

ON THE OCCURRENCE OF THE SOFT-SHELLED TURTLE,  
*PELOCHELYS BIBRONI* (OWEN) IN MARINE ENVIRONMENT

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ABSTRACT

A soft-shelled turtle, *Pelochelys bibroni* (Owen), caught alive from Palk Bay — a new record from the southern part of Indian peninsula — proves beyond doubt that the species can tolerate the marine environment, as against the belief that it is purely a freshwater form. The behaviour of the animal was studied keeping it under captivity for 14 days.

The taxonomic details and the distributional record of the species are given.

A soft-shelled turtle, *Pelochelys bibroni*, was caught in a trawl net operated in Palk Bay off Mandapam on 14th September, 1973. This species was first recorded by Owen in 1853. Later Gray (1864) reported this species from Malacca and Phillipine Islands, Strauch (1890) from Fuchow, China, and recently by Jones (1950) from Papua, New Guinea.

*Pelochelys* is a monotypic genus and is the most widely distributed of all the freshwater turtles. *P. bibroni* has a wide range of geographical distribution from southern China through the East Indies to the Philippines and New Guinea (Schmidt and Inger 1957). According to Smith (1931) its occurrence in Bengal is doubtful. Moreover, there is no record of its occurrence in the southern part of the Indian peninsula. The habitat of the species has also been a matter of dispute. A perusal of the literature reveals that though general statements are available regarding the sea-going habit of this species there are no evidences to prove its saltwater tolerance. The present report of *Pelochelys bibroni* from Palk Bay establishes the extent of its distribution from the lower Ganges to the southern part of Indian Peninsula, and also confirms that it enters the sea and tolerates the salt water.

*PELOCHELYS BIBRONI* (OWEN 1853).

*Trionyx (Gymnopus) bibroni* Owen 1853, *Cat. Osteol. Ser. R. Coll. Surg.* 1: 185 (type loc. "Australia"); Smith 1930, *Bull. Raffles Mus. Singapore*, 3: 3.

*Chitra indica* Gunther 1864, *Rept. Bri. India*: 50, pl. VI.

*Pelochelys cantorii* Gray 1864, *Proc. Zool. Soc.* 90, figs. (type loc. Malacca)  
Annandale 1912, *Rec. Indian Mus.* 7: 168; Schmidt 1927, *Bull. Amer.*

*Mus. Nat. Hist.*: 409, figs. Seibenrock 1909, *Zool. Jahrb. Jena. Suppl.*, 10: 607; Jones 1950, *Proc. R. Zool. Soc. N.S.W.*: 37-38.

*Pelochelys cantoris* Boulenger 1889, *Cat. Chel. Bri. Mus.*: 262; Boulenger 1890, *Fauna Bri. India*: 15; Mell 1922, *Arch. Naturg. Berlin* 88 (10): 110.

*Pelochelys poljakowii* Strauch 1890, *Mem. Acad. Sc. St. Petersb.* 38 (7): 188 (type loc. Fuchow, China).

*Pelochelys cummingii* Gray 1864, *Proc. Zool. Soc.*: 90 (type loc. Phillipine Is.)

*Pelochelys bibroni* Smith 1931, *Fauna Bri. India*: 160-162.

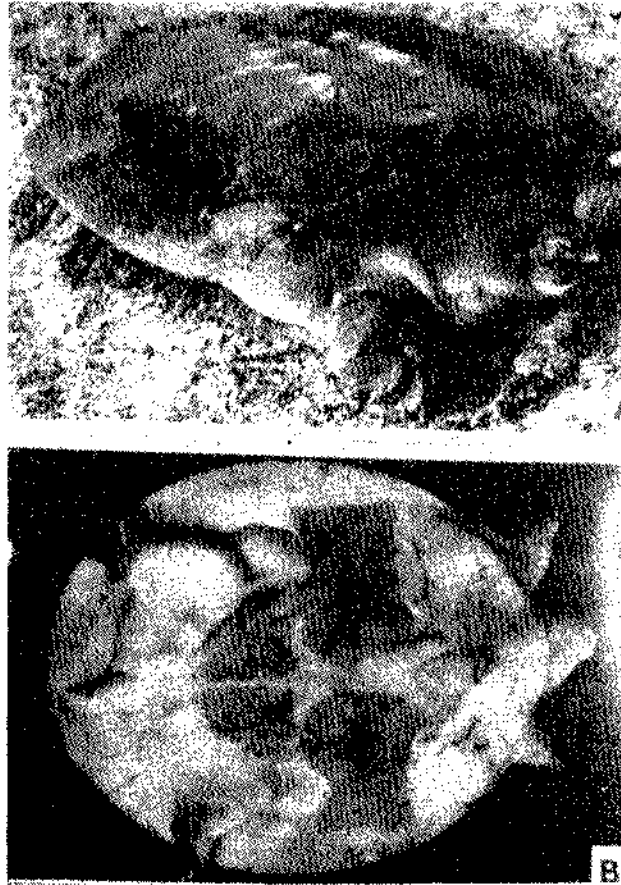


FIG. 1. *Pelochelys bibroni*. A: Dorsal view; B: Ventral view showing callosities.

