

Catalogue of American Amphibians and Reptiles.

DIXON, JAMES R. 1970. *Coleonyx variegatus*.

Coleonyx variegatus (Baird)
Banded gecko

Stenodactylus variegatus Baird, 1859a:254 (part). See Remarks.

Stenodactylus variegatus Baird, 1859b:12. Type-locality, "Colorado Desert"; restricted to Winterhaven (= Fort Yuma), Imperial County, California (Klauber, 1945; Smith and Taylor, 1950b). Holotype, U. S. Natl. Mus. 3217, collected about 1852 by A. Schott during the Mexican Boundary Survey.

Coleonyx variegatus: Cope, 1866:310. First use of combination. See Remarks.

• CONTENT. Eight subspecies are recognized: *abbotti*, *bogerti*, *fasciatus*, *peninsularis*, *slevini*, *sonoriensis*, *utahensis*, and *variegatus*.

• DEFINITION. *Coleonyx variegatus* is a medium-sized gecko (maximum snout-vent length 75 mm in females; 68 mm in males) with four or more preanal pores in an uninterrupted row, and no enlarged dorsal tubercles. The base of the cloacal spur is constricted, and its distal end is pointed. The color pattern in adults ranges from broad unbroken bands to large spots in adults, but juveniles are always banded.

• DESCRIPTIONS. The original description by Baird (1859b) was brief, but the species was well illustrated. External characters were described in detail by Cope (1900), Van Denburgh (1922), Smith (1933, 1946), and Klauber (1945); the osteology by Cope (1892), Noble (1921), Camp (1923), and Kluge (1962); and chromosomes ($2n = 32$) by Matthey (1933). Klauber (1945) described variation in several populations of *C. variegatus*, including detailed descriptions of young, juveniles, and adults. Smith (1946), and Stebbins (1954, 1966) gave brief descriptions with range maps.

• ILLUSTRATIONS. Schmidt and Inger (1957) and Stebbins (1966) illustrated the species in color. Black and white photographs were given by Van Denburgh (1922), Smith (1933, 1946), Ditmars (1936), Greenberg (1943), Pickwell (1947), Shaw (1950b), Schmidt and Inger (1957), Wijffels (1963), Miller and Stebbins (1964), Conant (1965), and Dixon (1967). Baird (1859b), Cope (1900), and Stebbins (1954) presented line drawings of scutellation. Osteological features were illustrated by Cope (1892), Noble (1921), Smith (1933), McDowell and Bogert (1954), and Kluge (1962).

• DISTRIBUTION. *Coleonyx variegatus* ranges from southwestern Utah and southern Nevada, southwestward to coastal California and both coasts of Baja California, eastward to central Arizona and southwestern New Mexico, and southward to extreme southern Sinaloa and western Durango, Mexico; found in desert and semi-arid environments in the northern part of the range, but extends into subtropical habitats in the south.

• FOSSIL RECORD. None.

• PERTINENT LITERATURE. The most comprehensive work on the species is that of Klauber (1945). A number of ecological (Hardy, 1944; Saint Girons, 1956; Gates, 1957; Wijffels, 1963; Miller and Stebbins, 1964; Mayhew, 1968), anatomical (Noble, 1921; Cook, 1949; Ryerson, 1949; Lynn and Walsh, 1957; Crescitelli, 1958; Hamilton, 1960; Kluge, 1962; Posner and Chiasson, 1966; Cuellar, 1966; Lynn, 1967), ethological (Greenberg, 1943; Brattstrom, 1952; Bustard, 1962, 1963; Evans, 1966, 1967), and distributional (Smith, 1933, 1946; Shaw, 1950b; Murray, 1955; Smith and Hensley, 1958; Stebbins, 1954, 1966; Lowe, 1955; Leviton and Banta,

1964; Dixon and Medica, 1965; Dixon, 1967) papers have appeared. A longevity record of 14 years is given by Moehn (1962). The species has been widely used in experiments on auditory sensitivity (Wever, 1965, 1967a, 1967b, 1967c; Wever *et al.*, 1964; Suga and Campbell, 1967; Campbell, 1969).

