

A NOTE ON THE FETUSES OF THE DOLPHINS *TURSIOPS ADUNCUS*  
AND *SOUSA PLUMBEA* FROM THE SOUTH WEST COAST OF INDIA

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Though our knowledge of the distribution and occurrence of dolphins along the Indian coast is fairly good (Blanford 1891), information on their reproductive biology is very meagre. While studying the dolphins of southwest coast of India during 1976-1981, two fetuses of the bottlenose dolphin *Tursiops aduncus* and one fetus of the humpback dolphin *Sousa plumbea* were examined. The observations made on them are presented here.

On 1-12-1980 an adult *Tursiops aduncus* measuring 2370 mm got entangled in a gill net operated off Calicut for fishes. A fetus measuring 241 mm was obtained from it. The beak of it was at 124° to the trunk; eyes closed; beak with three pairs of short, curved, white bristles measuring 2 mm on upper jaw and two pairs of bristles on lower jaw about 70 mm from the gape of mouth; teeth not sprouted; caudal fluke and dorsal fin well developed. Genital slit close to the anal opening. Umbilical cord 153 mm long with distinct pappillae-like processes arranged in rows; the distal end of cord indented (Fig. 1a).

Another fetus of length 91 mm was obtained from a dolphin *T. aduncus*, measuring 2350 mm, which got entangled in a gill net operated off Calicut on 31-1-1981. The beak of it was at 90° to the trunk; eyes not opened; bristles

absent on beak; teeth not sprouted; dorsal fin not developed but represented by dorsal 'fin bud'; caudal fluke not developed; anal and genital openings far apart; umbilical cord as strands of coils, short, about 70 mm long. (Fig 1b).

Observations also were made on a fetus of humpback dolphin *Sousa plumbea* measuring 471 mm, which is displayed in the museum of the Department of Zoology, Malabar Christian College, Calicut. From the records available

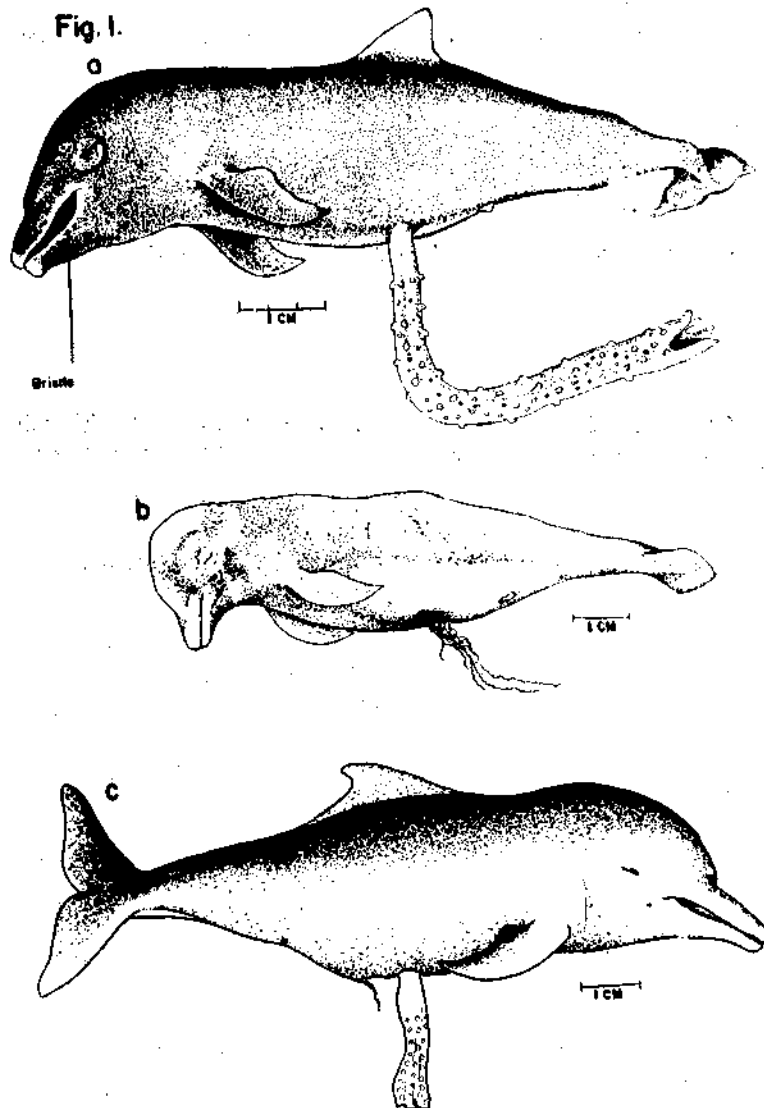


FIG. 1. a - Fetus of bottlenose dolphin *Tursiops aduncus*, 241 mm, taken off Calicut (Reg. No. CR.C., EMFRI, MM 2.). b - Fetus of *T. aduncus*, 91 mm, taken off Calicut (Reg. No. CR.C., CMFRI, MM 1). c - Fetus of humpback dolphin *Sousa plumbea*, 471 mm, taken off Calicut (from Malabar Christian College Museum)

with the museum, it is gathered that the fetus was collected from a humpback dolphin, of length unknown, landed at Calicut on 15-9-1981. The beak of the fetus was at 145° to the trunk; bristles absent on the beak but its positions were indicated by a few pairs of tubercles-like processes; eyes opened; teeth not sprouted; dorsal fin and caudal fluke well developed; genital and anal openings far apart; penis slender, protruding through the genital opening; umbilical cord robust, short, about 100 mm long with papillae like processes arranged in rows; body uniformly brown. (Fig. 1c). Measurements of the three fetuses of the dolphins are as follows.

TABLE 1. *Measurement of the fetuses of Tursiops aduncus and Sousa plumbea from off Calicut (India).*

	<i>T. ADUNCUS</i>		<i>S. PLUMBEA</i>
	No. 1	No. 2	No. 11
Tip of upper jaw to notch of fluke	91	241	462
Tip of upper jaw to centre of eye	15	47	110
Tip of upper jaw to apex of melon	5	16	44
Tip of upper jaw to angle of gape	10	30	90
Tip of upper jaw to external auditory meatus	20	55	117
Centre of eye to angle of mouth	6	15	23
Centre of eye to external auditory meatus	6	15	25
Centre of eye to centre to blow hole	7	33	72
Tip of upper jaw to blow hole	12	45	112
Tip of upper jaw to ant. insertion of flipper	20	68	148
Tip of upper jaw to tip of dorsal fin	44	156	260
Tip of upper jaw to mid point of umbilicus	39	124	245
Tip of upper jaw to genital aperature	51	167	275
Tip of upper jaw to centre of anus	55	171	335
Length of flipper (anterior insertion to tip)	17	47	85
Length of flipper (axilla to tip)	10	35	55
Width of flipper (maximum)	7	19	34
Height of dorsal fin	—	16	24
Width of fluke (tip to tip)	7	32	137
Length of umbilical cord	70	153	100
Number of bristles on the beak	—	3+3 2+2	—
Angle of the beak to the trunk	90°	124°	145°
Weight in grams	14.5	331.5	2000
Sex	Male	Female	Male
Date of recording	31-1-81	1-12-80	15-9-69
Register No. (R.C. CMFRI Calicut)	M.M. 1	M.M. 2	M.C.C MM No. 1

\* All measurments are in mm.

With the information available on the fetuses, it is possible to find the mating and calving seasons of the dolphins, if we know the gestation period and the age of the fetus. According to Ross (1977), the gestation period of the dolphin *T. aduncus* occuring along the South African coast is about 12 months. Perrin et al (1976) found the gestation period of *Stennella attenuata*,

a closely related species of *T. aduncus*, to be about 12 months. Further, Perrin et al (1976) determined the age of fetus of *Stenella attenuata* by using a regression model. Following the same linear regression, the age of 241 mm of *T. aduncus* was estimated to be 2½ months and that of 91 mm fetus to be about 1 month. The 471 mm fetus of *Sousa plumbea* was found to be about 5½ months old.

Along the South African coast the peak calving and mating season of the dolphin *T. aduncus* was from October to March (Ross 1977, 1979). Based on the gestation period and the age determined for the fetuses, the mating season of *T. aduncus* of Malabar coast back-calculated and found to be between October to December, which is in close agreement with the observations of Ross (1977).

Saayman and Taylor (1979) found that the calving season of *S. plumbea* along the South African coast was during the summer months as evidenced by the occurrence of small calves. However, Ross (1979) observed that *S. plumbea* mate and calve during February. The present study on the fetus of *S. plumbea* indicates that the mating season of the dolphin along the southwest coast of India may be during April, as a 5½ month-old fetus collected from it during the middle of September.

From the above observation it may be stated that the mating and the calving season of the two species of dolphins *T. aduncus* and *S. plumbea* along the Malabar coast (southwest coast of India) may be from October to April.

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