ACKNOWLEDGEMENTS

I am deeply indebted to my mentor and guide Prof. R.MayaSundari, Dept. of Genetics, Dr.A.L.M. Post Graduate Inst. of Basic. Med. Sci., University of Madras, Taramani, Madras - 600 113, for her constant encouragement through valuable suggestions, inspiring discussions and unstinted support without which it would not have been possible for me to submit this thesis. I record here my deep sense of gratitude for the continuous moral support and affection given during the moments of stress and strain and I shall cherish this memorable period of association I had with her.

My grateful thanks to Prof. P.M.Gopinath, Head, Dept. of Genetics, Dr.A.L.M. Post Graduate Inst. of Basic. Med. Sci., Taramani, Madras - 113, for giving me an opportunity to work in the department and providing me with all the necessary facilities and his encouragement.

I wish to thank the past and the present directors, Dr.A.L.M. Post Graduate Inst. of Basic. Med. Sci., University of Madras for providing me the facilities at the Institute.

My heartfelt thanks are also due to Prof. N.C.Subrahmanyan, School of Life Sciences, University of Hyderabad for allowing me to carry out part of my work at his laboratory and his constant support and encouragement.
I also extend my sincere thanks to Prof. S.P.Thiagarajan, Head, Dept. of Microbiology and Prof. R.Selvam, Dept. of Biochemistry, from this Institute, Prof. Kunthala Jayaraman, Centre for Biotechnology, Anna University, Prof. A.Mahadevan, Director, CAS in Botany, Guindy Campus, Madras University and Dr. George Thomas, Spic Science Foundation, Guindy for permitting me the use of instruments in their laboratories.

I would like to thank Mr. P.Easter Raj Solomon for the technical assistance, Mr. C.Krishnamoorthy for helping me in the collection of animals used for my work and Mr. Thangaraj for photographic assistance.

My profound thanks are due to my labmates and friends Mrs. V.Usha, Mr. E.M.Elango, Ms. S.Priya, Ms. V.Vidya and Ms. C.Narayani, Dept. of Genetics, Dr.A.L.M. Post Graduate Inst. of Basic. Med. Sci. for their help and encouragement.

I would also like to express my thanks to Mr. Nagesh CH and Mr. Kranthi Kumar P., School of Life Sciences, University of Hyderabad, Dr. Dilip Kumar, Dept. of Biomaterials, CLRI, Madras, Ms. J.Kavitha, Dept. of Zoology, Presidency College, Madras, all my coworkers and friends at different places for their constant help and affection showered on me.

I would like to extend my thanks to all the members of the teaching, non-teaching and technical staff, Dept. of Genetics, PGIBMS for their timely help and encouragement.
I acknowledge the University Grants Commission, New Delhi for the financial support, rendered in the form of Junior Research Fellowship.

The technical help rendered by draughtsperson Mrs. Indira Devi is duly acknowledged.

I also like to thank M/s. Students Computer Centre, Adyar, Madras for the typographical help rendered in preparing this thesis.

Last but not the least, I would like to express here my deep gratitude to my uncles Dr. Y.Rao Vadlamudi, Mr. Kolli. Gopala Krishnaiah and other cousins who have encouraged me throughout my academic career.