

the size of first and third and fourth almost equal and slightly smaller than second. Ventral keel present on eighth thoracic somite. A distinct notch is present in the submedian carinae of the second abdominal segment. Each intermediate carinae of second to sixth abdominal segment also bears a notch at about the anterior one-third of its length. Small tubercles present anteriorly in between the intermediate and lateral carinae on the first to the fifth abdominal segments.

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AN INSTANCE OF UNUSUAL OXYGEN PRODUCTION IN A
TROPICAL IMPOUNDMENT

While making limnological studies of Amaravathy Reservoir (Madras State), on one occasion (June 1964) an unusually high photosynthetic production of oxygen was recorded. Water samples collected from each metre depth with Friedinger sampler were placed in (1) a bottle for determining the dissolved oxygen immediately (2) a clear and a dark bottle to be suspended at the depth from which the sample was collected. The initial dissolved oxygen was determined soon after collection. The dissolved oxygen from the suspended light and dark bottles were determined after 7 hours exposure *in situ*. The difference in dissolved oxygen between the dark (D) and light (L) bottle represents the gross photosynthetic oxygen production in mg/l or g/m³. By averaging the oxygen production between two succeeding metre depths and totalling them up, the production per m² was obtained. Net production was obtained by deducting the initial oxygen (i) from the final oxygen in the light bottles. The results are presented in Tables I and II.

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NOTES

TABLE I

Productivity measurements in Amaravathy Reservoir on 4-6-64

Depth m.	Initial (i) oxygen mg/l	At the end of 7 hours		L-D mg/l	L-i mg/l	
		Dark bottle (D) mg/l	Light bottle (L) mg/l			
0.0	6.5	0.0	11.6	11.6	5.1	Total gross production = 33.2 g O ₂ /m ² 7 hr. or 56.91 gm ² /day
1.0	6.4	0.0	7.2	7.2	0.8	
2.0	5.6	0.0	5.8	5.8	0.2	
3.0	5.4	0.0	5.6	5.6	0.2	Net production in the euphotic zone 3.95 g O ₂ /m ² /7hr.
4.0	5.4	0.0	5.6	5.6	0.2	
5.0	5.4	0.0	5.0	5.0 (-)	0.4	Respiration (B.O.D.) 0.93 mg/l/h

The gross oxygen production from photosynthesis was 33.2 g/m²/7 hrs. This appears to be the highest recorded production. Copeland and Dorris (1962) recorded a high value of 29.0 g O₂/m²/day in a refinery holding pond. Odum and Odum (1959) have recorded productivity values of certain ecosystems but these

TABLE II

*Physico-chemical conditions at various depths
in Amaravathy Reservoir on 4-6-64*

Depth	0	1	2	3	4	5
Temperature °c	29.6	29.5	29.5	29.4	29.4	29.4
Free carbon dioxide (p.p.m.)	nil	nil	nil	nil	nil	nil
Phenolphthalein alkalinity (p.p.m.)	6.0	2.0	1.0	0.5	..	nil
Methyl orange alkalinity (p.p.m.)	84.0	92.0	94.0	94.0	..	98.0
Dissolved oxygen mg/l	6.5	6.4	5.6	5.4	5.4	5.0
pH	7.9	7.3	6.9	6.9	..	6.9

are lower than that of the Amaravathy reservoir. Hull (1962) observed a maximum production of only 8.7 g/m²/day in a polluted estuary. The same author (1963) found a maximum total production of 5.98 g/m²/day in a reservoir. Bartsch (1960) recorded 26.0 g O₂/m²/day in sewage stabilization ponds. Even in a highly polluted moat on one occasion the highest production of 42.3 g/O₂/m² day was found (Sreenivasan, 1964). Edwards and Owens (1965) recorded the highest of oxygen production of 35g/m²/day in River Lark. Thus, for a reservoir with a continuous inflow-outflow the photosynthetic production is very remarkable.

Dense bloom of blue green algae was visible and this was dispersed upto 4.0 m. depth. On this day, bright sunshine was noted for four hours and subdued light for 3 hours. Mild showers occurred for an hour. Physico-chemical conditions, shown in Table II indicate that homothermal conditions prevailed on this day. Free carbondioxide was absent and phenolphthalein alkalinity present upto 4.0 m. depth indicating photosynthetic utilization of carbon dioxide. Methyl orange alkalinity varied from 84.0 p.p.m. at the surface to 98.0 p.p.m. at 5.0 m. This was greater than usual because of the summer conditions concentrating the solutes (Sreenivasan, 1965). This is further confirmed by the conductivity of 200 μ . mhos as against the usual 50 μ mhos. The oxygen absorbed (Tidy's 4 hour test) was 6.8—a fairly high value. The 'oxygen deficit' was 2.09 mg./l or 1.28 mg./cm.² The plankton volume was high—0.6 c.c./10l and the more dominant genera were *Microcystis*, *Cylindrospermum*, *Oscillatoria*, *Merismopedia* and *Maugeotia*. *Brachionus*, the cosmopolitan zooplankter was also noticed. The phytoplankton is almost exclusively of blue green algae, which are known to be good photosynthetizers. The 'Community respiration' was higher—over 0.93 mg./l hr. The 'net production of 3.95 g. O₂/m.²/7 hours is a high rate and this is responsible for the lower 'oxygen deficit.' The high photosynthetic production of this impoundment will improve the oxygen balance and will be a favourable factor in tackling any pollution downstream.

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OCCURRENCE OF EGGS OF THE WHITE BAIT *ANCHOVIELLA* SP. IN OFFSHORE WATERS OF BOMBAY

During a fishing voyage of M. T. 'Kalyani' III of the Deep Sea Fishing Station, Bombay, in February 1965, in one of the surface plankton hauls made at 71°15'E., 19°35'N. to the West-North-West of Bombay a considerable number of elongated and elliptical eggs with segmented yolk (Fig. 1) were observed. This type of egg is believed to belong to the genus *Anchoviella*. The eggs were found to be in a very early stage of development with the embryo just beginning to take shape. The length of the eggs varied from 1.04 mm. to 1.24 mm., and the breadth from 0.49 mm.