ACKNOWLEDGMENT

I look upon gratitudes as one of the noblest human attributes. Hence, for the thanks giving is not mere formality but an expression of a grateful heart.

An acknowledgement is usually taken as a customary ritual with which a thesis or any academic work opens. To me, it is more than a ritual performed in the strict grammar of courtesy. At this point of life, I consider it my proud privilege, pleasure, honour and foremost duty to place on record my humble notes of gratitude and indebtedness to all those who stood besides me in the course of my doctoral research.

It gives me great pleasure to record my deepest sense of gratitude and indebtedness to my esteemed supervisor Dr. Subodh Kumar Jain, Sr. Lecturer, Department of Zoology, Dr. H.S. Gour University, Sagar for his inspiring and able guidance, sympathetic, understanding, continuous encouragement and unfailing interest during the entire course of this research work, without his consistent care and affectionate guidance, the present work would not have been possible. He gave his valuable time, good suggestions and whole hearted co-operation for completion and present shape of this work.

I wish to express my sincere thanks and gratitude to Dr. D.P. Gupta, Professor and Head, Department of Zoology and Dean, Faculty of Life Sciences, Dr. H.S. Gour University, Sagar for providing laboratory facilities and constant encouragement, to carryout this research work.

My sincere thanks are due to Prof. Santosh Kumar, Vice Chancellor, Dr. H.S. Gour University, Sagar, Prof. A.K. Raizada, Department of Zoology and Prof. P.O. Alexender, Department of Applied Geology, Dr. H.S. Gour University, Sagar for their inspiration and valuable suggestions during the course of the study.

I register my deep sense of gratitude towards Dr. (Mrs.) Kalpna Jain, Project Associate (UGC Project) Zoology Department, Dr. H.S. Gour University, Sagar for constant inspiration and to give me homely atmosphere. I would like to thank my best friends lovely Savni and Suhina for giving me good company and homely atmosphere during the course of my research work.
It gives me great pleasure to express my sincere gratitude to Dr. R.K. Kaurav, Mr. Rakesh Shrivastava, Mr. R.K. Vyas, Dr. (Mrs.) Neelam Chaudhary, Dr. Ms. Sunira Shrivastava (R.A.), Dr. Babita Shrivastava, Dr. Manoj Tiwari, Dr. Ashish Pateriya, Dr. (Mrs.) Sarbani Basu, Dr. (Mrs.) Mamta Mishra, Mrs. Sapna Mishra, Mrs. Deepti Jain, Mr. Mahendra Chourasia, Mr. N.P. Dubey and M.I. Shah for their co-operation and needful suggestions during my research work.

I would be failing in my duty if I do not express my gratitude to my family member Mrs. Shanti Devi Mishra (Grand mother in law), Mr. Sushil Kumar Mishra, Mrs. Nirupama Mishra (Father and mother in law), Mr. Ashok Mishra, Dr. (Mrs.) Anupama Mishra, Mr. Dilip Mishra, Mrs. Shobha Mishra, sister in law Mrs. Alka and Dr. (Mrs.) Richa, Udita, Shweta and Mohita, my brother in law Achal and Amol, my father Mr. A.P. Shukla, mother Mrs. Kiran Shukla and brother Meetesh Shukla, who remain as constant source of inspiration, encouragement and blessings that lead me to complete the present work.

I would like to thank my husband Mr. Atul Anand Mishra and my daughter Ananya for their perpetual encouragement in periods of trials and deep devotion and patience during the entire course.

I would like to thank Shri R.R. Patel, Network Computers, Civil Lines, Sagar for his devoted work in typing my thesis.

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

Meeta Mishra