

Catalogue of American Amphibians and Reptiles.

ALTIG, RONALD, AND REN LOHOEFENER. 1982. *Rana grylio*.*Rana grylio* Stejneger
Pig frog

Rana grylio Stejneger, 1901:211. Type-locality, "Bay St. Louis, Hancock County, Mississippi." Holotype, National Museum of Natural History 27443, collected by Gerrit S. Miller, Jr. in summer of 1900 (not examined by authors).

- CONTENT. No subspecies are recognized.

- DEFINITION. This large aquatic (to 165 mm) frog has irregular dark markings scattered over the green to dark brown dorsum. The throat and ventral and posterior surfaces of the hind legs may be heavily mottled, or the venter may be immaculate. Young have dorsolateral stripes like *R. virgatipes*. Dorsolateral folds are lacking, the snout is pointed, the toes are fully webbed, and the fourth toe is only slightly longer than adjacent toes.

- DESCRIPTIONS. Dickerson (1906), Boulenger (1920), Wright (1932), Wright and Wright (1949), Carr and Goin (1955), Conant (1975), Cochran and Goin (1970), Dundee (1974), Martof et al. (1980), Mount (1975), and Behler and King (1979) described the adult; Wright (1929), Wright and Wright (1949), Altig (1970, 1972) the tadpole, and Wright and Wright (1924, 1949), Wright (1932) and Livezey and Wright (1947) the egg.

- ILLUSTRATIONS. Photographs or diagrams of the frog, tadpole and egg are included in the above citations.

- DISTRIBUTION. *Rana grylio* occurs in permanent water on the Coastal Plain from the Santee River, South Carolina to Galveston Bay, Texas, including all of Florida. Wright and Wright (1949), Conant (1975), and Behler and King (1979) provided range maps, and Dickerson (1906), Deckert (1914a, 1914b, 1921), Barbour (1920), Carr (1940), Neill (1947, 1952, 1964), Livezey and Johnson (1948), Limer (1955), Smith and List (1955), Chermock (1952), Martof (1963), and others added range notations.

- FOSSIL RECORD. Fossils of Pleistocene age are from Florida (Tihen, 1952).

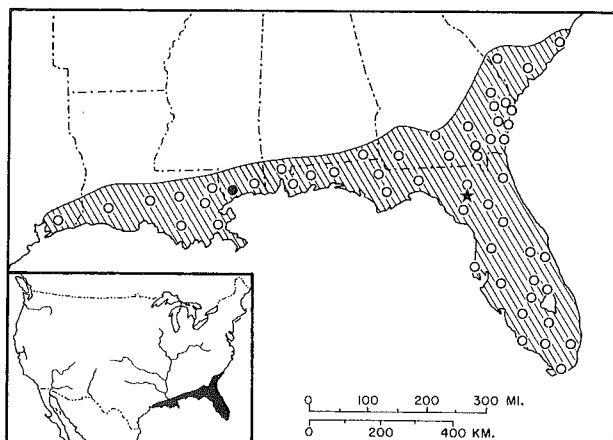
- PERTINENT LITERATURE. These papers involve aspects of physiology and biochemistry: Yamamoto et al. (1966), Lewis and Frieden (1959), Finamore and Frieden (1960), Frieden and Westmark (1961), Herner and Frieden (1960, 1961), Lipner and Hazen (1962), Trader et al. (1963), Price and Frieden (1964), Wahlberg et al. (1964), Fisher et al. (1965), Frieden et al. (1965), Light and Waschek (1965), Welsh and Zipf (1966), Ashley (1972), Ashley et al. (1968), Daly and Witkop (1971), Wallace et al. (1973), Case (1978), and Medda and Frieden (1972). Rosine and Brande (1955), Singer and Salpeter (1961), Parsons and Williams (1962), Andrzejewski et al. (1962), Szarski (1964), Altig and Pace (1974), Elkan (1968), and Case (1979) studied anatomical structures. Tressler and Lemon (1951) and Hansen (1952) discussed the frog as a commercial food source and for use in pregnancy tests. Viosca (1923), Goin and Goin (1953), Einem and Ober (1956), Capranica (1965), Jaeger and Hailman (1973) and Hailman and Jaeger (1974) provided ecological and behavioral studies. Christian and White (1973) named a parasite from this species.

- ETYMOLOGY. The name *grylio* apparently comes from the Greek *gry*, a grunt, and alludes to the pig-like call of the male.

- REMARKS. Confusion surrounding the name *Rana grunniens* Daudin in Sonnini and Latreille (1802), which was potentially confounded by Harper (1940), was clarified by Stejneger (1940).

