

Marine algal flora of submerged Angria Bank (Arabian Sea)

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Submerged Angria Bank was surveyed for the deep water marine algal flora. About 57 species were reported from this bank for the first time. Rhodophyta dominated (30 species) followed by Chlorophyta (18 species) and Phaeophyta (9 species). A few species like *Valonia ventricosa*, *Halimeda discoidea*, *Galaxaura marginata*, *G. lapidescens*, *G. lenta*, *Hypnea pannosa*, *Botryocladia skottsbergii*, *Antithamnion* sp., *Acanthophora muscoides*, *Laurencia paniculata* and *Dictyurus purpurescens* were the first records from the west coast of India. Other genera like *Codium*, *Microdictyon*, *Dictyopteris*, *Dictyota*, *Sargassum*, *Galaxaura*, *Asparagopsis*, *Acanthophora* and *Laurencia* were predominant at the Angria Bank.

Most of the marine algal studies undertaken in India so far are from the intertidal region¹⁻³. There are however, interesting reports on deep water marine algae from other regions. These data are quite important from distribution, physiology and reproduction points of view.

Angria Bank is located in the Arabian Sea approximately 135 km off Vijaydurg (16°27'N and 72°05'E) along the central west coast of India (Fig. 1). It has an area of 540 km². The average depth of water over the bank is about 25 m. Angria Bank has risen from the sea floor measuring 250 m depth. Nair *et al.*⁴ have collected the environmental data from this bank. There is, however, no data available on the marine algal flora of any submerged bank along the Indian coast. This communication reports for the first time results of a systematic survey on marine algal distribution from Angria Bank.

Observations were made during three cruises of *R.V. Gaveshani* nos. 159 (December 1985), 169 (May, 1986) and 173 (October 1986). A bucket dredge (size 0.7 × 0.5 × 0.25 m) was used for collecting the samples at 13 stations (Fig. 1) along the preplanned transects so that maximum surface area is represented. Algal samples were cleaned and preserved as herbaria and also in 5% seawater formalin. All the specimens were deposited at NIO Reference Centre, Goa, India.

Although the surface hydrography was not directly relevant to the present investigations, the midwater environmental conditions are of great significance for the marine algal growth on the submerged bank. According to Nair *et al.*⁴ the midwater temperature was found to be around

24.8° to 27.8°C, while salinity fluctuated between 35 and 36 × 10⁻³ and dissolved oxygen was 5.7 ml.l⁻¹. They have also reported significantly higher calcium concentration (1030 to 1915 ppm) from the shallow and submerged Angria Bank.

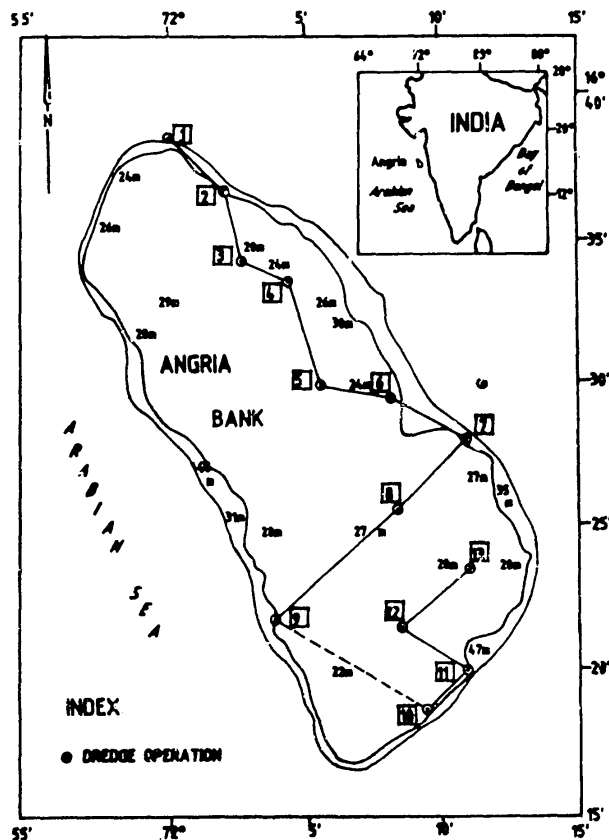


Fig. 1 - Map of Angria Bank showing locations of stations dredged

Table 1 – Marine algal flora of Angria Bank
[* = new records for the west coast of India]

CHLOROPHYTA

1. *Avrainvillea* sp.
2. *Boergesenia forbesii* (Harv.) Feldm.
3. *Caulerpa cupressoides* (Vahl) C. Ag.
4. *C. racemosa* (Forssk.) W.V. Bosse
- *5. *Chlorodesmis hildebrandtii* A. Gepp et. E.S. Gepp
6. *Cladophora* sp.
7. *Codium elongatum* Boergs
8. *C. indicum* Dixit
- *9. *Halimeda gracilis* Harv. ex. J. Ag.
10. *H. discoidea* Decaisne
- *11. *H. tuna* f. *platydisca* (Decaisne) Barton.
12. *Microdictyon tenuis* (C. Ag.) Decaisne
13. *Neomeris annulata* Dickie
14. *Struvea anastomosans* (Harv.) Piccone
15. *Udotea indica* A. Gepp. et. E.S. Gepp.
16. *Valoniopsis pachynema* (Mertens) Boergs
17. *Valonia aegagrophila* C. Ag.
- *18. *V. ventricosa* J. Ag.

