PREFACE

The co-existence of parasitic infections with generalized malnutrition and unhygienic conditions accounts for a large variety of pathogenic complications in man, and remains the cause of concern, particularly among the under-privileged people of developing countries. Apart from being threat to the human health directly, they occur a great loss to our economy by affecting the animals of veterinary importance. The problems posed are challenging and have to be met with both preventive and curative measures, especially when the effective immunotherapeutic remedies and suitable chemotherapeutic agents are not available. Since the chemotherapeutic agents exert their effect by selectively interfering with the processes necessary for the functional integrity or the reproduction of the invading organism without causing any injury to the host, an understanding of the physiological and the biochemical differences between the host and the parasite are of utmost importance.

Inspite of the tremendous advancements made with the biochemistry of microorganisms and vertebrates, the helminth biochemistry is still in its infancy. The
techniques for their in vitro cultivation and maintenance are yet to be perfected, and as such studies aimed at their molecular biology are premature.

Coenuroides digonopora, co-parasite of Ascaridia galli in fowl intestines, offers a fascinating subject for studies needed in placing this group in a proper perspective of comparative biochemistry and physiology.

Such investigations offer a wide scope for understanding key regulatory steps, which may probably be exploited for the perfection of chemo- and immuno-prophylactic measures.

This dissertation embodies the results of investigations on certain metabolic aspects of C. digonopora. Additional investigations on the metabolism under the influence of a few chemotherapeutic agents have helped in gaining useful information regarding its regulatory mechanism and mode of action of drugs. The terminal pathways of mitochondrial metabolism remain to be elucidated which can now be attempted with greater confidence armed, as we are, with some understanding of the role of functionally important pathways.