It is a great privilege to acknowledge my deep indebtedness and gratitude to my esteemed guide, Dr. G. Prathapasenan, Reader, Department of Botany, M.S.U., Baroda, for his guidance, encouragement and the freedom he kindly granted to think and execute the work.

I am thankful to Drs. S. D. Sabnis, R. P. Bhatt, S. J. Bedi, Ex-Heads; Dr. (Mrs.) M. A. Padhya, Offg. Head, Department of Botany, M.S.U., Baroda, for providing necessary laboratory facilities.

I express my deep sense of gratitude to Dr. Y. T. Jasrai, Reader, Department of Botany. His intellectual suggestions, amiable nature and encouragement has helped me in many ways.

I sincerely thank Prof. N. M. Bhatt, Environmental Division and Mr. K. Gangadhar, Department of Geology for the help rendered in analysis of ions.

I also acknowledge the kind help rendered by Miss. Neela Emanuel and Mr. M. P. Gireeshkumar of Department of Chemistry in analysis of polyamines.

Dr. K. S. Rao, Dr. V. K. Murukesan and Mr. Ravi Dindorkar helped a great deal in photography. I thank them all sincerely.

My sincere appreciation also goes to Mr. Prashant Kirkire for his kind help in the statistical analysis of the data, and to Mr. B. Suresh for preparation of graphs.
During the course of this investigation I had the honour to be the recipient of M.S. University Research Scholarship and Talwar Research Foundation Fellowship. My grateful acknowledgements to them.

I take this opportunity to thank gratefully Mr. A. Remakanthan, Mrs. Jullien Palmer and all my friends for the help rendered in scanning the text and preparation of plates.

My grandfather and parents were a source of constant encouragement and inspiration during the years of my study. Their love and affection gave me lot of strength. I shall always seek their blessings.

Credit for the neat and efficient typing of this thesis goes to Mr. Balasubramanian.

Blessings showered by ALMIGHTY made this dream come true.

Vyjayanti A. Chauhan