LITERATURE CITED

- Altig, R. 1970. A key to the tadpoles of the continental United States and Canada. *Herpetologica* 26(2):180-207.
- 1972. Notes on the larvae and premetamorphic tadpoles of four *Hyla* and three *Rana* with notes on tadpole color patterns. *J. Elisha Mitchell Sci. Soc.* 88(3):113-119.
- , and W. L. Pace. 1974. Scanning electron photomicrographs of tadpole labial teeth. *J. Herpetol.* 8(3):247-251.
- Andrzejewski, H., J. Czopek, L. Siankowa, and H. Szarski. 1962. The vascularization of respiratory surfaces in amphibians reaching large body size (*Rana esculenta* L., *Rana pipiens sphenoccephala* (Cope) and *Rana grylio* Stejneger). *Studia Soc. Sci. Torun.* 6:163-177.
- Ashley, H. 1972. Metabolism and distribution of triiodothyronine and thyroxine in the bullfrog tadpole. *Gen. Comp. Endocrinol.* 18(1):22-31.
- , P. Katti, and E. Frieden. 1968. Urea excretion in the bullfrog tadpole; effects of temperature, metamorphosis, and thyroid hormone. *Develop. Biol.* 17(3):293-307.
- Barbour, Thomas. 1920. *Herpetological notes from Florida.* *Copeia* (84):55-57.
- Behler, John L., and F. Wayne King. 1979. *The Audubon Society field guide to North American reptiles and amphibians.* Alfred A. Knopf, New York. 719 p.
- Boulenger, G. A. 1920. A monograph of the American frogs of the genus *Rana*. *Proc. Amer. Acad. Arts Sci.* 55(9):413-480.
- Capranica, R. R. 1965. The evoked vocal response of the bullfrog. A study of communication by sound. *Res. Monogr.* (33). M.I.T. Press, Cambridge, Mass. 110 p.
- Carr, Archie F., Jr. 1940. A contribution to the herpetology of Florida. *Univ. Florida Publ. Biol. Sci. Ser.* 3(1):1-118.
- , and C. J. Goin. 1955. *Guide to the reptiles, amphibians and fresh-water fishes of Florida.* Univ. Florida Press, Gainesville. ix + 341 p.
- Case, Susan M. 1978. *Biochemical systematics of members of*



MAP. Solid circle marks the type-locality; open circles indicate other localities. Star marks a Pleistocene fossil site.

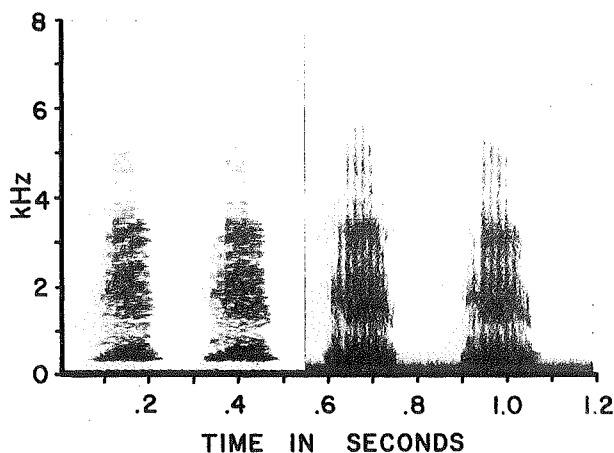


FIGURE. Audiospectrogram of call of *Rana grylio*; vicinity of Richmond Hill, Georgia, 8 August 1976, water 25.9°C; four successive notes with 45 Hz (left) and 300 Hz filters; Amer. Mus. Nat. Hist. Dept. Herpetology tape, no voucher specimen.

