

Catalogue of American Amphibians and Reptiles.

DEAN, R. H. AND BICKHAM, J. W. 1983. *Staurotypus salvini* Gray.

Staurotypus salvini Gray
Central American Musk Turtle

Staurotypus (Stauromys) salvinii Gray, 1864:127. Type-locality, "Haumanchal, Guatemala." Holotype, Brit. Mus. Natur. Hist. 1946.1.22.79, collected by Osbert Salvin, date unknown (examined by authors).

Staurotypus salvinii: Strauch, 1865:94.

Stauromys salvinii: Gray, 1870:65.

Claudius severus Cope, 1872:24. Type-locality, "Santa Efigenia on the western side of the Isthmus of Tehuantepec [Oaxaca], Mexico." Holotype, United States Nat. Mus. 64005, female shell, collected by Francois Sumichrast, date unknown (examined by authors).

Staurotypus marmoratus Fischer, 1872:265. Type-locality, "Mexico," restricted by Smith and Taylor (1950:27) to "Santa Efigenia, Oaxaca," Mexico. Holotype, location unknown, collected by Effeldt, date unknown.

Staurotypus (Claudius) severus: Bocourt, 1876:387.

Staurotypus salvini: Gunther, 1885:11. First use of combination, emendation of ending.

Staurotypus biporcatus: Gadow, 1905:209. A nomen nudem.

Staurotypus salvanii: Beltrán, 1953:130. Lapsus calami.

• CONTENT. *Staurotypus salvini* is a monotypic species.

• DEFINITION. Adults reach 25 cm carapace length. Weak carapacial keels are present in adults. The carapace is brown to dark black and may be mottled; the plastron is yellowish. The anterior plastral lobe is shorter than posterior lobe; and the bridge exceeds 7.5% of the plastron length. The abdominal scute exceeds 13% of plastral length; the anal scute is fused. Head dark or with mottling, sides of neck mottled. Jaws yellow to olive green; upper jaw weakly hooked, lower jaw strongly hooked. The nasal scute is trapezoidal in shape. The male tail is long, thick and nail tipped; female tail short. Roughened patches occur on the inner surface of the thigh and crus in males. Females exhibit greater carapace height and differ significantly from males by having greater ratios of plastron length, fore lobe length, hind lobe length, and bridge length to carapace length.

• DESCRIPTIONS. General: Alvarez del Toro (1973), Mlynarski and Wermuth (1975), Pritchard (1979), Smith and Smith (1980). Skull: Siebenrock (1897). Shell: Mlynarski (1976). Nose: Parsons (1968). Head muscles and larynx: Schumacher (1973). Cervical vertebrae: Williams (1950). Rostral pores: Winokur and Legler (1974). Penis: Zug (1966). Cloacal bursae: Smith and James (1958). Blood: Dessauer (1970), Frair (1964, 1972, 1977), Sullivan and Riggs (1967). Karyology: Bull, Moon, and Legler (1974), Moon (1974), Sites et al. (1979), Sites, Bickham, and Haiduk (1979).

• ILLUSTRATIONS. Black and white photographs of adult, Alvarez del Toro (1973); of juvenile, Sachsse and Schmidt (1976), Schmidt (1970). Color photograph: adult, Pritchard (1979). Various drawings: Gray (1870), Wermuth and Mertens (1961), Smith and Smith (1980).

• DISTRIBUTION. *Staurotypus salvini* is found throughout the Pacific lowlands from the Isthmus of Tehuantepec in Mexico southward to El Salvador.

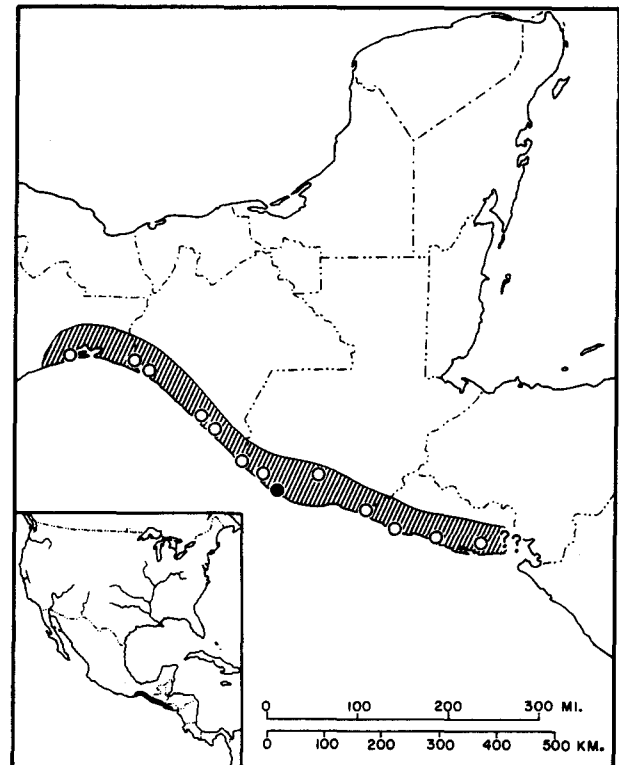
• FOSSIL RECORD. None.

