Acknowledgement

Knowledge rests on knowledge; what is new is meaningful because it departs slightly from what was known before. Similar is true with research also. In my opinion, doing a Ph.D. is a sacred task and this was definitely one of the best decisions of my life. Additional energy and vitality for the research was provided externally through various sources. It is a pleasant aspect that now I have an opportunity to express my gratitude for all of them who directly or indirectly contributed towards its completion.

Firstly, I express my special thanks to God in the completion of the thesis, because without Almighty's blessing it is not possible to submit the thesis in due time.

Foremost I express my deep sense of gratitude and indebtedness to my supervisor Dr. Mangla Bhide, M.Sc., Ph.D., F.A.Z., F.I.S.D.B., F.A.E.B., F.I.A.E.S., F.S.E.Sc., Reader in Environmental Biology, Department of Zoology, Dr. H.S. Gour Vishwavidyalaya, Sagar (M.P.) for her ungrudging this work. Her encouraging assessment, affectionate words and ever available patience always kept me charge and motivated to perform to best ever in the condition of ups and downs.

I would like to express my deep sense of gratitude to professor Dr. O.P. Gupta, Head of the Department of Zoology, Dr. H.S. Gour Vishwavidyalaya, Sagar (M.P.) for providing the necessary laboratory facilities and encouragement during the research work.

I am thankful to all teachers of the Zoology Department, Dr. H.S. Gour Vishwavidyalaya (M.P.) for the help and suggestions received whenever I needed.

I owe my respect to all the non teaching staff of my Department for their whole hearted support during my research work.

At every step of this venture my beloved Papaji Dr. Ramesh Prasad Agrawal, Mummiji Smt. Kusumlata Agrawal shared with one all the moments of different colours with immense love and ever available patience. My respect and profound affection is beyond the range of inscription of words.

From the core of my heart I extend special thanks to my senior Dr. Rjkia Rai, Dr. Preeti Nema, Shikha Jain, Abha Jain, Rita Gour, Ujjawal Dubey, Akhilesh Choudhary, Uday Tiwari, Shailendra Badal and my juniors Deepiti Tomar, Parul Jain and Poonam Tiwari. They extended fruitful help in solving and discussing many problems, which arose during this research work.
I wish to recall my thanks to my closest and dearest friends, Pushpadi, Dr. Anjali, Purnima, Sangeeta, Sapna, Richa, Kavita Rohit, Chhaya, Pyusha, Sujata, Kavita, Mrs. Ila, Kalpana, Mrs. Sapna, Neelam Sanskriti di, Rinki, Ruchi, Seetu, Ravindra for their valuable co-operation and encouragement.

My sisters and brother are very precious to me like rare gems. My loving elder sisters Smt. Shraddha Agrawal and Smt. Shrashti Agrawal need a special mention as they emulate me for better and better. They loving and caring attitude and careful listening of perform my work up to my satisfactory level.

I acknowledge my deep sense of gratitude to my Bhaiya Dr. Saurabh Agrawal and Bhabhi Dr. Shraddha Agrawal for providing moral support to completion of my research work.

I heartily express my gratefulness to my Jijaji Mr. Santosh Agrawal and Mr. Mukesh Agrawal for their constant encouragement and inspiring to achieve my objective.

I am particularly happy to acknowledge to my adorable Dadi Ji Smt. Bhagwati devi Agrawal for invaluable inspiring and caring attitude, exquisitely super help in solving many difficulties.

I can’t forget at this movement to express my heartfelt and sincere thanks to my warden Mam Dr. Janak Dulari Ahit for her caring attitude and moral support during my research work.

My special thanks and deep regards are due to my respected father in law Shree T.N. Agrawal and mother in law Smt. Shakuntla Agrawal for their inspiration and encouragement.

I am highly thankful to all the members of my in laws family for their kind support and encouragement.

A bunch of special thanks to Neelratan Bhaiya, Goutum Bhaiya and Sonu Bhaiya for their hard work and very cooperation attitude.

Last, but certainly not the least, I express my deep fervency to my husband Mr. Samar Agrawal. His devotion and gracious demeanour made it possible for me to bring this humble attempt to completion.

Lastly I would like to extent, my deep sense to gratitude to all those who have directly or indirectly contributed in the completion of my Ph.D. thesis.

Shubhra Agrawal