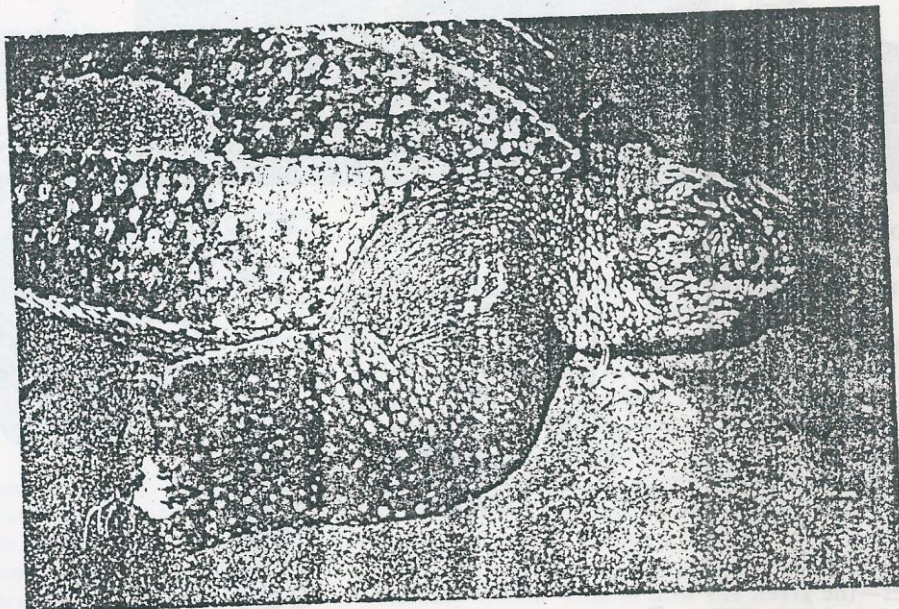


LOTTER: TURTLES:

India's heritage
from the sea

Text & Pix: S. Bhaskar



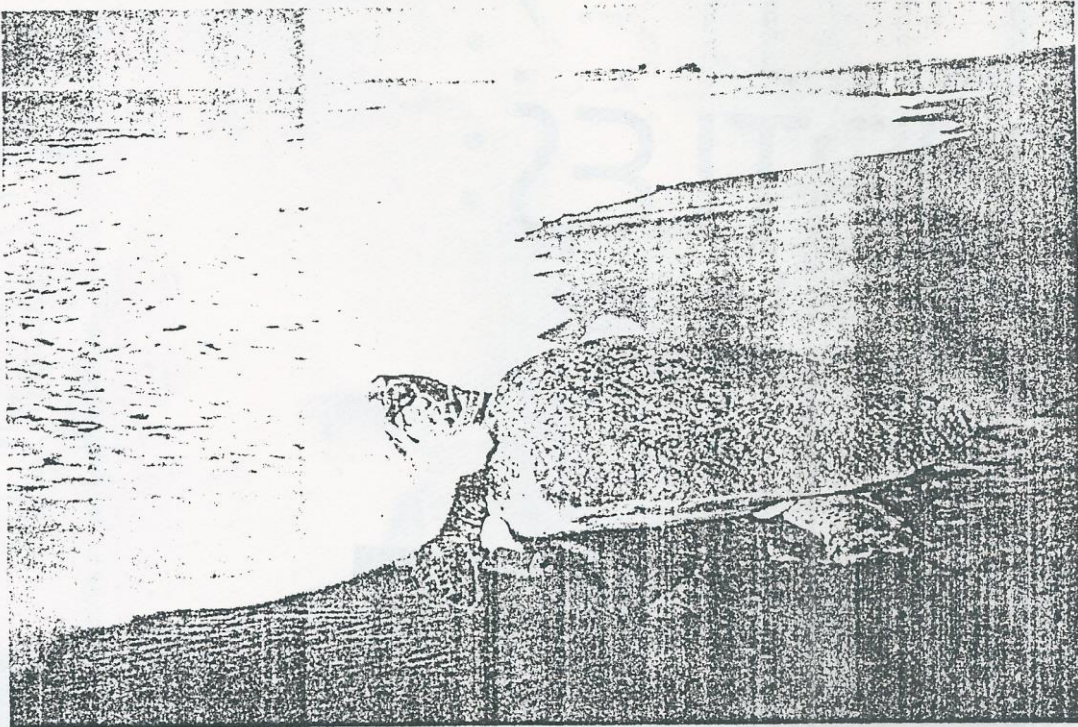
Weighed down by his 30 kilogramme collection of over 700 turtle eggs, the young man plodded on wearily but contentedly over the soft beach sand. It had been a good night. Poachers had not stolen any clutches on his beat, a 10 kilometre stretch near Madras. By daybreak the eggs together with those collected by his team-mates would be buried at the hatchery set up by the Students Sea Turtle Conservation Network, secure from predation by humans and jackals. Just a small but collectively important contribution to the rehabilitation of sea turtles—those magnificent reptiles that swim through the oceans in breeding migrations that may cover 4000