• PERTINENT LITERATURE. General accounts: Dean (1980), Hausmann (1964), and Mittermeier (1970). Reproduction: Jarvis and Biegler (1967, 1968), Klemens (1971), Klingelhoffner and Scherpner (1959), Sachsse and Schmidt (1976). Taxonomy: Casas Andreu (1965, 1967), Gray (1869, 1870, 1873a, b), Legler (1965), Maldonado-Koerdell (1953), Mertens (1952a, b), Neill (1965), Perrier (1928), Schenkel (1901), Siebenrock (1907, 1909), Strauch (1865, 1890), Sumichrast (1880, 1882), Wermuth and Mertens (1961). Longevity: Bowler (1977).

• ETYMOLOGY. The specific name *salvini* is patronymic in honor of the collector, Osbert Salvin.

LITERATURE CITED

- Alvarez del Toro, Miguel. 1973. Los reptiles de Chiapas. Segunda edición. Tuxtla Gutierrez, Chiapas, México, Gobierno del Estado. 178 p.
- Beltrán, Enrique. 1953. Vida silvestre y recursos naturales a lo largo de la carretera panamericana. Inst. Mexicano de Recursos Naturales Renovables, A.C., México, D.F. viii + 228 p.
- Bocourt, Marie-Firmin. 1876. Note sur quelques reptiles de l'Isthme de Tehuantepec (Mexique) donnees par M. Sumichrast au Museum. J. Zool., Paris 5(5-6):386-411.
- Bowler, J. Kevin. 1977. Longevity of reptiles and amphibians in North American collections as of 1 November, 1975. Soc. Stud. Amphib. Rept. Misc. Publ., Herpetol. Circ. (6), iv + 32 p.
- Bull, James J., R. G. Moon, and John M. Legler. 1974. Male heterogamety in kinosternid turtles (genus *Staurotypus*). Cytogenet. Cell Genet. 13(5):419-425.
- Casas Andreu, Gustavo. 1965. Estudio preliminar sobre las tortugas de agua dulce en México. An. Inst. Nac. Inves. Biol.-Presq. 1:359-401.
- 1967. Contribución al conocimiento de las tortugas dulceacuicolas de México. México, D.F., Univ. Nac. Auton. México, Fac. Cienc., Dept. Biol. 96 p.
- Cope, Edward D. 1872. Synopsis of the species of the Chelydridae. Proc. Acad. Natur. Sci. Philadelphia 24:22-29.
- Dean, Robert H. 1980. Selected aspects of the ecology of the Central American mud turtle *Staurotypus salvinii*. MS Thesis, Texas A&M Univ. 69 p.
- Dessauer, Herbert C. 1970. Blood chemistry of reptiles: physiological and evolutionary aspects, p. 1-72. In Carl Gans and Thomas S. Parsons (eds.), Biology of the Reptilia, Vol. 3. Morphology C. Academic Press, London and New York.
- Fischer, Johann G. 1872. *Staurotypus marmoratus* n. sp. Arch. Naturgesch. 38(1):265-272.
- Frair, Wayne. 1964. Turtle family relationships as determined by serological tests, p. 535-544. In Charles A. Leone (ed.), Taxonomic biochemistry and serology. Ronald Press Co., New York.



MAP. Solid circle marks type-locality; open circles indicate other localities. Question marks indicate uncertain range boundary.

