



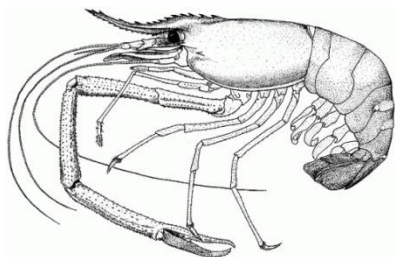
FISH AND FISHERIES

NEWS LETTER OF THE FISHERIES TECHNOCRATS FORUM, CHENNAI

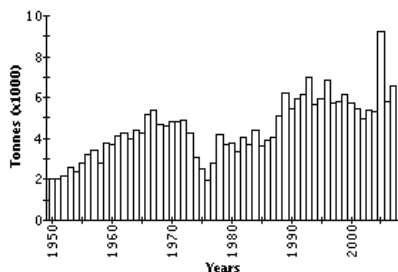
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January-March 2010

GLOBAL CAPTURE AND CULTURE PRODUCTION OF GIANT RIVER PRAWN, *MACROBRACHIUM ROSENBERGII*

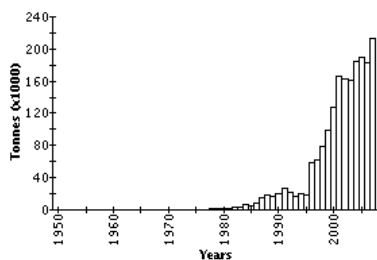


The giant river prawn *Macrobrachium rosenbergii* is known to attain a maximum size (total length) of 320 mm for males and 250 mm for females. The global production through the capture and culture fisheries is presented in the following figures.



Global capture production

The commercial exploitation of wild stock has taken place in Pakistan, India, Bangladesh, Malaysia, Indonesia, Thailand, Papua New Guinea and the Philippines



Global aquaculture production

After the successful hatchery seed production of the species in Malaysia in 1969, small-scale or large-scale farming has taken place in Malawi, Mauritius,

Seychelles, India, Sri Lanka, Bangladesh, Myanmar, Indonesia, Thailand, Cambodia, Viet Nam, the Philippines, Australia, Taiwan, Japan, Hawaii, Palau, Tahiti, U.S.A., Mexico, Puerto Rico, Honduras, Colombia and England. In India, the scampi production from culture ponds was 43,000 tonnes during 2005-06, which reduced to 12,866 tonnes during 2008-09 due to severe disease out-breaks.

TRADE IN THE ENDANGERED FISH AND CORALS



According to data of Convention on International Trade in Endangered Species of wild fauna and flora (CITES), 16 million seahorses, mostly from Thailand to Hong Kong, Taiwan and China (for medicinal purposes), 18 million coral pieces and 2000 tonnes of live corals, mainly from Indonesia to U.S.A. and European Union countries and 73,000 exotic fish mostly from Malaysia and Indonesia to Hong Kong were traded during 1998-2007.

ILLEGAL SAND MINING AFFECTS MARINE BIODIVERSITY

The land area of Singapore has increased 20 % since 1960s due to reclamation of peripheral shore area with sea sand from the sandy beaches of islands of Malaysia, Cambodia and Vietnam. The recent ban of export of sand from these countries has resulted in illegal smuggling trade, for which, the poachers use small barges in dredging and smuggle the sand. The environmental groups fear that several of the eighty three islands off the north coast of Indonesia are likely to disappear into the sea within a decade, unless the smuggling of sand is stopped forthwith. The illegal sand mining will totally remove the natural habitat of several marine organisms, which

in turn affects the coastal environment and marine biodiversity.

INTERESTING DEEP SEA SQUIDS



The Vampire squid (*Vampyroteuthis infernalis*) which attains a maximum 30 cm in total length, is a deep-sea cephalopod from depth of 600-900 m in the Atlantic Ocean. The recent video released by the Monterey Bay Aquarium Research Institute has shown that this squid can turn itself "inside out" to avoid predators.



