CHAPTER – 10
PARASITES

All fishes especially the carnivores are potential hosts to many different species of parasites. Small number of parasites are common in most of the fishes and probably do little harm especially in the wild. However, in some fishes due to heavy infection, epidemics can take place which carry mass mortality. All the parasites have tremendous reproductive potential and can under ideal conditions, quickly overwhelm fish in the confined water of a tank or pond, leading to mass mortality.

Parasites are broadly divided into two major group; (1) Ectoparasites (2) Endoparasites. Ectoparasites are found on the external surfaces such as skin, fins and gills, while endoparasites are found in the internal tissues and organs. However, endoparasites are common in Golden Mahseer, that colonize in the stomach and intestine of the fish. There are a variety of clinical signs which might indicate the presences of endoparasites. Lethargy accompanied by emaciation is a common sign. The worms protrude from the vent. Endoparasites are the most common parasite problem. With few exception, these parasites are not life threatening in small numbers. The danger from endoparasites comes from their tremendous reproductive potential.

Malhotra (1982) noticed three genera of nematodes; *Pseudanisakis* spp., *Cemephoronema* spp. and *Cystidicoloides* spp. in the *Tor tor* from Garhawal. Malhotra *et al.* (1980) also observed the nematode infection in the hillstream fishes.

OBSERVATIONS

In the gut contents of *Tor putitora*, the three genera of parasites have been observed during the course of study i.e. *Cemephoronema* spp., *Strongyloides* spp. and *Aphelenchooides* spp. The percentage occurrence of parasites in the food items was 1.13% and occurred throughout the year. The diseased fishes having the above parasites did not show any external symptoms or any change in the morphological characters.
In general, the incidence of occurrence of parasites in wild population is very low as compared to cultured populations. The infection takes place due to unhygienic conditions, high density and malnutrition. The waterbodies receiving polluted water mostly support diseased fishes. Further, the cultured fishes have less immunity to diseases due to the inbreeding of the populations.

The fish specimens investigated for the present studies, had very low incidence of parasitic infection due to the following reasons.

a. Low water temperature
b. Low density of fishes
c. Absence of pollution
d. Wild population.

As the efforts are being made to culture fish under hatchery conditions, there are chances of the out break of diseases especially during the summer months. Mostly bacterial and viral epidemics occur due to unhygienic conditions, hence, earlier information on bacterial and viral diseases with special reference to season shall be helpful to design the ‘Mahseer Hatchery’ in future.