Acknowledgement

It is a great privilege for me to have this opportunity of expressing my indebtedness, profound gratitude and hearty regards to my teacher Dr. Kallol K. Ghosh for his expert, painstaking guidance, farsightedness, undaunted strong will and his positive and simple approach to solve every kind of problems. I have been overwhelmed by his constant encouragement's, extra-cares and affections throughout the tenure of my Ph.D. work. I am quite fortunate to have been associated with him. I would always remain indebted to him for all the things which I have learned from him.

I owe my deep regards and thanks to Dr. G. L. Mundhara, Head, School of Studies in Chemistry, Pt. Ravishankar Shukla University, Raipur for extending me all the necessary facilities and help during my research work.

It is an opportunity for me to express my gratitude for the constant inspiration and support received from Prof. S.G. Tandon (Retd. Prof.), Prof. R. K. Mishra (Retd. Prof.), Prof. V. K. Gupta (Emeritus Prof.), Dr. Rama Pande, Dr. K. S. Patel, Dr. S.A. Bhoite, Dr. M. K. Deb of S.O.S. in Chemistry, Dr. S. C. Naithani, School of Studies in Life Science and Dr. D. P. Kulty, School of Studies in Geology, Pt. Ravishankar Shukla University, Ar. Debashis Sanyal, Engg. College, Raipur for their valuable suggestions and help.

I have been lucky enough to be associated with Dr. S. K. Rajput, Department of Chemistry, Govt. Model Science College, Raipur. He deserves special regards for his constant encouragement and his assistance in the synthesis of hydroxamic acids as well as in reaction mechanisms.

I am greatly indebted to Prof. Kalyan K. Banerjee, JNV University, Jodhpur for providing GW Basic Computer Programme for linear and multilinear regression analysis and Prof. Alejandro C. Olivieri Nanacional de Rosario University, Suipacha Argentina for providing the program Epsilon to determine the stability constants of metal chelates and also for the processing of our data through Epsilon programme.

I would also like to take this opportunity to express my considerable gratitude to Dr. Alessandro Bagno, University of Padova, Italy and Dr. Robin A. Cox, University of Toronto, Canada for their valuable correspondence and highly useful suggestions.
I am highly thankful to our principal Dr. G. D. Sao, Govt. Science College Raipur, Dr. R. B. Subramanian, Head, Department of Chemistry, Govt. Science College Raipur and my colleagues for constant encouragement and valuable suggestions.

I am also thankful to prof. Pradeep Sing Gour, Department of Geology, Govt. Science College, Raipur for his valuable suggestions and assistance in graphics.

I am grateful to Directors of C.D.R.I., Lucknow and R.S.I.C., Nagpur for giving analytical results including IR measurements and elemental analysis.

I convey my grateful acknowledgement and heartiest thanks for co-operation and active assistance of my laboratory colleagues Dr. K. K. Krishnani, Dr. Sharmistha Ghosh, Dr. Santosh Sar, Dr. Santosh Singh Thakur, Dr. (Mrs.) Supriya Roy, Dr. (Ms.) Alka Pandey, Dr. L. K. Tiwary, Dr. Pankaj Tamrakar, Pokhraj Sharma, Ku. S. Tamrakar and Ku. J. Vaidya.

I would also wish to express my thanks to Mrs. Shuvra Ghosh whose affection and support enabled me to work hard to achieve this long cherished goal of finishing my thesis work at the earliest.

I owe my genuine thanks to my friends Dr. Praveen Kadwe, Dilip Dewangan, P. C. Sharma, K. K. Tiwari, Dr. Manish Rai and Dr. Parijat Thakur for their great help towards the completion of the work.

I have no words in expressing my feeling towards my beloved parents Shri I. L. Patle and Smt. Indrakala Patle, my wife Seema, my elder daughter Shimali and my twins childs, Abhinav and Anjali, who have always cared for me and remained very close to me emotionally, despite all the constraints and odds. Infact their love and affection which enabled me to bring this work to the light of the day.

My thanks are also to Mr. Sushil Agrawal, Super Graphics for Raipur, for composing of the thesis and converting the pages in ink to the present mass output.

Lastly, I wish to apologize for any inadvertent omission of the names of persons who had helped me in one way or the other.

Shyam Kumar Patle
Assistant Professor of Chemistry
Govt. Science College
Raipur (C.G.)