A MODIFIED METHOD OF ANALYSIS OF GUT CONTENT
OF CARNIVOROUS FISH

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ABSTRACT

A modified comparative feeding index (CFI), as applicable to carnivorous fish, is described.

The method followed here is Comparative Feeding Index (Christensen 1978), modified to avoid errors in subjectivity estimates of the food items in carnivorous fishes, where the direct volume estimation of each item is possible. In this method, the stomach is allotted 0 to 100 points in accordance with its fullness (0 for empty; 6 for trace or little; 12 for 1/4 full; 25 for 1/2 full; 50 for 3/4 full; 75 for full; and 100 for gorged). The gut contents are sorted out, identified and volume of each food item measured. While determining the volume of the various food items, direct volume-displacement method, rather than points, is used in the case of bigger food items, and the mean volume, calculated from that stomach, in the case of small and uniform organisms (Starostka and Applegate 1970). In the next step, the volume of each of the food item in the stomach is converted into percentage volume. The total number of points allocated to that stomach is then subdivided amongst the food items according to
their percentage volumes. The points thus gained by each food item of the whole sample are summed up and the mean is calculated. The mean value is multiplied by the percentage of the total sample of fish that contain that item. The value of all the food items are used to assess the percentage of dietary composition of the fish examined.

The dietary composition of *Ilisha melastoma*, analysed by adopting the CFI (Christensen 1978), as well as modified method, is presented (Fig. 1). Fish used for this study were collected from July to September 1981 (premonsoon period), fortnightly, from the commercial catches landed at Porto Novo.

**FIG. 1.** Changes in diet with length of *I. melastoma*. 
Estimation of percentage volume with the aid of Data sheet No. 6 of Geotimes (Christensen 1978) is impossible in a piscivorous fish, especially when the prey are large and may not be accommodated within the microscopic field. In this case, volume estimation by displacement method as suggested here may give an accurate picture.

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