

Catalogue of American Amphibians and Reptiles.

Jennings, Mark R. 1988. *Rana onca*.

***Rana onca* Cope
Relict Leopard Frog**

Rana onca Cope, 1875:528. Type-locality, "Utah," estimated by Tanner (1929) as "somewhere along the Virgin River in Washington County," Utah. Holotype, Nat. Mus. Natur. Hist. (USNM) 25331 [formerly USNM 8656, which is the present number of a specimen of *Hyla arenicolor*], an adult female collected in 1872 by Henry Crècy Yarrow (examined by author).

Rana montezumae: Boulenger, 1882:35. Misidentification.

Rana draytoni onca: Cope, 1889:443.

Rana fisberi Stejneger, 1893:227. Type-locality, "Vegas Valley, [Clark County,] Nevada." Holotype, Nat. Mus. Natur. Hist. (USNM) 18957, an adult female collected on 13 March 1891 by Vernon Orlando Bailey (examined by author).

Rana fischeri: Boulenger, 1919:413. Lapsus.

R [anal. pipiens onca]: Wright and Wright, 1949:506 (part).

R [anal. p [pipiens]. fisberi]: Stebbins, 1951:365.

Rana pipiens brachycephala: Schmidt, 1953:83 (part).

• **Content.** No subspecies have been formally proposed although Stebbins (1985) tentatively considers *Rana fisberi* an extinct subspecies of *R. onca*.

• **Definition and Diagnosis.** A small (44-87 mm SVL) species of the *Rana pipiens* complex, distinguished from other species in this group by the combination of short, indistinct, dorsolateral folds that extend 1/2 to 3/4 down the dorsum, generally shortened legs, an incomplete supralabial stripe, upper surfaces of the thighs usually spotted rather than barred, and males having enlarged tympana, paired vocal sacs, and lacking vestigial oviducts. The dorsum is brown, gray, or greenish above, with discrete greenish-brown spots that are often reduced or obscure on the front of the body. Dorsal spots are indefinitely bordered and are usually present on the upper surfaces of the thighs. The venter is generally whitish, with dark mottling on the throat, and yellow to yellow-orange in the groin and undersides of the hind limbs. The fully-developed tadpole (to 85 mm in total length) has a greenish olive dorsum with a heavily mottled, pale green-yellow tail, and light venter. Labial teeth are 2/3 or 1/3 with the second upper row short or absent.

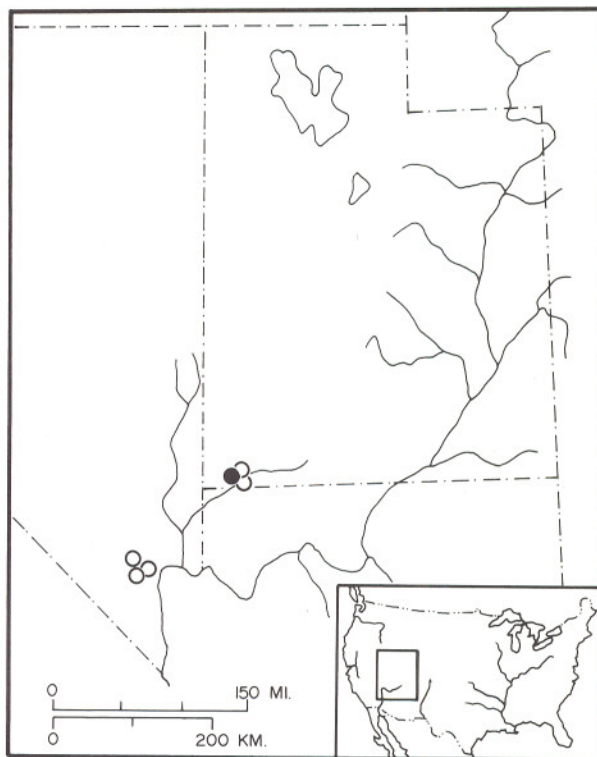
• **Descriptions.** Cope (1889), Boulenger (1920), Slevin (1928), Wright and Wright (1949), and Stebbins (1985) provided descriptions of the adult. Wright and Wright (1949) described the tadpole under *Rana fisberi*. The voice of *R. onca* was reported to be similar to that of *R. pipiens* (Wright and Wright 1949). The eggs and egg mass of *R. onca* are unknown.

• **Illustrations.** Cope (1875: pl. XXV), illustrated the type specimen. Slevin (1928), Tanner (1931), and Wright and Wright (1949: pls. XCVI and CVIII) [under *Rana fisberi*] provided black and white photographs of adults. Wright and Wright (1949: pl. XII, fig. 2) also illustrated the tadpole mouth-parts under *R. fisberi*. The color plate of "*Rana onca*" in Dickerson (1906: pl. II, fig. 6) is actually *R. yavapaiensis* (Platz 1984), as are the following photographs in Wright and Wright (1949): pls. XCIX and CIX, figs. 2 and 3.

• **Distribution.** Restricted to creeks, springs, and seeps in the vicinity of Las Vegas Valley, Clark County, Nevada, and the Virgin River Valley, Washington County, Utah, at elevations between 370 and 760 m. All populations are now believed to be extinct (see Remarks).

• **Fossil Record.** None.

