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NOTES ON *ALCYONIDIUM ERECTUM* SILEN, 1942 (ECTOPROCTA) FROM THE INDIAN OCEAN

DURING a study of the ectoproctous bryozoans of Indian waters nearly seventy species were recorded hitherto not known from this area. Of these *Alcyonidium erectum* Silen (Ctenostomata) is of special interest. The species has previously been recorded only from the Japanese coast of the Pacific (Silen¹ and Mawatari²). Several zoaria of *Alcyonidium erectum* were collected from the appendages and carapace of *Portunus pelagicus* caught in a cast net at 50 fathom depth off Cochin.

Diagnosis.—Zoarium with erect zooids which may be arranged uniserially or biserially growing into sac-like expansions from a basal encrusting portion spreading in a sponge-like fashion (Figs. 1 and 2). Colour of the colonies brown with a greenish tinge when fresh becoming paler in material preserved in formalin. The erect portion develops from the centre of the

encrusting part of the colony. The shape of the zooids varies considerably in different situations. Zooecia of the encrusting region usually rectangular in outline becoming much more elongate and sometimes hexagonal. Inter-zoecial walls thicker in the encrusting

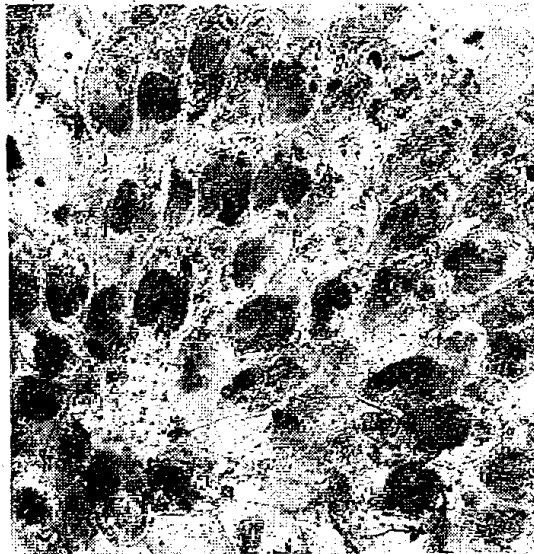


FIG. 1. Encrusting portion of a colony.

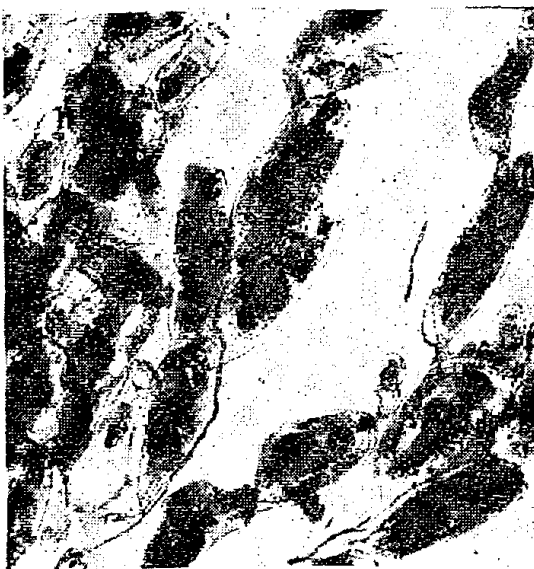


FIG. 2. Erect portion of a colony.

zooids and thinner in the erect ones. The frontal wall thin, translucent and even. Aperture placed at the distal end of the zooecium, often when the tentacle sheath is not completely withdrawn, giving the appearance of being at the tip of a papilla. In the uniserial and biserial erect regions of the colony the aperture is placed at the tip of a

small papilla marked with two to three wrinkles. The lophophore is placed at an angle to the frontal membrane. The pleated collar is funnel-shaped. Parietal muscles consist of eleven pairs.

Morphological Notes.—Silen¹ classified the forms coming under the genus *Alcyonidium* into three groups based on their mode of growth, namely, encrusting forms, erect forms without raised apertures, and erect forms with apertures placed at the tip of papillæ where the zooids rows are often disconnected. It is therefore of interest that the present form shows all the above three morphological peculiarities in one and the same colony and in this respect it is unique. The uniserial or biserial arrangement of the zooids in the proximal part of the erect portion in the present form is also of special interest. The structure of the flabellate region agrees with the observation of Silen¹ and Mawatari.² The number of tentacles varies. Silen's material shows twenty tentacles, of Mawatari's twenty-two, and the present form only sixteen. The shape of the zoecia is regular in the encrusting portion of the colonies, whereas it is irregular in the erect portion. This may be the result of its peculiar mode of growth. It is also of interest that the zoecial walls differ in thickness in one and the same colony.

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EFFECT OF SEED EXTRACT OF *HELIOTROPIUM EICHWALDI* STEUD, ON SEED GERMINATION OF *PHASEOLUS AUREUS* ROXB.

SEEDS of *Heliotropium eichwaldi* Steud have a prolonged dormancy which can be broken by the application of gibberellic acid in dark.¹ This suggests the presence of an inhibitor in this seed.

The inhibitor was extracted by soaking 1,000 seeds, weighing 1.08 g, in 25 ml. distilled water for 24 hr. at 38° C. The dried matter from

the extract was finely ground and dissolved in distilled water. Seeds of *Phaseolus aureus* (var. 24-2) were used as the test material. These were germinated in 10 ml. each of five different concentrations of extract under continuous light, alternate 12 hr. light-12 hr. dark, and continuous dark conditions. Osmotic pressure of all the five concentrations of seed extract was noted by conductivity bridge for verifying its interference with germination. The difference in osmotic pressure of the extract was not much to affect germination (0 = 0.014, 25 = 0.022, 50 = 0.027, 75 = 0.035 and 100 = 0.037 atm.).

Germination of *Phaseolus aureus* seeds show gradual decrease under continuous light condition with the increasing concentration of seed extract while reverse is the case under continuous dark condition. Under the condition of dark-light (12 : 12 hr.) there is no sequential pattern of seed germination (Table I). It is, thus clear that the seed

TABLE I

Effect of different concentrations of water-soluble seed extract of *Heliotropium eichwaldi* Steud. on the seed germination of *Phaseolus aureus* Roxb.

Concentrations* of seed extract	% seed germination†		
	Continuous‡ light	Alternate light and dark (12 : 12 hrs.)	Continuous dark
0	78.3	75.6	72.3
25	69.6	71.0	75.3
50	57.6	72.3	79.0
75	47.3	71.6	81.3
100	39.3	60.3	67.3
C.D. (P=0.01)	3.758	1.675	3.019
(P=0.05)	2.583	1.053	2.075

* Relative concentration (100 = 1 ml. extract/16 ml. distilled water).

† % germination based on 100 seeds each in 3 replicates. Observations recorded after 8 days based on emergence of both plumule and radicle.

‡ Fluorescent tube light (4' length) of 40 W and a 200 W Incandescent bulb, placed at a distance of 10' from the test material.

extract of *Heliotropium eichwaldi* contains some chemical compound which gets activated in light and acts as inhibitor and under dark conditions as growth promoter for the seed germination of *Phaseolus aureus*. Recently,² a water-soluble substance was extracted from the seeds of *Trifolium subterraneum* which at high concentrations adversely affected its own