

OCCURRENCE OF *TRICHODESMIUM* PHENOMENON IN THE STRAIT OF MALACCA

S. Z. QASIM

National Institute of Oceanography, Dona Paula - 403 004, Goa

ABSTRACT

About 40 kilometres away from Penang, a bloom of *Trichodesmium* was recorded in the Strait of Malacca on 18 April, 1979. The bloom was seen up to a distance of about 50 kilometres and was largely confined to the surface. The clumps of the algae appeared to be in a decaying phase. Floating oil slicks and tar slumps were also seen at the surface in the Strait of Malacca along the shipping route.

Trichodesmium phenomenon is of very wide occurrence in tropical oceans and recent studies on this phenomenon have shown that it occurs with varying intensity almost every year from February to April in Goa waters, west coast of India (Devassy, Bhattathiri and Qasim, 1978). The phenomenon has been reported from different parts of the world oceans including the Java Sea (Delsman, 1939) and the east coast of Borneo (Mohler, 1941). However, there is no previous record of its occurrence in the Strait of Malacca.

During a sea voyage (Madras-Singapore-Madras) on board a passenger ship M.V *Chidambaram*, the present author made all possible efforts to locate visually the areas of *Trichodesmium* bloom. The ship's track is shown in Fig. 1. During its onward journey to Singapore, the ship called at Nagapattinam and Penang whereas on its return cruise, in addition to the two ports noted above, it also called at Port Kelang (Fig. 1).

The ship sailed from Madras on 12 April, 1979 in the evening and reached Penang in the morning of 17 April. No *Trichodesmium* bloom was seen anywhere along the route up to Penang. From Penang the ship sailed at 1015 hours on 18 April and at 1215 hours the bloom was first noticed in the Strait of Malacca. The bloom continued to occur on either side of the ship's track till about 1430 hours. The ship's cruising speed in this sector was 15 knots and hence the size of the bloom would be about 50 kilometres in length. The area where bloom was seen has been marked in Fig. 1. Flying fishes were quite common in the bloom area and these could be seen moving away from the ship's track as they did from the bloom-free areas of the sea. The bloom seen in the Strait of Malacca was not very dense except in parts and it was largely in a decaying phase as the patches of *Trichodesmium* had congregated in the form of slicks. The ship on its return journey, passed through the same area on 24 April in the early hours of the morning and reached Penang at 0700 hours. Hence the continued presence of the bloom could not be confirmed on 24 April.

Throughout the ship's voyage Madras-Singapore-Madras which lasted 17 days (12 to 29 April, 1979), the sea was exceptionally calm, the sky was very clear and there was bright sunshine and a gentle breeze. At the start of the cruise there was full moon and no

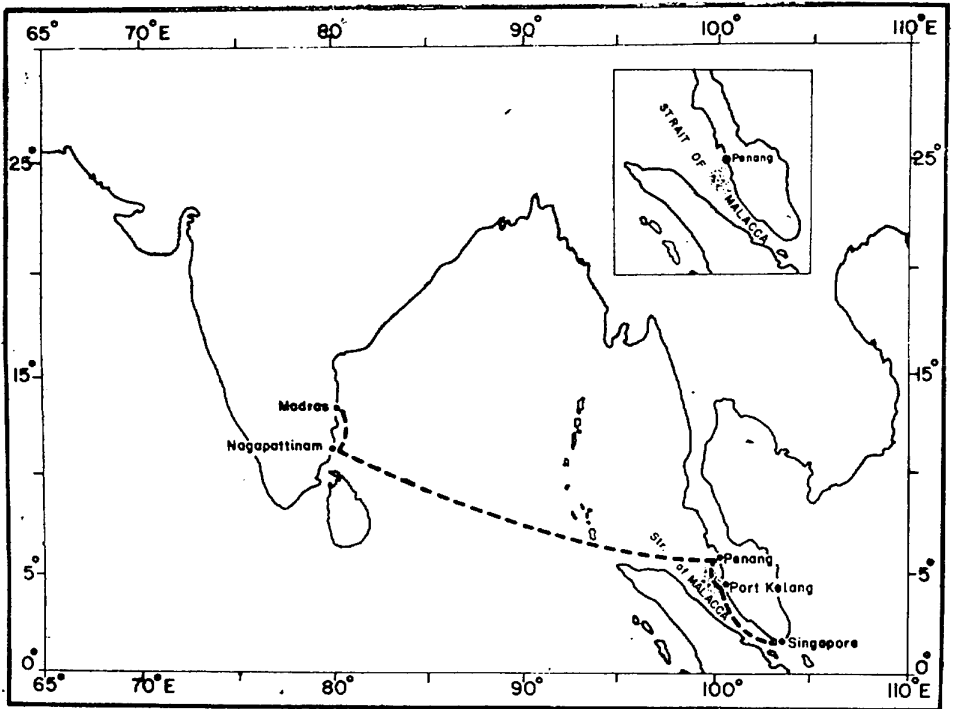


Fig. 1. Cruise track of M.V. Chidambaram to Malaysia and Singapore is shown by broken lines. The area where *Trichodesmium* bloom was seen is shown by stippling. Inset shows the approximate position of the bloom (stippled area).

rain was recorded anywhere along the route except in Singapore when the ship was in the harbour. Apart from the Strait of Malacca, no *Trichodesmium* bloom was seen anywhere during the voyage.

One of the striking features noticed during the voyage was the lack of bird life. At Nagapattinam, some brown-headed sea gulls and a few common pariah kites were seen, but at Penang, Singapore and Port Kelang, except for a few sea gulls and some land birds in the harbour area, no water birds were seen. Marine animals noticed during the voyage included a shoal of dolphins at 0800 hours on 16 April, a large whale at 1640 hours on 25 April and another shoal of about 15 dolphins at 1130 hours on 26 April and a few porpoises at 1745 hours on 26 April.

Enroute to Singapore, after the ship passed the Parsons Pygmalion Point of the Great Nicobar island (Andaman Sea), several oil tankers, bulk carriers and cargo ships were seen and their number increased in between Penang and Singapore. Large patches of floating tar lumps and oil slicks were also seen in many parts of the Strait of Malacca.

Some of the interesting features of the *Trichodesmium* phenomenon recorded in the Strait of Malacca were as follows:

1. It was recorded at a time (18 April) when peaks of similar *Trichodesmium* blooms occur in the Laccadive Sea (Qasim, 1970 and 1972) and in other parts of the Arabian Sea.

2. The bloom was largely confined to the surface and the colour which the decaying clumps imparted to the sea (light brown) was similar to that noticed in the Arabian Sea (Devassy, Bhattathiri and Qasim, 1978).

3. The intensity of the bloom was not as high as that recorded in the Laccadive Sea (Qasim, 1972) but was almost similar to that of the 1977 bloom season of Goa waters (Devassy, Bhattathiri and Qasim, 1978).

As has been deduced earlier, the blooms of *Trichodesmium* are a source of enrichment to tropical seas (Devassy, Bhattathiri and Qasim, 1978) and hence its occurrence in the Strait of Malacca provides further evidence that its role in enriching the nutrient-impooverished tropical oceans is quite far and wide.

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