Chapter 1

Labyrinth Fish

1.1. Distribution

The blue gourami (*Trichogaster trichopterus*; syn, *Trichopodus trichopterus*) belongs to the Anabantidae family of ray-finned fish, in the order Anabantiformes, commonly referred to as labyrinth fish (Van Der Laan et al., 2014) (**Figure 1**, **Figure 2**). The 16 known genera contain about 80 species, distributed throughout most of southern Asia, India, and central Africa (Degani, 2001; Forselius, 1975; Vierke, 1988) (**Figures 3-5**, **Figure 7**).

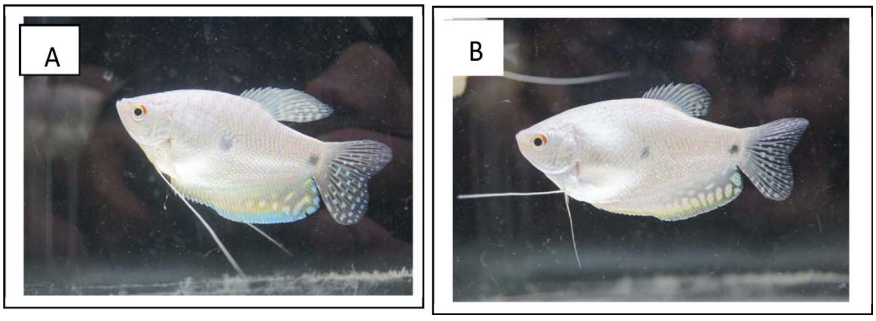

Figure 1. Male (A) and female (B) blue gourami.

Labyrinth fish have an air-filled breathing cavity, known as labyrinth, located above the gills under the operculum, on top of the head behind the eyes (Degani, 2001). The labyrinth is a circular area of

highly wrinkled tissue, which offers more surface area for oxygen intake. This cavity, which is well suited to gaseous exchange, supplements the breathing function (Degani, 2001) (**Figure 2**). The systematic characteristics of Anabantiformes have not been agreed upon and many synonyms are used.

According to Vierke (1988), taxonomists classify the labyrinth fish into four families: Anabantidae (genera: *Sandelia*, *Ctenopoma*, *Anabans*), Belontiidae (genera: *Trichopsis*, *Trichogaster*, *Sphaerichthys*, *Pseudosphromenus*, *Parosphromenus*, *Malpulutta*, *Hlostoma Ctenops*, *Collisa*, *Betta*, *Belontia*), Osphromenidae (genus *Osphronemus*), and Helostomatidae (genus *Helostoma*). These fish can survive in water with very low oxygen content.

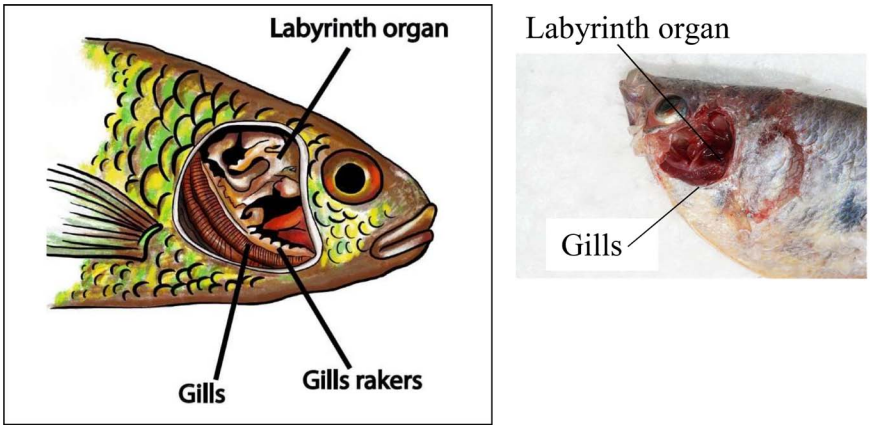

Figure 2. The suborder Labyrinthici is characterized by the presence of a chamber on the gills that retains air for breathing in low-oxygen environments (a *Helostoma* fish is shown).