**Material:** A single female specimen of disc-length 570 mm, caught in a trawl net from Palk Bay, five kilometers off Mandapam in September 1973 (Fig.1). The live specimen was kept in a seawater aquarium where it lived for 14 days. After death, the turtle was examined and stuffed and is deposited in the Central Marine Fisheries Research Institute Museum.

*Description:* The disc nearly rounded. The bones of both carapace and plastron embedded in dermal tissue. A crescent-shaped, tough and fleshy rim is around the carapace broader posteriorly and tapering anteriorly through the sides. There are 8 neurals in the carapace forming a continuous series, the 8th one very small. There are 8 pairs of pleurals, the last one pair in contact with each other in the midline with the anteriormost portion separated by the 8th neural. Peripherals are absent. All the bones of the carapace are whitish, coarsely pitted and vermiculate. Plastron is rather flat and broad; 4 well-developed plastral callosities, hyoplastral and xiphoplastral. Another indistinct inverted V-shaped callosity is also present above the entoplastron which may be an indication of old age (Smith 1931). The neck is elongate, flexible and completely retractile, bending in a sigmoid curve in a vertical plane. The head rather small and broad; proboscis very short with two small, terminal nasal openings. Orbits nearer to nasal fossa than to temporal fossa and slightly nearer each other anteriorly than posteriorly. Interorbital distance greater than the diameter of orbit. Limbs completely exposed and retractile. 8 digits in forelimbs and 5 in hindlimbs. 3 inner digits in both the pairs of limbs clawed. The digits webbed. Tail very short. The body measurements are given below (in mm).

Disc length	570
Disc width	520
Carapace length	390
Carapace width	360
Plastron length	450
Plastron width	520
Head length (Posterior tip of supracapital to tip of proboscis)	138
Head width	82
Orbital diameter	11
Interorbital distance	18
Proboscis length	2
Proboscis width	9
Tail length	35

Olive green above with slightly darker dots. The neck and the head lighter in colour with a yellow tinge. Ventral side whitish with light-yellow tinge at angles. Plastron whitish with light pink-red callosities.

*Behaviour:* In the aquarium it was first kept in an open-air seawater tank. The animal appeared to be more comfortable in the shade than in direct sunlight. So, later it was transferred to an indoor seawater tank with about 2 feet of sand at the bottom. The animal buried in the sand almost completely except the head. It did not show any tendency to feed when fishes, clams and sea weeds were offered. Normally the head was kept contracted but when provoked it was shot out with a jerk and made sharp bites.

**Distribution:** Mandapam; ? Bengal; Burma, the Indochinese Peninsula and Southern China; Hainan; ? Malay Peninsula; Sumatra; Borneo; Philippine Islands and New Guinea.

**Discussion:** In spite of the wide distributional range of *P. bibroni*, from southern China up to New Guinea, Annandale (1912) states that it appears to be a scarce species in all the localities in which it is found. Boulenger (1890) stated Ganges as its habitat in India. Annandale (1912) has never seen one alive by himself, even though there is a specimen in the Indian Museum obtained by Anderson labelled 'Calcutta'. According to Smith (1931) its occurrence in Bengal is doubtful. Smith (1931) also questioned its occurrence in Malay Peninsula.

*Pelochelys bibroni* is generally considered as a freshwater form inhabiting the deep and slow-flowing rivers. Whether it enters the sea or is restricted to above the seawater level had been a matter of conjecture. Boulenger (1890, 1912) and De Rooij (1915) are of opinion that it enters the sea. But Smith (1931) observed that it lives in fresh water only and never enters the sea. Neill (1958) had discussed the occurrence of *P. bibroni* in saltwater areas, and says that the widespread distribution of this turtle suggests, but does not prove, some tolerance for salt water. Deraniyagala (personal communication) has informed that he has never seen a specimen of *P. bibroni* but has trawled up an occasional *Lissemys* (another genus of the family Trionychidae) in the sea two miles from the mouth of the Mahaveli river, Sri Lanka, and he believes that these are washdowns into the sea by flooding rivers. The present observation categorically affirms the occurrence of *Pelochelys bibroni* in the sea water also.

According to Smith (1931) the specimens of *P. bibroni* from Burma, Siam and the Philippine Islands have only 7 neurals and the last two pairs of pleurals in contact with one another whereas those from the Malay Peninsula and New Guinea have 8 neurals and the last pair of pleurals in contact with each other. Since the present specimen agrees with the latter group it could be inferred that, it has its origin in the Malay Peninsula or New Guinea.

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