Author wishes to express his sincere and deep gratitude to Dr. Bijon Roy, Associate Professor, Department of Experimental Medical Sciences, Institute of Post-graduate Medical Education & Research, and now, Associate Professor, Department of Biophysics, School of Tropical Medicine, Calcutta, Honorary Lecturer, Department of Physiology, University of Calcutta, and Extramural Lecturer, College of Medicine, University of Calcutta, who originally introduced him into this field of research and under whose guidance the present work has been carried out.

Thanks are also due to Prof. S.R. Mukherjee, Department of Experimental Medical Sciences, Institute of Post-graduate Medical Education & Research, Calcutta for the facilities obtained. The author is indebted to Prof. M.K. Chhetri, Professor-Director, Department of Medicine, and Prof. N.M. Banerjee, Professor-Director, Department of Radiology Institute of Post-graduate Medical Education & Research, Calcutta for their kind and thankful co-operation and for the technical facilities obtained. Grateful thanks are also due to Dr. S. Ghosh, Department of Experimental Medical Sciences and Dr. (Mrs.) Geeta Mukherjee, Department of Obstetrics & Gynaecology, Institute of Post-graduate Medical Education & Research, Calcutta, for their assistance throughout the work and also Sri Ajoy Chaudhuri, Physicist, Department of Radiotherapy, Institute of Post-graduate Medical Education & Research,
Calcutta, for his technical help in processing the data. Author wishes to express his gratitude to the Director, Institute of Post-graduate Medical Education & Research for permitting him to carry out the work and for the facilities obtained. The author is deeply indebted to A. Bose, Physicist, Department of Radiotherapy, Medical College, Calcutta, and Sri R. Ghose and the technical staff of the Department for the facilities given to him and for the technical help rendered during animal irradiation. The author also takes this opportunity to express his gratitude to Prof. B.K. Chakravarty, Principal, Medical College, Calcutta for his kind permission to utilize the facilities of the tele-caesium source for animal irradiation purpose. The author is also indebted to Dr. N. Ganguli, Head, Department of Pathology, and Dr. T. N. Ghose, Head, Department of Protozoology, and Prof. J. K. Sarkar, Head, Department of Virology, School of Tropical Medicine, Calcutta, for their kind help and interest in the work.

Author also wishes to thank Mr. H. Bagchi for typing out the manuscript and Mr. N. Chakraborty and Mr. S. K. Ghosh of School of Tropical Medicine, Calcutta for photographs and illustrations. Grateful acknowledgements are also due to Dr. P. C. Adhikari, Sri Prabir Lahiri, Sri Bikash Mazumdar, Sm. Sarbari Maitra, Sm. Bunni Gupta and Debashis Ghosh, Department of Biophysics, School of Tropical Medicine, Calcutta for their help in preparation of the thesis.
Grateful thanks are also due to Sri K.L. Bhattacharya, Mrs. Aruna Mitra and Dr. R.K. Sinha, Department of Biophysics, Chittaranjan National Cancer Research Centre, Calcutta for their help in taking the electron-micrographs.

Lastly, the author takes this opportunity to express his deep gratitude to the Director, School of Tropical Medicine, Calcutta, for the facilities obtained.

(Samares. Chaudhuri)