

much of conjecture about the partnership was not easy to be conjured with, in view of the fact that the fish were always swimming in advance of the medusa. However, it is of interest to note that in the above mentioned cases it is the juveniles of carangid fishes which are involved as one of the partners.

Out of the two common forms of sea snakes observed in the sea bottom at Tuticorin, the association of the carangid was seen only with the one possessing an yellowish body with brownish black annuli alternating all over the body (Photograph 1). This snake had been seen frequenting the rocky area and was more active and graceful in its movements than the other one. Efforts to catch the snake together with the fish were unsuccessful. However, 3 numbers of the fish alone were netted and these were later identified as *Gnathanodon speciosus* (Photograph 2). It is hoped that positive identification of the snake will be possible at a later date.

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

#### II. THE OCCURRENCE OF THE SYNAPTID *CHONDROCLOEA* ALONG WITH THE MASSIVE SPONGE, *PETROSIA*

In this paper an interesting instance of association between a sponge and a synaptid, which was observed during the course of our underwater dives with SCUBA is recorded. The rocky patches of the sea bottom off Tuticorin exhibited certain characteristic fauna depending on the depth and locality. For instance, the shoreward rocky floor in the 10-13 metre range was characterized by, amongst other things, the small and medium sized sponges firmly attached to the substratum and was conspicuous by the absence of the massive sponge of the genus *Petrosia*. The offshore rocky area between 10 and 22 metres showed, in addition to other sponges, the prolific growth of *Petrosia* spp., especially in between Lat. 8°43' N-8°50' N and

Long. 78°18'E.-78°23'E. *Petrosia testudinaria* (Lamarck) was the more common sponge although *Petrosia similis* Ridley and Dendy was also recognised. The *Petrosia* spp. ranged in size from 15×30 cm. up to 90×90 cm. In areas where small as well as large sized *Petrosia* spp. occurred in abundance the entire locality presented an animated appearance with fishes like *Zanclus cornutus* (Linnaeus), *Hemiochus acuminatus* (Linnaeus), *Abalistes stelleris* (Bloch), *Odonus niger*, (Ruppell), *Gasterin schotaf* (Forskål), *Pomacanthodes annularis* (Bloch), *Pterois russelli* Bennet, *Lutjanus sebae* (Cuvier), *Chaetodon ocellatus* (Cuvier), *Emmeacetrus miniatus* (Forskål) etc. hovering over or moving in between the columns of the sponges. Living in the vicinity also were varied fauna and luxuriant flora. But the most striking and characteristic of the animals noticed along with *Petrosia testudinaria* (Lamarck) was the synaptid, whitish in colour markedly visible even



*Chondrocloea striata* on *Petrosia testudinaria*

from a considerable distance. The synaptid was found occupying the meandering grooves on the irregular surface of the sponge (Photograph). In undisturbed condition many specimens of this synaptid measured from 50 to 60 cm. in length. The specimens were extricated from the sponge with difficulty owing to the extremely adhering nature of the body of the synaptid possessing spicules of 'anchor and anchor plate' pattern. It was possible to collect many specimens like this and they were identified as *Chondrocloea striata* Sluiter.

Pearson (1903) reported *Chondrocloea striata* from Ceylon but did not specify the sponge on which the specimens were found. Bell (1887) and Koehler & Vaney (1908) have collected the specimens from Andamans from sponges. From the present account it is of interest to note that the specimens were found only

on *Petrosia testudinaria* and not on any other sessile animals or sponges along the bottom to a stretch of nearly 600 sq. km. up to a depth of 23 metres. The incidence of occurrence of this synaptid was noticed greatest in the area at depths 17-22 m. and has not been noticed on *Petrosia* occurring in less deep waters. More than one synaptid of the said species was often found over the same sponge. There were many *Petrosia* in the area which did not have this synaptid also.

It is difficult to think of any other reason as to why *Petrosia* should be preferred as a host except that the hard sponge body may serve as a firm attachment for the synaptid.

Thanks are due to Dr. F. B. Salvadori for the photograph of the synaptid on sponge. To Mr. D. B. James, Research Scholar, we are grateful for the identification of the synaptid.

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ON A SWARM OF SALPS, *PEGEA CONFOEDERATA* (FORSKAL),  
FROM THE GUJARAT COAST

*Pegaea confoederata* (Forsk.) has a wide range of distribution from Hawaii to the Gulf of Oman. Though the distribution and seasonal variation of *P. confoederata* from the Bay of Bengal is well understood, our knowledge of the same from the West Coast of India is very meagre, but for the information of Apstein (1906) and Metcalf (1918). From Bay of Bengal *P. confoederata* has been recorded from Preparis Channel (Bomford, 1913; Sewell, 1926), and from Madras Coast (Nair and Aiyar, 1943; Nair, 1949). However, no record of such an aggregate form is available from the Gujarat Coast.

On November 17th, 1963, close to the shore at Rupan on the Gujarat Coast (18°53'E, 22°15'N), a swarm of *P. confoederata* (Forsk.), solitary as well as aggregate forms was noticed. The swarm extended about three kilometers long and about a hundred meters wide with thousands of dead and living salps. The forms closer to the shore were dead while those in the sea were alive. It was interesting to note that the salps settled on the rocks and reefs due to the tidal influence were alive for more than three hours, which was evident from the pulsating movement of the siphons when released in the sea water. The salps were large and measured 30 mm. to 45 mm. in length. The occurrence of *P. confoederata* on the coast of Rupan was preceded by heavy rain and wind in the sea. Probably these were responsible for drifting large swarm of *P. confoederata* towards