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STATUS OF IRRAWADY RIVER DOLPHIN *ORCAELLA BREVIROSTRIS* IN CHILKA LAKE*

P. DHANDAPANI

Marine Biological Station, Zoological Survey of India,
100, *Santhome High Road, Madras*-600 028

ABSTRACT

Annandale (1915) was the first to record *Orcaella brevirostris* from Chilka Lake in large numbers and gave a detailed report on its habits and behaviour. The present account is a comparative study with that of Annandale's, based on the recent survey conducted by the Zoological Survey of India from 1985 to 1987. It is found that the number of Irrawady River dolphins has dwindled so much that its sighting in Chilka Lake is rare and only a trained eye can spot the animal, when it takes to surface for a shortwhile for breathing. The factors which could have caused the depletion of this species are discussed. It is recommended that *O. brevirostris* be declared as an endangered species in this part of the sub-continent to enable conservation.

INTRODUCTION

THE IRRAWADY RIVER dolphin *Orcaella brevirostris* Gr y, 1866 is one of the smaller cetaceans found commonly in the southeast Asian waters inhabiting the rivers, estuaries, backwaters, brackishwater lagoons and mangrove creeks that are connected with the Bay of Bengal; and also in the Malay Archipelago and the coasts of northern Australia (Anderson, 1878; Annandale, 1915; Norman and Fraser, 1938; Johnson, 1964; Ellis, 1983; Lyall Watson, 1985). Mozer Bruyna (1971) states that these dolphins were not seen in the sea beyond one or two kilometres from the shore, while Lyall Watson (1985) indicates that it 'travels in the open oceans far afield as Australia'. The present account deals with the population of *O. brevirostris* observed in Chilka Lake (Orissa State, India) where it is called 'Basiya Moggur'. The only other vernacular name known for this species is 'Lumbalumba' in Malay.

The Zoological Survey of India (ZSI), which has taken up a programme of survey of areas which need conservation of its ecosystem and the fauna associated with it, has chosen Chilka Lake also for study. The first survey of this lake by ZSI for its faunistic constituents was done in the year 1915 and the present study undertaken from the year 1985 to 1987 is just not a repetition, but a comparative study to ascertain the changes, if any, that have taken place either in its physiography or in its biological constituents after a gap of seventy years.

The present survey of Chilka Lake involved a multi-diciplinary study comprising of physiography, hydrology, the plant and animal constituents of plankton, nekton and benthos. The flora and fauna of the islands, which dot the lake and the migratory birds which throng

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the lake during winter also formed a part of this study. The lake, for the convenience of the present study, was divided into the southern, central and northern sectors and all these sectors were covered during all seasons from 1985 to 1987.

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Area and Material for Study

The Chilka Lake is the largest brackishwater body in Asia and lies between 19°15'—19°50'N and 85°0'—85°45'E on the east coast of India in Orissa State. The occurrence of Irrawady River dolphin in Chilka Lake was first recorded by Annandale (1915), the first Director, ZSI. He saw a large dead male specimen that was washed on the shores of Kaladi Island. Apart from this, his account on the behaviour and habits are based on his observations made over a large school of these dolphins at different parts of the lake.

During the present survey, a dead female specimen was seen afloat in the northern sector of the lake on 3rd of December, 1985. This specimen was towed on to the shores of Satpada Village for study. A week earlier to this, one of our party members who was on a shore collection trip at the Breakfast Island happened to see a decomposed body of Irrawady River dolphin which was beyond handling stage.

Description

The Irrawady River dolphin was first known from a skull collected in the harbour of Visakhapatnam (India) in 1866 by Sir Walter Elliot. A brief report on this skull was given by Owen (1866), but it was Gray (1866) who gave the correct systematic position of the species by placing it under a new genus *Orcaella*.

