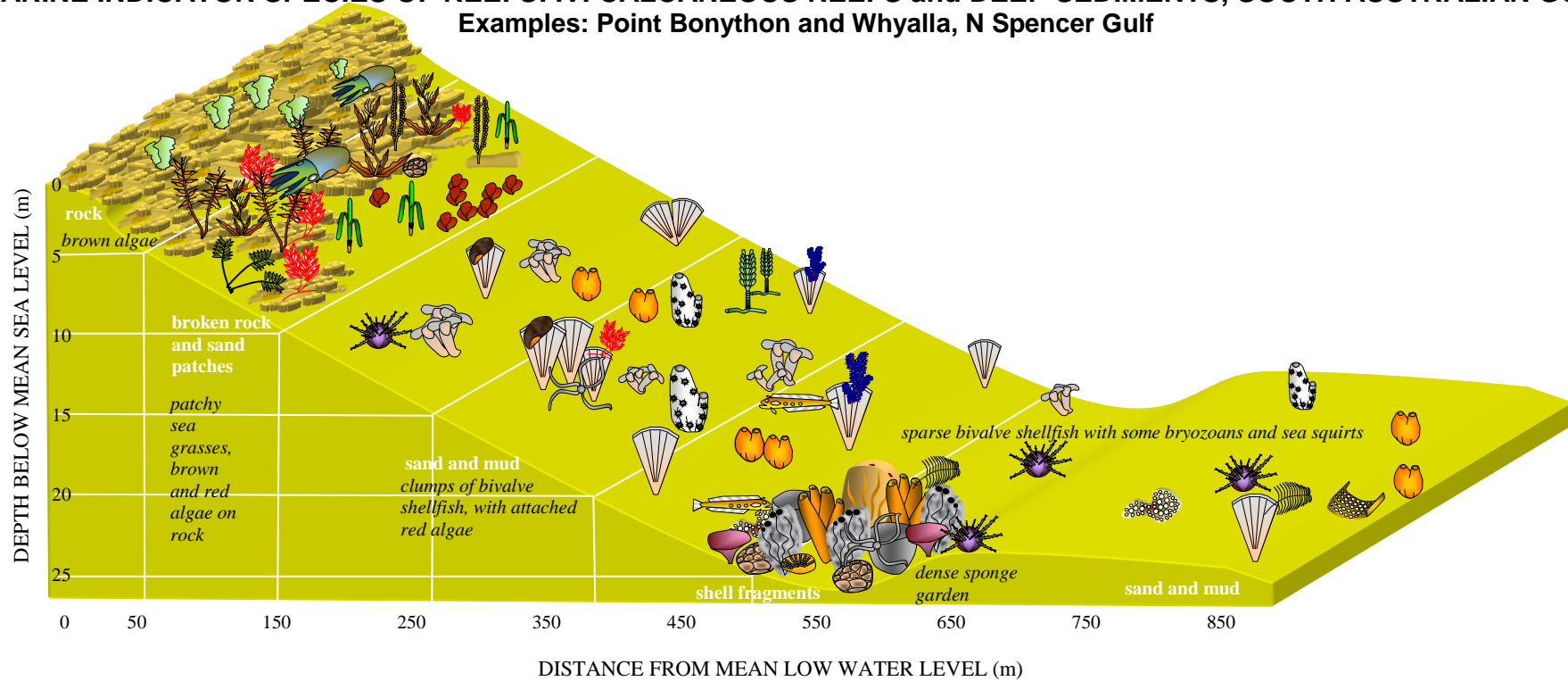


MARINE INDICATOR SPECIES OF REEFS: IV. CALCAREOUS REEFS and DEEP SEDIMENTS, SOUTH AUSTRALIAN GULFS

Examples: Point Bonython and Whyalla, N Spencer Gulf



plants			animals									
large brown algae			bivalve shellfish		bryozoans	cuttlefish	solitary sea squirts	soft coral	sea urchins			
1	2	3	10	11	12	13-15	20	22	23	25	27	28
green algae		red algae	sea grasses		sponges		grubfish	compound sea squirts	hydroids	serpent stars		
4	5	6	7	8	9	16-19	21	24	26	29		

