

Preface

Animal science, Zoology, has contributed a lot to our knowledge on the exploration and inventorization of the fauna. Since Linnaeus, as many as, 1719183 species have been named, it is great challenge for the modern zoologists/ taxonomists to explore and identify innumerable number of them from different zoogeographical regions of the globe.

But the man, which is on top of animal kingdom, as a species is fool and as an individual is wiser and wants to command each thing in his favour. Further, man is such a species having no breeding seasons and continues to grow in all seasons and hence we have population explosion, environmental crisis, decline of biodiversity and what not? It seems that our laws are being violated with impunity and the system has almost been collapsed. Keeping this in view, to save the animal kingdom from extinction, the present book will be helpful in conservation of biodiversity and germplasm so that sustainable development will be achieved.

My special thanks and appreciation go to the scientists whose contributions have enriched this volume. I wish to express my sincere gratitude to Dr. P. C. Hembram, Hon'ble Vice Chancellor, S. K. M. University, Dumka who has been a source of constant inspiration. I am especially thankful to Professor (Dr.) B. N. Jha, Hon'ble Pro Vice-Chancellor, S. K. M. University, Dumka for his encouragement. I owe my special thanks to Professor M. C. Dash, Hon'ble Vice Chancellor of Sambalpur University, Professor N. C. Datta of Calcutta University, Professor S. K. Konar of Kalyani University, Professor P. S. Murthy of Bangalore University, Professor P. Natarajan of Trivandrum University, Professor S. P. Roy of Bhagalpur University, Professor A. K. Quereshi of Bhopal University, Professor Tanmay Bhattacharya of Midnapore University, Professor P. C. Mishra of Sambalpur University, Professor B. D. Joshi of Hardwar University, Professor G. C. Pandey of Faizabad University, Professor K. C. Sharma of Ajmer University, Professor M. Raziuddin of Hazaribag University, Professor U. S. Bagde of Mumbai University, Dr. M. P. Sinha of Ranchi University, Professor Gurdeep Singh of I. S. M., Dhanbad, Dr. P. K. Goel of Karad, Dr. M. C. Varma and Shri T. Poddar of Bhagalpur University. I also acknowledge the incentives provided by one of my research scholars, Dr. Chandan Bohra, Head of Zoology, B. S. K. College, Barharwa. for helping me actively in bringing out this book.

I also express my deep sense of gratitude to my parents whose blessings have always prompted me to pursue academic activities deeply. I am also thankful to my sweet wife, Professor Kumari Bimla and my two lovely sons, Kumar Pallav Shivshankaran and Kumar Prasun Ramakrishnan whose natural smiles extended to me relief all through this tiresome endeavour.

Last but not the least, I am also thankful to Mr. Anil Mittal, Proprietor, Daya Publishing House, Delhi for taking keen interest in bringing out of this book. Finally, I will always remain a debtor to all my well-wishers for their blessings, without which this book would not have come into existence.

Dumka

Professor Arvind Kumar

Preface

Animal science, Zoology, has contributed a lot to our knowledge on the exploration and invention of the fauna. Since Linnæus, as many as 17,183 species have been named. It is great challenge for the modern zoologists/taxonomists to explore and identify innumerable number of them from different zoogeographical regions of the globe.

But the man, which is on top of animal kingdom, as a species is fool and as an individual is wise and wants to command each thing in his favour. Further, man is such a species having no breeding seasons and continues to grow in all seasons and hence we have population explosion, environmental crisis, decline of biodiversity and what not? It seems that our laws are being violated with impunity and the system has almost been collapsed. Keeping this in view, to save the animal kingdom from extinction, the present book will be helpful in conservation of biodiversity and zooplasm so that sustainable development will be achieved.

My special thanks and appreciation go to the scientists whose contributions have enriched this volume. I wish to express my sincere gratitude to Dr. P. C. Hembram, Hon'ble Vice-Chancellor, S. K. M. University, Dumka who has been a source of constant inspiration and especially thankful to Professor (Dr.) B. N. Jha, Hon'ble Pro Vice-Chancellor, S. K. M. University, Dumka for his encouragement. I owe my special thanks to Professor M. C. Dash, Hon'ble Vice-Chancellor of Sambalpur University, Professor N. C. Datta of Calcutta University, Professor S. K. Kishor of Kalyani University, Professor S. K. Roy of Bangalore University, Professor B. Natarajan of Tirunelveli University, Professor S. P. Roy of Bhubaneswar University, Professor A. K. Quereshi of Bhopal University, Professor J. V. Bhatnagar of Midnapore University, Professor R. C. Mishra of Sambalpur University, Professor B. D. Jais of Hardwar University, Professor G. C. Pandey of Patna University, Professor G. S. Sharma of Patna University, Professor M. Razindran of Huzandag University, Professor U. S. Baidya of Mumbai University, Dr. M. P. Sinha of Ranchi University, Professor G. Singh of S. M., Dhanbad, Dr. P. K. Goel of Kanpur, Dr. M. C. Varma and Shri T. Poddar of Bhubaneswar University. I also acknowledge the incentives provided by one of my research scholars, Dr. Chandra Boina, Head of Zoology, B. S. College, Barharwa, for helping me actively in bringing out this book.