NOTES

OBSERVATIONS ON THE WHALES *BALAENOPTERA EDENI, B. MUSCULUS* AND *MEGAPTERA NOVAEANGLIAE* WASHED ASHORE ALONG THE INDIAN COAST WITH A NOTE ON THEIR OSTEOLOGY

ABSTRACT

The Baleen whales *Balaenoptera edeni, Balaenoptera musculus* and the *Megaptera novaeangliae* were reported from the Indian Coast. The skull of a *B. edeni* washed ashore in Dhanuskodi Island in the Gulf of Mannar and that of *Megaptera novaeangliae* from the Malabar Coast were studied. The identity of *B. edeni* was confirmed based on the study of its nasal bones. Biological significance of the occurrence of whales washed ashore along the Indian Coast is also discussed.

JAMES AND SOUNDARARAJAN (1984) summarised the information on the whales washed ashore along the Indian Coast and discussed the probable reasons for their strandings. Further, the declaration of the Indian Ocean as a Marine Mammal Sanctuary has focused the attention of the International Agencies like International Whaling Commission, World Wildlife Fund and IUCN to study the Marine Mammals of the Indian Ocean (Alling *et al.*, 1982; Alling, 1986; Leatherwood, 1985; Mohan, 1985 a, b, 1987; James and Mohan, 1988 a, b, Payne, 1987). Investigations of the 'Tulip' Expedition have brought to light a wealth of information on the distribution, abundance and behaviour of humpback whale, blue whale, Bryde's whale and the smaller cetaceans (Whitehead, 1985; Alling, 1986; Alling *et al.*, 1982; Leatherwood, 1985, 1986).

As the information on the osteology of the whales occurring along the Indian Coast is meagre, the skull of Bryde's whale *Balaenoptera edeni* and the lower jaw of Humpback whale *Megaptera novaeangliae* are studied. Though *B. edeni* has not been so far reported from the Indian Coast, *B. borealis* a closely related species has been repeatedly reported along the coast. (Venkataraman *et al.*, 1973; Anon., 1988). Some of the earlier records of '*Balaenoptera* sp.' are *B. edeni*. The Blue whale *B. musculus* appears to be a common species along the Indian Coast (Jones, 1953; Danial, 1963; Kewalramani, 1964; Nair and Jeyaprakash, 1987). But *M. novaeangliae* is not common along the Indian Coast. It has been reported earlier from the southwest coast of India by Mathews (1947), Chacko and Mathew (1954) and Muthiah *et al.* (1988). However its 'song' was recorded from the Northern Indian Ocean and Sri Lanka (Leatherwood, 1985; Whitehead, 1985).

Observation

A male *B. edeni* of length 13.0 m was washed ashore at Beypore near Calicut (12° 20'N - 76° 30'E) on 2-7-1979. It was characterised by about 55 throat grooves extending utop naval. Flippers were 1.03 m in length forming about 1/12 of the total length (Pl. I A). Another

carcass of the same species measuring 13.52 m in length was observed in one of the islets near Dhanuskodi Island in the Gulf of Mannar (9°02' N-79°30' E) on 20-2-1983. The skull and other parts of the skeleton were collected with great difficulties. The carcass was in a highly decomposed state. It was mutilated by the fishermen searching for 'Ambergeris'. The skeleton is kept at the museum of the Regional Centre of CMFRI, Mandapam Camp The details of the measurements are given in Table 1.

A female blue whale (*B. musculus*) of length 19.2 m was washed ashore at Paravana (12° 10'N — 76°30'E) near Calicut on 29-9-1988. The length of the flippers were 2.5 m forming about 1/7 of the total length. There were about 80 throat grooves reaching the umblicus.