THUMBNAIL SKETCHES OF INDICATOR ORGANISMS — DISTRIBUTED ACCORDING TO DEPTH

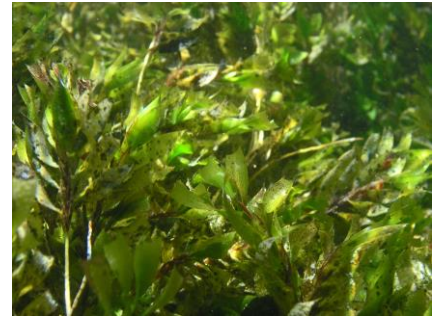
The coin scale is 23 mm across, or almost 1 inch in diameter



1. grapeweed, *Caulocystis uvifera* has gas floats directly on the central stalk



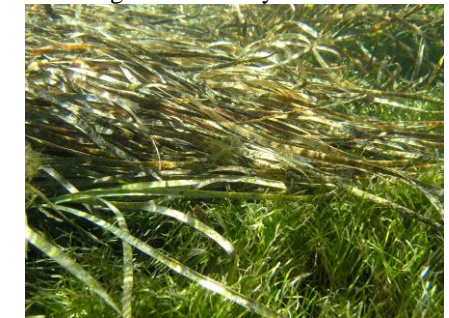
4. sea lettuce, *Ulva* can form dense green mats of crinkly, tissue-thin plants running from the lower intertidal to shallow water



8. sea nymph, *Amphibolis*, is a leafy sea grass with wiry stems



5. *Caulerpa cactoides* has jointed balloon-shaped parts



9. eel grass, fine leaved *Zostera* and Tape grass, *Posidonia*



2. *Scaberia agardhii* has scaly or warty branches



6. *Haloplegma* is a red alga with felty lobes about 50 mm across. It sometimes forms dense mats at depth



10. bivalve shellfish, *Mytilus* (with white worm-tubes attached)



11. bivalve hammer oyster, *Malleus*



3. *Sargassum* has leafy or divided basal parts and feathery upper parts often bearing small gas floats



7. *Asparagopsis taxiformis* is a fluffy red alga about 200 mm tall



12. razor shell, *Pinna*, pointed tip buried in mud, about 300 mm tall



13. bryozoan, lace coral, *Petralia*, 100 mm across, easily broken



17. sponge, *Tedania*



22. yellow sea squirt, *Polycarpa*, about 80 mm tall



14. bryozoan, lace coral, *Triphyllozoon*, 30 mm across



18. lace sponge, about 100 mm across



23. giant sea squirt, *Phallusia obesa*



15. bryozoan, *Celleporaria*



19. sponge garden



16. cup sponge, 300 mm tall
(Photo: D Muirhead)



20. giant cuttlefish, *Sepia apama*, to 500 mm long



24. compound ascidian colony



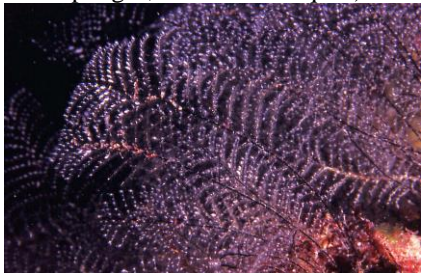
21. spotted grubfish, *Parapercis ramsayi*, 200 mm long



25. soft coral, *Telesto* (syn: *Carajoa*)



26a. hydroids (amongst bryozoans, sponges, colonial sea squirt)



