ON THE EMBRYONIC STAGE OF THE MOTTLED RAY, *AETOMYLUS MACULATUS* (GRAY), WITH A NOTE ON ITS BREEDING SEASON

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ABSTRACT

Developmental stage of the intrauterine embryos of *Aetomylus maculatus* has been presented. Except for the cephalic region and the presence of internal yolk the full-term embryo resembles the adult in all respects. The condition of the uterus and the position of the embryos inside the uterus are described, and the time of parturition discussed.

The information on the reproduction of rays in Indian waters is meagre. Devadoss (1976, 1977) studied the maturity and breeding of *Dasyatis imbricatus* and other rays from Porto Novo waters. Eight embroys of *Aetomylus maculatus* in advanced stages of development (220-240 mm across disc) were recorded from adult females measuring 715 to 1040 mm across disc at Devanampattinam landing centre, Cuddalore, during April-May 1976. The embryos resembled the parent in all respects except for the cephalic characters, and are shown in Fig. 1.

Disc about twice as wide as long, spiracular openings twice the diameter of eye, fleshy snout short with no horns, brain case not sufficiently hardened and brain visible from underneath, teeth somewhat soft, in several rows, of which the median ones broader. Fin rays faintly visible ,dorsal origin behind the ventral, spineless tail about 4 times the length of disc and indistinctly banded, yolk sac completely absorbed and the stomach filled with yolk.

Back Smooth, with no tubercles, colour on the dorsal side olive-green with rounded bluish brown spots on the posterior half of the body and whole of ventral fins, ventral side creamy white.

In adult females ovary and uterus on the left side only were found to be functional. The posterior part of the oviduct was dilated and contained embryos. No separate compartments developed in the uterus for each embryo. The two embryos from a mother are found to lie in the uterus with their head pointing towards the anterior side of the mother, and the pectoral fins folded like a tube. The ventral side of the embryo is found to face the ventral side of the mother.

The tail of the embroys is tucked in towards one side of the tube like scrolls. The developing ova (two bigger ones) were seen along with the developing embroys. The morphometric measurements are given in Table 1.

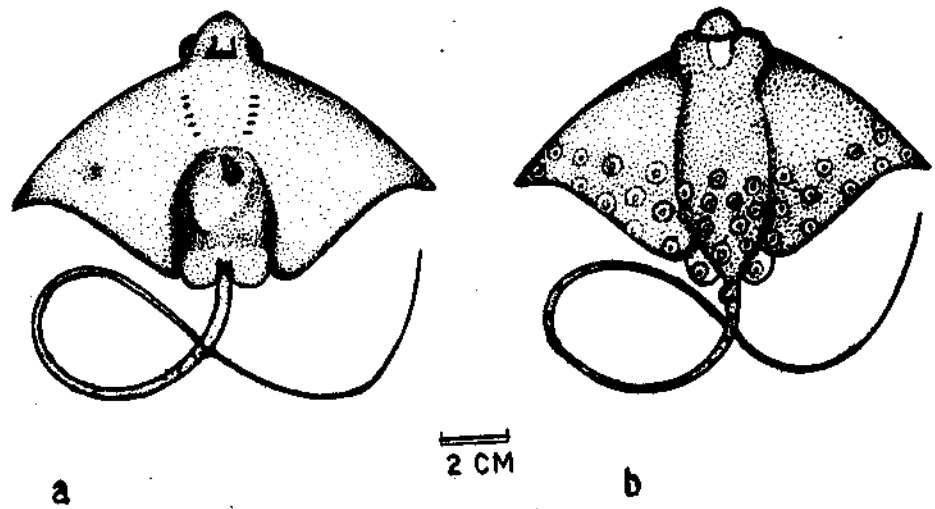

FIG. 1 Embryo of *Aetomylus. maculatus*. A. Ventral view, b. dorsal view.

TABLE 1. *Mean morphometric characters of eight embroys of* Aetomylus maculatus, *expressed as a percent of disc width.*

Characters	Mean %	Range %
Disc length	48.4	47.5-49.3
Tip snout to greastest disc width	39.5	38.4-40.8
Tip snout to orgin of dorsal	61.7	60.1-62.4
Tip snout to anterior end orbit	6.3	6.1- 6.5
Tip snout to anterior end cloaca	55.0	54.0-56.0
Tip snout to pelvic orgin	54.2	54.1-54.4
Tip snout to tip of lower jaw	11.7	10.8-12.3
Tip snout to Ist gill slits	17.5	16.4-18.3
Tip of snout first dorsal base	7.1	6.9- 7.3
Tip of snout origin of apex	5.0	4.9- 5.1
Distances between orbits	17.1	17.0-17.2
Distance between sipracles	20.0	19.9-20.2
Distance between inner end nostrils	5.8	5.7- 5.9
Mouth width	7.1	7.0- 7.3
Horizontal diameter eye	4.2	4.0- 4.4
Between Ist gill openings	16.7	16.7-16.7
" 5th gill openings	9.6	9.5- 9.7

This species appears to be viviparous with no placenta (Teshima et al 1971). Ovary and uterus on the left side only are functional and their counterpart on the right side are rudimentary. The embroys may be liberated with the internal yolk sac functioning as a nutritive organ until they are capable searching for food (Chen and Mizue 1973). Since the embryos were found in advanced stage of development during the months of April and May, the parturition time of this species appears to be during April-May. Incidences of free swimming young ones of this species (size 255-270 mm across disc) during June and July support the above conclusion. Ova in full developmental stage are also noticed in the same period. This suggests that the species falls in the category of ovarian and uterine cycles coincident (Holden 1974).

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References

CHEN, C. T. AND K. MIZUE, 1973. *Bull. Fac. Fish. Nagasaki Univ.*, 36: 37-51.

DEVADOSS. P. 1976. *Proc. 63rd Indian Sc. congr. Waltair.* (Abstract)

DEVADOSS. P. 1977. *Ph. D. Thesis*, Dept of Marine Biology, Annamalai University.

TESHIMA K. H. YOSHIMURA, AND K. MIZUE, *Bull. Fac. Fish Nagasaki Univ.*, 32: 41-50.