

## PREFACE

Every problem has solution, but science, some times, fails to do so, this is not a drawback but it is its plus point in the sense that the problem remains widely open for further investigation giving a full scope for a research worker. Cell Biology is an integrated discipline including material from the fields of cytology, cytogenetics, biochemistry, histochemistry, biophysics, microbiology. The intellectual challenge involved in the study of cells and their contents has attracted many investigators and the field today constitutes a frontiers of biological knowledge. The laboratory of Department of Zoology, Shivaji University, Kolhapur (India) is engaged in extensive work on various cell and tissue metabolites like proteins, carbohydrates (chiefly mucins), lipids and various enzymes in different physiological processes, with a view to investigate the behaviour and role of such metabolites in life processes, for which most recent, well tested and established techniques are routinely used. It is always said that once techniques are known, one won't go wrong with the results.

Apart from the work done on mucins, it could be pointed out that there exists scanty literature on histology and nature of mucosubstances in the alimentary tract of birds. This stimulated to undertake the present investigation on mucosubstances in the alimentary tract of a white breasted waterhen (A.phoenicurus phoenicurus).

The body of the dissertation is divided into four chapters. The first chapter is devoted to the nomenclature of complex

carbohydrates, avian alimentary tract (gross review), review of existing literature, reasons for undertaking the work and research plan. The second chapter gives in short the information on the peculiar features and feeding habits of the animal selected for present investigation and the histochemical techniques employed in the present study. Chapter three covers histological and histochemical observations and colour microphotographs in support of the observations recorded. The last chapter is devoted to discussion on the results obtained, followed by summary and concluding remarks. Bibliography is given at the end of the dissertation.

#### ACKNOWLEDGEMENT

"I keep six honest serving-men (They taught me what I know); their names are what, why, when, where, who and how".

Rudyard Kipling.

Rudyard Kipling, the great India-born English poet has nicely told the names of great abstract honest serving men, but here I would like to thank those who actually helped me in completing this dissertation of M.Phil.

My research guide Dr. B.K. Pawar, guided me properly and developed self-confidence in my research work. Dr. A.E. Varute, the dynamic personality cherred me up, without help of these two persons, the work would have lingered back. At the same time, the teaching and non-teaching staff of the Zoology department

gave me nice co-operation whenever, wherever and whatever I asked for.

Shri V.A. Patil, Shri G.R. Gonjari, Shri P.S. Mane, Shri Mohan Gojer and Shri D.B. Mandlik helped me in the clumsy laboratory work. Thanks are due to Shri Mushrif (artist), Miraj Medical College, for microphotography. I am also thankful to Shri Ghatage who typed the manuscript very neatly and impressively.

I take opportunity to thank Prin. A.P. Rane, who recommended my name for Teacher-fellowship and Prin. A.G. Salunkhe, the Secretary, Shri Swami Vivekanand Shikshan Sanstha, for sanctioning me one year study leave. Shri A.R. Patil, with all his enthusiasm, gave me all sorts of help in the university campus. I thank the U.G.C. authorities for granting me Teacher-fellowship and Shivaji University authorities for allowing me to work in their premises. I would like to acknowledge my debt to my wife, whose willingness to co-operate with me in every way deserves to be recorded.

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