BROWN, BRYCE C. 1967. *Eurycea nana.*
Catalogue of American Amphibians and Reptiles, p. 35.

Eurycea nana Bishop
San Marcos salamander

Eurycea nana Bishop, 1941:6. Type-locality, "Lake at the head of the San Marcos River at San Marcos, Hays County, Texas." Holotype, Univ. Michigan Mus. Zool. 89759, collected by C. E. Mohr on 22 June 1938.
Eurycea neotenes nana: Schmidt, 1953:55.

• CONTENT. No subspecies are currently recognized, but see COMMENT.

• DEFINITION AND DIAGNOSIS. A small (41 to 50 mm total length), slender neotenic salamander with short slender legs, well developed and highly pigmented gills, and tail fins represented only by narrow keels. The dorsum is uniform light brown with a dorsolateral row of pale yellowish flecks on either side of the midline and the venter is yellowish white. The interorbital distance is less than one and one-half times that of the eye diameter. The eyes have a dark ring around the lens due to the pigmented sclerotic coat. The costal grooves number 16 or 17 with 6 or 7 costal grooves between the adpressed limbs. There are 2 to 6 (mean, 4.8) palatopterygoid teeth and 7–13 (mean, 11) premaxillary teeth.

Baker (1961) gave a diagnosis of this species. *Eurycea nana* differs from all other neotenic *Eurycea* of Texas by its smaller size, slender body proportions and shorter limbs, uniform light brown dorsal coloration, relatively large eyes with dark rings around the lens, larger number of costal grooves, fewer pterygoid teeth, and fewer premaxillary teeth.

• DESCRIPTIONS. The only published descriptions are those of Bishop (1941 and 1943); he mentioned the larvae only briefly.

Eurycea nana is a very small (up to 50 mm total length) neotenic salamander with a snout–vent length of 30 mm. The head is narrow with a broadly rounded snout. The moderately large eyes (less than one and one-half times into the interorbital distance) are partly or completely surrounded by a dark ring and have a dark iris with only a few light flecks. The gills are well developed and pigmented nearly to the tips.

The slender, somewhat compressed trunk is flattened above and has a median dorsal furrow which extends from the base of the tail to the head where it forks and sends a branch to each eye. Sixteen or 17 costal grooves are present with 6 to 7 between the adpressed limbs. The slender tail has a well developed dorsal fin of nearly uniform height that arises abruptly at the level of the posterior end of the vent and a ventral fin on the distal third of the tail that gradually widens toward the tip. The small, slender legs have 4 toes on the forefeet (1-4-2-3—in order of length from the shortest) and 5 on the hind feet (1-5-2-4-3).

The general color above is light brown with the chromatophores grouped into little clusters separated by inconspicuous narrow light lines. The venter is white; the tail is tinged with yellowish. A series of 7 to 9 small irregular light spots is present along each side of the midline of the back; rarely a second incomplete series occurs on the sides just above the insertion of the legs.

In a series of 8 specimens (Bishop, 1941) the dentition is as follows: premaxillary teeth, 7 to 13 (mean, 11); vomerine teeth, 9 to 14 (mean, 11.7); and palatopterygoid teeth 2 to 6 (mean, 4.8).

The vent of the male is larger than that of the female; the opening is lined with short papillae. That of the female is a simple slit with the sides anteriorly thrown into narrow folds. The testes are strongly pigmented with black.

• ILLUSTRATIONS. See Bishop (1943:440) for black and white photographs and Conant (1958:270) for a colored photograph of adult. Line drawings are given in Mitchell and Redell (1965:20–21). No illustrations of the eggs or larvae have been published.

• DISTRIBUTION. Known only from the type locality in San Marcos, Hays County, Texas.

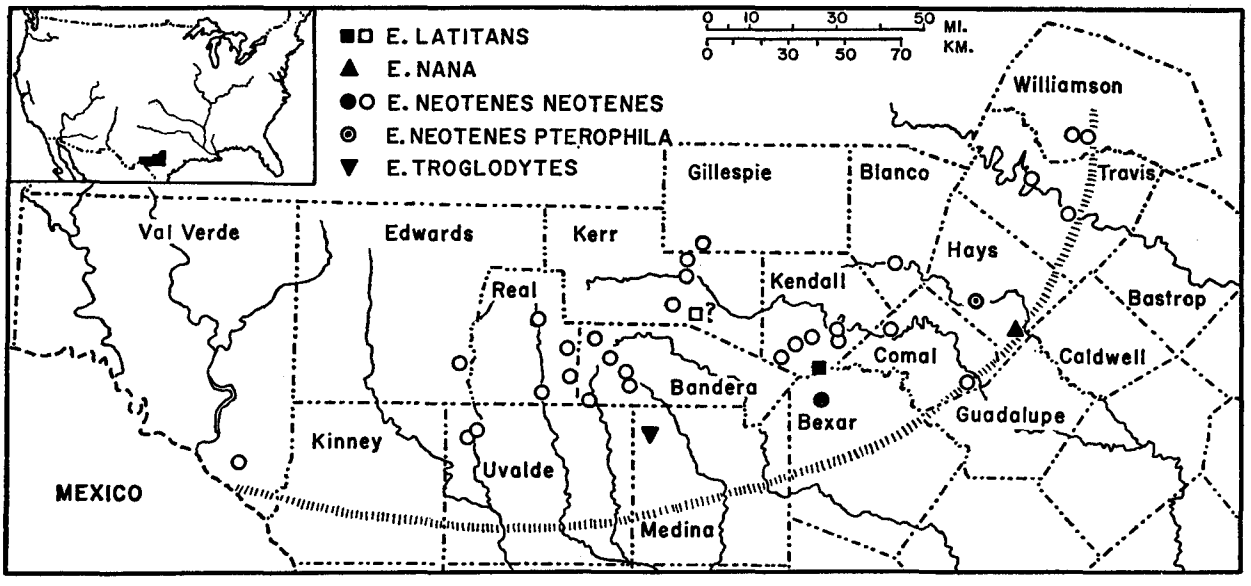
• FOSSIL RECORD. None.

• PERTINENT LITERATURE. Baker (1957) gave additional morphological data and (1961) a key including this species. Potter and Rabb (1960) and Dundee (1962) reported on thyroxin-induced metamorphosis.

• ETYMOLOGY. The specific name *nana* is from the Greek *nanos* or Latin *nanus* meaning dwarf. It refers to the small size of these salamanders.

COMMENT

Schmidt (1953) included *E. nana* as a subspecies of *E. neotenes* without giving his reasons for doing so. These two forms have numerous differences that warrant classifying them as distinct species. Among these are differences in size, body form, pigmentation, and dentition. *E. nana* is smaller but has larger eyes; is more slender with shorter limbs, has a uniform light brownish dorsum and a dark ring around the eye, and fewer pterygoid and premaxillary teeth. Moreover, it is unlikely that the subterranean streams system which furnishes



MAP. Distribution of neotenic species of *Eurycea* on the Edwards Plateau of Texas. Hatching marks the approximate edge of the Plateau. Open symbols indicate localities other than type-localities. *E. nana* is known only from the type-locality.

water for the springs in which *E. nana* occurs connects with water systems in which other neotenic *Eurycea* occur. This is especially doubtful in the case of *E. neotenes*.

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