

Catalogue of American Amphibians and Reptiles.

Iverson, John B. 1985. *Staurotypus* Wagler.

***Staurotypus* Wagler
Mexican Musk Turtles**

Staurotypus Wagler, 1830:137. Type-species, *Terrapene triporcata* Wiegmann 1828, by monotypy.

Clemmys (*Staurotypus*): Fitzinger, 1835:109.

Kinosternon (*Staurotypus*): Gray, 1844:34.

Staurotypus (*Stauremys*): Gray, 1864:127.

Stauremys Gray, 1869:180. Type-species, *Staurotypus* (*Stauremys*) *salvinii* Gray 1864, by monotypy.

Staurotipus: Sumichrast, 1882b:34.

Saurotopus: Deraniyagala, 1931:1065.

● CONTENT. Two species, *Staurotypus triporcatus* and *S. salvinii*, are recognized.

● DEFINITION. These aquatic musk turtles are medium to large (40 cm carapace length) with oval, strongly carinate carapaces. The vertebral scutes are usually longer than broad; and eleven pairs of marginal scutes are present. The nuchal bone possesses costiform processes. The plastron is small; length less than 70% of the carapace length. The triangular posterior plastral lobe is narrow and lacks a hinge; the rounded anterior plastral lobe has a weakly kinetic transverse hinge. A large endoplastron is present. Seven or eight plastral scutes are present; an intergular scute is occasionally present, and the anal scutes are often partially or completely fused. The interabdominal seam length is 13–25% of the plastron length. A bony suture connects the narrow bridge with the carapace. Large axillary and inguinal scutes are always present, in contact, and separate the other plastral scutes from the marginals. The bridge length is 7.5–20% of the plastron length. The head is large, and the beak is never strongly hooked. The nasal scale is usually at least slightly emarginated posteriorly. A large pair of mental barbels is present. The tail supports two rows of conical tubercles, and is longer in males than in females. Males also have well developed patches of tuberculate scales (claspings organs) on the posterior surfaces of each crus and thigh.

● DESCRIPTIONS. Most of the significant literature is listed in the species accounts. Additional detailed descriptions include the skull (Baur, 1888; Rutimeyer, 1873), and karyotype (Bickham and Carr, 1983).

● ILLUSTRATIONS. Color illustrations appear in Gray (1855), Angel (1949), and Mlynarski and Wermuth (1975). Black and white photographs of adults are in Straffen (1912), Mittermeier (1971), and Petzold (1979); those of juveniles in Mittermeier (1971). Drawings of adults are in Wagler (1830, 1833), and Duméril (1870); of the skull in Kilias (1957); and of sutures and bones of the shell in Boulenger (1889), Nopsca (1926), and Mlynarski (1976).

● DISTRIBUTION. The genus *Staurotypus* occurs throughout the lowlands of the western Caribbean from central Veracruz, Mexico, eastward through northern Guatemala, Belize, and extreme north-western Honduras, but excluding the Yucatan Peninsula; and throughout the Pacific lowlands from eastern Oaxaca, Mexico to El Salvador.

● FOSSIL RECORD. None.

● PERTINENT LITERATURE. Most of the literature is listed in the species accounts; the following include only those not listed there: biomass (Iverson, 1982); reproduction (Cope, 1865; Sumichrast, 1880, 1882a); habits in captivity (Klingelhoff and Scherpnier, 1959; Slavens, 1976); skeletal mass (Iverson, 1984); shell kinesis (Bramble et al., 1984); karyology (Gilboa, 1975; Yntema, 1976); zoogeography (Wallace, 1876; Palacký, 1898, Nopsca, 1926); and eyes (Underwood, 1970).

● KEY TO THE SPECIES. The catalogue account numbers are given in parentheses.

Interabdominal seam length 19 to 23% of plastron length; head strongly reticulated above *S. triporcatus* (328)

