

## REPTILIA: TESTUDINES: PELOMEDUSIDAE

## PODOCNEMIS LEWYANA

## Catalogue of American Amphibians and Reptiles.

Iverson, J.B. 1995. *Podocnemis lewyana*.

*Podocnemis lewyana* Duméril  
Magdalena River Turtle

*Podocnemis lewyana* Duméril, 1852:242. Type-locality, originally recorded as "les environs de Santa Fé de Bogota" [Colombia] (for the larger syntype, Muséum National d'Histoire Naturelle, Paris [MNHN] 8985) and "la République de Venezuela" (for the smaller syntype, MNHN 8360). The MNHN catalog and the base on which MNHN 8985 is mounted both record "Rivière de la Magdaleine" [= Río Magdalena] (R. Bour, pers. comm.). Syntypes, MNHN 8985 (not 8905 as recorded by Iverson, 1992:75) and 8360 collected (date unknown) by Bernard Lewy (not examined by author). MNHN 8985 was designated a lectotype by Williams (1954:281), who identified MNHN 8360 as *Podocnemis vogli*. This designation implies the restriction of the type locality to "les environs de Santa Fé de Bogota."

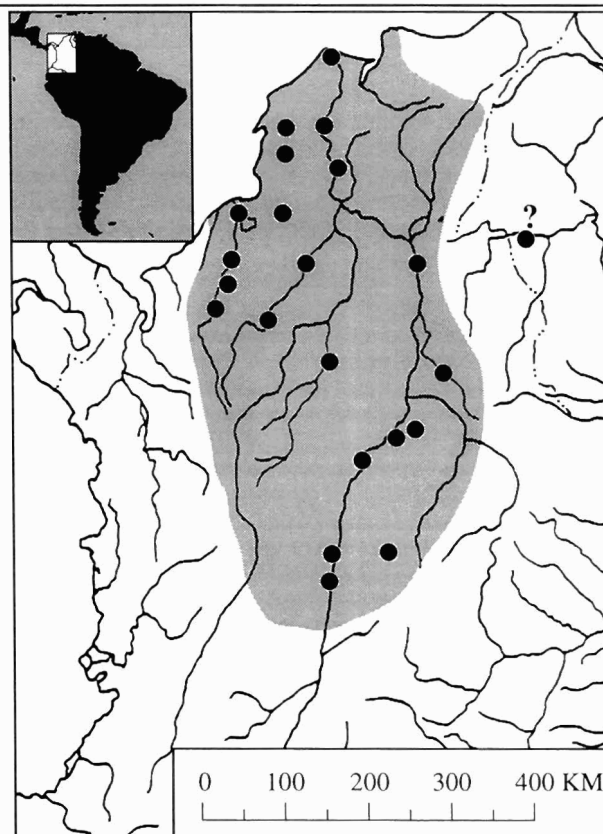
*Chelonemys Dumeriliana*: Gray, 1870:83 (part).

*Pod[ocnemis]. Lessyana*: Goeldi, 1886:277 (*ex errore*).

*Podocnemis Lewyana*: Luederwaldt 1926:406.

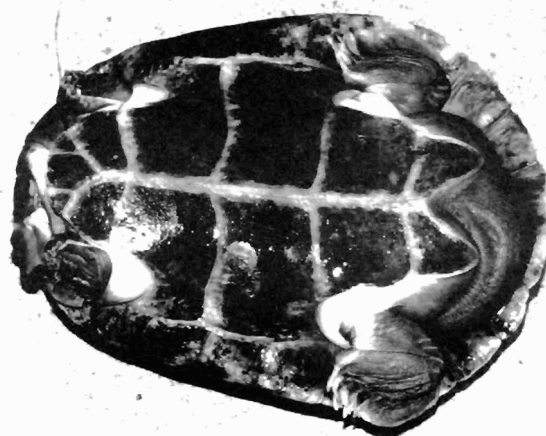
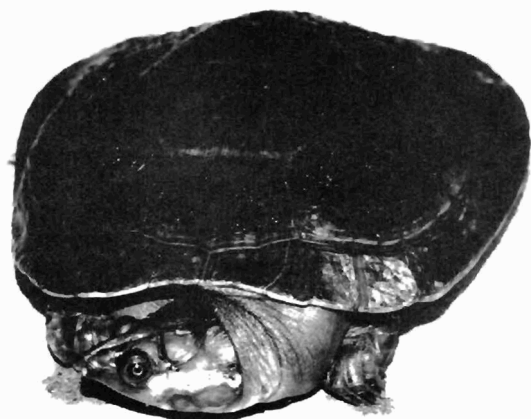
• **Content.** *Podocnemis lewyana* is a monotypic species.