kilometres each nesting season.

Of the eight surviving species of sea turtles now recognized, five are found in Indian waters and four of these nest on Indian beaches. However, there exists the hard reality: sea turtle populations have been declining alarmingly all over the world. Several have been exterminated, including some populations in India.

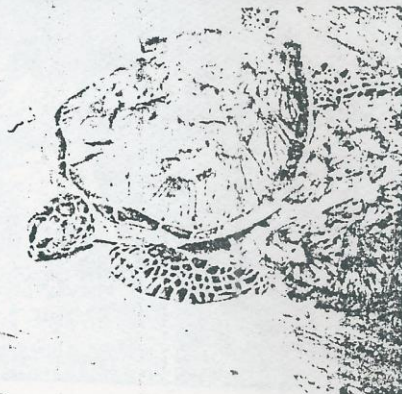
Adult sea turtles weigh between 35 kilogrammes to over 650 kilogrammes, according to their species. The largest is the leatherback turtle which outgrows the giant land tortoises of the Seychelles and the Galapagos islands. In India, leatherbacks nested in good numbers in Kerala

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upto the 1920's. Today, nesting on mainland India has been wiped out, a result of indiscriminate collection of eggs for human consumption, slaughter of nesting females on the shore and beach 'development' and alteration. Substantial nesting by leatherbacks is presently known from only two islands, Little Andaman and Great Nicobar, and these populations are also under seige.

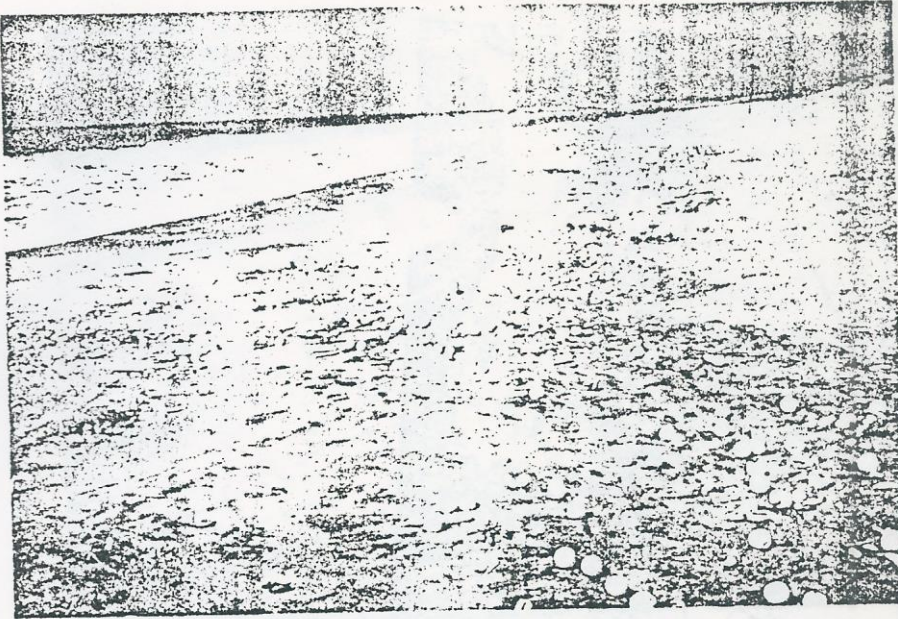
Two turtle species—the green turtle (whose fat rather than shell is greenish) and the aptly-named hawksbill turtle have fared a little better, with viable populations still surviving along India's western and southern coasts as in the Andamans, Nicobar and Lakshadweep. In the past, green turtles have been instrumental in accelerating exploration, colonization and conquest in several parts of the world: they provided ship crews with palatable meat "on the hoof," for the turtles could conveniently be "turned turtle" during their nesting emergences and stored alive on their backs in a



ship's hold for weeks and even months.

Until the 1970's when India's sea turtles received total legal protection, quantities of turtle meat, oil and "tortoise shell" were being exported. Tortoise shell, the thick plates on the bony shell of the hawksbill turtle, could be moulded by heat and given a high polish. Until the advent of plastics, combs made from tortoise shell were popular, and even today the hawksbill's beautiful colours—a mosaic of reddish, yellow and black—are often imitated in combs

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made from synthetics. The flesh of the hawksbill is, on occasion, poisonous to humans if consumed. The poisons present in certain marine organisms build up in the tissues of hawksbills that eat them. Thorough cooking is reported to detoxify the flesh, but I have observed Nicobarese who consumed, with relish, raw minced hawksbill meat—a practice that struck me as a variation of Russian roulette. In Tamil Nadu, the livers of suspect turtles were sometimes fed to crows as a test for toxicity.

The olive ridley, probably the most abundantly found species of turtles, nests on several beaches on India's west and east coasts and on the islands, but nowhere in the world can turtles be seen as

spectacularly as at Gahirmatha in Orissa. Here, every year, in two spells of about 10 days each, over 100,000 females—in some years over half a million—come ashore en masse to lay their eggs and to mate at sea with males that migrate with the females in presumably comparable numbers. The occurrence of such extraordinary congregations *arribada*—was documented for the first time only in the late 1940's in Mexico. The sensational *arribadas* in Orissa—the biggest in the world—came to light as recently as 1974 but their importance: environmental, scientific, aesthetic and economic, was speedily recognized by the government which initiated research programmes, instituted a sea-turtle sanctuary within what is now the Bhitarkanika National Park and halted the exploitation of eggs and offshore trawling of adult turtles. Despite this, many turtles poached elsewhere along the coast still reach West Bengal for human consumption, though their open, unrestricted capture and the sale of eggs by the boatload have passed into history.

The loggerhead turtle is seen in India mainly in and near the Gulf of Mannar where a small feeding population survives. Curiously, though the world location most favoured by this species for egg-

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laying lies in the Arabian Sea (Masirah island in Oman), loggerheads have yet to be found nesting on Indian shores.

A sea turtle's clutch usually consists of over a hundred soft, white, ping-pong ball sized eggs buried half a metre in sunwarmed sand where incubation occupies 45 to 60 days. Warmer temperatures shorten the incubation period. The sex of a hatching is decided not during fertilization but by incubation temperatures. If the developing clutch escapes predation by mammals, monitor lizards and humans, most eggs hatch. Hatchlings take about three days to tunnel to the sand surface in large groups which then dash seaward unless disoriented by artificial lighting on shore. Many may fall prey to ghost crabs and monitor lizards on land; the majority succumb at sea, mostly to predatory fish, some to sea birds. Out of a thousand hatchlings, one may survive to outgrow most predators but still remains vulnerable to sharks, killer whales and humans. After turtles mature they then remigrate, uncannily, to beaches where it is presumed they had hatched: the females to deposit their eggs, the males to mate. Having crawled into the sea as hatchlings,

males almost never return to land again, and females do so only briefly to lay one or more clutches. In some species, upto 11 clutches totalling over 800 eggs may be laid at roughly 10 day intervals during a nesting season which for an individual turtle may recur two or more years apart. Some olive ridleys nest annually.

Leatherbacks eat jellyfish, a habit that has killed some turtles after having swallowed polythene wrappers mistaken for jellyfish. Green turtles are herbivorous as adults. Other species eat crabs, molluscs, sponges and diverse marine creatures.

All sea turtles except one, the flatback, are globally threatened with extinction. In concert with international efforts to save, conserve and manage them, several organisations in India within and outside the government have undertaken programmes involving research, surveys and protection which include the operation of turtle hatcheries. Their efforts, together with governmental determination to ensure the inviolability of the remaining feeding and nesting habitats will, it is hoped, give India's sea turtles a chance to recover and to fill their niche in our marine environment.

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