

Bridge and of the small bridge near San Thome. During the January-March period of 1934 and 1935, fairly luxuriant growths of these Hydroids were observed and both the species showed gonosomes during the months January and February. The first species disappeared with the advent of summer; but colonies of *O. spinulosa* were found on dead oyster shells, stones, etc., even during the month of April; none of these however, showed gonosomes. The species was very rare in the month of June; but a month hence specimens could not be found. The next time they were observed again was in the succeeding season of high salinity after the bar had opened and the monsoon had ceased.

Our observations lead to the view that both the species have not permanently established in the backwater in the sense that the colonies do not survive and actively reproduce throughout the year. In all probability they are only casual migrants, entering the backwater every year when the bar is open and the colonies thus started (and which may attain sexual maturity) almost completely perish with the advent of summer. Both these Hydroids are known from the brackish-waters in other parts of India (*vide* Leloup, 1932). Luxuriant growths of these may be observed in the Madras Harbour.

CLASS . . . *Scyphozoa*.

*Acromitus flagellatus* (Haeckel)

This is the only Scyphozoan that occurs in the Adyar, the Cooum and the Buckingham Canal. The species enjoys a wide distribution throughout the coasts of India and is found in the sea, brackish-water, and even in water that is of very low salinity (Rao, 1931). Rao considers that *A. rabanchatu* described by Annandale from the Chilka Lake may after all be only a variety of *A. flagellatus*. At Madras the jelly-fish is found in the backwater all through the year; and we have collected specimens measuring from 5 mm. to 200 mm. across the bell.

*Ephyrae*.—During the November-January periods of 1934-35 and 1935-36 a number of ephyrae were obtained in the tow-net collections taken from the river as well as the backwater. During these years the ephyrae were not collected in any other season. As they were capable of surviving considerable lowering of salinity and were common in the backwater during this season the ephyrae were considered as belonging to *Acromitus flagellatus*; but their exclusive occurrence during the period when the bar is open, led us to think that these were brought down from the sea. No evidence was available at that time to prove that the process of strobilisation takes place in the brackish-water, but definite data bearing on this point was obtained in 1936. In describing the fauna of isolated brackish-water pools in our

previous paper we have specially referred to a large salt pool situated near the Adyar Boat Club. During June and July 1936, adult jelly-fishes were completely absent from this pool, and the water was but a few inches deep. The rains during August increased the level of water: and the plankton collections made in August and September brought in plenty of ephyrae from the pool that was not at all directly communicated to the Adyar river at that time, in a season when the bar was closed. There is not the least doubt therefore that asexual phase of reproduction takes place in the brackish-water. In spite of careful search we have not so far obtained the strobila. Young specimens of the jelly-fish were observed in the pool by about October and November. So far as we are aware there is no previous record of the ephyrae of this species.

The ephyrae are about 1 to 2 mm. across; they are perfectly transparent and unpigmented. In essential features they are very similar to those of *Aurelia* usually figured in text-books. The sense organs at the points of bifurcation of the arms are quite distinct in live specimens. In none of them were the canal system and other structures developed.

Very young individuals of the jelly-fish have been collected during the months of November, December, January and February. These were immature and the terminal filaments of the arms were well developed, similar to the condition reported by Annandale (1915) in *Acromitus rabanchatu*. Large specimens of the jelly-fish are found all through the year, but they are commoner in March and April and later in August and September, than at other times of the year. Several specimens collected at this time had well-developed gonads with ripe eggs or sperms as the case may be. We have not seen them spawn; nor have we found planulae in the tow-net collections. Menon (1930) finds that they begin to appear in August till some time in November. His record of the largest specimen (which was immature) was in October. There is a certain amount of variation in the time of their appearance, but summing up the records, it seems probable that both the asexual and sexual phases of reproduction take place in the brackish-water, the asexual phase being produced during the months August-January, and the sexual phase probably taking place during the other half of the year. It must also be admitted that large numbers of jelly-fish enter the back-water from the sea when the bar is open.

The observations of Annandale are noteworthy in this connexion. In Chilka Lake, he says that probably the fixed stage of *A. rabanchatu* occurs on rocks or weeds near the south end of the Lake, where the young were found in April, July, September and November, but not in January or February. If this were so, it would mean that at Madras, the liberation of the

ephyrae takes place much later in the year than it does in the Chilka Lake. Annandale also says that the main breeding season of *A. rabanchatu* as judged by the condition of gonads in the specimens occurs towards the end of the cold weather, *i.e.*, February and March (p. 102).

CLASS .. *Anthozoa.*

ORDER .. *Actiniaria.*

*Phytocætes gangeticus* Annandale