• **Definition.** Carapace lengths of adult females reach approximately 32.5 cm; those of adult males 45.0 cm. The oval carapace of the adult is flattened, has a smooth posterior margin, and usually lacks a keel and a cervical indentation. Juveniles may have a weak medial keel, and a posteriorly serrated shell. The vertebrals are wider than long, with the third being the widest, the first and fifth the smallest, and the fifth posteriorly flared. The carapace is gray to olive brown or pinkish brown to dark brown, and may be darkly spotted. The plastron is much smaller than the carapace, and connected to it with a broad, bony bridge. The anterior plastral lobe is rounded anteriorly and is shorter than the posterior lobe. The posterior lobe has a distinct anal notch and is as wide as the anterior lobe. The typical plastral formula is abdominal ~ pectoral > femoral > intergular > anal ~ gular > humeral. The intergular is broader than the gulars are long. The plastron and bridge are olive gray to grayish yellow. The narrow head has a protruding snout, an unnotched, slightly



**Map.** Dots indicate locality records; the type-locality cannot be precisely plotted. The shaded area marks limit of drainage basins inhabited by the Magdalena River turtle. The question mark indicates a problematic locality in Venezuela (Pauler and Trebbau, 1995), which is extralimital.

rounded upper jaw, and a medial groove between the orbits. The tympanum is as broad as the orbit. The interparietal scale is broad and heart-shaped, with the parietals in medial contact behind it. Subocular scales and two chin barbels are present. Two longitudinal ridges are present on the triturating surface of the upper jaw. The premaxillae do not separate the maxillae and they do not extend posteriorly to the choanae. The incisive foramen lies completely within the premaxilla, and a small vomer



**Figure.** An adult male *Podocnemis lewyana* from the Río Magdalena, Colombia (photographs by William R. McCord).

bone may be present. The neck and limbs are gray to olive, with a broad yellowish band extending posteriorly from the orbit across the tympanum. The jaws are dark yellow to horn-colored and the throat is yellowish. Three large scales are present on the posterior margin of each hind foot. Males have longer, thicker tails than females.

• **Descriptions.** General descriptions are found in Boulenger (1889), Siebenrock (1902, 1909), Luederwaldt (1926), Nicéforo Maria (1952), Williams (1954), Pritchard (1979), Groombridge (1982), and Ernst and Barbour (1989). Specific descriptions include those of the hatchling (Cole and Link, 1972) and of the karyotype (Rhodin et al., 1978).

• **Illustrations.** Line drawings are in Wermuth and Mertens (1961), Honegger et al. (1985), and King and Burke (1989). Black and white photographs are in Cole and Link (1972), Mittermeier (1978), Pritchard (1979), Freiberg (1981), and Ernst and Barbour (1989). Color photographs appear in Pritchard (1979), Freiberg (1981), Methner (1989), and Pauler and Trebbau (1995). The palate, upper jaw, and anterior plastron were illustrated by Williams (1954), and the triturating surface of the cranium was figured by Gaffney (1979).

• **Distribution.** *Podocnemis lewyana* is known definitively from the Río Magdalena and Río Sinú river basins in Colombia. However, Pauler and Trebbau (1995) found a single live specimen in the possession of local farmers south of Lago de Maracaibo in Venezuela; it was reportedly collected locally in the Río Tarra, a tributary of the Río Catatumbo.

• **Fossil Record.** None.

• **Pertinent Literature.** General reviews are found in Groombridge (1982) and Ernst and Barbour (1989). Additional references, by topic, are: taxonomy and diagnostic characters (Luederwaldt, 1926; Müller, 1935; Williams, 1954); distribution (Medem, 1958; Iverson, 1992; Pauler and Trebbau, 1995); natural history (Medem, 1964, 1965); reproduction (Steindachner, 1902; Medem, 1964, 1965; Vanzolini, 1977; Castaño-Mora, 1986); feeding (Rhodin et al., 1981); conservation (Mittermeier, 1975, 1978; Groombridge, 1982); rostral pores (Winokur and Legler, 1974); choanal structure (Parsons, 1968); cloacal bursae (Smith and James, 1958); shell abnormalities (Medem, 1958); respiratory muscles (Shah, 1962); parasites (Brooks, 1976); blood chemistry (Frair et al., 1978); serology (Frair, 1980); erythrocyte volume (Frair, 1977); husbandry (Methner, 1989); vernacular names (Mittermeier et al., 1980); and use by indigenous peoples (Simón, 1882; Castaño-Mora, 1986).