- 1972. Taxonomic relations among chelydrid and kinosternid turtles elucidated by serological tests. *Copeia* 1972(1):97–108.
- 1977. Turtle red blood cell packed volumes, sizes, and numbers. *Herpetologica* 33(2):167–190.
- Gadow, Hans F. 1905. The distribution of Mexican amphibians and reptiles. *Proc. Zool. Soc. London* 1905(2):191–244.
- Gray, John E. 1864. Description of a new species of *Staurotypus* (*S. salvinii*) from Guatemala. *Proc. Zool. Soc. London* 1864:127–128.
- 1869. Notes on the families and genera of tortoises (Testudinata) and on the characters afforded by the study of their skulls. *Ibid.* 1869(12):165–225.
- 1870. Supplement to the catalogue of shield reptiles in the collection of the British Museum. Part 1. Testudinata (tortoises). London. x + 120 p.
- 1873a. Notes on the family Chelydridae. *Ann. Mag. Natur. Hist. (London)*. Ser. 12, 67:66–70.
- 1873b. Notes on the tortoises of the "Zoology of Mexico" of Mm. A. Duméril and Bocourt. *Ibid.* Ser. 4, 12:109–114.
- Gunther, Albert C. 1885–1902. Reptilia and Batrachia, p. xx + 326. In F. D. Godman and O. Salvin, *Biologia Centrali-Americana*. Dulau & Co., London.
- Hausmann, Peter. 1964. Auf Schildkrötenfang in Mexiko. *Aquar.-u. Terrar. Z.* 17:51–54.
- Jarvis, Caroline, and Ruth Biegler. 1967. Species of wild animals bred in captivity during 1965. *Int. Zoo. Yearb.* 7:300–365.
- 1968. Species of wild animals bred in captivity during 1966. *Ibid.* 8:288–348.
- Klemens, Michael. 1971. London's zoo is going up. *Int. Turtle Tortoise Soc. J.* 5(3):20–25.
- Klingehöffer, Wilhelm, and Christoph Scherpner. 1959. Terrienkunde. Viertes Teil: Schlangen, Schildkröten, Panzerrechen, Reptilienzucht. Alfred Kernan, Stuttgart. 379 p.
- Legler, John M. 1965. A new species of turtle, genus *Kinosternon*, from Central America. *Univ. Kansas Publ. Mus. Natur. Hist.* 15(13):615–625.
- Maldonado-Koerdell, Manuel. 1953. Reptiles, p. 121–133. In E. Beltran (ed.), *Vida silvestre y recursos naturales a lo largo de la carretera panamericana*. Inst. Mexicano de Recursos Naturales Renovables, A.C., México, D.F.
- Mertens, Robert. 1952a. Die Amphibian und Reptilien von El Salvador, auf Grund der Reisen von R. Mertens und A. Zilch. *Abh. Senckenberg Naturforsch. Ges.* (487):1–120.
- 1952b. Neues über die Reptilienfauna von El Salvador. *Zool. Anz.* 148(3–4):87–94.
- Mittermeier, Russell A. 1970. Turtles in Central American markets. *Int. Turtle Tortoise Soc. J.* 4(5):20–26.
- Mlynarski, Marian. 1976. *Hanbuch de Palaoherpétologie (Encyclopedia of paleoherpétology)*. Part 7. Testudines. Gustav Fischer, Stuttgart. 130 p.
- , and Heinz Wermuth. 1975. The turtles, order Testudines, p. 75–108, 486–489. In H. C. B. Grzimek (ed.), *Animal life encyclopedia*, vol. 6. Van Nostrand Reinhold, New York.
- Moon, R. G. 1974. Heteromorphism in a kinosternid turtle. *Mammal. Chromosomes Newslett.* 15(1):10–11.
- Neill, Wilford T. 1965. New and noteworthy amphibians and reptiles from British Honduras. *Bull. Florida St. Mus. Biol. Sci.* 9(3):77–130.
- Parsons, Thomas S. 1968. Variation in the choanal structure of Recent turtles. *Canadian J. Zool.* 46(6):1235–1263.
- Perrier, Jean O. E. 1928. Développement embryogénique des Vertébrés allantoidiens les Reptiles. *Traite de Zoologie* 8: 2885–3118.
- Pritchard, Peter C. H. 1979. *Encyclopedia of turtles*. T.F.H. Publ. Co., Neptune, New Jersey. 895 p.
- Sachsse, Walter, and Alfred A. Schmidt. 1976. Nachzucht in der zweiten Generation von *Staurotypus salvinii* mit weiteren Beobachtungen zum Fortpflanzungsverhalten (Testudines, Kinosternidae). *Salamandra* 12(1):5–16.