Another deep sea giant squid (*Architeuthis dux*) living at 400-600 m in temperate oceans attains a maximum of 13 m in total length. Though the body appears to be large, the gut is about 1 m long with a diameter of 10 mm, through which only the food has to pass on. So far no live adult giant squid has been recorded. It is presumed that it is a passive predator, suspending motionless in the water column at a 45° angle, waiting for fish or other small squid to swim within its reach.



Mesonychoteuthis hamiltoni, the colossal squid attains a maximum of 5.4 m in total length of 5.4m. It is known only from the Antarctic occurring in the water column from 2200m to the surface and makes the diet of sperm whale (*Physeter macrocephalus*), up to 77% by weight.

CMFRI HELPS A FISHERMEN TRUST IN OPEN SEA CAGE CULTURE OF SPINY LOBSTER AT MANDAPAM



Under the guidance of Mandapam Regional Centre of Central Marine Fisheries Research Institute (CMFRI), Fishermen and Handicapped Education Economic Development Trust (FHEEDT) has successfully harvested the spiny lobster (*Panulirus homarus*) from an open sea cage culture system. 10 cages (each 6 m in diameter), made up of high density polyethylene pipes covered by nets and anchored in the inshore sea off Mandapam were stocked with the juvenile lobsters and fed with trash fishes. The reared lobsters have reached the exportable size after 3-month rearing and fetched a price of Rs.1000 per kg.

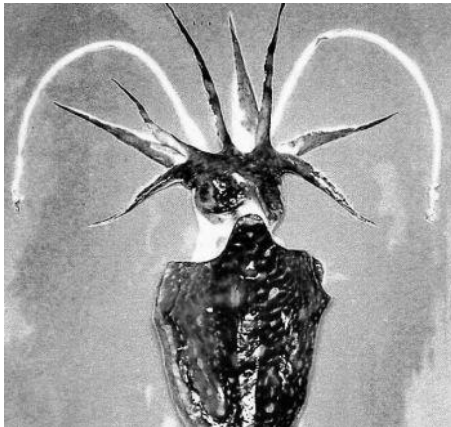
PILOT PROJECT ON ENHANCEMENT OF NATURAL STOCK OF SEAHORSES IN GULF OF MANNAR

The Tamil Nadu Forest Department has sanctioned Rs. 1.5 lakh to Suganthi Devadason Marine Research Institute at Tuticorin to undertake a pilot project to produce young ones of endangered species of seahorses (*Hippocampus* spp.) in hatchery system and release in Gulf of Mannar Biosphere Marine Park to replenish the stock.



A stamp from Malaysia on seahorse

NEW SPECIES OF CUTTLEFISH FROM INSHORE SEA OFF COLACHEL, KANYAKUMARI DISTRICT, TAMIL NADU



The scientists of Fisheries College and Research Institute (FCRI) at Tuticorin has described a new species of cuttlefish, namely, *Sepia vecchioni* based on specimens collected from the coastal waters of Colachel in Kanyakumari district. Two more new species of cuttlefish (*Sepia prabahari* and *Sepia ramani*) were brought to science by FCRI in 2003, thus making a total of 15 known species of *Sepia* in Indian waters.

WHALE SHARKS FROM CUDDALORE – THEIR FINS SPIN MONEY

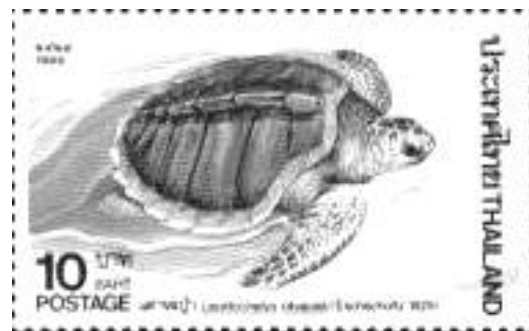
Two whale sharks (*Rhincodon typus*), locally known as 'Paal Sura' in Tamil, were caught off Cuddalore by trawl net and their weight ranged from 400 to 500 kg. The fins of these sharks are great in demand for their medicinal properties.



