

BIOLOGY OF AQUARIUM FISHES

Q.Enumerate the sexual dimorphic character of ornamental fishes.

Q.Give an account of common community fishes in fresh water.

SEXUAL DIMORPHISM IN AQUARIUM FISH

Morphological difference between male and female is called *sexual dimorphism*. Sexual dimorphism can enable identification of the sexes are classed as primary and secondary.

Primary Sexual Characters—

- i)These characters are concerned with the reproductive process.
- ii)Testes and their ducts in males and ovaries and their ducts in female constitute primary sexual characters.
- iii)Primary sexual characters often require dissection for their discernment.
- iv)Social organization plays a large role in the changing of sex by the fish.
- v)It is often seen that a fish will change its sex when there is a lack of dominant male within the social hierarchy.
- vi)The females that change sex are often those who attain and preserve an initial size advantage early in life.
- vii)In either case, females which change sex to males are larger and often prove to be a good example of dimorphism.

Secondary Sex Characters—

The characters developed during breeding season related to mating and courtship are called secondary sex characters.

Secondary sex characters are of two kinds.

- (a)Those which have no primary relationship with the reproductive act at all.
- (b)Those which are definitely accessory to spawning.

Body shape

- i)This is an important secondary sexual character. Ordinarily female is much more pot-bellied than the male, particularly ripe or near ripe for spawning.
- ii)Males are usually smaller in size than female.
- iii)Further they are brightly coloured and attractive. For example, in **Guppies** the male is coloured and may have long and variously shaped decorative fins, whereas the female is drab. Markedly smaller males also occur in *Pocillia vivipara*, *Pseudoxiphophorus bimaculatus*, *Gambusia affinis* etc.

Q.What is pearl organ? (or nuptial tubercles)

Appear on the male of many fishes to mark the sexes. e.g. *Minnows (Cyprinidae)* and *Suckers (Castostomidae)*. These tubercles are little horny excrescence that become evident just before the spawning season and disappear shortly after, under the influence of hormonal secretion.

- iii)The **fins** often provide characteristic distinctive of the males. For e.g. the lower lobe is greatly extended in the males of the sword tail (*Xiphophorus helleri*). It is somewhat enlarged in white sucker (*Catostomus commersoni*).

Q.What do you mean by sexual dichromatism?

iv)**Colouration** in fishes often serves as a mark of sexual distinction and recognition. It is termed as **Sexual dichromatism**. In general males are brighter or more intense in colour than females. In the orange spotted sunfish (*Lepomis humilis*), the male has more numerous and brighter orange spots on the body than does the female. Sexual dimorphism is well shown by parrot fishes.

v)Several different **Head characteristics** also serve to distinguish the sexes among fishes. In the *Chimaeras* (Chimaeridae), the male develops a spiny, stout, retractile knob, the **frontal clasper**, on the upper part of the head. In Trouts the breeding male typically develops a knobby hook or kype near the tip of both the upper and lower jaw.

vi)A few accessory reproductive structures among female serves as sexual characteristics. An outstanding example is the egg laying tube or **ovipositor** in females of the European brittle ling *Rhodeus amarus*.

vii)In the majority of egg-laying species and egg scatters, the male is often slimmer, smaller and brightly coloured. He has more elongated fins.

