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REVIEWS AND COMMENTS

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MARINE TURTLES IN INDIA—There is a burgeoning and extremely timely increase in research activity with respect to marine turtles in India and adjacent islands. Shantharam (1975) stated that Indian marine turtles are "very seriously threatened with extinction" and exhorted the Government to develop research and conservation programs. Among the principals presently involved are:

- S. Dutt, Professor and Head, Department of Marine Sciences, Andhra University, Waltair, Vizakhapatnam 530 003.
- S. Bhaskar, Field Officer Madras Snake Park, Guindy Deer Park, Madras 600 022
- C. S. Kar, Grahismatha Marine Turtle Reserve and Conservation Unit, Satabhaya, Via Rajnagar, Cuttack 754 225. Kar is a doctoral

candidate under H. R. Bustard, Central Crocodile Breeding and Management Institute, 19-4-319, Lake Dale, Rajendranagar Road, Hyderabad 500 264

Four species are involved. They are in approximate order of abundance, olive ridley (*Lepidochelys olivacea*), green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*) and leatherback (*Dermochelys coriacea*) according to Murthy and Menon (1976). They also list *Caretta caretta gigas* from Sri Lanka and the Andamans, but Bhaskar (1979) did not find it nesting on the latter

Nesting seasons vary dramatically even within species. Ridleys nest in June in the Gulf of Kutch (Bhaskar, 1958) (Fig. 1) and from January to March on the Orissa coast (Anon. 1979) and at Visakhapatnam (Dutt, 1979). The ridley hatching season, February to April, on the Orissa and Andhra Pradesh coasts coincides

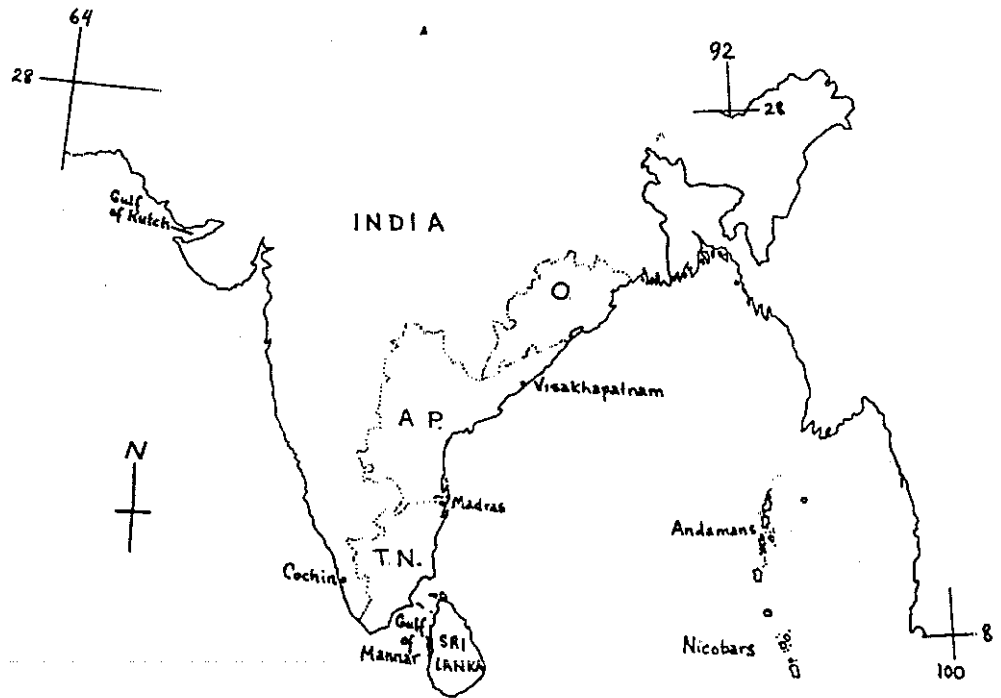


Fig. 1. India, showing place names relevant to marine turtle work noted. O., Orissa. A.P., Andhra Pradesh. T.N., Tamil Nadu.

with the peak bloom of small hydromedusae (Ganapati and Nagabhusanam, 1958). Leatherbacks nest from December (possibly November) through February in the Andamans and Nicobars (Bhaskar, 1979); one was killed attempting to nest, 18 May, 1976, at Visakhapatnam (Dutt, 1976). Greens hatch in January and February in Tamil Nadu (Anon. 1978), which implies nesting in October or November; they nest from December to February in the Andamans and Nicobars (Bhaskar, 1979).

Turtle mortality has apparently escalated with human population and regional development. All of the usual causes have been recorded: commercial harvest (up to 4,000 green a season from the Gulf of Mannar: Dutt, 1979); propeller cuts (green, Gulf of Kutch: Bhaskar, 1978); trawler drownings (ridley, Gulf of Kutch: Bhaskar, 1978); and idle, if brutal, curiosity (leatherback, Visakhapatnam: Dutt, 1976). Davis and Bedi (1978) report the destruction of an arribada of over 100,000 ridleys on the Orissa coast, apparently for commercial export. Dutt (1979) points out that marine turtles are rarely consumed locally and are caught primarily to be sold. Muthy and Menon (1976) give export figures for the 1970's to 1974. 1973 was the peak year. Nearly 2,500 kg of meat was sold (virtually all to West Germany) and more than 1,000 kg of shell was sold (mostly to Italy). The 1974 figures showed a nearly 50% decline.

Some unusual causes of mortality include the cutting off of flippers to make shoe soles and the destruction of entire islands (4 of 13 suitable for nesting) in the Gulf of Kutch (Bhaskar, 1978), by sand mining for cement factories.

Because several journals are not widely known outside India, I give addresses:

Andhra University Publication Series, Memoirs in Oceanography, Department of Marine Sciences, Andhra Univ., Waltair, Visakhapatnam 530 003.

CMFRI Newsletter, Central Marine Fisheries Research Institute, Ennakulam Cochin 682 018.

Hamadryad, Madras Snake Park Trust, Guindy Deer Park, Madras 600 022.

Seafood Exporters Journal, Seafood Exporters Association of India, VII/389, Kochangadi, Cochin 682 002.

My organization is presently planning to assist Dr. Dutt and others listed above in developing a research and conservation program of a comprehensive nature, at least for the Indian east coast. All marine turtles in India are legally

protected. Schedule I, Wildlife Act (Anon. 1979).

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