ACKNOWLEDGEMENTS

I sincerely and most profoundly record my deepest gratitude with great pleasure to Dr. M.K. George, Senior Scientist, Central Marine Fisheries Research Institute, Cochin-14 for suggesting the research problem, providing able guidance and supervising the work. I would like to extend my sincere thanks to Dr. P.S.B.R. James, Director, C.M.F.R.I., for providing all facilities needed for this investigation and to Cochin University of Science and Technology for granting me the Ph.D. registration.

I am grateful to Dr. George John, Director, D.B.T., New Delhi, my previous supervisor, for his guidance and encouragements. I also thank Dr. A.G. Ponniah, Senior Scientist, N.B.F.G.R., Allahabad for his valuable help and suggestions.

My thanks are due to Dr. I.D. Gupta, Dr. N.K. Verma and Mr.Vijayagopal, Scientists, C.M.F.R.I., for all encouragements and help during the investigation period. I also thank Dr. C. Suseelan, Senior Scientist, C.M.F.R.I., for providing me the facilities for the photographic work.

I am thankful to Mr. E.V. Radhakrishnan, Dr. N. Neelakanta Pillai, Mr. K.K. Sukumaran, Dr. P.P. Pillai and Dr. Kuriakose, Scientists, C.M.F.R.I., for helping me during specimen collection.

I gratefully acknowledge the valuable suggestion and timely help extended to me by Dr. Jose Stephan, subject expert, C.I.F.T., Dr. N. Unnikrishnan Nair, Senior Scientist, C.I.F.T., Dr. N.R. Menon, Dean of Marine
Science, Cochin University, Dr. P.V. Ramachandran Nair, Retd. Scientist, C.M.F.R.I., Dr. J. Bojan, Project Director, M.P.E.D.A., Vallarpadam and Late Mr. Sadananda Rao and Late Mr. C.P. Ramamirtham, C.M.F.R.I., Kochi.

I express my deep sense of gratitude and respect to Mr. T.R. Rajamani, Senior Scientist, C.E.C.R.I., Kalamassery and Dr. L. Krishnan, Senior Scientist, C.I.B.A., Narakkal for their valuable advice and constant encouragements from the very beginning of this research work. I also wish to acknowledge here, Mr. K.L.V. Narayanan, Export Manager, M/s. Anna Aluminium Co., Cochin who helped me in various ways.

I would like to show my sincere gratitude to Mr. P. Venkita Narayanan, Lecturer, Ship Technology, C.U.S.A.T., for the computer software support.

I take this opportunity to show my indebtedness to Miss. B. Santh Begum, Research Scholar, C.M.F.R.I., Kochi for her untiring help and continuous encouragements rendered during the period of this study and especially during the compilation of reference part of this thesis.

I would like to extend my special thanks to Mr. K. Diwakar, Laboratory Assistant, ICAR-Adhoc Project, now Technical Assistant, in C.M.F.R.I., Vizakhapatnam for his continuous assistance during the investigation. I would also like to thank Mr. K.L.K. Kesavan, Artist and Mr. P. Raghavan, Photographer, C.M.F.R.I., for their timely help. My sincere thanks are due to C.M.F.R.I., Library Staff members for helping me with the library facilities.
and to C.M.F.R.I., Vehicle drivers for their help during the collection of specimens.

I express my strong feeling of gratitude to some of my colleagues and friends, Mr. Tomy Prince, Mr. N.N. Mohandas, Dr. S. Vijayakumar, Dr. Paramananda Das, Dr. K.K. Vijayan, Mr. C.P. Balasubramanian, Mr. P.S. Sudheesh, Mr. S. Kandan, Mr. V. Mohan, Mr. K. Madhu and Mr. K.K. Joe for various help rendered to me during the research work.

I am very much grateful to Mrs. Sajitha, C.M.F.R.I., and Mrs. Aisha Suresh, Coastal Impex for typing the thesis, Mr. M.K. Sasi, Coastal Impex and Mr. John, Canon Xerox for xeroxing the thesis.

Above all I am very much indebted to Indian Council of Agricultural Research for awarding me the research fellowship, under the ICAR-Adhoc Scheme, "Population genetic studies on oil sardine, Sardinella longiceps to identify distinct genetic stocks".