

**M.S.96. SYED ISMAIL KOYA, M.S.—Ecobiology of helminth parasites of finfishes and shellfishes of cochin waters with special reference to digenetic trematodes—1988—**

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Among the parasites that infect finfishes and shellfishes, helminths form a major group. They cause mechanical injury, introduce toxic metabolic by-products, deprive the fish of food, act as carriers of other pathogens, and provide a point of entry for other pathogens through mechanical damage. Serious damage to the reproductive organs might cause their partial or total castration. Other economic effects of infection include reduction in the number of food fishes available to fishery, stunted growth, weight loss, decrease in the yield of fish products and rejection of abnormal or diseased fish by consumers leading to

subsequent loss of interest in fishery products. Fish transmitted helminth parasites acquired by man through eating raw fish or inadequately treated fish products containing infective larvae or juveniles are well known in parasitology and medicine as helminth zoonoses. Evidently, marine and brackish water fishes exhibit an intricate link in the food chain, and hence the study of helminths of marine fishes, and brackishwater fishes is of paramount significance, so also their larval forms.

**Summary:-** A detailed description of the study area is given. The hydrological parameters, and their impact on the occurrence of helminths are discussed. The prevalence of infection with helminth parasites was found to be significantly high. Taking into consideration of single and multiple infections in different combinations, 540 out of 1934 fishes of 30 species were infected. More young fishes were infected than old ones but old fishes harboured more number of parasites. More females were infected than males, and more carnivores and omnivores were infected than herbivores. The maximum prevalence of infection occurred in the premonsoon season and minimum in the monsoon season. A strict host specificity was recorded in the majority trematodes. Thirty species of digenetic trematodes were collected from 30 host species, and they were identified. Nine species have been treated as new to science. The trematodes belonged to nine families. Four genera, and their hosts are new records from India. Eighteen species of trematodes are from new host species. The entire life cycle of *Philophthalmus (Philophthalmus) cochinensis* sp. nov. was worked out in the laboratory using domestic chicken as the experimental host. Survival characteristics of a curious transversotrematid cercaria, *Cercaria chackai* revealed that it is freshwater form showing considerable tolerance to salinity fluctuations, although the family Transversotrematidae is considered to have a marine origin. The family is restricted to the Indo-Pacific region, and interestingly the members of this family, only seven species, occupy an ectoparasitic niche. *Cercaria melanocrucifera* is described in detail and its pathogenicity in the digestive gland of *Turritella attenuata* discussed. The report on the occurrence metacercarial cysts of *Carneophallus* sp. in prawns, *Metapenaeus monoceros* is the first from Indian waters revealing the role of prawns as second intermediate host in the life cycle of a trematode. This species has public health importance because continuous consumption of raw, naturally infected shrimps (infection rate-27.4%), or semi-cooked ones favours the adverse involvement of the heart, spinal cord, and other vital organs. An adult digenetic trematode recovered from the gonad of a female *Perna viridis* was described and is identified as a species of the genus *Gorgoderina*, normally found in the urinary bladder of amphibians and teleost fishes. Occurrence of adult trematodes in invertebrates is rare and this information has evolutionary significance as far as digenetic trematodes are concerned.