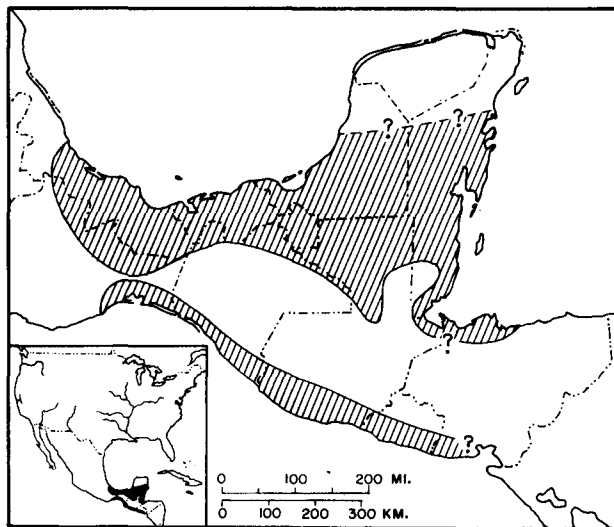
Interabdominal seam length 14 to 19% of plastron length; head mottled or unicolor, but never strongly reticulated *S. salvinii* (327)

● REMARKS. Morphological similarities (Williams, 1950; Parsons, 1968; Zug, 1971; Gaffney, 1975; Hutchison and Bramble, 1981) argue that staurotypine turtles belong with the kinosternines in the family Kinosternidae; however, chromosomal evidence (Bickham and Carr, 1983) suggests that the staurotypines may be a distinct family.

● ETYMOLOGY. The name *Staurotypus* is from the Greek *stauros* (meaning cross) and *typos* (shape), and referring to the cruciform plastron.

LITERATURE CITED

- Angel, Fernand. 1949. Petit atlas des amphibiens et reptiles. 3d ed. Fasc. I. Apodes, urodeles, anoures, rhynchocephales, chelonians, crocodiliens. Fasc. II. Sauriens, ophiidiens. Paris, Boubee. Fasc. I, 129 p.; Fasc. II, 141 p.
- Baur, Georg Hermann Carl Ludwig. 1888. Osteologische Notizen ueber Reptilien. Fortsetzung V. Zool. Anz. 11(291):736–740.
- Bickham, John W., and John L. Carr. 1983. Taxonomy and phylogeny of the higher categories of cryptodiran turtles based on a cladistic analysis of chromosomal data. *Copeia* 1983(4): 918–932.
- Boulenger, George Albert. 1889. Catalogue of the chelonians, rhynchocephalians, and crocodiles in the British Museum (Natural History). London, x + 311 p.
- Bramble, Dennis M., J. Howard Hutchison, and John M. Legler. 1984. Kinosternid shell kinesis: structure, function and evolution. *Copeia* 1984(2):456–475.
- Cope, Edward Drinker. 1865. Third contribution to the herpetology of tropical America. *Proc. Acad. Natur. Sci. Philadelphia* 17:185–198.
- Deraniyagala, P. E. P. "1930" (1931). Testudinate evolution. *Proc. Zool. Soc. London* 48(9):1057–1070.
- Duméril, Auguste H. A. 1870. In A. Duméril, M.-F. Bocourt, and F. Mocquard (eds.), *Études sur les reptiles. In Recherches zoologiques pour servir à l'histoire de la fauna de l'Amérique Centrale et du Mexique. Mission scientifique au Mexique et dans l'Amérique Centrale, recherches zool., part 3, sect. 1.* Imprimerie Nat., Paris. xiv + 1012 p. (1870–1909).
- Fitzinger, Leopoldo J. F. J. 1835. Entwurf einer systematischen Anordnung der Schildkröten nach den Grundsätzen der natürlichen Methode. *Ann. Mus. Wien* 1:103–128.
- Gaffney, Eugene S. 1975. A phylogeny and classification of the higher categories of turtles. *Bull. Amer. Mus. Natur. Hist.* 155(5):387–436.
- Gilboa, Itzhak. 1975. Karyotypes of amphibians and reptiles; a bibliographic review, p. 91–156. In H. G. Dowling (ed.), 1974 *Yearbook of Herpetology. Herpetol. Info. Search Systems*, Amer. Mus. Natur. Hist., New York.
- Gray, John Edward. 1844. Catalogue of the tortoises, crocodiles,



MAP. Range of the genus *Staurotypus*.

