

GENERAL MATERIALS AND METHODS

2. GENERAL MAETRIALS AND METHODS

2.1. EXPERIMENTAL ANIMAL

Rosy barb, *Puntius conchoni* (Hamilton–Buchanan) is the experimental fish in the present study. It is one of the beautiful tropical ornamental fishes and a great favourite for aquaculturists (Talwar and Jhingran, 1992). It is perhaps the best known and most popular of the genus, as far as aquarists are concerned. It is one of the hardiest of the barbs. The fish is most impressively coloured during the mating period, when the normally silvery male takes on rich claret flush and the slightly larger females become more luminous (Figure 2.1). Also the fish is docile and can be kept together with other small fishes. The systematic position of the fish is as follows:

CLASS : ACTINOPTERGII

ORDER : CYPRINIFORMS

FAMILY : CYPRINIDAE

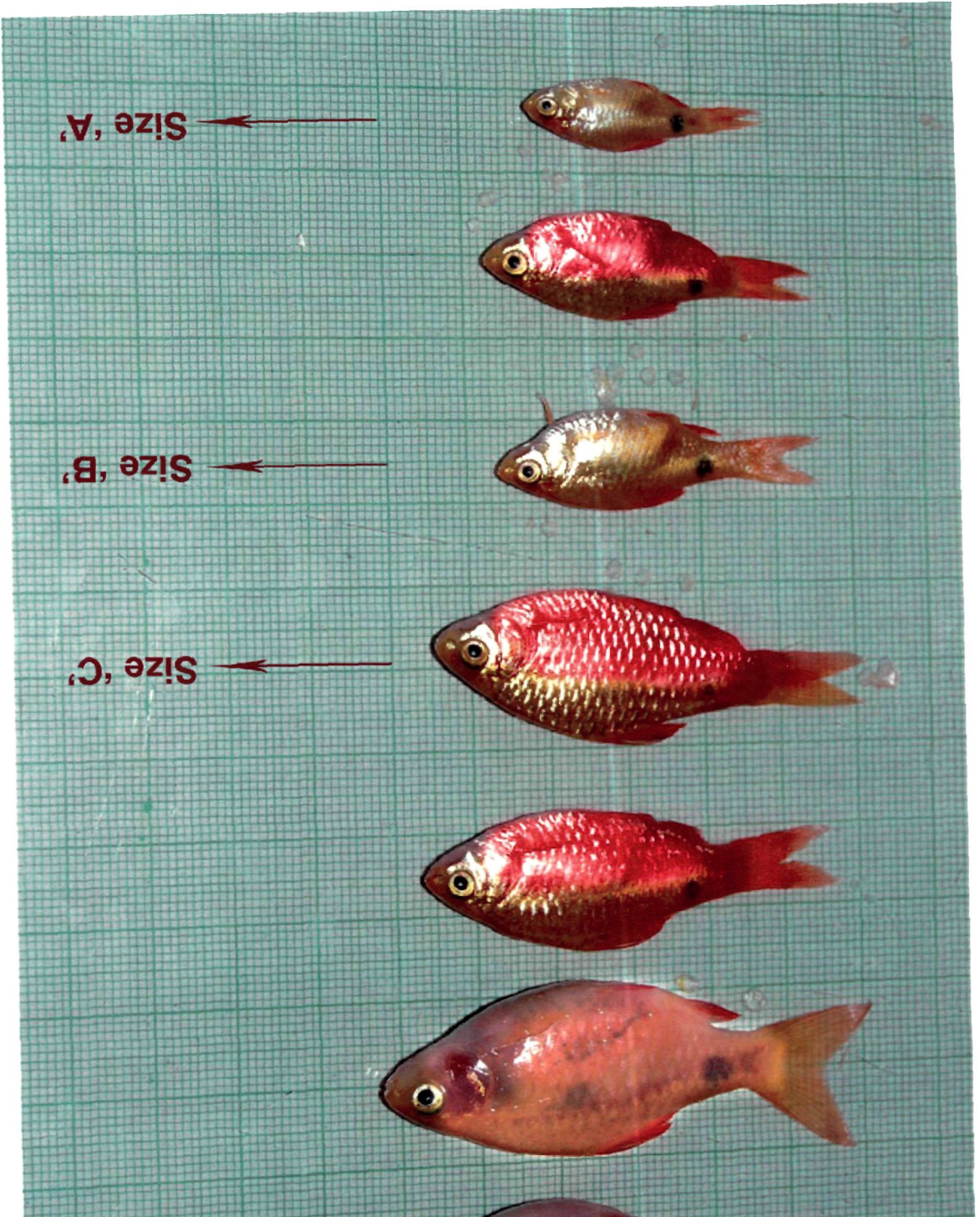
GENUS : *PUNTIUS*

SPECIES : *CONCHONIUS* (HAM.)

2.2. REARING THE FISH

Fingerlings and grown fishes (*Puntius conchoni*) of varied sizes were collected from the aquarists and transported in well aerated polythene bags to Aquatic Biodiversity Centre, St. Xavier's College at Palayamkottai, Tamil Nadu, India. The fishes were sorted into different size groups and then stocked in large cement tanks. They were fed with pelleted fish feed, live feed and algae. The water in the tanks was

Fig. 2.1. Experimental fish, *Puntius conchonius* (Ham.)



well aerated with aerator pumps. Frequent partial changing of old water was carried out as the fishes are sensitive to frequent change of freshwater.

2.3. SIZE GROUPS

All experiments were conducted on three different size groups namely size A ($200 \pm 30\text{mg}$), size B ($1200 \pm 150 \text{ mg}$) and size C ($2200 \pm 250 \text{ mg}$). Only healthy individuals of *Puntius conchoni* at desired size group ranges were collected from stocking tanks. For any type of experiment, the selected fish were introduced into the experimental set up at least one day before the start of the experiment and deprived of food.

