# UNDERWATER ECOLOGICAL OBSERVATIONS IN THE GULF OF MANNAR, OFF TUTICORIN

## IV. THE OCCURRENCE OF CRINOIDS (*Lamprometra* AND *Comanthus*) ON THE GORGONID *Juncella*

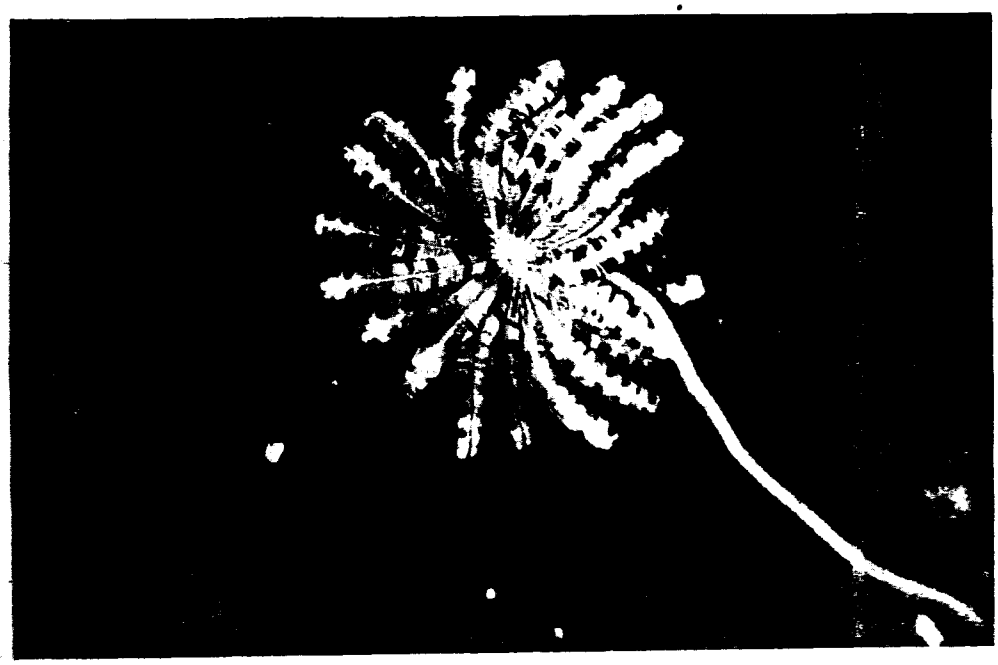
Of the rocky bottom the following two categories were noticed (1) a floor which was rugged due to moderate outgrowths of live and dead coral blocks (*Favia* spp., *Montipora* spp., *Pocillopora* spp., *Coeloria* sp., *Goniastraea* sp. and *Turbinaria* sp.), sponges (*Acanthella carteri* Dendy, *Petrosia testudinaria* (Lamarck), *Pachychalina delicatula* Dendy, *Siphonochalina communis* (Carter) etc., and dense population of sea-weeds, broken shells and fishes (Photograph 1). This type of surroundings was more often characteristic of the area lying beyond 17 metres, (2) comparatively barren ground formed of inner extensive core of consolidated flat dead corals covered with thin film of coarse sand all over, with occasional outgrowths of corals like *Heteropsammia* sp., *Porites* sp., encrusting sponges and coelenterate colonies like *Thuiaria* sp., *Lytocarpus* sp., and *Sertularia* sp. This habitat was more characteristic of the shallower rocky areas. Of course, hard and fast line of demarcation between these two types was not evident.

Photograph 1. Sea bottom with live corals and crinoids underneath the rocks.

While diving, many crinoids were noticed in both the surroundings. In area (1) mentioned above they were mostly found attached to the proliferating sponges, underneath coral blocks and inside crevices and nooks. In habitat (2) their occurrence was interesting. The crinoids were thriving well only in the area where the gorgonid *Juncella* spp. were seen growing. In an area 15 metres depth between Lat. 8°50′-8°52′N.-Long. 78°22′-78°24′ E. dense forest-like growth of the gorgonid *Juncella gemmacea* (Valenciennes) and *Juncella juncea* Pallas was seen with

most of them harbouring one or more crinoids of the genus **Lamprometra* or *Comanthus* on the stem. Such an abundant fauna of *Juncella* and the crinoids was rather a peculiar feature in the entire sea-bottom surveyed.

Of the gorgonids, *J. gemmacea* was numerically more abundant and it attained a length of 2.5 metres, firmly attached to the flat rocky core beneath. Towards the apex as well as on its body of stem were seen several animals like small gobids (4-6 nos. in each), several ophiuroids of brick red colour flush with the stem and a few small shrimps. At about the middle of stem were invariably attached one or two crinoids remaining above the bottom level (Photograph 2.).



Photograph 2. *Lamprometra* sp. on gorgonid, *Juncella gemmacea* (Valenciennes).
Photograph by Dr. F. B. Salvadori.

Judging from the comparative abundance of crinoids in this area as against the paucity of these in most of the shoreward rocky patches where the gorgonids were not seen it was felt that the crinoids might get some advantage in the presence of the gorgonids. Physical environmental conditions observed in the shallow shoreward rocky zones were such that the area was subjected to sand drift and heavy oscillation of water at the bottom during major part of the year. Perhaps it would seem detrimental to the crinoids if they were attached to objects on the ground level. For existence in such a surrounding attachment on the gorgonids would perhaps be the safest.

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* *Lamprometra palmata palmata* (Muller) and *Comanthus annulata* (Bell) are two of the crinoids identified so far by Mr. D. B. James, to whom our thanks are due.