To study the relationship between the total length of *B. musculus* stranded along the Indian Coast and the northern latitudes of their stranding, these parameters were plotted against each other using the formula $Y = a + bx$, where X = total length and Y = the Northern latitudes. The following relationship was obtained:

$$Y = -2.11 + 0.99\ X.$$

The correlation coefficient 'r' was 0.89 indicating a close relation between the length

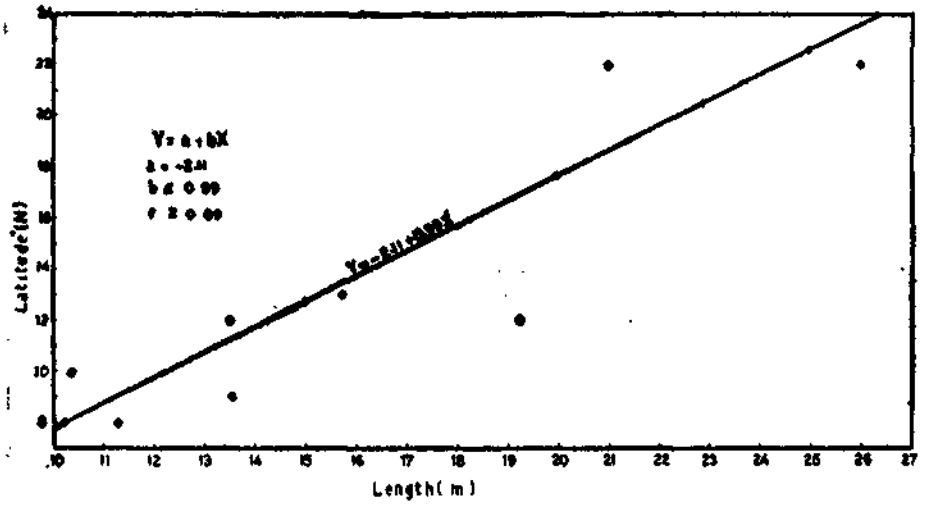

FIG. 1. Relation between lengths of *B. musculus* washed ashore along the Indian Coast and the latitudes of their occurrence.

TABLE 1. *Measurements (mm) on the skull of* Balaenoptera edeni *measuring* 13.5 m

Characters			% of Condylobasal length
Condylobasal length	..	2450	
Length of rostrum	..	1380	56.3
Width of premaxillaries (in the middle)	..	235	9.6
Width of rostrum at base	..	692	28.2
Greatest perorbital width	..	755	30.8
Lease supraorbital width	..	1042	42.5
Width of premaxillaries	..	225	9.2
Greatest width of post temporal fossae	..	1080	44.0
Greatest width of pterygoid	..	155	5.1
Greatest length of ramus	..	2445	99.8
Distance from tip of rostrum to internal nares	..	1530	62.4
Greatest width of external nares		124	5.0

