I am deeply indebted to Dr. (Miss) N.J. Chinoy, Lecturer, Department of Zoology, University School of Sciences, Gujarat University, Ahmedabad for suggesting this line of work and for her constant, unfailing guidance and encouragement throughout the period of this investigation. I am thankful to Dr. V.C. Shah, Professor and Head, Department of Zoology and Director, School of Sciences for providing necessary facilities. I am also grateful to Rev. (Father) F. Braganza, Principal, St. Xavier's College, Ahmedabad and Rev. (Father) D. Dias, Vice-Principal (Science), St. Xavier's College for all the encouragement as well as for providing the necessary facilities during the period of this investigation.

I express my gratitude to (Late) Prof. J.J. Chinoy, Director, School of Sciences, Gujarat University, and Dr. C.K. Shah, Head, Botany Department, Gujarat University, for providing necessary facilities as well as guidance in carrying out the cytophotometric work. Thanks are also due to Dr. V.G. Desai, Superintendent, Govt. Poultry Farm, Makarba for providing a regular supply of eggs and birds as well as his suggestions and criticisms. I am also thankful to Dr. G.V. Raval, Senior Research Officer, Govt. Poultry Farm, Makarba for helping in caponizing the birds. The generous gift of cyproterone acetate from Schering AG,
Berlin, the dystrophic birds of strains 307 and 308 ranging in age from 1 1/2 to 2 years from the Institute of Muscle Diseases Inc., New York, are gratefully acknowledged. Thanks are also due to Dr. Miss S.C. Pandya, the Ex-Dean, Municipal Medical College, Ahmedabad and Dr. R.J. Desai, Radiologist, Department of Radiotherapy and Nuclear Medicine, Sheth V.S. Hospital, Ahmedabad, for allowing the use of cobalt 60 unit and helping in the radiation experiments.

The award of research grants from Gujarat University, Ahmedabad and University Grants Commission, New Delhi are gratefully acknowledged. I wish to express my deep gratitude to Dr. (Miss) L. Seethalakshmi and to all the other staff members and research colleagues of both the Departments of Zoology, Gujarat University and Department of Biology, St. Xavier's College, whose co-operation has helped me in no small measure towards the completion of this project and the preparation of this thesis.