Acknowledgement

Enlistment of the endless number of people, whose advice, encouragement, knowledge and support has made this Thesis possible, is virtually impossible for me.

The most difficult task is to even try to thank Prof. B.R. Maiti, Department of Zoology, University of Calcutta, whose magnanimity has always been overwhelming. Ever since my days as a student in Science College till date, I keep on wondering how a person can be so knowledgeable, so sincere, so punctual, so meticulous and yet so simple, caring and cordial. The way, Sir, you have guided me and always stood by me all those years has enabled me to keep up high spirits even during scientifically less productive periods and complete this work and keeps me indebted to you forever.

I am honored to have had the golden opportunity of getting invaluable advice from legendary Late Prof. Ashok Ghosh every now and then during the initial part of my research work.

I would like to express my deep gratitude to Prof. Subrato Chakraborty, Department of Zoology, University of Calcutta, for his constructive suggestions all through my research work.

I am greatly thankful to Prof. Samir Banerjee, Department of Zoology, University of Calcutta, for his hearty co-operation which helped me to tide over my problems and difficulties during the entire work.

I am extremely grateful to the present and past heads of the Department of Zoology, University of Calcutta for permitting me to proceed with my research programme in the department. My sincere gratitude are due to my teachers, Prof. R.N. Chatterjee, Prof. B. Manna, Prof. P. Lahiri, Dr. A. Baral and Dr. C.S. Chakraborty for going out of their way in extending helping hands and for their constant words of encouragement and assurance.

Special thanks are due to Dr. Urmi Chatterjee, Department of Zoology, University of Calcutta, whose warmth, friendliness and generous support were boundless.
My heartfelt thanks goes to Dr. Tapash C. Nag (AIIMS, New Delhi), who lend his invaluable time to teach me how to identify and interpret subcellular changes under the sophisticated EM, which has enhanced the quality and importance of my work.

Dr. Tanya Das and Dr. Gaurisankar Sa of Bose Institute, Kolkata, with their vibrant nature and unending support helped me to redeem my confidence and strength. They gave me the opportunity to work in their laboratories and introduced me not only to the amazing dimension of modern techniques of molecular biology but also to a new world of personal relationship.

I consider myself as an extremely fortunate person to be under the tutelage of Santasiri'di (Dr. Santasri Sengupta), a wonderful person both in terms of her scientific knowledge as well as exceptional human qualities. There are no superlatives that could describe my gratitude to Santasiri'di who would often steal hours from her personal commitments and give untiring selfless effort, just to make my experiments fruitful.

I express my grateful thanks to Prof. D. Nag (Department of Biochemistry, Guru Nanak Dental College, Kolkata), Dr. S.N. Kabir (IICB, Kolkata) and Prof. A. Paul (Department of Botany, University of Calcutta) who have, in their own ways, kept the door open for me, helped me whenever I approached them and shared their expertise within their tight schedule.

I gratefully acknowledge the help and enthusiastic assistance rendered by seniors, Dr. Prajna Paramita Roy, Dr. Supriti Sarkar, Mr. Hari Prasad Sarkar and also wish to express my sincere affection and thanks to my laboratory companions Indraneel Saha, Anasua Bose, Anusree Mondal and Aniruddha Chatterjee who always provided an excellent working environment. In terms of research, special thanks are owed to Snigdha'di and Mohua (Department of Botany, University of Calcutta), Bireswar, Enakshi (ex-scholars of Department of Zoology), Dr. Arindam Bhattacharya, Dr. Suman Pal and Dr. Debprasad Mondal (Bose Institute). I also acknowledge with thanks the assistance of Srikanta'da (Srikanta Bera) for providing his whole-hearted assistance in handling animals efficiently.
during my work, I would like to thank Ms. Ruby Das for the excellent typographic assistance.

I would wish to extend my thanks to all my friends and colleagues at South Point High School who cheered me and provided regular cooperation and support through these days.

It is said that teacher learn a lot more from a student than he/she teaches. A living example of this is probably my student Atri (Nayak), presently an MBA student at IIM, Calcutta from whom I have got much more than I have imparted. Hours of his tireless efforts in assisting me in any sort of problem, whether simple or brain-storming, enabled me to overcome the crisis, redefining the concept of Teacher-Student relationship. Without his personal touch the Thesis could not have taken its present form.

Last and not the least my family filled with love and care, provided full support for completing the thesis, specially my brother Amitava and sister-in-law Pritha for their selfless support and cooperation that cannot be described here but can only be acknowledged silently.

Finally, my parents who brought me up from the very first day of life with unfailing love and continuously sustained me at the hours of exhaustion and shared with me every moment of tedium and satisfaction of completing this thesis. My indebtedness to them I can only feel, signify – can never repay. I can only pray, next time, I am born to them, I am enriched enough to express my feelings of gratitude to you, Ma and Baba.

Romi DasGupta

Romi DasGupta