2.4. EXPERIMENTAL DIET / FEED

Four iso-calorific feeds were prepared with different densities of protein (25, 30, 35&40%) using locally available ingredients (Table 2.1). Different protein density feeds were formulated following standard methods. The feed was pelleted with the help of a manual pelletizer, sun-dried and stored in air tight containers.

Table 2.1. Ingredients and their percentage of Protein used to prepare 100g of four different protein density diets.

Ingredients	25% Protein diet	30% Protein diet	35% Protein diet	40% Protein diet
Fish meal (g)	14.29 (8.57)	21.43 (12.85)	28.57 (17.14)	35.71 (21.42)
GOC (g)	14.29 (5.86)	21.43 (8.78)	28.57 (11.71)	35.71 (14.64)
Soya bran (g)	11.91 (5.12)	9.53 (4.09)	7.15 (3.07)	4.76 (2.04)
Rice bran (g)	11.91 (1.61)	9.53 (1.28)	7.15 (0.96)	4.76 (0.64)
Maize (g)	11.91 (1.32)	9.53 (1.06)	7.15 (0.79)	4.76 (0.53)
Sorghum (g)	11.91 (1.24)	9.53 (0.99)	7.15 (0.74)	4.76 (0.50)
Wheat flour (g)	11.91 (1.31)	9.53 (1.04)	7.15 (0.78)	4.76 (0.52)
Tapioca (g)	11.91 (0.08)	9.53 (0.06)	7.15 (0.05)	4.76 (0.03)
Mineral mix (%)*	1.00	1.00	1.00	1.00
Vitamin mix (%)**	1.00	1.00	1.00	1.00
Energy value (KJ/g)	13.990	13.995	14.058	14.121

(Values in parentheses denote percent protein)

*Calcium phosphate -129 mg; Magnesium oxide - 60 mg; Ferrous sulphate - 32.04; Manganese sulphate - 2.03; Copper sulphate - 3.39 mg; Zinc sulphate - 2.20 mg; Sodium molybdate - 0.25mg; Sodium borate - 0.88 mg;

**Vitamin A - 10000 I.U.; Vit. D - 1000 I.U.; Thiamine mononitrate - 10.0 mg; Riboflavine - 10 mg; Pyridoxine hydrochloride - 3 mg; Cynocobalamin - 15 mg; Nicotinamide - 100mg; Calcium pantothenate - 16.3 mg; Ascorbic acid - 150mg; α Tocopheryl Acetate - 25mg; Biotin - 0.25mg.