• **Pertinent Literature.** Platz (1984) and IUCN (in press) provided the most comprehensive survey of published information on this



Map. Solid circle marks the type-locality, open circles indicate other localities.

species. Earlier workers often confused *Rana onca* with other frogs of the *R. pipiens* complex (see Nomenclatural History). Miscellaneous taxonomic and ecological notes are in Dickerson (1906), Tanner (1931), Linsdale (1940), and Stebbins (1985). Wright and Wright (1949) summarized what is known about the life history of the species and provided first-hand observations of frogs in the field. Stebbins (1951) described the decline and disappearance of populations in Las Vegas, Nevada. Pace (1974), Platz and Mecham (1979), Platz (1984), and Platz and Frost (1984) provided preliminary taxonomic studies on *R. onca* and discussed its distinctness from other western ranids.

• **Nomenclatural History.** Until relatively recently, authors have generally confused *Rana onca* with other members of the *R. pipiens* complex. Dickerson (1906), Boulenger (1919), Van Denburgh and Slevin (1921), Slevin (1928), and Tanner (1931) perceptively identified *R. fisberi* as a synonym of *R. onca*, but Dickerson (1906) and Tanner (1931) failed to exclude frogs now identified as *R. yavapaiensis* and *R. pipiens*. Linsdale (1940) and Wright and Wright (1949) did likewise but still considered *R. fisberi* populations as distinct. Since Pace (1974), most authors consider *R. fisberi* a synonym of *R. onca*, but some workers (e.g., Behler and King 1979, Bury et al. 1980) continue to list *R. fisberi* as a separate taxon or incorrectly include information from *R. yavapaiensis* populations with *R. onca*.

• **Remarks.** *Rana onca* occurred at the edge of the ranges of *R. chiricahuensis*, *R. pipiens*, and *R. yavapaiensis*, and apparently survived as relict populations in marginal habitat provided by desert springs and creeks. Since 1920 there has been extensive habitat alteration and introductions of non-native fish and amphibians into *R. onca* localities, and the species has experienced a severe population decline (Cowles and Bogert 1936, Wright and Wright 1949, Stebbins 1951). The last known specimens were collected in 1950 from Berry Springs, Washington County, Utah, but in a recent survey of this site as well as surrounding likely habitats by Platz (1984), did not find any frogs. Therefore, *R. onca* is considered to be extinct. If a living frog from southern Nevada or southwestern Utah is found

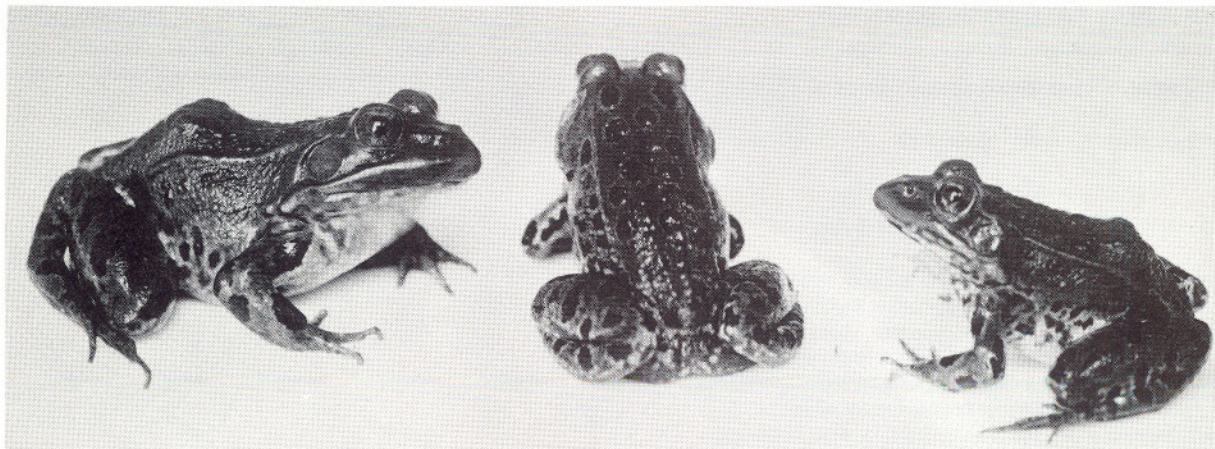


Figure. Adult female (left) and male (right) *Rana onca* collected from Las Vegas, Clark County, Nevada, on August 11, 1913. Photo taken in August 1913 by John Van Denburgh. (Courtesy of the Department of Herpetology, California Academy of Sciences).

that fits the description of this species, the proper State and Federal authorities should be contacted.

• **Etymology.** The name *onca* (Greek, *onkos*) means "swelling" or "tumor". Perhaps Edward Drinker Cope used this name in allusion to the overall appearance of the body of the holotype.

• **Comment.** Because of *Rana onca*'s superficial resemblance to other western ranids, the paucity of museum specimens, and an undetermined amount of hybridization between *R. onca* and other members of the *R. pipiens* complex (Platz 1984), this species has a confusing taxonomic history and has been considered as being closely related to *R. aurora*, *R. clamitans*, *R. montezumae*, *R. pretiosa*, and *R. pipiens*, by past workers (Boulenger 1882, 1920; Cope 1889; Dickerson 1906; Wright and Wright 1949; Stebbins 1951; Pace 1974). Recent taxonomic studies on *R. onca* indicate that it is a member of the *R. pipiens* complex deserving specific status (Platz and Mecham 1979, Platz 1984, Platz and Frost 1984).

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