Acknowledgements

With the utmost sincerity and appreciation I thank Prof. G.G. Maiti, Department of Botany, University of Kalyani, Kalyani-741235, West Bengal, India for encouragement to undertake this study and for his helpful guidance and patience over the course of my studies. Thanks also for my first exposure to Taxonomic work and for treating me as student from the beginning and for radically changing how I felt about taxonomic works and allowing me to grow as a scholar, and for his advice and continuous support and again for supporting my decision to choose a particular topic as a problem, what is the mark of a true teacher. Thanks also for Prof. Sobhan Kumar Mukherjee, Department of Botany, University of Kalyani, Kalyani-741235, West Bengal, India, Prof. P. K. Mukherjee and Prof. N.D. Paria, both of Department of Botany, University of Calcutta, West Bengal, Prof. K.R. Naskar, Principal Scientist (ICAR), CICFR1, Saltlake, Calcutta, for showing me that teaching and research could be fun and requiring me to do well and for showing that plants are neat and for many valuable conversations about the subject and their inputs as my teachers.

Thanks to the head(s) of the Department of Botany, University of Kalyani, Kalyani-741235, West Bengal, India, for their kind permission and laboratory facilities. Thanks also for Principal(s) and head(s) of the Department of Botany, Darjeeling Government College, Darjeeling-734101, West Bengal, India, for their permission and laboratory facilities.

I am really thankful to Dr. Mousumi Mukhopadhyay, who introduced me with the genus Carex L. in the field for the first time.

I am grateful to the Higher Education Department, Government of West Bengal, for giving me permission of conducting research works.

Thanks also to the authority of USIC, University of Burdwan, West Bengal for Scanning Electron Microscopic facilities.

Thanks to the many scientists, researchers, who had provided necessary literatures during my study, Dr. Andrew L. Hipp (The Morton Arboretum, Illinois, USA), Dr. Julian R. Starr (Department of Plant Sciences, University of Oxford, UK), Dr. Robert F.C. Naczi (The New York Botanical Garden, Bronx, NY, USA), Dr. Bruce A. Ford (Department of Botany, University of
Manitoba, Canada), Dr. Encarnacion Rosa Guaglianone (Instituto de Botaanica Darwinion, San Isidro, Buenos Aires, Argentina) provided me online literature related to my works and Dr. T. Muthukumar, Microbiology Laboratory, Department of Botany, Bharathiar University, Coimbatore 641046, Tamil Nadu, India. Moreover, Dr. Muthukumar had provided literature as well as helped me in the identification of mycorrhizal association in *Carex* species.

Thanks to the herbarium authorities of Central National Herbarium (CAL), Shibpur, Howrah and Llyod Botanic Garden, Darjeeling, West Bengal, India, for their permission to examine specimens. The value of these collections in systematic works cannot be overstated.

I would like to thanks to Head of the Department of Botany, Head of the department of Physics, other colleagues of Krishnagar Government College, Krishnagar-741101, Nadia, West Bengal, for their continuous support and inspiration.

Thanks to my friends and colleagues Dr. Kaushik Majumder and Dr. Vivekananda Mondal for their inspiration and helps. A special thank goes to Mr. Shekhar Bhujel and Mr. Chirag Rai, my postgraduate students for whom I was fortunate to serve as teacher as well as scholer. They were the highlight of my weeks, and watching them to learn was really the educational and the rewarding for me. A special thank also for Dr. Archan Bhattacharya, Acharya Prafulla Chandra Government College, Siliguri, West Bengal, without mentioning whom the work remains incomplete. Great thanks to Neeradi (Dr. Neera Sen Sarkar) and Bijanda (Dr. Bijan Kumar Sarkar) of University of Kalyani, Kalyani-741235, West Bengal, India who helped me to open the door of higher education and inspired throughout and for all sorts of support, including troubleshooting and brainstorming. Thanks to Subhradi (Subhra Bhattacharya) of CICFRI, Saltlake, Calcutta for her encouragement.

Many thanks are deserved by my family members and my sibling for their sacrifice and cheering each other during my works.

Place: Kalyani

Date: 21/11/2010

(ASOK GHOSH)