Acknowledgments

It was indeed a proud privilege to be a student of Dr. R. Nazeer Ahmed, Professor, Department of Zoology, Karnataka University, Dharwad. It was a sheer pleasure and my good fortune to study under his guidance, who apart from being a guide and mentor was source of constant encouragement. His inexhaustible knowledge and unfailing support in his characteristic fashion have helped me in preparation of this thesis from its infancy to the final stage. I take this opportunity to express my sincere gratitude to him. It is my pleasure to thank my research co-guide Dr. M David who introduced me to a fascinating realm of aquatic toxicology. His ever encouraging attitude, constant motivation and valuable suggestions throughout the study were source of inspiration. This has helped me to understand better and remain optimistic. I express deep sense of gratitude to both guide and co-guide for giving me liberty in the work undertaken, untiring support and encouragement during my doctoral programme. Although this acknowledgment is insufficient, I preserve an everlasting gratitude for both of them. I am thankful to Dr. BK Chandrashekar Sagar, Associate Professor, Electron Microscopy Division, NIMHANS, Bangalore for extending EM facilities and guiding me in electron microscopic studies. I am grateful to my teachers who inspired my interest in science and particularly towards career in biological sciences.

I am grateful to UGC DRS SAP-II UGC New Delhi and Department of Zoology, Karnataka University, Dharwad for awarding me Project fellowship and necessary facilities to carry out my research work. In addition I am thankful to the Department of Zoology, Karnataka Science College, Dharwad for providing necessary facilities to carry out my research work.

I extend my deep sense of gratitude to Prof. (Smt) BA Shanbhag (Chairperson), Prof. R. D. Kamadi, Prof. (Smt) K. Pancaratna, Dr. (Smt) LS Inamdar, Dr. N. Shivanna, P.G. Department of Studies in Zoology, Karnataka University, Dharwad. I am also thankful to Dr. AA Hooli (Principal), Dr. (Smt) NV Biradar (HOD), Dr. (Smt) A.S Bellad, Dr. (Smt) Mangala Naik, Dr. CB. Ganesh, Dr. A. H. Arali of Karnataka Science College, Dharwad. I am thankful to Prof. K. Neelakantan, Department of Studies in Marine Biology, Karwar, Dr. SG Mathad (Rtd-Principal), Karnataka Science College, Dharwad for their encouragement and support.

My sincere thanks to the authorities of University Scientific Instrumentation Centre (USIC), Karnataka University, Dharwad for providing necessary instrumentation facility for the current research. I thank Dr. RH Chandan, Pathologist, for his kind help in carrying out the haematological studies. I am thankful to Mr. Ramesh and Mrs. Hemavathi, Technicians, Electron
Microscopy Division, NIMHANS, Banagalu for their kind help in processing the samples for EM studies.

My heartfelt thanks to my senior researchers: Dr. SB Mushigeri, Dr. R. H. Aladasatti, Dr. M. S. Prashanth, Dr. R. Shivakumar, Dr. Prakash Meshta, Dr. HB Shivakumar, Dr. (Smt.) VR Naik, Dr. H. Ramesh, Dr. V. Munaswamy and to my research colleagues Vineetkumar Patil, Sameer Chebbi, Prof. Rafeek Ahmed Maniyar, Prof. G Krishnamurthy, Sanjeev Deshpande, Praveen Dube, Prof. R.M.Pattar, Prof. Aravind Kamat, Robert Raj, Lilaram, Subhas for their motivation, subtle guidance, constant help, technical support and discussions. I am also thankful to Dr. Vijayakumar Kudari, Dr. Dheeraj, Reena D’souza, Dr. Nakul Vandal, Dr. Prabhakar Patil, Veena, Jyothi, Manjunath, Prasad, Swetha, Santosh, SG Sunagar, Vikas Mokashi, Suresh Araker, Chidanand, Nagbhushan, Puranand Sangalad, Sadanand Naganur, Ambareesh, Sri nath, Jayaraj, and Suneel for the encouragement and help.

I extend my profound respect and deep sense of gratitude to my beloved parents Shri. Rudragouda and Smt. Kasturi Marigoudar whose blessings have made this endevour a success. I express my heartfelt thanks to my brother Kumarswamy, Sister Shivaleela & family and Ms. Swetha Madageri for their love, caring, unfailing support and encouragement. I wish to thank my elder brother Shri. V.D. Patil and family for their love affection, support, and encouragement.

I also extend sincere respect and gratitude to Mrs. Zeenath Begum Raichur & family, Mrs. Chandravathi David & their family for their well wishes, love, care and support. I thank Shri. R. S. Iroji & family, Narayan Shetty, Prof. Upase, and family for their kind help and support.

I am thankful to non teaching staff of the Department of Zoology, Karnataka University and Karnataka Science College, Dharwar. Undoubtedly, immortal peoples have been associated with this and for me it is impossible to mention all of them. In this regard, my honest, humble, and sincere thanks to all the individuals who have in any way been associated with the completion of this research work.

(Mr. S. R. Marigoudar)