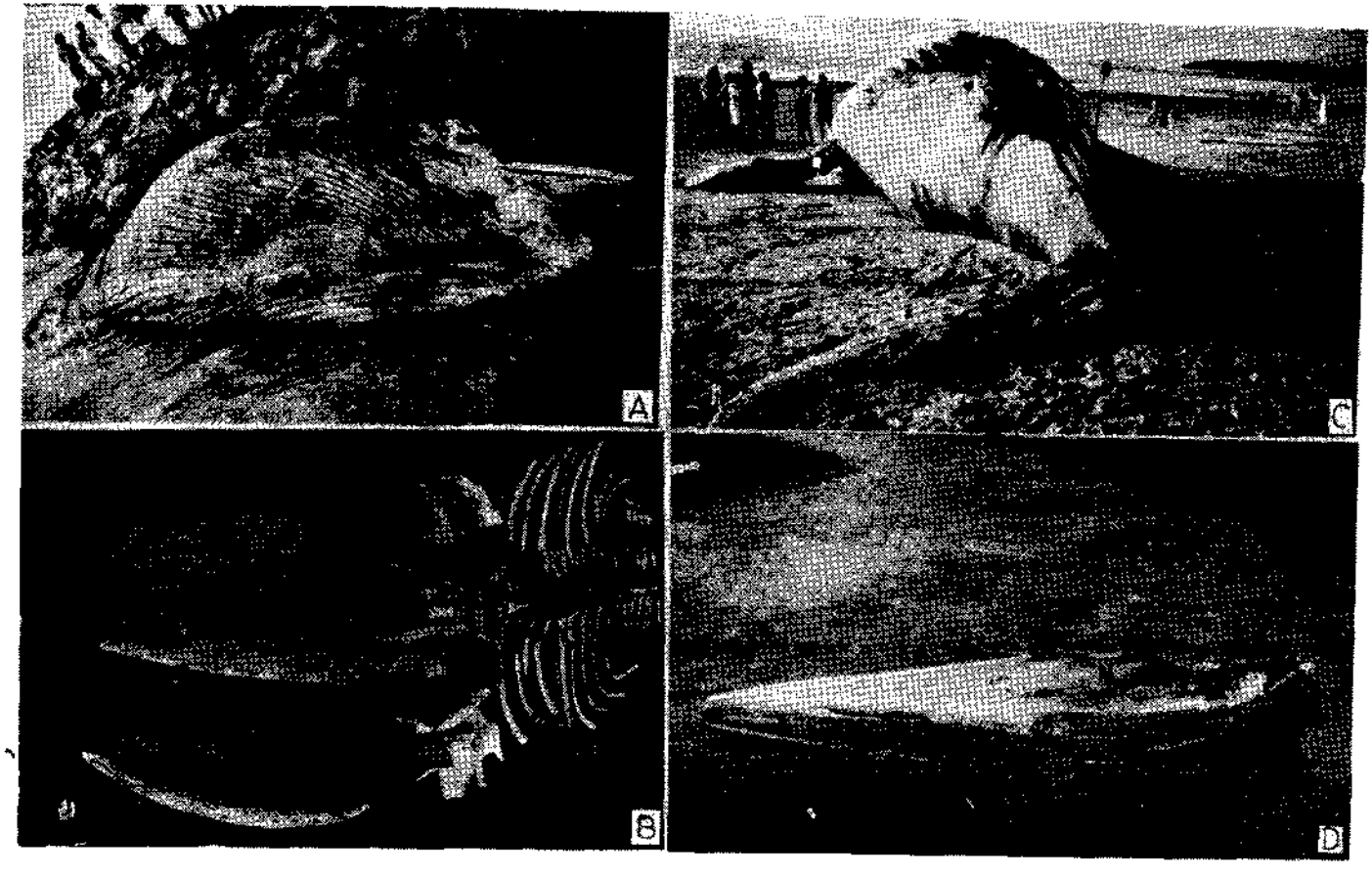

PLATE I A. *Balaenoptera edeni*, 13 m washed ashore near Calicut, B. Skeleton of *Balaenoptera edeni*, 13.5 m washed ashore near Dhanuskodi on 20-2-1983 : (*a*) Nasal bone, C. *Megaptera novaeangliae* (Humpback whale), 14.3 m washed ashore near Kasaragod on 15.1.1988 and D. Lower jaw bone of humpback whale washed ashore near Kasaragod.

of the whales washed ashore and its proximity to the equator (Fig. 1). It was observed that the calves of the whales were found nearer to the equator (Fig. 1) indicating its breeding there.

The lower jaw bone (Pl. I D) of female humpback-whale of length 14.3 m which was washed ashore near Kasaragod (12°20'N and 79°05'E) was studied for the first time in India. The jaw bone measured 3.17 m in length and is kept in the museum of the Research Centre of CMFRI, Calicut.

Remarks

B. edeni is one of the common species of baleen whales found between 40°S and 40°N preferring warm waters (Gaskin, 1972). It has been reported from Sri Lankan Coast in large numbers (Payne, 1987) and from the Indo-Pacific (Ohsumi, 1981 ; Leatherwood, 1986). However it is desirable to study the identifying characters of *B. edeni* and *B. borealis* in details as their range of distribution overlaps and they have some external similarities.

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