Acknowledgement

Writing this thesis has been charming and awfully pleasing to me. Although only my name is on the cover of this Ph. D. thesis, many people around me deserve credits for its achievement. Therefore, I am deeply grateful to all those who have helped me to write this thesis over the past several months.

At this moment of accomplishment, first of all I pay homage to my guide, Dr. Asis Kumar Nandi, Associate Professor, Department of Botany and Forestry, for his outstanding guidance, understanding, patience and most importantly, his guidance during my post-graduate studies at Vidyasagar University. This work would not have been possible without his guidance, support and encouragement. Under his guidance I successfully overcame many difficulties and learned a lot. For everything you've done for me, my regards to you Sir.

I would like to thank my all teachers of this department, Mr. R. K. Bhakat, Dr. A. K. Mondal, Dr. P. Karmaker, Dr. D. Banarjee, Dr. Gunjan Biswas and Dr. Nilanjana Banarjee for their constant help and valuable suggestions.

I am very much grateful to Professor. G. G. Maity, Professor in Botany (Retired), Kalyany University, for his admirable direction and help to identification of the species during this period.

I am also gratified to all staff of this department, Dr. D. Chakraborty, Dr. Bivas Panda and Mr. G. Duari for their kind help.

I would also like to express my sincere regards to the Honorable Vice –Chancellor Professor Ranjan Chakraborty, Vidyasagar University, for giving me this opportunity.

I am also thankful to my all lab mates- Dr. Uday Kumar Sen, Mr. S. Kundu, Mr. A. Mukherjee, Mr. A. Choudhury, Miss. T. Nandi and Mrs. A. Maity, for their endless contribution.

I would also like to say a heartfelt thanks to my husband, father, mother, father-inlaw, mother-in-law and my beloved brother and sister for always believing in me and encouraging me to follow my dreams. They are always helping me to take right decision during this challenging period.