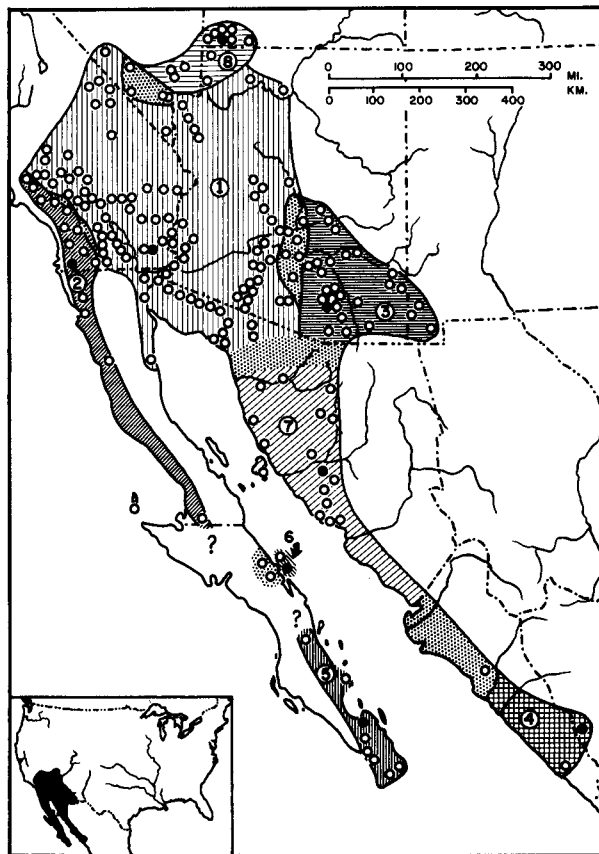
• ETYMOLOGY. The name *variegatus* (Latin) "of different sorts," refers to the contrasting elements of the color pattern; *abbotti*, *bogerti*, and *slevini* honor Clinton G. Abbott, Charles M. Bogert, and Joseph R. Slevin; *fasciatus* (Latin) "banded," refers to the color pattern; *peninsularis* alludes to the range of the subspecies on the peninsula of Baja California; *sonoriensis* and *utahensis* refer to the states of Sonora and Utah.

• REMARKS. *Stenodactylus variegatus* Baird (1859a) was based on syntypes from California and Texas. Baird (1859b) fixed the identity of *variegatus* with the California population, but the concept of a single species of *Coleonyx*, ranging from Texas to California, remained. Stejneger (1893) re-described the Texas species, and restricted the name *variegatus* to the western species (see Dixon, 1970).

Coleonyx variegatus was placed in the genus *Eublepharis* by Boulenger (1885) and Cope (1900), but Stejneger (1893) redefined *Coleonyx* and validated the genus.

1. *Coleonyx variegatus variegatus* (Baird)
Desert banded gecko

Stenodactylus variegatus Baird, 1859b:12. See species account.
Coleonyx variegatus variegatus: Klauber, 1945:138. First use of trinomial.



MAP. The solid symbols mark type-localities. Hollow symbols mark other localities. Stippling indicates areas of intergradation.

• **DIAGNOSIS.** Differs from other subspecies in the greater number of gulars in contact with the mental (6.3); fewer preanal pores in males (6.4); absence of a light nuchal band; presence of head spotting, and narrow body bands with light centers.

• **REMARKS.** Hardy (1944), Klauber (1945), Shaw (1950b), Brattstrom (1952), and Gates (1957) commented on habits and ecology of this subspecies. Cowles (1941) noted the effect of *Hypsiglena* venom on *C. v. variegatus*. Reynolds (1943), Klauber (1945), Shaw (1950a), and Banta (1962) mentioned predators of this subspecies.

2. *Coleonyx variegatus abbotti* Klauber San Diego banded gecko

Coleonyx variegatus abbotti Klauber, 1945:154. Type-locality, "Proctor Valley, San Diego County, California." Holotype, San Diego Soc. Nat. Hist. (formerly L. M. Klauber) 34790, collected 28 Feb. 1942 by William Moore.

• **DIAGNOSIS.** Differs from other subspecies by the presence of unbroken dorsal bands of equal width and a narrow light nuchal band in adults, and the absence of head spotting in adults.

• **REMARKS.** Klauber (1945) discussed the systematics, habitat and ecology of this subspecies.

3. *Coleonyx variegatus bogerti* Klauber Tucson banded gecko

Coleonyx variegatus bogerti Klauber, 1945:176. Type-locality, "Xavier, Pima County, Arizona." Holotype, San Diego Soc. Nat. Hist. (formerly L. M. Klauber) 32486, collected 17 July 1939 by Lee W. Arnold.

• **DIAGNOSIS.** Differs from other subspecies in having more preanal pores in males (usually 8 or more); from all except *variegatus* in having dark dorsal bands with light centers; and in having dorsal bands equal in width to, or narrower than the light interspaces.

• **REMARKS.** The southern distributional limit of *bogerti* is not known. Lowe (1955) and Dixon and Medica (1965) have reported the eastern limit of its range in New Mexico. The area of intergradation between *bogerti* and *variegatus* is along a line from Casa Grande to Apache Junction, Arizona.

