

SUMMARY OF READING ON THE DURBAN AQUARIUM, SOUTH AFRICA, AND ITS PLANS FOR A MARINE MAMMAL DISPLAY

by A.E.F. Heydorn, Director Oceanographic Research Institute and Durban Aquarium.

The southern tip of the African continent is the meeting place of the mighty Indian and Atlantic Oceans. It is also the region of mixing of two major current systems - the warm Agulhas Current, originating in the tropics and sweeping southwards along the southern African east coast, and the cold Benguela Current, the waters of which are of mixed Atlantic and Antarctic origin and which flow northwards along the west coast.

This turbulent configuration of water masses represents a great asset for South Africa because they hold a wide range of ecological conditions along the coastline. The cold nutrient-rich waters of the Benguela Current support extensive stocks of pilchards, maasbankers, anchovies, mackerels, stockfish, kingklip, rock lobsters and other exploitable species. By contrast, the overall biomass carried by our east coast waters is much lower and consequently commercial fishing conducted here is on a smaller scale than on the west coast. However, the subtropical waters of Natal and its adjoining regions are far richer than those of the west coast in number and variety of species. Furthermore, the numerous estuaries and river mouths of the east coast represent an accessible source of protein while the trawling banks off Natal are rich in prawns of various species (*Penaeus* and *Hymenopenaeus*) and rock lobsters (*Palinurus delagoae*).

It is in the middle of this interesting region that the Durban Aquarium is situated. It serves as a public and educational amenity and displays the wide range of marine organisms living in the waters of the east coast. All profits of the Aquarium as well as those of a curio-shop and a restaurant run by it, are devoted to the marine biological research of the Oceanographic Research Institute. The whole organisation falls under the aegis of the South African Association for Marine Biological Research, which is a private non-profit company. Research grants are received from government, provincial and private authorities.

Initial research of the Oceanographic Research Institute was aimed at combating the shark menace to bathers off Natal's beaches, a project which was prompted by a spate of shark attacks in the late 1950's and early 1960's. Research activities have now been expanded into a much wider field including studies on marine and estuarine fish, prawns, rock lobsters, turtles, marine productivity and ecology. Numerous scientific reports have been produced and this work is of significance in relation to the conservation and management of Natal's marine and estuarine resources. Our work is closely coordinated with that of other institutes and universities. We have close ties with the University of Natal in that the Director serves as Research Professor and most scientific staff members use their research projects for the acquisition of either M.Sc. or Ph.D. degrees.

The aquarium display facilities consist of an oceanarium tank with a capacity of 700.000 L., with viewing through a total of 24 windows in two galleries as well as into the water from the top. There is a shark tank with a capacity of 400.000 L., with viewing through windows in one gallery and from the top. The display of mature specimens of large sharks such as the Zambesi shark (*Carcharhinus leucas*) and the ragged-tooth shark (*Odontaspis taurus*) arouses never-ending interest. Circulation through these two large tanks is on a semi-open system, with water drawn from the sea by well points penetrating 2m. under the sea-bed and partial recirculation through pressure filters.

In addition there are smaller tanks in the foyer and lobby of the aquarium on closed circulation systems with ecological displays of shallow water marine life. Of particular interest is the display of a mangrove community and also one of live corals.

The next phase of our development programme incorporates the construction of a dolphinarium. The display tank is to be of moderate size with a capacity of about 800.000 L., with a covered auditorium capable of seating 700 to 1000 people with a training tank inter-connected with the display tank and at least two holding pens and a separate quarantine tank. Simultaneous above and below water viewing is to be provided. In spite of our proximity to the sea, a closed circulation system is to be provided although natural seawater will be used.

The marine mammals to be displayed will consist of *Tursiops aduncus*, which is common off Natal, of *Stenella*, which occurs slightly further offshore, and possibly of rarer species occurring further south such as the humpback dolphin (*Sousa plumbea*), *Lagenorhynchus* and possibly even *Orcinus orca*. Risso's dolphins and false killer whales (*Feresa spp.*) do occur in Natal, but are rare.

With this display we hope to extend not only the range of marine life and exhibits at Durban, but also to generate more funds for the marine research which is of such vital importance on our rapidly developing coastline.

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