ACKNOWLEDGMENTS

It is great pleasure to accord my heartfelt appreciations and gratitude to Dr. V. T. Antony, Head, Department of Botany, St. Berchmans College, Changanassery, Kerala for his incessant guidance, supervision and encouragement throughout this Ph. D study.

I am obliged to the Principal, St. Berchmans College, Changanassery, Kerala, India for extending me all facilities and encouragements. I would like acknowledge my gratitude to the Director and staff, Research and Development Center, Bharathiar University, Coimbatore, Tamilnadu, for the whole hearted encouragements and to his gracious office staff for their co operation. I thank the officials of Kerala Forest Department, Government of Kerala for providing facilities and support to collect the data.

I am very much indebted to Dr. Soni Scaria, Associate professor, Department of Botany, St. Berchmans College, for his advice, comments and encouragement which helped me to frame my thesis. I am very grateful to Dr. Scaria K. Varghese, Dr. Joseph Job, Mr. Salvy Thomas, Mr. Biju George and Prof. James Joseph (Rtd.) Department of Botany, St. Berchmans College, for the help during the course of investigation and criticism on the manuscript.

I owe my deepest gratitude to Dr. P.K.K. Nair, Director ERRC, Dr. Shaji P. Assistant director and K.G. Divya, research fellow of ERRC Thiruvananthapuram, for helping me in palynological analysis and assistance in interpretation of the data. I would like to express my deepest gratitude to Dr. Shivanna, ATREE, Bangalore; Dr. Giby Kuriakose, Assistant professor, S. H. College, Thevara; Dr. M. Sabu and Dr. A. K. Pradeep, Department of Botany, Calicut University for giving training and technical help in the study of reproductive biology. It is beyond words to thank to Dr. H.B. Singh and technical staffs of Raw Materials Herbarium & Museum, NISCAIR, New Delhi for giving me training and technical help in herbarium techniques. The valuable help received from Dr. Joseph John K., Senior scientist, N.B.P.G.R, Thrissur, Mrs. Lucy Paul, Senior technical officer, NIIST, Thiruvananthapuram and Mr. Benoy Jose, Senior Research Fellow, JNTBGRI Thiruvananthapuram in field and
laboratories have contributed a lot for timely completion of the work. I thank, Director and staff of Herbariums at Botanical Survey of India, Kolkatta and Coimbatore; Fisher Herbarium Coimbatore; Calicut University; JNTBGRI, Thiruvananthapuram; Kerala Forest Research Institute, Thrissur and Aarya Vydyva Sala Kottakal, for sparing their facilities. I would like to express my sincere gratitude and love to officials and staff of KSRTC, for granting leave, moral support and encouragement.

I greatly acknowledge my senior research scholars and colleagues Dr. Pramodkumar N., Mr. T. Sunilkumar, Mrs. Ambily P., Dr. Roy Y. C., Dr. Vijay Bhaskar, Dr. M.C. Varghese, Mr. Vivek C. P., Mr. Ajayakumar K., Mr. Sebastian A., Mr., Tojo Jose, Mr., Anish Babu B., Mrs. Mejo Jose, Mrs. Kala K., Mrs. Sheemole M.S., Mrs. Jessy Kurian, Mrs. Asha Saji, Mrs. Dhanya Vijayan, Mrs. Alka E. Varghese and Mrs. Semina Haneef for their valuable suggestions during the course of investigation and criticisms on the manuscript.

I also express my sincere gratitude to Dr. M.V. Krishnaraj, Assistant Professor, B.A.M. College, Thuruthikkad, Kerala for his valuable suggestions and help especially for scientific drawing. I thank to Dr. Kesavan Nampoothiri, Scientist, CPCRI, Kayamkulam for the technical assistance in statistical analysis. I express my sincere thanks to Mr. Juphin Joseph, Scientific assistant, Department of Botany, St. Berchmans College, for his unstinted support.

I am very grateful to my father and mother for their support and love. I thank my family members for understanding, supporting and being for everything. I also thank my brother in-laws Mr. Joshy Antony and Mr. Joby Antony for support provided throughout this work. Last but not least I am grateful to my beloved wife Mrs. Jolly Antony who gave fulltime support and always inspired and helped me to complete this study.