- the genus *Rana* native to western North America. Syst. Zool. 27(3):299-311.
- 1979. Observations on some cranial foramina in the Ranidae. Copeia 1979(2):346-348.
- Chermock, Ralph L. 1952. A key to the amphibians and reptiles of Alabama. Mus. Pap. Geol. Surv. Alabama (33):1-88.
- Christian, F. A., and L. L. White. 1973. The genus *Allasotomoides* Stunkard, 1924, with descriptions of *Allasotomoides louisianensis* n. sp. (Trematoda: Paramphistomidae) from the pig frog, *Rana grylio*. Amer. Midland Natur. 90(1):218-220.
- Cochran, Doris M., and C. J. Goin. 1970. The new field book of reptiles and amphibians. G. P. Putnam's Sons, New York. xxii + 359 p.
- Conant, Roger. 1975. A field guide to reptiles and amphibians of eastern and central North America. Second edition. Houghton Mifflin Co., Boston. xviii + 429 p.
- Daly, John W., and B. Witkop. 1971. Chemistry and pharmacology of frog venoms, p. 497-519. In W. Bücherl and E. Buckley (eds.), Venomous animals and their venoms. Vol. II. Academic Press, New York and London.
- Deckert, Richard F. 1914a. List of Salientia from near Jacksonville, Florida. Copeia (3):[3].
- 1914b. Further notes on the Salientia of Jacksonville, Fla. Ibid. (5):[2-4].
- 1921. Amphibian notes from Dade Co., Florida. Ibid. (92):20-23.
- Dickerson, Mary C. 1906. The frog book. Doubleday, Page and Co., Garden City, New York. xvii + 253 p.
- Dundee, Harold A. 1974. Recognition characters for *Rana grylio*. J. Herpetol. 8(3):275-276.
- Einem, Gerald E., and L. D. Ober. 1956. The seasonal behavior of certain Floridian Salientia. Herpetologica 12(3):205-212.
- Elkan, E. 1968. Two cases of epithelial malignancy in Salientia. J. Pathol. Bacteriol. 96:496-499.
- Finamore, F. J., and E. Frieden. 1960. Nucleic acids in induced amphibian metamorphosis. J. Biol. Chem. 235(6):1751-1755.
- Fisher, James, R., Pang F. Ma, and Oscar P. Chilson. 1965. Some tissue specific differences in adenosine deaminase. Comp. Biochem. Physiol. 16(2):199-203.
- Frieden, E., A. Wahlberg, and E. Howard. 1965. Temperature control of the response of tadpoles to triiodothyronine. Nature 205(4977):1173-1176.
- , and G. W. Westmark. 1961. On the anomalous activity of thyroxin analogs in tadpoles. Science 133(3463):1487-1489.
- Goin, Coleman J., and Olive B. Goin. 1953. Temporal variations in a small community of amphibians and reptiles. Ecology 34(2):406-408.
- Hailman, Jack P., and R. G. Jaeger. 1974. Phototactic responses to spectrally dominant stimuli and use of colour vision by adult anuran amphibians: a comparative study. Anim. Behav. 22(4):757-795.
- Hansen, Keith L. 1952. An investigation of native Florida male Salientia as test animals for early pregnancy diagnosis. Quart. J. Florida Acad. Sci. 14(4):231-236.
- Harper, Francis. 1940. Some works of Bartram, Daudin, Latreille, and Sonnini, and their bearing upon North American herpetological nomenclature. Amer. Midland Natur. 23(3):692-723.
- Herner, A. E., and E. Frieden. 1960. Biochemistry of anuran metamorphosis. VII. Changes in serum proteins during spontaneous and induced metamorphosis. J. Biol. Chem. 235(10):2845-2851.
- , and — 1961. Biochemical changes during anuran metamorphosis. VIII. Changes in the nature of red cell proteins. Arch. Biochem. Biophys. 95(1):25-34.
- Jaeger, R. G., and J. P. Hailman. 1973. Effects of intensity on the phototactic responses of adult anuran amphibians: a comparative study. Z. Tierpsychol. 33:352-407.
- Lewis, E. J. C., and E. Frieden. 1959. Biochemistry of amphibian metamorphosis: effects of triiodothyronine, thyroxin, and dinitrophenol on the respiration of the tadpole. Endocrinology 65(2):273-282.
- Light, R. F., and C. C. Waschek. 1965. Liver fatty acids in *Rana grylio* tadpoles and frogs. Comp. Biochem. Physiol. 15(2):167-173.
- Liner, Ernest A. 1955. A herpetological consideration of the Bayou Tortue region of Lafayette Parish, Louisiana. Proc. Louisiana Acad. Sci. 18:39-42.
- Lipner, H., and S. Hazen. 1962. Extrathyroidal iodide pump in tadpoles (*Rana grylio*). Science 138(3543):898-899.