A stamp from Vietnam on whale shark

SATELLITE TAG FOR OLIVE RIDLEY TURTLE-TO STUDY ITS BIOLOGY AND MIGRATION

A female of the endangered marine turtle-Olive Ridley (*Lepidochelys olivacea*) was attached with a first-ever satellite telemetry tagging device to study her biological aspects including migration. The personnel from Sea Turtle Protection Force (STPF), Chennai cleaned the carapace of the turtle with acetone, cemented the device and coloured with bright red for easy recognition by international scientists. The whole process took nearly 29 hrs from the time of capture and release after tagging. The female tagged turtle was named as 'Sumitha' and she can be tracked at http://www.seaturtle.org/tracking/?project_id=477



A stamp from Thailand on Olive Ridley turtle

CURRENT STATUS OF WORLD FISHERIES

According to the Food and Agriculture Organization of the United Nations (FAO), the world's capture (non-aquaculture) fisheries produced 92 million tonnes of fish in 2006, of which, 81.9 million came from the sea. The value of the total marine and freshwater catch at the first point of sale was around USD 91.2 billion. It is estimated that some 52 % of marine fish stocks or species groups are fully exploited, 19 % overexploited and 9 % depleted or recovering from depletion. The maximum fish yields from the world's oceans have probably been reached. Hence, a more closely controlled and sustainable approach to fisheries is required.

Steps were already taken to ban the most exploited species such as basking and whale sharks in 2002, great white shark and humphead wrasse in 2004 and the European eel and saw fishes in 2007. These animals were brought under the control of Convention on International Trade in Endangered Species (CITES). Further, it is proposed to bring eight commercially fished species under the purview of CITES. Monaco proposed a complete ban on the international commercial trade in the bluefin tuna, which attains a maximum size of 3 m in length and 650 kg by weight. It is highly sought after as a delicacy and a single fish weighing 220 kg was reportedly sold for US \$ 1,60,000 in January 2010. Though it has been fished for many centuries, its populations in the Atlantic Ocean and Mediterranean Sea have dwindled in the last 40 years. Repeated efforts have been made to ensure more sustainable fishing, but now Monaco insists that it is right time to bring the international trade to a halt, so as to allow the species to recover. However, the recent UN Wildlife meeting held at Qatar in the third week of March 2010 rejected the proposed ban on bluefin tuna.

Among the most valuable and precious corals, red or pink corals have been harvested for over 5,000 years and used for jewellery and other decorative purposes. Their tree-like colonies provide protection and habitat for numerous marine organisms and pink corals occur in the tropical, subtropical and temperate oceans. Over-exploitation for international trade and the destruction of colonies by bottom trawls and dredges have greatly affected their capacity to reproduce and regenerate. The U.S.A and Sweden, on behalf of the European

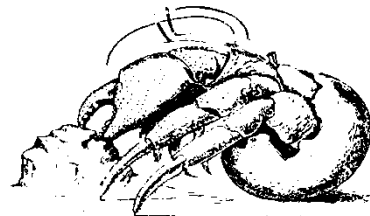
Community Member States, propose to bring the red or pink corals under Appendix II of CITES to control their trade.

COCONUT SHELLS AS A HOME FOR OCTOPUS AND HERMIT CRAB



Veined octopus hiding in coconut shells

The veined or coconut octopus (*Amphioctopus marginatus*) uses empty molluscan bivalves or coconut shells as shelter. Two half coconut shells are kept in contact using the suckers, which are so strong and cannot be pulled apart by a man.



Borradaile's record in 1901



CMFRI survey's record in 1987

There are three records: one by Borradaile (1901) from Minicoy, second one by Dr. R.R. Prasad (1962) from Suheli and the third one by CMFRI survey (1987) from Kalpeni. *Coenobita clepeatus* is usually found away from water front and hence it is called as land crab. As this species grow up, it needs larger shells. Due to its land-ward habitat, the only alternative may be the availability of the empty coconut shells, in which, it takes refuge.

