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TURTLES (Chelonians) are reptiles like lizards, snakes and crocodiles but they are the only reptiles which have a shell. The characteristic "dome" is meant to act as a protective armour for these animals. These domed reptiles have a lineage running back to 200 million years and they have remained almost unchanged structurally throughout the period — a sheer example of conservation with a vengeance!

Turtles are toothless; they have a beak with horny sheaths provided

Buffalo Of The Sea

DERIVING its common name from the colour of its greenish fat and not from the colour of the shell which is actually brownish, the Green Turtle is not a confirmed wanderer of the open sea. But it frequents the shallow waters where there is an abundance of the marine vegetation on which it principally feeds. Growing to a length of four feet and weighing up to 850 lb., it is helpless when caught and dragged ashore. The Green Turtle is well-

protein content of 16-23% is said to resemble that of the famous veal and tastes sweet and tender like chicken. Suffice it to say that two Green Turtles are sufficient food for ten hungry men for an entire day. An adult Green Turtle produces 100 kg of rich red meat, better than the best beef. It is no wonder then that this turtle is suggested as an alternate source of food for the growing populations. Called appropriately the 'buffalo of the sea', it is the only vertebrate which can convert the marine grasses

DOMED METHUSELAHS

By T. S. N. Murthy

Turtles are the only reptiles with a shell, having a lineage running back to 200 million years — a sheer example of conservation with a vengeance.

with a cutting edge. They feed on both plants and animals and, like other reptiles, can survive without eating for months. Their sense of hearing is dull, but their eyesight is fairly good. They are not very vocal. Though they are proverbially slow in movement, the marine turtles have developed an efficient swimming stroke. With their feet modified as "flippers", which are moved with an up-and-down beat similar to that of the wings of a bird in flight, sea turtles swim with a speed of 32 km an hour.

There are about 250 species existing today, thriving in deserts, swamps, marshes and the oceans all over the globe. They vary greatly in size — from four-inch dwarfs to six-and-a-half feet long giants weighing hundreds of pounds. They are represented in India by 21 kinds of freshwater turtles and land tortoises and five species of marine turtles.

Of all the reptiles, turtles are of greatest direct economic benefit to man. The meat and eggs of Indian river turtles are a staple diet in our country, notably in Assam, Bihar, and Bengal. Freshwater tortoises like **Hardella** and **Kachuga** found in the Ganges and Brahmaputra river systems make excellent food and are caught in large numbers for food. The Indian softshell turtle is renowned for its meat, which has an excellent flavour resembling beef. It is sold in large numbers in Calcutta markets.

Of the seven kinds of sea turtles, five species occur in Indian water. They are the massive Loggerhead, the succulent Green Turtle, the Hawksbill, the Ridley and the giant Leathery Turtle. The Green Turtle and the Hawksbill are chiefly hunted wherever they occur since time immemorial

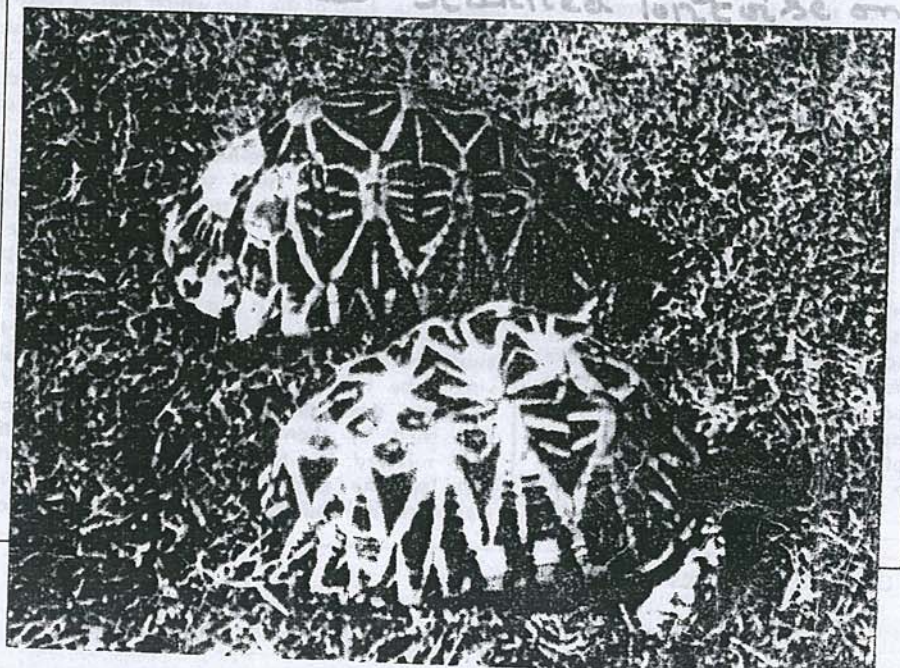
known for its remarkable powers of migration to long distances. It is one of the world's most valuable reptiles as it is prized for its meat, blood, eggs, oil, hide, and shell. The turtle soup or calipee is actually obtained from the belly plates of the turtle. It is said that a 350 lb Green Turtle yields about 6 lb of calipee. So synonymous is this turtle with the soup that the Germans gave it another name, "Suppenchildkrote" (Soup turtle).

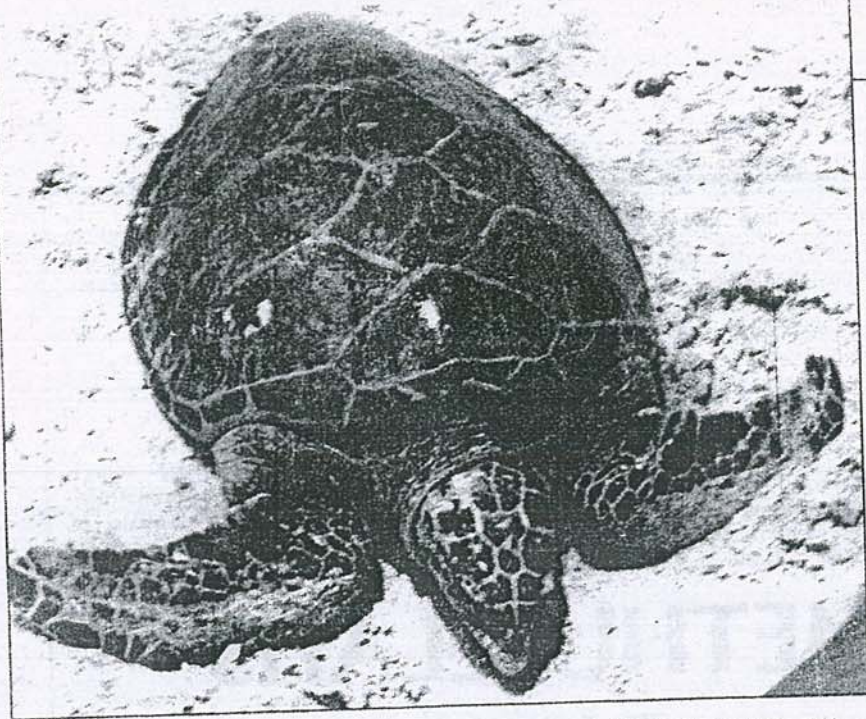
Its raw, red meat with an estimated

into edible meat fit for human consumption. It has supplemented the diet of peoples of more cultures than has any other wild vertebrate. In India, the Green Turtle is abundant in and around the islands of Rameswaram, Andamans and Nicobars and Lakshadweep. This turtle can continue to be a source of food provided it is afforded strict protection on the breeding sites and allowed to recover from savage destruction.

The Hawksbill, so called because it has a hooked beak was once so

The female Hawksbill nesting. Its shell, known in commerce as carey, is sold like ivory in the world markets. Each turtle yields six to eight pounds of carey which is used to make jewellery and other artefacts.
Pic: J. Frazier





The Starred Tortoise of India is so named because of its shell pattern. It is a sought after pet because of its colour pattern and gentle disposition.
Pic: S. A. Minton

popular for its ornamental shell, carey, out of which combs, brushes, buttons and other *objects d'art* are manufactured. Each turtle is estimated to yield 6 to 8 lbs of carey. It is said that the best tortoise shell comes from the species of the Indian Ocean and it has been sold at £5 a pound.