- Livezey, Robert L., and H. M. Johnson. 1948. *Rana grylio* in Texas. Herpetologica 4(5):164.
- , and A. H. Wright. 1947. A synoptic key to the salientian eggs of the United States. Amer. Midland Natur. 37(1):179-222.
- Martof, Bernard S. 1963. Some observations on the herpetofauna of Sapelo Island, Georgia. Herpetologica 19(1):70-72.
- , W. M. Palmer, J. R. Bailey, and J. R. Harrison III. 1980. Amphibians and reptiles of the Carolinas and Virginia. Univ. North Carolina Press, Chapel Hill. 264 p.
- Medda, A. K., and E. Frieden. 1972. Effect of prolactin and growth hormone on the ammonia excretion of bullfrog tadpoles during normal and induced metamorphosis. Gen. Comp. Endocrinol. 19(2):212-217.
- Mount, Robert H. 1975. The reptiles and amphibians of Alabama. Auburn Univ. Agric. Exp. Sta., Auburn, Alabama. vii + 347 p.
- Neill, Wilfred T. 1947. *Rana grylio* in South Carolina. Copeia 1947(3):206.
- 1952. New records of *Rana virgatipes* and *Rana grylio* in Georgia and South Carolina. Ibid. 1952(3):194-195.
- 1964. Frogs introduced on islands. Quart. J. Florida Acad. Sci. 27:127-130.
- Parsons, Thomas, and E. E. Williams. 1962. The teeth of Amphibia and their relationship to amphibian phylogeny. J. Morphol. 110(3):375-390.
- Price, S., and E. Frieden. 1964. B-glucuronidase from amphibian tails. Comp. Biochem. Physiol. 10:245-251.
- Rosine, Willard N., and P. F. Brande. 1955. An anomaly in the venous system of a mature frog, *Rana grylio*. Copeia 1955(2):136-137.
- Singer, M., and M. M. Salpeter. 1961. The bodies of Eberth and associated structures in the skin of the frog tadpole. J. Exp. Zool. 147(1):1-19.
- Smith, P. W., and J. C. List. 1955. Notes on Mississippi amphibians and reptiles. Amer. Midland Natur. 53(1):115-125.
- Sonnini, C. N. S., and P. Latreille. 1802. Histoire naturelle des reptiles. Chez Deterville, Paris, Vol. 2. 332 p.
- Stejneger, L. 1901. A new species of bullfrog from Florida and the Gulf Coast. Proc. U.S. Nat. Mus. 24:211-215.
- 1940. Status of the name *Rana grunniens* Daudin. Copeia 1940(3):149-151.
- Szarski, H. 1964. The structure of respiratory organs in relation to body size in Amphibia. Evolution 18(1):118-126.
- Tihen, J. A. 1952. *Rana grylio* from the Pleistocene of Florida. Herpetologica 8(3):107.
- Trader, C. D., J. B. Wortham, and E. Frieden. 1963. Hemoglobin: molecular changes during amphibian metamorphosis. Science 139(3558):918-919.
- Tressler, D. K., and J. M. Lemon. 1951. Marine products of commerce. 2nd ed. New York, N.Y. 782 p.
- Viosca, Percy, Jr. 1923. An ecological study of the cold blooded vertebrates of southeastern Louisiana. Copeia (115):35-44.
- Wahlberg, A., E. Bright, and E. Frieden. 1964. Activity of some new triiodothyronine analogs in the tadpole. Endocrinology 75:561-564.
- Wallace, D. G., M. C. King, and A. C. Wilson. 1973. Albumin differences among ranid frogs: taxonomic and phylogenetic implications. Syst. Zool. 22(1):1-13.
- Welsh, J. H., and J. B. Zipf. 1966. 5-hydroxytryptamine in frog's skin. J. Cell. Physiol. 68(1):25-34.
- Wright, Albert H. 1929. Synopsis and descriptions of North American tadpoles. Proc. U.S. Nat. Mus. 74(2756):1-70.
- 1932. Life-histories of the frogs of Okefinokee Swamp, Georgia. North American Salientia (Anura) No. 2. The Macmillan Co., New York. xv + 497 p.
- , and A. A. Wright. 1924. A key to the eggs of the Salientia east of the Mississippi River. Amer. Natur. 58(657):375-381.
- , and — 1949. Handbook of frogs and toads of the United States and Canada. Comstock Publ. Co., Ithaca, New York. vii + 640 p.
- Yamamoto, K., D. Kanski, F. E. Cole, and E. Frieden. 1966. The uptake, distribution and excretion of thyroid hormones and inorganic iodide in *Rana grylio* tadpoles. Gunma Symposium on Endocrinology 3:217-238.

RONALD ALTIG AND REN LOHOEFENER, MISSISSIPPI STATE UNIVERSITY, MISSISSIPPI STATE, MISSISSIPPI 39762.

Primary editor for this account, Richard G. Zweifel.

Published 11 February 1982 and Copyright 1982 by the SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES.