Dedicated to my loving husband
Acknowledgement

A long journey is begun with a single step. If only we visualize our goal, we can materialize it. To visualize my real goal was the very first step of this humble journey. I had been lucky enough to be accompanied by able and sincere colleagues and friends in this journey. I always remember the words of my parents 'let us move together, if one of us succeeds, we all do'. I am obliged to dedicate the success of this work to all the many good hearted souls who were moving along with me shoulder to shoulder until this finishing point. And this research journey has reached the culminating point where I am to turn around and express my cordial gratitude to all of them.

A job well began means half done! This is proved to be true by the inception itself, when I started my research work under the guidance of Dr. M.C. Subhash Peter, Reader in the Department of Zoology of the University of Kerala and Dr. Valsa Jacob, UGC research awardee. Dr. Peter has uncommon abilities to inspire success to those around him. I am grateful to him for his friendly guidance, timely advice and constructive criticism. His invaluable collection of scientific literature helped me to excel in this work. I am also grateful to Dr. Valsa Jacob, for her timely advice and guidance and for her involvement in the work. Her constant inspiration was a motivating force behind this thesis.

I express my unlimited obligations to the former head of the department Prof. Oommen V. Oommen, Dept. of Zoology who had extended whole-heartedly some of laboratory facilities. And again to Prof. Mathew. M. Oommen, the Head of the Department of Zoology of the University of Kerala, I am indebted to for providing library and laboratory facilities. All the faculty members, Prof. D. Muraleedharan, Mrs. Jeejakumari and Dr. G. Prasad of the Department of Zoology of the University of Kerala, are to be remembered with gratitude for their positive involvement, creative suggestions and kindist co-operation during the course of this investigative study. I am thankful to the UGC, New Delhi for the financial and infrastructural support through the MRP (Coconut husk retting) and the SAP facility and University of Kerala for granting me University Fellowship.

I take this opportunity to acknowledge the unstinted, unfailing and incomparable help of my colleague and friend, Dr. Leji J. who has contributed greatly to the successful completion of my research work. My dearest friend Dr. Babitha G.S who really is a friend indeed, had undertaken painstaking tasks related to the research and analysis processes involved in my dream project. Selfless services of my dear colleagues Lekshmi S. and Vijayasree A.S were like reinforcements to the concrete of this team work. I cannot go ahead without appreciating the efforts of Ms. Rejitha V., a sweet personality and a science enthusiast who had provided me with enormous energy and dedication. Her patience and endurance largely boosted the overall quality of this research.

No earthly language suffice me to express my appreciation to my dearest friends Ms. Nimta George, Mr. Manish K, Mrs. Divya R, Mr. Sajeeb Khan A, Ms. Anupriya Samuel, Ms. Swapna S, Ms. Mini V.S and Ms. Bindulekha D.S for their sincere help and co-operation. Mr. Kiran P and Ms. Simi S are wise heads on young shoulders. I had got outstanding assistance from all of them whenever I faced difficulties. Special thanks are due to the research scholars, Mr. Sreejith P., Ms. Divya. L., Mr. Beyo R.S, Ms Manju M., Mr. Dileep Kumar, Mr. Arun Raveendran, Ms. Sunitha Philip and Mr. Ramachandran, for the sincere help I received from them.
I owe my thanks to the former librarian, Mrs. Jayakumariamma, Mrs. Vasudha and Mrs Sunaja and the present librarian, Mr. Salim A, Department of Zoology, Kariavattom, for providing liberal library facilities. I also wish to acknowledge all the office staff of the Department of Zoology in the University of Kerala, Kariavattom for the priceless and fabulous support offered by them.

Mr. Sherif, IMK-Kerala University is a personification of goodwill and brotherly affection. His timely interventions guided me smoothly whenever a crisis encountered. Mrs. Haseena Sherif, IMK, simply a good hearted well wisher stood behind me with good spirits and iron will for my work's successful conclusion.

I could not have completed this thesis without the unfathomable patience and the moral support of my husband, Salil Ahmed. Our loving twin kids Salah and Sabah sacrificed a lot for completing this project. I just recall the inspiring spirits of my father-in-law Mr. Shahul Hameed who is a real motivator and my mother-in-law Mrs. Sulaikha Beevi who is a power house of good hope for their spiritual and thoughtful support.

Finally, I would like to acknowledge the support of my family. My parents deserve special mention for their inseparable support and prayers. My Father, S Peeru Muhammed in the first place is the person who fundament my learning character, showing me the joy of intellectual pursuit ever since I was a child. My Mother, Suhara Beevi, is the one who sincerely raised me with her caring and gently love. Thanks are due to my sisters Sophia and Safeena, for being supportive and caring siblings. I gratefully acknowledge my brother-in-law Mr. Habeeb who showed great interest in this piece of work and extended his sincere help for its fulfillment.

As I mentioned earlier, this is the finishing point of a great journey together. Each member of this group is a winner. I do apologize to all of you whom I couldn't mention individually. But in this journey, one of us succeeded means we all did.

I dedicate this result to God Almighty who deserves the ultimate submission. It is only with His grace that this mission is finally accomplished.

Sajeena Muhamed S.