The Leatherback, Leathery Turtle or Luth is the king of the sea reptiles because of its size, weight and rare appearance on land. It reaches a length of six feet and weighs nearly 1,000 lb. Instead of having horny shields on its back as is the case with its cousins, its skin is mostly made up of brownish leather marked by seven ridges. Usually seen far at sea, it comes seldom near the shore. The female Leatherback has, however, to visit the sandy beaches to lay eggs and even this sight is extremely rare and a feast to the eye. It has not much economical value except for the oil extracted from its fat. Of the other two Indian sea turtles namely

the Olive Ridley and the Loggerhead Turtle, India constitutes a most important breeding ground for the former. The Loggerhead Turtle is so named because of its enormous head and it is a sea turtle with a nasty disposition as it bites with its powerful jaws.

A Tale Of Terror

THE breeding of a sea turtle reads like a fairy tale. Sea turtles mate at sea but the egg-laden female comes ashore at midnight to lay her round golf-ball sized eggs in the pits dug in the sand and undisturbed beaches. About 100 eggs will be laid at a time in a clutch and the whole process is accomplished within two or three hours. The mother takes no care of them except for covering them and leaving them to the heat of the sun which hatches them out. In a single breeding season a mature female may deposit two to five clutches. The eggs hatch out in seven to 10 weeks and thereafter commences the saga of terror and tragedy in the life-history of the baby turtles which head towards the sea. En route they are the target of attack by sea birds, crabs, lizards, dogs and lastly man, their arch enemy. After this heavy toll, only one out of ten will make it but even there the fishes lurking in shallow waters await their turn to peck at the surviving baby turtles which unfortunately have not developed the hard protective shell by then. Yet sea turtles have survived. But today the sea turtle that lays the golden egg and which was once an abundant species is fast

becoming rare thanks to its unabated exploitation by man.

It is gratifying to note that of late there has been an awareness that many species of animals like the sea turtles are in danger of extinction. This awareness has quickened the efforts of scientists, conservationists and the Government of India to take the initiative for affording protective measures by legislation, governing trade, collecting or habitat modification, to the establishment of the exclusive marine preserves. Now efforts are underway to apply the concept of conservation through sustained yield including the management of the sea turtles for their eggs, meat, and other products. Hidden under deep water or in the bottom slit between ledges of the far-flung islands in the Andamans and Nicobars and Lakshadweep are hundreds of sea turtles mainly Greens, practically asking to be harvested. The underwater pastures in these islands are particularly

THEY LIVE LONGEST

CONTRARY to popular belief, turtles are not immortal. Their maximum life span may be 100 years or more. One thing is certain: they live longer than any other back-boned animal including man and in this respect the giant tortoises of Galapagos are record breakers. At least one tortoise in Mauritius lived from 1766 to 1918 when it was killed in an accident.

— T. S. N. M.

WHAT IS A TURTLE?

THE varied usage of the word "turtle" in the English language has given rise to much confusion. In proper usage, "tortoise" is referred to the strictly land dwellers with elephant-like stubby feet, "turtle" for those found in the sea and rivers, with flippers and webbed toes and "terrapins" for the hard-shelled, edible freshwater tortoises.

— T.S.N.M.

good as feeding grounds for the sea turtles. Some of the lagoons can be fenced for tending these "aquatic cattle" with care and attention. It is possible to step up our attempts aimed at conservation and utilization of the sea turtle resources of India provided we use these renewable resources of nature in a scientific and planned manner. The immediate objective of the conservation programme should be to re-establish the breeding colonies of the sea turtles where they once were abundant by affording total protection to their breeding sites. Simultaneously the sea-turtle nests and eggs should be saved from predation by beast and man. More research should be undertaken at the sea where the turtles feed and breed. Ultimately we have to set up some marine reserves governed by strict regulations free from the influences of urban development and industrialisation.