ISSN 0254-380 X

भाकृअनुप
ICAR

समुद्री मात्स्यिकी सूचना सेवा
MARINE FISHERIES INFORMATION SERVICE

No. 97

JULY 1989

तकनीकी एवं विस्तार अंकावली
TECHNICAL AND EXTENSION SERIES

केन्द्रीय समुद्री मात्स्यिकी अनुसंधान संस्थान
कोचिन, भारत
CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
COCHIN, INDIA

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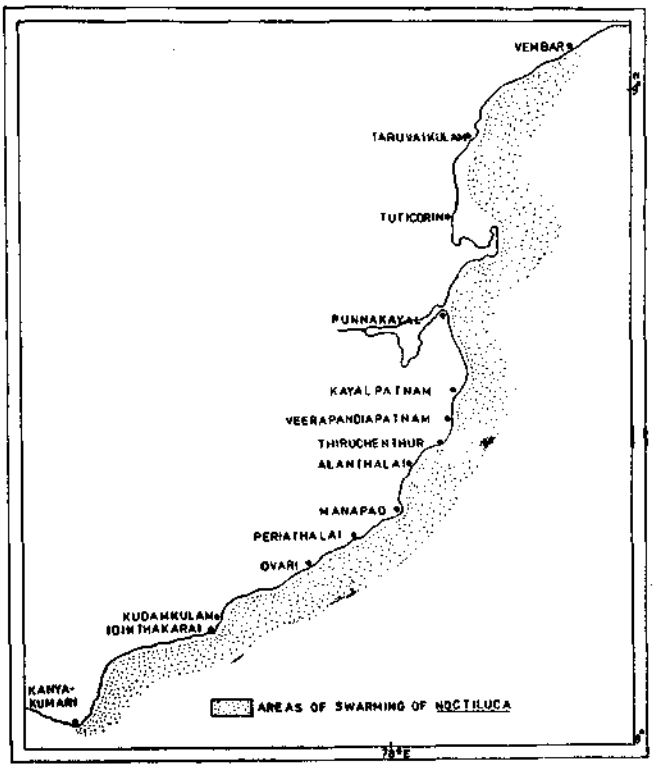
INDIAN COUNCIL OF AGRICULTURAL RESEARCH

'GLOWING SEA' PHENOMENON DUE TO THE SWARMING OF *NOCTILUCA MILIARIS* ON THE SOUTHEAST COAST*

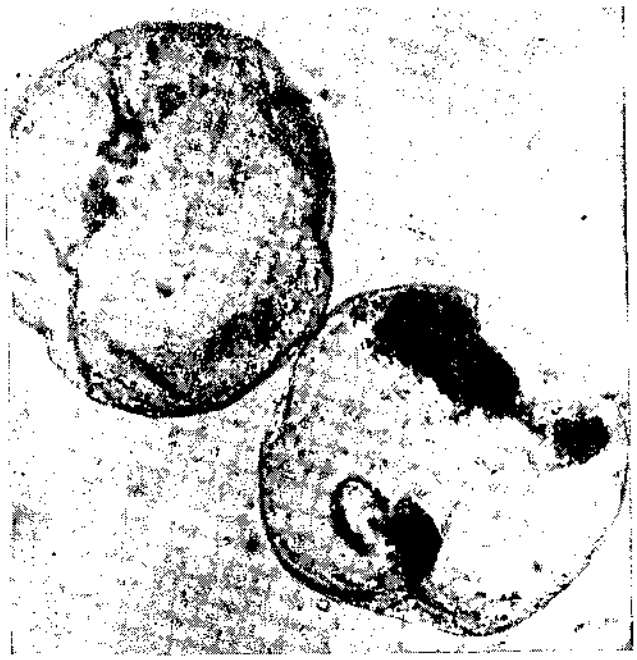
During October, 1988, a phenomenon of 'glowing sea' was observed in the night hours in the inshore area off Tuticorin and nearshore areas of Kayalpatnam, Thiruchendur, Manapad, Idinthakarai and upto Kanyakumari. The coastal people of these areas felt anxiety about this phenomenon and the 'glowing sea' condition was the talk of the villagers. Based on the newspaper reports, a visit was made to these places and collected water samples during night hours. On examination of the water samples, it was found that the dominance of the plankton, *Noctiluca miliaris* (a toxic dinoflagellate which is microscopic, baloon-like and green in colour) was responsible for the 'glowing sea' condition of the sea water. Since *Noctiluca* has the ability of producing phosphorescence or bioluminescence, the whole area became illuminated and this caused anxiety among the local people.

The blooming of *Noctiluca* is common along the coasts of India and they cause the 'red tide' in the inshore waters. However, the present observations of *Noctiluca* showed no 'red tide' since the organisms were green in colour due to the harbouring of green flagellates on *Noctiluca*.



* Reported by C.P. Gopinathan, Pon. Siraimeetan, J.X. Rodrigo and M. Selvaraj, Tuticorin Research Centre of CMFRI, Tuticorin.

The 'glowing sea' was first recorded on 12th October, 1988, based on plankton samples collected from the inshore area of Tuticorin. Since the water current was having a southward drift, these organisms also moved to the south. On 31st October the nearshore waters between Kayalpatnam and Thiruchendur became illuminated. This was the first time in recent years such a phenomenon was observed here.



Noctiluca miliaris the toxic dinoflagellate responsible for the 'glowing sea' phenomenon.

The hydrological conditions indicated normal features with salinity of water 34 ppt, pH 8.2, temperature 25.5°C and dissolved oxygen content 4.2 ml/1. The concentration of *Noctiluca* was 10,000 cells/ml during the middle of October, while the samples of 5th of November showed less than 100 cells/ml. The samples of 11th of November showed the total absence of *Noctiluca* from the nearshore samples.

It has been reported earlier that there was significant reduction in the diatom population, when there was blooming of *Noctiluca;* the level being reduced almost to nil. Similar situation was observed in the present samples collected from Kayalpatnam and Thiruchendur areas. Practically no other phytoplankton organisms could be seen in the water. A few larvae of copepods, decapods and lucifers were present. The local fishermen could not get any fish catches during the two weeks of *Noctiluca* bloom. It is evident from this that high abundance of *Noctiluca* was responsible for the situation. Demersal forms such as crabs and eels were the only organisms fished from these areas during the period. It is assumed that the rapid reduction of diatom population might have seriously affected the other grazers, particularly the copepods and in turn the pelagic fishes.