MARINE INDICATOR SPECIES OF REEFS:
III. CALCAREOUS REEFS OF DUNE-ROCK (AEOLIANITE) IN ROUGH, COLD-TEMPERATE WATERS
Examples: Cape Dombey, Robe and Beachport South Australia

Steep cliffs, pot-holed, flat rock platforms, isolated sea-stacks and arches at Cape Dombey

vertiical cliff-face grazed bare by molluscs and dense algal mats exposed at low tide

fronds of Giant Kelp floating at the surface from attachments deep below and distant rock arches

THUMBNAIL SKETCHES OF INDICATOR ORGANISMS — DISTRIBUTED ON THE REEF ACCORDING TO TIDE LEVELS

1a. the marine lichen, Caloplaca, in the “splash” zone above high tide dries and becomes bright orange during summer. Tiny blue snails create a distinct browse-line lower in the splash zone.

1b. blue snails, Austrolittorina, to 16 mm tall, grazing black marine lichen, Lichina, in the region above high tide, kept moist by occasional wave splash.

1c. surf barnacle Catamorua polymerus, 30 mm across, seen here with a few black mussels. grows in the mid-intertidal on rough coasts.

2. a variety of molluscs graze the mid-intertidal clean of algae. Because they do not venture down into the lower intertidal due to predation, sea-lettuce and other algae can grow there prolifically.

3a. six-plated barnacle, Chthamalus antennatus, about 12 mm across may grow high up in the intertidal region.

3b. honeycomb barnacles, Chamaesipho tasmanica, about 6 mm across, seen here with a few blue snails, squash together in groups in the upper intertidal, and can be difficult to see against the eroded background rocks.

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4b. the orange-edged limpet, Cellana solida, found on rough coasts, may be 60 mm across.

4c. porphyra may grow in the mid-intertidal during winter.

5. 6. brown, wrinkled Neptune’s fingers, Splachnidium, amongst lozenges of blue-green algae Calothrix australis (formerly C. firma).

6. six-plated barnacle, Chthamalus antennatus, about 12 mm across may grow high up in the intertidal region.

7. the red alga laver, Porphyra, may grow in the mid-intertidal during winter.

8. white worm tubes, Galeolaria caespitosa, may form a prominent band on more vertical rocks in the mid-intertidal.

9. sea lettuce, Ulva, seen here with stunted Hormosira surrounding a rock pool in the lower intertidal can be prolific in spring.
10. rock pools, full of a mix of flat or tufted brown algae and red algae

11. the algal mats in the lower intertidal can be dense and species rich. Shown above: the red alga Griffithsia teges with yellow tips to filaments, and three species of the green alga Caulerpa

12. Neptune’s necklace, Hormosira banksii, about 300 mm tall, in the lower intertidal, forms chains of brown beads

13. cunjevoi, Pyura stolonifera, is a seasquirt attached to rocks in the lower intertidal, often with a fuzzy coating of red algae

14. the large chiton, Plaxiphora albida, previously Poneroplax, to 100 mm long, with broad girdle coated with a fuzz of algae, grazes the lower intertidal

15. in the region of wave surge at the reef edge, bull kelp, Durvillea, stands on a trunk-like stalk to 400 mm tall, its large, broad rubbery blade shredded at the edges into belt-like strands

16. algal mats extend under the reef edge. They contain many red species, but the largest algae are brown, such as crayweed, Phyllospora, shown above

17. beds of bright green Caulerpa contrast with the dominant brown algae of shallow waters

18. giant kelp, Macrocystis, from shallow water to 20 m deep, attaches to rocks with a branching, root-like holdfast giving rise to elastic strands ending in wrinkled, narrow blades held at the water surface by gas bladders

19. leafy fronds of Macrocystis may rise from 20 m deep