26b. hydroid, microscopic views



27a. sea urchin, *Heliocidaris*, to 80 mm across, is a heavy browser of algae



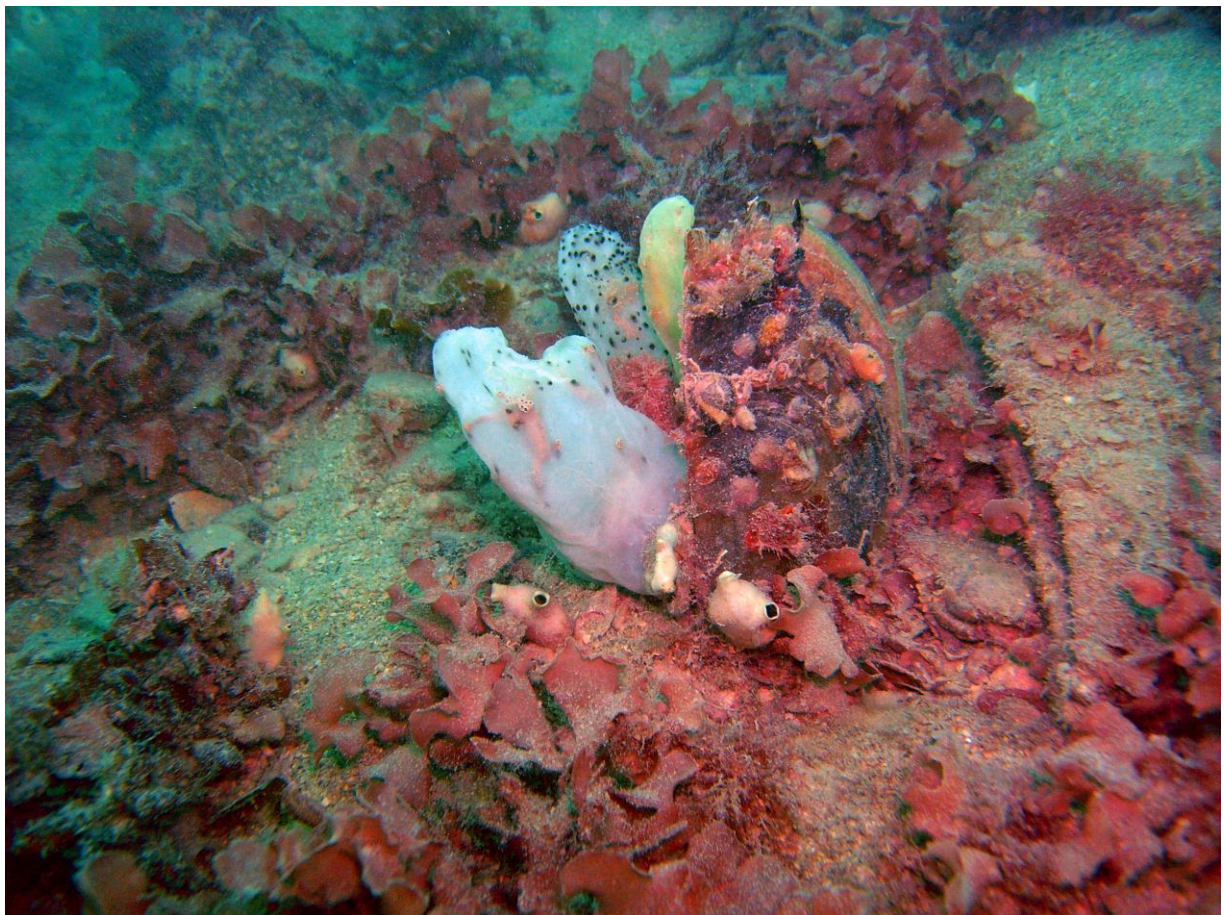
27b. a "shell" or test of *Heliocidaris* washed up on the beach and denuded of spines



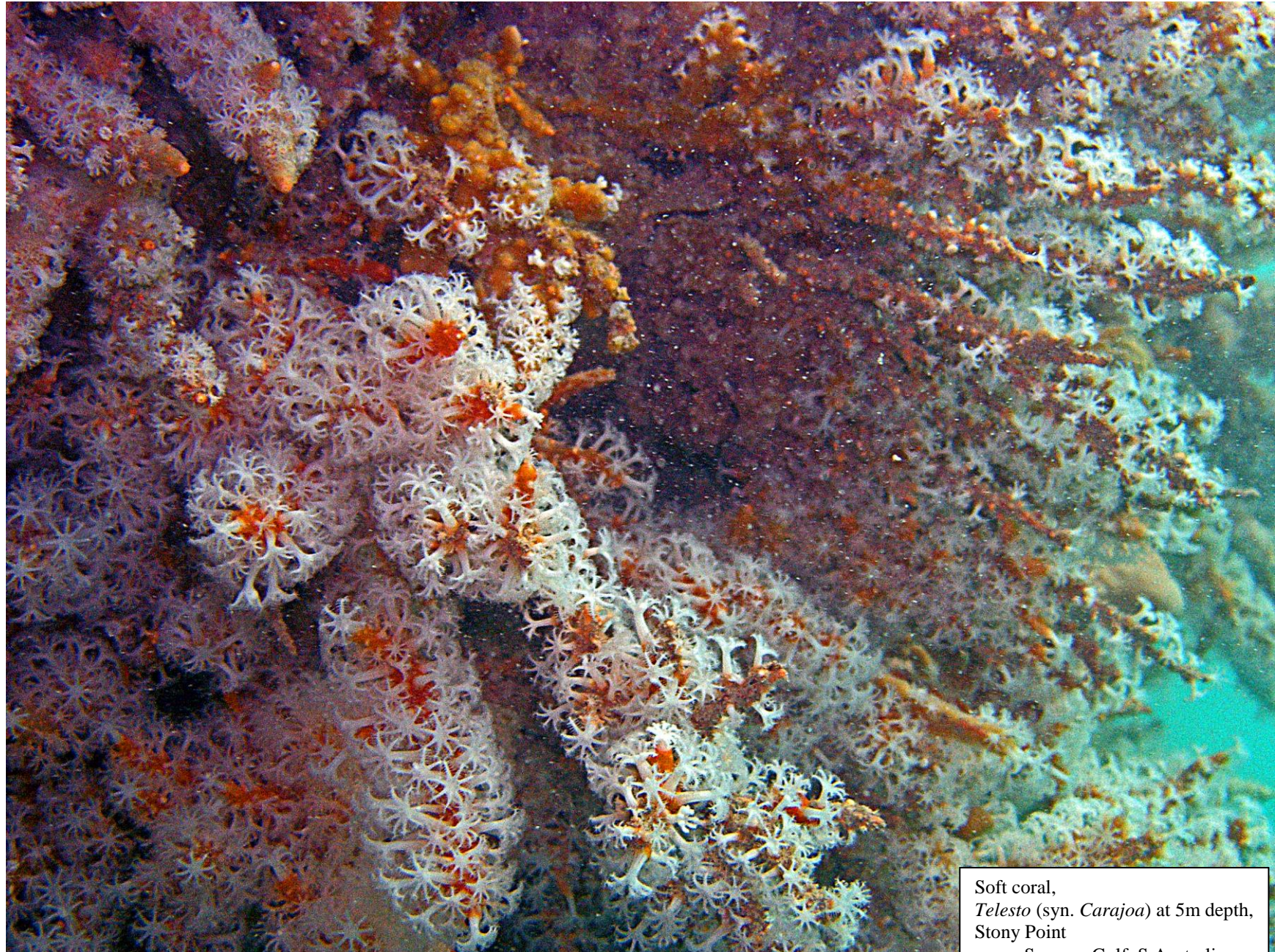
28. thorny sea urchin, *Tubaria*, centre ball about 30 mm wide, spines thick and thorny



29. tiny brittle star, *Amphipholis* about 25 mm across, hides amongst algae and bryozoans, sometimes in large numbers



Bottom dwellers on coarse shell grit – red *Haloplegma*, yellow *Polycarpa*, and 3 colour variations of the giant sea squirt, *Phallusia*, growing from the side of a razor clam heavily encrusted with sponges and other animals



Soft coral,
Telesto (syn. *Carajoa*) at 5m depth,
Stony Point
upper Spencer Gulf, S Australia