4. *Coleonyx variegatus fasciatus* (Boulenger) Black-banded gecko

Eublepharis fasciatus Boulenger, 1885:234. Type-locality, "Ventanas, [Durango] Mexico." Holotype, British Mus. Nat. Hist. 1946.8.30.91 (formerly 83.4.16.53), collected by A. Forrer (date unknown).

Coleonyx fasciatus: Taylor, 1935:203. First use of combination.

Coleonyx variegatus fasciatus: Conant, 1965:4. First use of trinomial.

• **DIAGNOSIS.** Differs from other subspecies in the absence of enlarged postnasals; in the presence of three black dorsal bands; and in having more robust limbs and digits.

• **REMARKS.** Günther (1885-1902 [1893]) figured the holotype of *E. fasciatus*. Taylor (1935) described the second known specimen and resurrected the name from the synonymy of *Coleonyx variegatus* (Stejneger, 1893). Smith and Taylor (1950a) regarded *C. fasciatus* as a distinct species, but Conant (1965) described a specimen intermediate between *fasciatus* and *sonoriensis*, and suggested that Taylor's specimen also was probably an intergrade.

5. *Coleonyx variegatus peninsularis* Klauber San Lucan banded gecko

Coleonyx variegatus peninsularis Klauber, 1945:160. Type-locality "La Paz, Lower California, Mexico." Holotype,

Mus. Comp. Zool. 37210, collected in 1933 by Miguel L. Cornejo, Jr.

• **DIAGNOSIS.** Differs from other subspecies in having even-edged dorsal dark bands wider than the interspaces; a greater number of scales in contact with the mental; reduced head spotting; and prominent light canthal lines.

• **REMARKS.** Leviton and Banta (1964) presented ecological and taxonomic data, and a habitat photograph. Intergradation with other subspecies of *variegatus* is unknown.

6. *Coleonyx variegatus slevini* Klauber Santa Inez Island banded gecko

Coleonyx variegatus slevini Klauber, 1945:167. Type-locality, "South Santa Inez Island (Lat. 27°N.) on the Gulf of California coast of Lower California, Mexico." Holotype, California Acad. Sci. 51697, collected 13 May 1921 by Joseph R. Slevin.

• **DIAGNOSIS.** Differs from other subspecies in having five dark dorsal bands and fewer gular scales in contact with the mental (3.95).

• **REMARKS.** Klauber (1945) described ontogenetic pattern changes and commented on the habitat of this subspecies. I found an individual in a vertical crack of a granite bluff during the day on San Marcos Island, the second known insular locality.

7. *Coleonyx variegatus sonoriensis* Klauber Sonoran banded gecko

Coleonyx variegatus sonoriensis Klauber, 1945:162. Type-locality, "5 miles southeast of Hermosillo, Sonora, Mexico." Holotype, Univ. Michigan Mus. Zool. 72140, collected 25-29 June 1932, by Morrow J. Allen.

• **DIAGNOSIS.** Differs from other subspecies in having wide dorsal bands frequently divided by a vertebral light line; head spotted in adults; and postparietal light loop present.

• **REMARKS.** Klauber (1945) gave an account of pattern variation and habitat of this subspecies. Although Langebartel and Smith (1954) recorded the northern limits of the range, intergradation with other subspecies is unknown.

8. *Coleonyx variegatus utahensis* Klauber Utah banded gecko

Coleonyx variegatus utahensis Klauber, 1945:171. Type-locality, "Watercress Spring, Washington County, Utah." Holotype, San Diego Soc. Nat. Hist. (Formerly L. M. Klauber) 35792, collected 16 April 1941, by Ross Hardy. Watercress Spring is about one mile northwest of Saint George (Klauber, 1945).

• **DIAGNOSIS.** Differs from other subspecies in having irregular, wide, dorsal bands without light centers, that tend to coalesce with intercalary spots; in having wavy light canthal lines; and in the absence of a light vertebral line.

• **REMARKS.** Klauber (1945) discussed ontogenetic pattern change in this subspecies. Tanner and Jorgensen (1963) and Tanner and Banta (1966) suggested that the area of intergradation with *variegatus* may be wider than indicated by Klauber (1945).

COMMENT

The geographic ranges of the southern subspecies need to be determined in many areas. Zones of intergradation between *bogerti* and *sonoriensis*, *variegatus* and *sonoriensis*, *peninsularis* and *variegatus*, and between *abbotti* and *variegatus*, remain to be discovered. Detailed life history studies are conspicuously absent. Additional studies are required to validate the subspecies *sonoriensis*, *bogerti*, and *utahensis*.

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