• **Nomenclatural History.** *Podocnemis Coutinhii* was described by Goeldi (1886) and synonymized with *P. lewyana* by Siebenrock (1902). This was widely accepted until Mittermeier and Wilson (1974) correctly placed *P. Coutinhii* in the synonymy of *P. erythrocephala*.

• **Etymology.** The specific name is a patronym and honors Bernard Lewy, who collected the types.

#### Literature Cited

- Boulenger, G.A. 1889. Catalogue of the chelonians, rhynchocephalians, and crocodiles in the British Museum (Natural History). New ed. The Trustees (Brit. Mus., Nat. Hist.), London.
- Brooks, D.R. 1976. *Neodeuteroberis pritchardae* gen. et sp. n. (Digenea: Microscaphidiidae) in a sideneck turtle, *Podocnemis lewyana* Dumeril 1852, from Colombia. J. Parasitol. 62:426-428.
- Castaño-Mora, O.V. 1986. Contribución al conocimiento de la reproducción de *Podocnemis lewyana* Duméril (Reptilia: Quelonia: Pelomedusidae). *Caldasia* 15:665-667.
- Cole, M. and B. Link. 1972. *Podocnemis* in captivity. Internat. Turtle Tortoise Soc. J. 6(2):12-14, 33.
- Duméril, A.H.A.. 1852. Description des reptiles nouveaux ou imparfaitement connus de la collection du Muséum d'Histoire Naturelle, et remarques sur la classification et les caractères des reptiles. Premier Mémoire. Ordre des Chéloniens et premières familles de l'ordre des Sauriens (Crocodyliens et Caméléoniens). Arch. Mus. Hist. Nat. Paris 6:209-264, pls. 14-22.
- Ernst, C.H. and R.W. Barbour. 1989. Turtles of the world. Smithsonian Inst. Press, Washington, D.C.
- Frair, W. 1977. Turtle red blood cell packed volumes, sizes, and numbers. *Herpetologica* 33:167-190.
- . 1980. Serological survey of pleurodiran turtles. *Comp. Biochem. Physiol.* 65B:505-511.
- , R.A. Mittermeier, and A.G.J. Rhodin. 1978. Blood biochemistry and relations among *Podocnemis* turtles (Pleurodira, Pelomedusidae). *Comp. Biochem. Physiol.* 61B:139-143.
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- Honegger, R.E., R.A. Mittermeier, and A.G.J. Rhodin. 1985. *Podocnemis lewyana*, p. 009.005.003. In P. Dollinger (ed.), CITES wild fauna and flora identification manual. Vol. 3. Amphibia, Reptilia, Pisces: Testudinata. IUCN, Gland, Switzerland.
- Iverson, J.B. 1992. A revised checklist with distribution maps of the turtles of the world. Privately printed, Paust Printing, Richmond, Indiana.
- King, F.W. and R.L. Burke. 1989. Crocodylian, tuatara, and turtle species of the world: a taxonomic and geographic reference. Assoc. Syst. Coll., Washington, D.C.
- Luederwaldt, H. 1926. Os chelonios brasileiros com a lista das espécies do Museu Paulista. *Rev. Mus. Paulista* 14:405-469 + 12 pl.
- Medem, F. 1956-57 (1958). Informe sobre reptiles Colombianos. (II). El conocimiento actual sobre la distribución geográfica de los Testudinata en Colombia. *Bol. Mus. Cienc. Nat., Caracas* 2/3:13-45.
- . 1964. Parte II. Los reptiles acuáticos de la hoya del Sinu, p. 110-152. In G. Dahl and F. Medem (eds.), Informe sobre la fauna acuática del Río Sinu. Corporación Autonomía Regional de los valles del Magdalena y del Sinu. C.V.M., Dept. de Investigaciones Ictiológicas y Faunísticas.
- . 1965. Anexo I. Lista de reptiles acuáticos coleccionados durante la expedición, p. 103-110. In G.F. Dahl, F. Medem, and A. Ramos Henao (eds.), El Bocachico, contribución al

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- Frair, W. 1977. Turtle red blood cell packed volumes, sizes, and numbers. *Herpetologica* 33:167-190.
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- Luederwaldt, H. 1926. Os chelonios brasileiros com a lista das espécies do Museu Paulista. *Rev. Mus. Paulista* 14:405-469 + 12 pl.
- Medem, F. 1956-57 (1958). Informe sobre reptiles Colombianos. (II). El conocimiento actual sobre la distribución geográfica de los Testudinata en Colombia. *Bol. Mus. Cienc. Nat., Caracas* 2/3:13-45.
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- . 1965. Anexo I. Lista de reptiles acuáticos coleccionados durante la expedición, p. 103-110. In G.F. Dahl, F. Medem, and A. Ramos Henao (eds.), El Bocachico, contribución al