PHAEOPHYTA

1. *Dictyopteris australis* Sonder.
2. *D. delicatula* Lamour.
3. *Dictyota dichotoma* (Huds) Lamour.
4. *D. maxima* Zanard.
5. *Lobophora variegata* (Lamour.) Wom.
6. *Padina pavonica* (L.) Thivy ex Taylor
7. *Ralfsia* sp.
8. *Sargassum* sp.
9. *S. tenerrimum* J. Ag.

RHODOPHYTA

- *1. *Acanthophora muscoides* (L.) Boergs
2. *A. najadiformis* (Delile) Papenfuss.
3. *Acrochaetium* sp.
4. *Agalothamnion byssoides* (Arn. ex. Feldm.)
5. *Amphiroa fragilissima* (L.) Lamour.
- *6. *Antithamnion* sp.
7. *Asparagopsis taxiformis* Delile
8. *Bostrychia tenella* (Vahl.) J. Ag.
- *9. *Botryocladia skottsbergii* (Boerg.) Levr.
10. *Champia parvula* (C. Ag.) Harv.
11. *Ceramium rubrum* (Huds.) C. Ag.
12. *Ceratodictyon variabilis* (Gress.) R.E. Nomis.
13. *Cryptonemia undulata* Sond.
- *14. *Dictyurus purpurescens* Bory.
15. *Fosliella farinosa* (Lamour.) Howe.
- *16. *Galaxaura lapidescens* (Ellis et Sol.) Lamour.
- *17. *G. lenta* Kjellman.
- *18. *G. marginata* (Ellis et Sol.) Lamour.
19. *G. oblongata* (Ellis et Sol.) Lamour.
20. *Gracilaria* sp.
21. *Herposiphonia tenella* C. Ag.
- *22. *Hypnea pannosa* J. Ag.
23. *Jania rubens* L. Lamour.
- *24. *Laurencia paniculata* (C. Ag.) J. Ag.
25. *L. obtusa* (Huds) Lamour.
26. *Myriogramme bombayensis* Boerg.
27. *Nitophyllum punctatum* (Stackh.) Grev.
28. *Peyssonelia obscura* Web. V. Bosse.
29. *Polysiphonia* sp.
30. *Rhodomenia australis* Sond.

About 12 calcified marine algae have been reported in the present investigation. Among these forms *Halimeda* spp were found to be dominant. The phosphate values varied from 1.6 to 9.7 $\mu\text{g-at.l}^{-1}$.

The marine algal flora of the Angria Bank comprises 57 species representing 45 genera (Table 1). Most of these species are common for the main coastland or Lakshadweep atolls^{2,3,5}. It appears that the flora of Angria Bank has greater affinity with the flora of Gulf of Kuchchh and Maharashtra than with the flora of Lakshadweep⁵. The species of *Codium*, *Microdictyon*, *Dictyopteris*, *Dictyota*, *Sargassum*, *Galaxaura*, *Asparagopsis*, *Acanthophora* and *Laurencia* were abundant during the investigation. It was also observed that most of the seaweeds grew luxuriantly on the ridge (Fig. 2) towards mainland as compared to

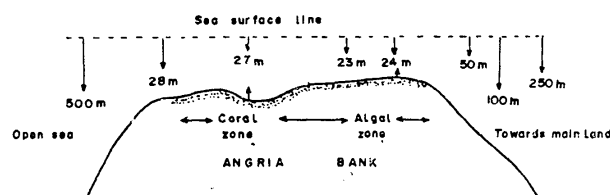


Fig. 2 – General profile of the Angria Bank showing coral and algal zone

the other side. The central part of the bank, however, supported growth of live coral species of *Turbinaria*, which perhaps prevents the growth of any vegetation. Of the species reported a few species like *Halimeda gracilis*, *H. discoidea*, *Valonia ventricosa*, *Acanthophora muscoides*, *Antithamnion* sp., *Botryocladia skottsbergii*, *Dictyurus perpurescens* and 3 species of *Galaxaura* are new re-

ports for the west coast but already listed from the east coast⁶.

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