CHAPTER - VIII

The Food and Feeding Habits of *Mystus vittatus* (Bloch)
INTRODUCTION

*Mystus vittatus* (Bloch) is one of the common fresh water catfishes. Some aspects of the biology of *M. vittatus* of the ponds and rivers were investigated by a few biologists (Prabh, 1956; Qasim & Qayyum, 1961 and Bhatt, 1972).

*M. vittatus* is also found in derelict waters but no information is available on the food of the fish in these waters. Thus, an attempt has been made to investigate the food of the fish.

MATERIAL AND METHODS:

123 fish were caught between Oct. 1977 and Oct. 1978 using seine net in the derelict water. In addition to this 153 fish were caught between Jan. 1981 and Dec. 1981. Thus, the material consisted of 275 fish (40 - 140 mm). All the fish caught in each month during the two calendar years were combined and treated as a single sample for each month. The number of the fish which were examined, are given below in the brackets against each month.

Oct. (25); Nov. (20); Dec. (30); Jan. (34); Feb. (30); March (25); April (20); May (20); June (15); July (18); Aug. (30); Sept. (28).

Arbitrary estimation of fullness of the food in the stomach was made as described in Chapter II.
The percentage composition of various food items has been calculated by the number method based on visual count.

**Food Composition:**

*M. vittatus* was found to feed mainly on planktonic crustaceans, insect larvae, cypris, algae and debris. Other food items viz., rotifers, molluscs, insect eggs, aquatic insects (Nemiptera and Coleoptera) and annelids were of secondary importance as these food items were not frequently eaten by the fish. Bhatt (1973) recorded copepods, insect larvae, daphnids, rotifers, eggs of invertebrates, cypris, algae and debris in the gut contents of *M. vittatus* of the rivers and ponds around Aligarh.

Fig. 14 shows the seasonal variation in the feeding activity of *M. vittatus*. The fish were in well fed condition throughout the year except the summer months. Maximum activity of feeding was recorded in the autumn season (Aug. - Sept.). Maximum feeding intensity coincided with the zooplankton bloom. Moreover, the food intake of the fish increased in the post-spawning season to compensate loss of energy during spawning. Generally the summer season brings about extreme weather conditions which adversely affect the feeding activity of the fish as was also true for other fish species.

Fig. 15 based on table-XXXV (appendix) shows seasonal variation in the food composition of *M. vittatus*. The fish seem
ig. 14 Seasonal variation in the feeding activity of *M. vittatus.*
FIGURE 14

MEAN FULLNESS OF STOMACHS

MONTHS

0 10 20
to feed mainly on the zooplankton. The planktonic crustaceans had a great contribution to the diet of the fish as these organisms formed 45% of the total food intake of the fish. The crustaceans were represented by Cyclom, Daphnia, Pianotus and Haupia in the diet of the fish. These crustaceans were eaten by the fish throughout the year.

Insect larvae represented mainly by the dipterans (Chironomids, Dixa sp. and Culicoids) which were frequently consumed by the fish in the summer (May - July).

Cypris was consumed by the fish all round the year, but its occurrence frequency in the diet of the fish was little.

Debris was found in the gut of the fish in the summer and winter months. It is relevant to mention that the extreme weather conditions (high & low temperature) brings about a quantitative depletion in the food of the fish. Therefore, the fish had to rely on decayed organic matter during the summer and winter seasons.

Insect eggs were frequently consumed by the fish during the summer, because the low dissolved oxygen in the environment restricted the fish to the upper layers of the water which gets oxygenated by wind action and the fish had an easy access to feed the drifting insect eggs on the water surface.
Fig. 13  Seasonal variation in the food composition of *M. vittatus.*
At times the fish were feeding on molluscs (*Cypraulus convexusculus* and *Helisoma bengalensis*) and green algae (*Spirogyra, Ulothrix* and *Ankistrodesmus*).

Aquatic insects (*Hemiptera* and *Coleoptera*) and annelids were rarely seen in the diet of the fish.

The food composition of *M. vittatus* reflects the surface feeding habit of the fish as it was comprised mainly by *Cyclops*, Daphnids, *Diaptomus*, nauplii, insect eggs, debris and other pelagic plant and animal material. True benthic organisms were rarely found in the diet of the fish. There was a marked seasonal variation in the food intake of the fish depending on the easily available food in the season.