ACKNOWLEDGEMENTS

The successful completion of this work, leading to the writing and submission of a Doctoral thesis goes to a large number of persons who helped me in various capacities and different manners during the course of this project work.

The first and foremost, I extend my deepest sense of thanks and gratitude to my supervisor Dr. Abhaya Prasad Das, FLS (London), Retired Professor, Department of Botany, University of North Bengal, for his inspiration, encouragement and guidance throughout the period of execution of this work. He lifted me when I was down and this shall always remain incised somewhere deep within me for the rest of my days. Without the basic perception and supervision it was not possible even to take up the projected work.

I would like to convey my heartiest thanks to the Heads of the Department of Botany who looked after the department during my tenure of work for extending all the required facilities.

I am also thankful to all the teachers of the Department of Botany, namely Prof. B.N. Chakraborty (Retired), Prof. P.K. Sarkar (Retired), Prof. (Mrs) U. Charkaborty (Retired), Prof. A. Saha, Prof. A. Sen, Dr. P. Mandal, Dr. S.C. Roy and Dr. M. Chowdhury, for their continuous support, help and encouragement. My thanks also go for the non-teaching staff of the Department of Botany for their various kinds of assistance.

I would like to convey my heartiest thanks to Dr. Chandra Ghosh, Assistant Professor, Gour Mahavidyalaya of Gour Banga University, for her continuous help during this period.

I extend my gratitude to Dr (Mrs). Tanmayee Mishra, Assistant Professor, Gyanjyoti College of University of North Bengal, for her moral supports and encouragement.

Also, I convey special thanks to Dr. P. K. Basu, Head Master, Iswarchandra Vidyasagar High School, for his love, inspiration and moral support during this period.

It is indeed important to extend my thanks to all my lab mates, seniors and juniors namely Dr. Sonam R. Lepcha, Dr. Animesh Sarkar, Dr. Ajita Sarkar, Mr. Rajib Biswas, Mr. Goutam Saha, Mr. Suman Nirola, Mr. Anurag Chowdhury, Mr. Anand Lama, Mr. Sourav Moktan, Mr. Dibakar Choudhury, Mr Amalesh Bijali, Mr. Biman Krishna Saha, Mrs. Bishakhi Sarkar, Ms. Payel Paul, Mr. Sujit Mandal, Ms. Dipika Chettri, and others who were constant sources of help and encouragement in the two laboratories in which I conducted my research.

I also offer thanks to Mr. Binod Singha, Mrs. Sangita Oraon, Lab and field assistants and others for their helps in my work. I also acknowledge different Forest Personnel for their help, without whom it was quite impossible to work in the field.

I express my gratitude to University Grants Commission Special Assistance Programme (UGC- SAP, DRS -II) for financial supports to complete the work.

I would remain indebted to Mrs. Ruby Das for her motherly love and inspiration.

I would like to convey my heartiest thanks to my dear Biltu, Sanu and Partha who helped me a lot during the compilation of my thesis. I also acknowledge the help of my other relatives and well wishers who supported me immensely during the course of my research work.

At the end I would like to express my heartfelt gratitude to my beloved parents for their endless inspiration, encouragement, love and affection. I would also like to thank my parents-in-law for their moral support and my loving wife Karabi Biswas for her continuous support throughout the execution of the work. I am also thankful to my other family members for their help and encouragement.

Kishor Biswas

University of North Bengal November, 2017