. Star marks a tentative lower Pliocene fossil site.

• DEFINITION. Dorsum smooth (or nearly so) with rounded spots encircled by light borders on a light gray to dark brown ground color. The venter is immaculate except laterally on the chin and throat. Dorsolateral folds do not contrast with the dorsal body color.

## 2. *Rana areolata capito* LeConte

*Rana capito* LeConte, 1855:242. Type-locality, "Inhabits Georgia in the ditches of rice fields" (see REMARKS). Holotype, collector and collection data not given, but Harper (1935) and Cochran (1961) listed United States Nat. Mus. 5903 as the type (not examined by authors).

*Rana areolata capito*: Cope, 1875:32. First use of combination.  
*Rana* [*capito*]. *capito*: Wright and Wright, 1942:173. First use of combination.

*Rana capito stertens* Schwartz and Harrison, 1956:136. Type-locality, "6 mi N Cainho, Berkeley County, South Carolina." Holotype, Charleston Museum 55.146.12, adult male, collected September 4, 1955, by Julian R. Harrison, III, John A. Quinby, and Albert Schwartz (not seen by authors).

• DEFINITION. The dorsum has numerous small warts and inconspicuous dorsal spots generally lacking light-colored borders on a dark gray to brown or black ground color. In adults, the venter is heavily spotted or mottled. The dorsolateral folds do not contrast with the dorsal ground color.

• REMARKS. Harper (1935) assumed Riceboro, Liberty County, Georgia was the type-locality since LeConte had a plantation there; Cochran (1961) listed this locality. Neill (1957) pointed out that collectors sent LeConte specimens and Liberty County was not necessarily the type-locality. He and Schwartz and Harrison (1956) doubted the holotype (USNM 5903) was actually the specimen described by LeConte (1855), but Harper (1935) attributed size differences to shrinkage.

## 3. *Rana areolata circulosa* Rice and Davis

*Rana circulosa* Rice and Davis in Jordan, 1878:355. Type-locality, "Benton County, Indiana." Goin and Netting (1940) listed Chicago Academy of Sciences 160 as the holotype. Collection date not known, collected by E. F. Shipman (not examined by authors).

*Rana areolata circulosa*: Davis and Rice, 1883:28. First use of combination.

• DEFINITION. This subspecies is weakly differentiated from *R. a. areolata*. Diagnosis is based on larger size, shorter and broader head, more prominent dorsolateral folds and rougher dorsum.

• REMARKS. Stejneger and Barbour (1943) incorrectly revised the type-locality to northern Illinois. Mittleman (1948) corrected the error, but Schmidt (1953) incorrectly revised the type-locality to Olney, Richland County, Illinois.

## 4. *Rana areolata aesopus* Cope

*Rana a[reolata]. aesopus* Cope, 1886:517. Type-locality, "Micanopy, Alachua County, Florida." Holotype, United States Nat. Mus. 4743, collected by T. H. Bean. (Date not known; not examined by authors.)

*Rana aesopus*: Dickerson, 1906:193.

• DEFINITION. The dorsum has irregular dark blotches not enclosed by light borders on a ground color of cream white to brown. Anterior venter spotted but posterior venter usually immaculate. Dorsolateral folds of males may contrast with body color. Dorsum smooth or nearly so.

• REMARKS. This subspecies is listed as threatened in Florida (Flogarty, 1978).

## 5. *Rana areolata sevosa* Goin and Netting

*Rana sevosa* Goin and Netting, 1940:137. Type-locality, "Slidell, Saint Tammany Parish, Louisiana." Holotype, Carnegie Museum 16809, adult male, collected 11 April 1926 by P. Viosca, Jr. (not examined by authors).

*Rana capito sevosa*: Wright and Wright, 1942:186. First use of combination.

*Rana areolata sevosa*: Viosca, 1949:4. First use of combination.

• DEFINITION. The rough to warty dorsum has brownish dark blotches generally not encircled with light borders on a gray to light brown ground color. The venter (at least anteriorly) is darkly spotted. Dorsolateral folds do not contrast with the dorsal ground color.

• REMARKS. Neill (1957) considered Hinds County, Mississippi, specimens to be intergrades between *R. a. sevosa* and *R. a. circulosa*. Goin and Netting (1940) could not assign a specimen from Tangipahoa Parish, Louisiana ("definitely *circulosa*") to *sevosa* and considered the record as an error (excluded from map).

### COMMENT

Neill (1957) is the latest taxonomic treatment of the complex and presents evidence for *R. areolata* with five subspecies. Conant (1975), H. M. Smith (1978) and Behler and King (1979) used this taxonomy, whereas Cochran and Goin (1970) without substantiation listed *R. areolata* with two subspecies and *R. capito* with three.

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