- Schenkel, E. 1901. Achter Nachtrag zum Katalog der herpetologischer Sammlung des Baseler Museums. *Verh. Naturforsch. Ges. Basel* 13(1):142–199.
- Schmidt, Alfred A. 1970. Zur Fortpflanzung der Kreuzbrustschildkröten (*Staurotypus salvinii*) in Gefangenschaft. *Salamandra* 6(½):3–10.
- Schumacher, Gert-Horst. 1973. The head muscles and hyolaryngeal skeleton of turtles and crocodylians, p. 101–199. In Carl Gans and Thomas S. Parsons (eds.), *Biology of Reptilia*, vol. 4. Morphology D. Academic Press, London and New York.
- Siebenrock, Friedrich. 1897. Das Kopfskelet der Schildkröten. *Sitzungsber. Akad. Wiss. Wein.* 106(1):245–328.
- 1907. Die Schildkrötenfamilie Cinosternidae. *Ibid.* 116(1): 527–599.
- 1909. Synopsis der rezenten Schildkröten mit Berücksichtigung der in Historischerzeit Ausgestorbener Arten. *Zool. Jahrb. Suppl.* (10, part 3):427–618.
- Sites, Jack W., John W. Bickham, and Mike W. Haiduk. 1979. Derived X chromosome in the turtle genus *Staurotypus*. *Science* 206:1410–1412.
- , —, —, and John B. Iverson. 1979. Banded karyotypes of six taxa of kinosternid turtles. *Copeia* 1979(4):692–698.
- Smith, Hobart M., and Louis F. James. 1958. The taxonomic significance of cloacal bursae in turtles. *Trans. Kansas Acad. Sci.* 61(1):86–96.
- , and Rozella B. Smith. 1980. Synopsis of the Herpetofauna of Mexico. Vol VI. Guide to Mexican turtles: bibliographic addendum III. John Johnson, North Bennington, Vermont. 1044 p.
- , and Edward H. Taylor. 1950. An annotated checklist and key to the reptiles of Mexico exclusive of the snakes. *Bull. United States Nat. Mus.* (199):v + 253.
- Strauch, Alexander. 1865. Die Vertheilung der Schildkröten über den Erdball. *Mém. Acad. Imper. Sci. St. Pétersbourg* (ser. 7) 8(13):1–207.
- 1890. Bemerkungen über die schildkrötensammlung im zoologischen Museum de Kaiserlichen Akademie der Wissenschaften zu St. Pétersbourg. *Ibid.* (ser. 7) 38(2):1–127.
- Sullivan, Bolling, and Austen Riggs. 1967. Structure, function and evolution of turtle hemoglobins. I. Distribution of heavy hemoglobins. II. Electrophoretic studies. III. Oxygenation properties. *Comp. Biochem. Physiol.* 23(2):437–474.
- Sumichrast, Francois. 1880. Contribution à l'histoire naturelle du Mexique I. Notes sur une collection de reptiles et des batraciens de la partie occidentale de la Isthme de Tehuantepec. *Bull. Soc. Zool. France* 5:162–190.
- 1881–1882. Contribución a la historia natural de México. I. Notas a cerca de una colección de reptiles y batracios de la parte occidental del Istmo de Tehuantepec. *La Naturaleza* 5:268–293.
- 1882. Enumeracion de las especies de reptiles observados en la parte meridional de la Republica Mexicana. *Ibid.* 6:31–45.
- Wermuth, Heinz, and Robert Mertens. 1961. Schildkröten, Krokodile, Bruchenechsen. G. Fischer, Jena. 422 p.
- Williams, Ernest E. 1950. Variation and selection in the cervical central articulations of living turtles. *Bull. Amer. Mus. Natur. Hist.* 94(9):505–562.
- Winokur, Robert M., and John M. Legler. 1974. Rostral pores in turtles. *J. Morphol.* 143(1):107–120.
- Zug, George R. 1966. The penial morphology and the relationships of cryptodiran turtles. *Occas. Pap. Mus. Zool. Univ. Michigan* (647):1–24.

R. H. DEAN, AND J. W. BICKHAM, TEXAS A&M UNIVERSITY, COLLEGE STATION, TEXAS 77843.

Primary editor for this account, Carl H. Ernst.

Published 27 September 1983 and Copyright 1983 by the SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES.