

NOTES

A NOTE ON THE OCCURRENCE OF BOMBAY DUCK *HARPODON NEHEREUS* (HAMILTON) WITHOUT PELVIC FINS

ABSTRACT

Bombay duck *Harpodon nehereus* with single pelvic fin was observed in trawnet landings at Veraval and another specimen without pelvic fins was observed in dol net catch at Versova, Bombay. The anomaly appears to be of congenital in nature.

THE ABSENCE of pelvic fin in fishes either totally or partially, have been reported from India by various workers. The notable among them are Hora (1921), James and Badrudeen (1968), Kaushik (1960) and Gopinath Menon (1973). However, thousands of specimens of Bombay duck *Harpodon nehereus* (Ham) have been observed during the last few years, but no anomaly has been found earlier.

On 15th June, 1983 a specimen of *H. nehereus* was observed with only one pelvic fin in trawl catches at Veraval (Pl. I A). The fish is measuring 241 mm and weighing 90 gms. The height of body is 37 mm. The meristic counts are D 13, A 14, P 11, V 9 and C 19. The right side pelvic fin is absent. The specimen is male. The *basipterygium* bone is also found lacking on the right side.

Subsequently, on 7th Feb. 1985 another fish measuring 266 mm and weighing 100 gms was observed in dol net at Versova, Bombay without pelvic fins (Pl. I B). On examination it was found that *basipterygium* bone is absent on the right side whereas it is present on the left side.

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The pelvics act as accessory manoeuvring organ and as counters to the pitching force which results from braking action of the pectoral. It is also used to produce rolling motion (Norman, 1963). Despite these handicap, the fish could survive and grow to such size as mentioned above.

The abnormalities among fishes are attributed to be accidental (Hora, 1922), congenital (Brindley, 1891) and natural mutations (Willey, 1920). Injuries among fishes caused by predator are common particularly among taper-tailed fishes viz. *Muraenesox talabonoides* and *Coilia dussemieri* (personal observations), in such cases the tail gets regenerated.

In the present case the absence of pelvic fins in *H. nehereus* appears to be congenital.

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PLATE I. *Harpodon nehereus*. A - with only one pelvic fin landed at Veraval in trawl net and B, without pelvic fin landed at Versova in dol net, along with a normal fish.

REFERENCES

- BRINDLEY, H. H. 1891. *Proc. Zool. Soc. London*, pp. 108-109.
- GOPINATHA MENON, N. 1973. *Indian J. Fish.*, 20 (2): 679-681.
- HORA, S. L. 1922. *Rec. Indian Mus.*, 22 : 27-32.
- JAMES, P. S. B. R. AND M. BADARUDEEN 1968. *J. mar. biol. Ass. India*, 10 (1): 107-113.
- KAUSHIK, N. K. 1960 *Curr. Sci.*, 29 (8): 316-317.
- NORMAN, J. R. 1963. *A history of fishes*, Ernest Benn. Ltd., London; pp. 31-49.

A NOTE ON THE MEASUREMENT OF EXTRACELLULAR PRODUCTS (ECP) IN SOME NANNOPLANKTERS

ABSTRACT

The rate of excretion of dissolved organic carbon in two nannoplanktonic flagellates isolated locally and developed in axenic cultures has been measured using the C^{14} technique. Variations occur according to species, their density and the stage of growth. The ecological implication of phytoplankton excretory products is also discussed.

RELEASE of organic metabolites into the surrounding medium is an integral part of phytoplankton photosynthesis. However, the rate of excretion varies and is attributable to a variety of factors - physical, chemical and biological (Hellebust, 1974). In the present investigation, the rate of excretion of four nannoplankton species isolated locally and cultured in the laboratory has been determined.

Material and methods

The organisms used are two golden-yellow flagellates *Chromulina freiburgensis* Doflein, *Isochrysis galbana* Parke, a green flagellate *Tetraselmis gracilis* Kylin and the blue-green alga *Synechocystis salina* Wislouch. These plankters were grown in sterile culture media (modified Miquel's medium) at 10:14 light-dark cycle from five 40 watts fluorescent lamps (about 34×10^{15} quanta $cm^{-2} sec^{-1}$) at ambient temperature.

Aliquots were withdrawn on the fourth, eighth and sixteenth day following inoculation. These samples were incubated in triplicate

with C^{14} for two hours in identical conditions as the culture. After the incubation the samples were filtered through Millipore HA filters. The activity of the filters and the filtrate (Extra Cellular Products, ECP) were counted in a Liquid Scintillation Counter (Stemann Nielsen, 1952; Krishnamoorthy and Viswanathan, 1968; Vollenweider, 1974).

Results and discussion

The rate of excretion of the plankters was low during the early days of growth and increased subsequently from 3.0% to 12.6% in *C. freiburgensis* from 3.9% to 45.2% in *I. galbana*, and from 2.5% to 22.4% in *T. gracilis* (Table 1). In *S. salina* the release was 38.9% on the fourth day, followed by a decrease to 36.9% on the eighth day and subsequent increase to 64.5% on the sixteenth day. In terms of absolute activity, 0.01 to 0.273 μC (micro curie) of C^{14} was excreted out of the 5 μC added to each (Table 2).

It has been found that phytoplankters excrete about 4% of the carbon assimilated (Hellebust,