

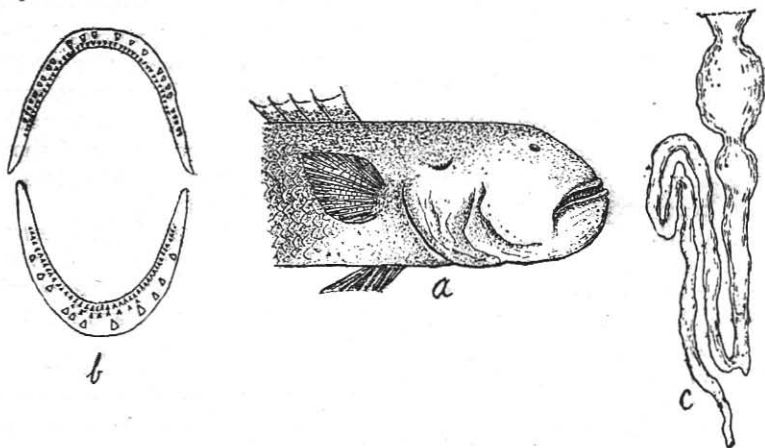
MISCELLANEOUS NOTES

26. NOTES ON THE BIONOMICS OF THE RED GOBY, *TRYPAUCHEN VAGINA* BLOCH & SCHNEIDER

(With a text figure)

In his account of the Gobioid Fishes of the Gangetic Delta, Hora (1936) described the ecology and bionomics of ten species of gobies from the Uttarbagh area on the Piali river, one of the estuarine creeks a few miles on a motorable road from Calcutta. He referred to *Trypauchen vagina*, but, since specimens of this species were not available to him at Uttarbagh, its ecology and bionomics were not dealt with by him. The writer was, however, lucky to obtain specimens from the Calcutta markets and Port Canning, about 20 miles south of Calcutta, and also from the fixed engines or Chinese dip-nets operated at the mouth of the Cochin Harbour on the West Coast. As our knowledge of the bionomics of this species is meagre, the following observations seem worth recording.

Trypauchen has a wide distribution, extending from the Persian Gulf, along the coasts of India, to the Indo-Australian Archipelago and China. Koumans (1941) has given a list of localities whence this species has been recorded from India. It is generally found frequenting the coasts, estuaries and lower courses of brackish water streams, canals and creeks. Though essentially a euryhaline species, it is occasionally found to push its way up rivers into waters that are nearly or quite fresh.



Trypauchen vagina Bloch & Schneider.

- (a) Lateral view of head and anterior part of body.
- (b) Upper and lower jaw showing arrangement of teeth.
- (c) Alimentary canal.

Its zonation in relation to the other estuarine Gobioids is similar to that described for *Taenioides rubicundus* (Hamilton) by Hora (1936,

p. 849). It is found living low down on muddy banks between tide marks and in outlying shallow portions. It moves about by wriggling in the mud.

The mouth of *Trypauchen vagina* is superior and oblique, the lower jaw being very prominent (figure a). Both jaws are fringed with two or three rows of teeth, of which the outer row is sharp and caninoid (figure b). Behind the rows of teeth in either jaw, a membranous flap is present. The markedly upturned nature of the mouth may help the fish to respire even while completely hidden in the mud, with only a part of the head showing in the water. The wide and unspecialised gill-openings suggest that the fish breathes continuously and can pass out muddy water without clogging its gills. Due to its oblique nature, the mouth offers least hindrance to progression through the mud. In correlation with its mode of life in the muddy waters, the eyes have also undergone considerable reduction and, in some of the specimens, are hardly recognisable. On either side above the operculum is a cavity or blind pouch, which is probably sensory in function. The pelvics, which are jugular and partly fused to the ventral surface of the body, are also reduced to a certain extent.

The alimentary canal, which is slightly convoluted, showed practically no variation in the nature and disposition of the coils (figure c). The length of the gut roughly ranges from 0.4 to 0.6 in the total length of the fish. The stomach is only $1/10$ th to $1/12$ th in the length of the alimentary canal. The short nature of the alimentary canal is suggestive of a carnivorous diet. The inner wall of the stomach is produced into a number of longitudinal ridges or folds. In some specimens, the stomach was empty though the intestine had digested food in it. This suggests that feeding is not only intermittent, but that the digestive action is also rapid.

The stomach contents of 36 specimens of *T. vagina* were examined and it was found that the fish feeds mainly on Polychaete worms. Along with the semidigested food, plenty of sand particles were also present. The sand may probably have been derived from the Polychaete worms on which the fish feeds. Bits of algae were found in the stomach of two of the specimens. As none of the other specimens examined showed any trace of phytophagous remains, its stray occurrence suggests that it had been accidentally taken in along with other food.

Of interest is the fact that in the stomach of one of the specimens measuring 128 mm., an entire young *Ophichthys*, about 58 mm in length, was found. That the prey had been taken in a short while prior to the capture of the fish is certain, because no digestive action seems to have taken place. It is likely that the prey had been swallowed when both fish were in the net together.

The approximate percentage of food in the specimens examined is as follows: Polychaete remains 65%; digested pulpy mass 20% and sand particles and other food 15%.

It may therefore be surmised that *Trypauchen* frequents muddy areas and is carnivorous in habit, feeding mainly on Polychaete worms.

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