ABSTRACT OF THE Ph. D. THESIS

"BIOLOGY OF HELMINTH PARASITES OF FISHES AND BIRDS FROM JALNA DISTRICT"

Researchers in the field of parasitology have started knowing the physiological and biochemical aspects of the parasites, right from the beginning of the 19th Century; importance of biochemical studies has seen the light during the beginning of 2oth Century. (Cheng, 1964) . the science of parasitology is emerging as multidisciplinary subject embracing the various field like physiology, biochemistry, cell biology, immunology, pharmacology etc. the major aspect of parasitology is the study of relationship between the host and the parasite.

The study of chemical composition of the parasite is gaining importance in modern times. Notable contributions were made on parasite biochemistry: Ried (1942), Bueding (1949), Hopkins (1950), Chowdhary (1955), Dugherty (1956), Read (1956), Agosin (1957), Good child (1957), Kent (1957), Lee (1958), Phifer (1960), Fairbairn (1961), Compbell (1962), Cheng (1964), Arme (1966), Rothman (1966), Symth (1966), Simmons (1969), Nodakal (1972), Smith (1976), Premavathi (1978) and Roy (1979).

Investigations in to the biochemical profiles are revealing new facts, which would be very useful in developing a rational approach to design the anti helminthic therapeutics.

The helminths were extensively used for the biochemical studies, because of its exceptional parasitic mode of life; morphological features with well defined reproductive system, made up of strings of reproductive proglottids (Smyth, 1966). The parasites are known to cause mechanical injury to the host intestinal wall there by disturbing the physiological state of the host.

Interdependent physiological state of the host and parasite is of great importance is immunology and chemotherapeutical aspects of animals.

Biochemical work has been carried out in the following few species of helminth:

Hymenolepis species, Taenia species, Moniezia species, Echinococcus granulosus, Schistocephalus solidus, Ligula intestinalis, Diphyllobothrium and Spirometra Mansonoides, Primasubuluria alata, Ascaridia trichinella, Trichuris species, Ancylostroma species, Nippostrongylus species, Schistosoma Mansuni, Schistosoma douhitti, Fasciola hepatica.

The lipid contents of many helminths have been investigated which varies from 3 to 6% of fresh weight of the parasites. The lipid content of helminth parasites varies from species to species (Von Brand, 1973) and also varies with the age of proglottids (Fairbairn et. al. 1961).

An about 3600 million cases of helminthiasis exist at present worldwide. Every species of the parasite possess its own particular problem, it is essential to be quite sure of identity of the species on dealing with. Therefore an accurate classification is necessary for completion of this study.

The helminth infections are very common to the man, domestic animals and wild life. In the areas with poor socio-economic status endemic helminth infections are very common. Unhygienic living and food habits promote the spread of infection causing high morbidity and complications.

Helminth infection leads to anemia, complication and protracted illness. There is an upsurge of parasitic diseases in the country. Parasitic diseases are major public health problems of tropical countries including India.

PART - I

This part deals with study of seven new species of Cestode parasites and one redescribed species i.e. given below:

Following genera and their species are included in this genera:

1	*Gangesia*, Woodland, 1924	One new species
2	*Silurotaenia*, Nybelin, 1942	One new species
3	*Proteocephalus*, Weinland, 1858	One new species
4	*Circumoncobothrium*, Shinde, 1968	Two new species
6	*Davainea*, Blanchard, 1891	One new species
7	*Cotugnia*, Diamare, 1893	One new species
8	*Raillietina*, Fuhrmann, 1920	One species redescribed

PART – II

This part deals with Trematoda belonging to the order Digenea in which the genera and specie belonging to the family Halipeginae, Philophthalmidae.

The following two genera and their species are included in this part:

1	*Ophiocorchis*, Srivastava, 1933	One species redescribed
2	*Philophthalmus*, Skrjabin, 1947	One species redescribed

PART – III

This part deals with the study of Nematoda belonging to the order Heterakidae and the family Heterakinae. The following one genera and its species is included in this part.

1	*Heterakis*, Dujardin, 1845	One species redescribed
2	*Rhabdochona*, Railliet, 1916	One species redescribed

PART – IV

Histopathology

1 *Circumoncobothrium maharashtrii* n.sp.

2 *Cotugnia jalanensis* n.sp.

3 *Heterakis gallinae*, (Gmelin, 1790), Freeborn, 1923.

PART – V

Biochemistry

1 Glycogen estimation of *Circumoncobothrium maharashtrii* n.sp.

2 Glycogen estimation of *Davainea inducusae* n.sp.

3 Glycogen estimation of *Heterakis gallinae*, (Gmelin, 1790), Freeborn, 1923.

PART – VI

Seasonal variation of cestode parasites of fishes and birds.

Note: Keys of the known species of helminth parasites will also provide in support of the thesis.

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