

ON THE CONCEALING BEHAVIOUR OF THE TIGERFISH
THERAPON JARBUA (FORSKÅL)

In October 1959 while collecting fish from shallow waters in the lagoon near Pullamadam, about two miles from the Central Marine Fisheries Research Station, Mandapam Camp, one of us (E.G.S.) noticed sprouts of 'mud clouds' rising from the bottom at certain points. This phenomenon was repeatedly seen at certain spots five to ten metres ahead while slowly wading through the water and eventually their origins were traced to the openings of the burrows of the ocypodid crab *Macrophthalmus depressus* Rüppell. This crab has the peculiar habit of constructing a shallow burrow with an exit opening of about the same size as the entrance, which we found to be generally 30 to 40 mm. wide. There is a drop of 8 to 12 cm. from the entrance from whence the burrow runs horizontally, usually for about 20 cm. before ascending to the exit. There were no crabs anywhere

in the vicinity and the burrows appeared disused. Observing for about three minutes, one such burrow, from the entrance of which the 'mud cloud' was seen drifting, a fish was suddenly seen to dart out and speed away. The next time a 'mud cloud' was noticed one of us closed the openings of the burrow with the hands while the other helped in scooping up the mud around the entrance from which the 'mud cloud' was originally seen emitting. A fish was found to strike against the palm of the hand cupped over the entrance of the burrow in its bid to escape and when brought up it was found to be the tigerfish *Therapon jarbua* (Forskål). Subsequent observations made and the specimens collected under similar circumstances from four such burrows confirmed this peculiar behaviour of this fish. Only once was a specimen taken from a freshly made foot-print depression in the soft mud from which the characteristic 'mud cloud' was seen drifting. On the whole, the specimens collected range from 70 to 99 mm. in total length, with the depth of the body being between 18.0 and 25.5 mm. and height of the spinous dorsal from 9.5 to 14.0 mm.

In this connection the following observations are worth recording. The 'mud cloud' caused by this fish rises from only a certain point, unlike the cloud trail of stirred up mud caused by some of the gobioids and other bottom fishes which usually burrow into the soft mud for a short distance before stopping abruptly, hiding in the mud or under a stone. *T. jarbua* is known to attain a maximum length of about 330 mm. and when young the species is gregarious, which habit is seen only to a lesser extent among the older individuals. From our observations in the field, it would appear that this concealing behaviourism is typical for the juveniles, especially those ranging from about 70 to 100 mm. in total length.

The distance at which the fish hides from the source of disturbance suggests that the animal might even seek a burrow or occasionally a depression in the soft mud and once having found its hide, it dives in and swiftly turns to face the entrance, which movement causes the 'mud cloud'. Unless spotted early, the 'mud cloud' drifts sufficiently away or even disappears or fades out in the surrounding water as not to leave a tell-tale mark. Several groups of *T. jarbua* of smaller size were seen at that time and on two subsequent visits to the lagoon, some swimming about less than a metre from us. When disturbed they scattered, only to rejoin later and swim away in another direction, not once showing a tendency to take refuge in the burrows or depressions or dive into the soft mud.

We are not aware of this concealing behaviourism having been previously recorded for *T. jarbua*, nor did we find the two other allied species, *T. puta* Cuvier & Valenciennes, and *Pelates quadrilineatus* (Bloch) also occurring in the lagoon evincing this habit. It is interesting that a fish so brightly coloured, which colouration by itself may be warning as well as camouflaging in nature should resort to this habit.

Central Marine Fisheries Research Station,
Mandapam Camp.

E. G. SILAS
EGBERT DAWSON