- and amphisbaenians in the collection of the British Museum. London. viii + 80 p.
- 1855. Catalogue of the shield reptiles in the collection of the British Museum. Part I. Testudinata (tortoises). Taylor and Francis, London. 79 p.
 - 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. Proc. Zool. Soc. London 1869(12):165-225.
- Hutchison, J. Howard, and Dennis M. Bramble. 1981. Homology of the plastral scales of the Kinosternidae and related turtles. Herpetologica 37(2):73-85.
- Iverson, John B. 1982. Biomass in turtle populations: a neglected subject. Oecologia 55(1):69-76.
- 1984. Proportional skeletal mass in turtles. Florida Sci. 47(1):1-11.
- Kilius, R. 1957. Die funktionell-anatomische und systematische Bedeutung der Schläfen reduktionen bei Schildkröten. Mittl. Zool. Mus. Berlin 33(2):307-354.
- Klingelhoff, Wilhelm, and C. Scherpner. 1959. Terrienkunde. Vierter Teil: Schlangen, Schildkröten, Panzerechen, Reptilienzucht. Alfred Kernan, Stuttgart. 379 p.
- Mittermeier, Russell A. 1971. Status—the market in So. E. Mexico. Int. Turtle Tort. Soc. J. 5(3):15-19.
- Mlynarski, Marian. 1976. Handbuch per Paläoherpetologie (Encyclopedia of paleoherpetology). Part 7. Testudines. Gustav Fischer, Stuttgart. 130 pp.
- , 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.
- Nopcsa, Ferenc V. 1926. Heredity and evolution. Proc. Zool. Soc. London 1926(29):633-665.
- Palacký, Jan. 1898. La distribution géographique des chéloniens. Bull. Int. Acad. Tchèque Sci. 1:9-14.
- Parsons, Thomas S. 1968. Variation in the choanal structure of Recent turtles. Canadian J. Zool. 46(6):1235-1263.
- Petzold, H. G. 1979. *Staurotypus salvinii* Gray 1864 Salvin-Kreuzbrustschildkröte (Familie: Kinosternidae, Schlamm-schildkröten). Aquar. Terr. 26(10):360.
- Rutimeyer, L. 1873. Bau von Schale und Schadel lebenden und fossilen Schildkroeten. Verh. Naturf. Ges. Basel 6(1):1-137.
- Slavens, F. L. 1976. The working guide to breeding potential for reptiles and amphibians in United States zoos. Seattle, Washington. Woodland Park Zoological Gardens. ix + 81 p.
- Straffen, Otto. 1912. Die Lurch und Kriechtiere (1st part), p. 1-572. In A. Brehm (ed.), Brehms Tierleben, Vol. IV. Bibliographischen Inst., Leipzig and Vienna.
- Sumichrast, Francois. 1880. Contribution a l'histoire naturelle du Mexique. 1. Notes sur une collection des reptiles et des batraciens de la partie occidentale de l'Istme de Tehuantepec. Bull. Zool. Soc. France 5:162-190.
- 1882a. Contribución a la historia natural de México. I. Notas acerca de una colección de reptiles y batracios de la parte occidental del Istmo de Tehuantepec. La Naturaleza 5:268-293.
 - 1882b. Enumeración de las especies de reptiles observados en la parte meridional de la República Mexicana. La Naturaleza 6(1):31-45.
- Underwood, Garth. 1970. The eye, p. 1-97. In Carl Gans and Thomas S. Parsons (eds.), Biology of the Reptilia, vol. 2. Morphology B. Academic Press. London and New York.
- Wagler, Johann G. 1828-1833. Descriptions et icones amphibiorum. Parts 1-3. J. G. Cotta'schen Buchhandlung, München, Stuttgart u. Tübingen.
- 1830. Natürliches System der Amphibien, mit vorangehender Classification der Säugethiere und Vögel. J. G. Cotta'schen Buchhandlung, München, Stuttgart u. Tübingen. vi + 354 p.
- Wallace, Alfred Russell. 1876. The geographical distribution of animals. With a study of the relations of living and extinct faunas as elucidating the past changes of the earth's surface. 2 Vols. Harper and Brothers, New York.
- Wiegmann, Arend Friedrich August. 1828. Beytrage zur Amphibienkunde. Isis von Oken, 21(3-4):364-383.
- Williams, Ernest E. 1950. Variation and selection in the cervical central articulations of living turtles. Bull. Amer. Mus. Natur. Hist. 94(9):505-562.
- Yntema, C. L. 1976. Effects of incubation temperatures on sexual differentiation in the turtle, *Chelydra serpentina*. J. Morphol. 150(2):453-462.
- Zug, George R. 1971. Buoyancy, locomotion, morphology of the pelvic girdle and hindlimb, and systematics of cryptodiran turtles. Misc. Publ. Mus. Zool. Univ. Michigan (142):1-98.

JOHN B. IVERSON, EARLHAM COLLEGE, RICHMOND, INDIANA 47374.

Primary editor for this account, Carl H. Ernst.

Published 30 January 1985 and Copyright 1985 by the SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES.