

## NOTES

### <sup>1</sup> **OBSERVATIONS ON SOME PELAGIC TUNICATES IN COASTAL WATERS OF THE BAY OF BENGAL'**

The pelagic salp, *Salpa (Jasis) zonaria* (Pallas) was so abundant off the River Mahanadi (Orissa) in 40-42 metres over mud grounds during late February and whole of March 1960, that individuals choked the trawl meshes. The salps could be observed just under the surface, and as far down as the eye could penetrate the water-mass, in immense numbers. This 'swarm' was approximately 3 miles in length and one mile across, oriented parallel to the coast. Weather conditions were calm, and the water was extremely clear.

A size-range between 12 and 30 mm. was noted, with the majority over 20 mm. Individuals over 20 mm. showed 'budding'. Three specimens, 22, 28 and 30 mm. respectively, were found eviscerated and their empty 'tests' were occupied by the pelagic amphipod *Phronima sedentaria* (Forsk.). .

Also taken in late February 1960, was a specimen of *Pyrosoma atlanticum* (Peron) off False Point (Orissa). This pyrosome was taken during a haul made in 114-158 m., and there can be no doubt that it was retained accidentally (being jammed among fish also taken at the same time) by the trawl used, the cod end mesh being 77 mm. ; thus, it is possible that this pyrosome might have been more com\* toon in the area than present data would suggest.

The specimen measured 110 mm. in length ; it was 15 mm. wide at its narrow end and 25 mm. wide at its broader end

The present data are of some interest in that it extends distribution pyrosomes into the Bay of Bengal. Sewell (1913) had previously recorded 4 *Pyrosoma* (species not mentioned) in about 800 m. off Ceylon ( $7^{\circ} 26' 6''$  N ;  $85^{\circ} 7' 15''$  E)>

Details of the taxonomy and distribution of *S. zonaria* and *P. atlanticum* are given by Berrill (1950) and Sewell (1953). The latter author indicates that *P. atlanticum* is most common at some depth below the surface, rather than at the surface ; and the former remarks that these forms do not normally occur in coastal waters except where the continental slope approaches the shore-line, or when unusual invasions of the continental shelf by outlying water takes place. The present data come from around  $20^{\circ} 02' N$  ;  $86^{\circ} 59' E$ , where the continental shelf is fairly broad and there is therefore, an indication that an invasion by outlying water might have occurred over the continental shelf in that region. Such a type of invasion is known to occur about 300 miles south of this location, near Visakhapatnam (La Fond} 1954).

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**COSSURA DELTA REISH (POLYCHAETA) FROM THE VELLAR ESTUARY**

In the course of a series of dredgings that were made in the Vellar estuary to study the bottom fauna, a Cirratulid, *Cossura delta* Reish (1958) was obtained in two localities which may be referred to as Stations C and D (Jacob and Rangarajan, 1959). The genus *Cossura* comprising four species *Cossura longocirrata* Web. & Ben. (1887), *C. Candida* Hartman (1955), *C. pygodactyla* Jones (1956) and *C. delta* Reish (1958) occurs mostly in America. *C. longocirrata* alone has been reported from Denmark (Eliason, 1920 and Thulin, 1921) and North Atlantic (Wesenbergund, 1950). Now *C. delta* Reish is reported for the first time in Indian waters,

Family: CIRRATULIBAE

Genus: *Cossura* Webster & Benedict;

*Cossura delta* Reish;

The body is cylindrical and rolls up into coils posteriorly. The length varies from 15 mm. to 20 mm. and the diameter from 0.5 mm. to 0.6 mm. There are about 100 segments and the intersegmental lines are very faint in the anterior end; in life the animal is pale red in colour. The prostomium is conical in shape and devoid of tentacles and palps. It is slightly longer than width; Eyes are absent; In some of the specimens the prostomium is everted and showed 15-20 digitate subequal lobes. The peristomium lacks setae. The first setigerous Segment follows the peristomium. A very long slender annulated median tentacle arises dorsally between the second and third setigerous segments in well narcotised specimens preserved in alcohol. In worms picked up from the seiving and preserved immediately in 4% formalin the dorsal tentacle is seen to arise from the posterior end of the second setigerous segment. The length of the tentacle varies from one-half to two-thirds of the length of the body.

Dorsal cirri, ventral cirri and gills are totally absent, Setae are simple curved capillaries and occur in two bundles which issue directly from the body wall without any parapodial lobes. The first setigerous segment is uniramous and the rest are biramous in the anterior end. The bundles of dorsal and ventral setae are close to each other forming as nearly a continuous series as in *C. Candida* (Hartman, 1955). They also show a biserial arrangement as in *C. Candida* with a row of long capillaries followed by another row of short capillaries. From the second to twenty-fifth segment there are usually 6 to 8 pairs of capillaries in the dorsal and ventral bundles. After the twenty-fifth segment the number of setae diminishes, and beyond the fortieth segment the dorsal bundle has 3 to 5 long straight smooth unbordered