Orcaella brevirostris Gray (1866) (Pl. I)

The Irrawady River dolphin is bluish-grey above and lighter and paler below. The body is torpedo-shaped. It is a passive animal, easily distinguishable by the large melon on the forehead and the blunt dorsal fin which is situated behind the midpoint of the body. A mid-dorsal keel extends between the dorsal fin and the notch of the tail. The tail is typical of cetaceans with the cleft pointing towards the notch. There is a demarcating constriction resembling a groove running vertically at the junction of the neck and body. The blowhole is placed just adjoining the left of midventral line between the eyes. The flippers are elipsoid with stout insertion bases and ovate tips. The specimen measured (cm) as follows :

Length from tip of cleft to melon ..	140
Max. height in front of dorsal fin ..	32
Length of flipper ..	21
Length of fluke from notch base to fluke tip ..	22
Notch base to cleft of tail ..	17
Distance between the tips of flukes	
Height of dorsal fin ..	37

Status Survey

During the present survey, live animals were seen only in winter and summer. The animals were observed surfacing only for breathing for a moment and the melon alone is visible above water surface. Immediately after blowing it quickly dips down to dive. It was spotted five animals during this survey. The local fishermen and the officials of the Fisheries Department of Orissa estimate not more than twenty animals to exist presently in Chilka Lake.

The survey conducted by Annandale in 1915 is the first authoritative record to give a correct picture about the number of *O. brevirostris* in Chilka Lake. He stated that these dolphins were present in the outer channel of the lake throughout the year. This probably is the reason for naming the outer channel or the mouth of Chilka Lake as " Moggur Mugh " or ' the dolphin inhabiting lake mouth ' by the Chilka fishermen. To quote Annandale (1915) ' In this part of the lake system it was usually seen in parties of three or four. When the lake was full, the parties kept to the middle of the channel, but in March they hung round the fishermen fishing close inshore with seine nets, swimming within a few feet of the men and being apparently attracted by their shouts. At Satpara, individuals were frequently observed rolling over and over on a shelf of sand at the margin of the lake. The water was so shallow that it did not cover more than half of their bodies, but the animals though apparently abandoning themselves to play, slipped over into deeper waters instantaneously on the slightest movement on the shore '.

About the behaviour of parties of dolphins off Ghantasila and Barkul point of Chilka Lake, Annandale states ' The Cetaceans would often rush in straight towards the rocks, as if about to land upon them and on one occasion we saw one individual strand itself on a flat shelf and remain for some second with its flippers and forepart of its body practically out of water '.

It is so heartwarming to go through Annandale's description. Unfortunately the situation now is contrary to what it was in the year 1915. Presently, the Irrawady River dolphins are seen as stray individuals popping out of water surface for that inevitable purpose of breathing; but for which, perhaps, the animals would prefer to remain underwater. There could be two reasons to cause such a steep decline of this dolphin population : (1) merciless killing of the species for the sake of their oil and (2) changes in the environmental conditions of this impounded water body that would reduce the chances of their habitation in the lake.

Being naturally shy of human presence, these dolphins seem to have developed mortal fear to keep away from humans due to the atrocity committed upon them for the past several years. Annandale (1915) reports ' They seem to be for more suspicious in this direction (shore) than of any danger from the water. Out in the channel they commonly follow boats and we were told that there was a man living near Satpara who could call them upon his boat and spear them for the sake of their oil, which in Orissa, as in other parts of India is regarded as a cure for rheumatism, applied externally '. This probably is one of the main reasons that has lead to the present depleted status of this dolphins' population in Chilka Lake. Here is a typical example showing how human greed for animal products and want of love for wildlife lead to possible eradication of the species, if not checked in time. Presently the dolphins are hardly seen in the vicinity of the fishing area or playing along the shores of Chilka Lake.

Analysis of the environmental factors show that the physiography of the lake, particularly the bottom topography of the northern and central sectors, has been changing gradually year after year due to the enormous quantity of silt deposited by the rivers and rivulets into the lake. The major contributors are the rivers Mandakini, Daya, Nuna and Bhargavi. There is no recorded data available regarding the quantum of silt brought into this lake by these sources. But it is evidently seen that due to this silt deposition many acres of lake area of the northernmost sector has been turned into paddy fields. Down south of this area, the lake is a mud flat

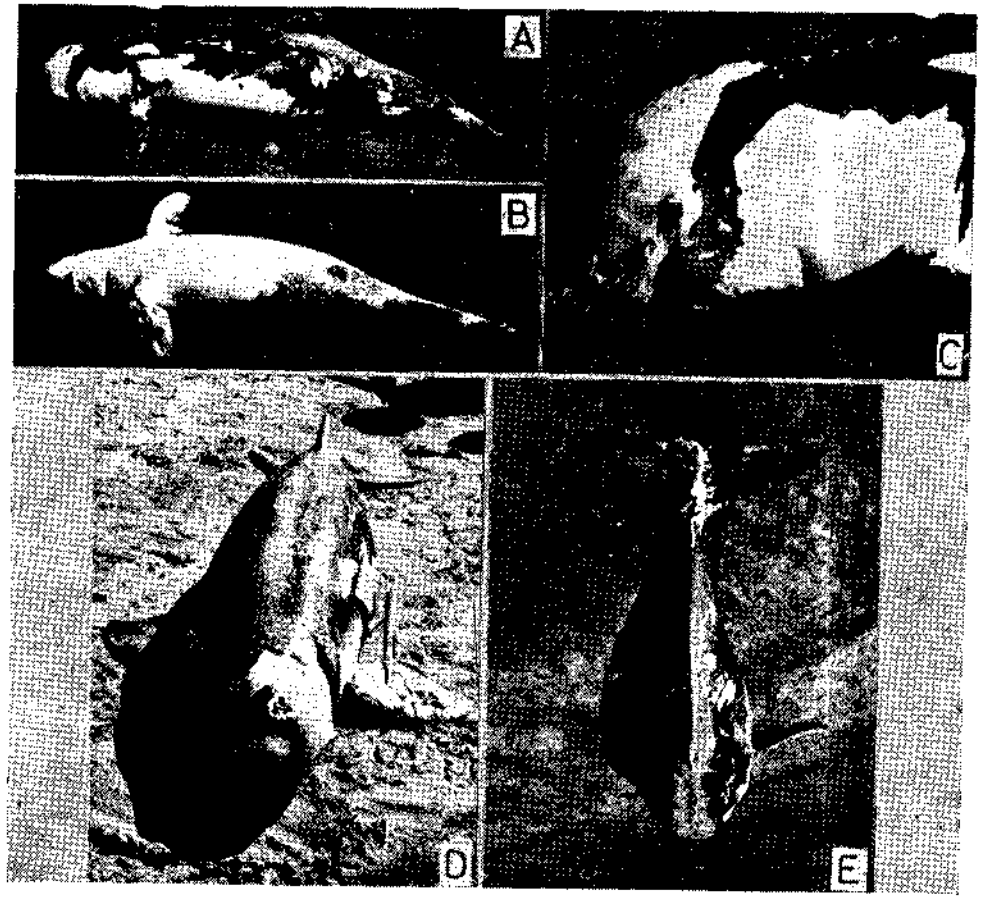

PLATE I. Irrawady River dolphin *Orcaella brevirostris*: A. 'Melon' and snubfin (lateral view), B. Genital orifice (ventral view), C. Head, beak and lateral grove at the junction of head and neck, D. Blowhole (fronto-dorsal view) and E. Mid-dorsal keel (postero-dorsal view).

harbouring thousands of wading birds, followed by a wetland with lush growth of aquatic vegetation that is suited for waterfowl habitation. One can have an idea of the silt deposited in this area and down upto Barkul if he drives a fifteen feet bamboo pole into the lake bottom, and would watch it pass through smoothly for its entire length. The silt deposits of the past several decades made the margin of the lake so very shallow that it is inaccessible for the dolphins for their activity.

Conclusions

It is needless to mention the importance of conserving the Irrawady River dolphin in Chilka Lake, where it has been living and breeding as a local community. It is a pity that no attention has so far been paid to perpetuate the species when it is presently facing chances of extermination. The animal is not very common in other parts of the east Indian Coast bordering Bay of Bengal. The type locality, the Visakhapatnam Harbour, has no recent record of its occurrence. It is, therefore, recommended that the Irrawady River dolphin *Orcaella brevirostris* Gray (1866) be declared as an endangered species and given all importance and attention to prevent its extinction. It may even be possible through penfarming, to maintain an endemic population of this species within Chilka Lake where its prey is in plentiful. It is also advisable to have a large aquarium as a captive centre in one of the islands, either Breakfast or Honeymoon Island, since captive breeding is already known to be a success (Hendrokusomo, 1979).

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