

PREFATORY NOTE

Zoology is a branch of science which mainly deals with animals. Investigating the various animals from basic and applied research point of view, their impact on environment and discovering its unknown facts has been fundamental to the researcher of Zoology. The researches on animals and its contribution to the understanding of the vast nature constitute an important part of man's perennial quest for enlightenment. Every age registered its own milestone in the unending process of research. To know the kind of researches going on in the various parts of the country and the scientists engaged in them research publications and research seminars have become indispensable in the modern scientific age.

Post-graduate Department of Zoology, S.C.A. Govt. P.G. College, Jhabua had an honour of organising a National Research Seminar on "Modern Trends of Research in Zoology." (Jan. 21st and 22nd, 1995). This seminar was sponsored by Department of Higher Education, M.P. Govt. In addition to the participation of eminent Scientists and Professors of various colleges and research institutions, this seminar was also addressed by Honourable Cabinet Minister for Tribal Welfare, Govt. of M.P., Shri Kantilalji Bhuriya. He exhorted the scientists to come out of the confines of their laboratories for a while in order to heed to the local and regional challenges and suggest practical scientific solutions for the various problems that crop up here and there locally. Other dignitaries who addressed the inaugural function were Dr. D.K. Belsare, Director, Institution of National Resources and Human Environment, Bhopal, Dr. S.S. Shrivastava, Addl. Director, Deptt. of Higher Education, Indore-Ujjain, Division, Bhopal, and Shri Manoj Jhalani, Collector, Jhabua.

We on behalf of the Organising Committee would like to extend our sincere thanks to all of them for their gracious presence and encouraging address. With the view of making this event memorable, we have decided to publish the best of the papers presented or accepted for the presentation in the form of a Book. We hope that the scholars and the researchers would find this book interesting and immensely useful. We express our deep sense of gratitude towards RBSA, Publishers, Jaipur, who readily accepted to take-up this project.

In this book we have grouped papers into seven chapters. Each chapter bears a title. The first chapter of "Environment, Wild life and Biodiversity" contains three valuable solution-oriented papers. Dr. H.K. Jain (Institute for Resources Conservation, Bhopal M.P.) highlighted combating desertification through people's participation while Dr. D.K. Belsare (Inst. of Nat. Res. and Human Env., Bhopal, M.P.) suggested gene-pool fragmentation hypothesis for fast vanishing wild life and Dr. D.N. Saxena (Jiwaji Univ, Gwalior, M.P.) proposed concept of protected areas for Biodiversity conservation.

The second chapter of this book deals with the toxicity and pollution studies. Dr. A. P. Rao and P. P. Sood (Saurashtra Univ. Rajkot, Gujrat) in their research paper focussed on the changes in nucleotide degradation enzymes and cholesterol during heavy metals intoxication and detoxication. Shri Deepak Shinde and Mrs. S. Shinde (Gov. College Jhabua, M.P.) also dealt with the effect of a heavy metal on cholesterol and glucose level and the possible recovery through 'Spemen' drug. Toxicity of dietary selenium has been discussed by Dr. A.K. Gupta and Dr. S. Mathur and Dr. A.K. Gupta and Dr. M.K. Acharya (Rajasthan Agri. Univ., Udaipur, Rajasthan). Dr. Maya Uttamchandni (I.K.D. College, Indore, (M.P.) presented the impact of textile pollution on R.B.C. count, while Toxicity of Isoproturou, 2,4-D and paraquat to fish and their seed was

discussed by Dr. K.D. Mishra (S.K. Jain College, Vidisha, M.P.) and his team members.

The third chapter includes papers on endocrinology. In this chapter Dr. Kar (D.A. Univ. Indore, M.P.) suggested Radio-immunoassay technique for hormones estimation, while Dr. P.B. Reddy and Dr. S. Mehta (Govt. College Khachrod and Ratlam, M.P.) discussed seasonal changes in thyroid concentration. Dr. M.M. Prakash and Reena Shrivastava (Govt. College, Jhabua M.P.) detailed the structure of Nucleus lateralis tuberis in fish, whereas, Dr. M.S. Chauhan (Govt. College, Rampura, M.P.) presented histochemical nature of Pineal Organ in fishes.

Chapter four deals with the findings in the field of parasitology. Now-a-days a few scientists are working in this field in comparison to the other branches. Dr. B.V. Krishna Rao and V. V. Vardhni (Nagargjuna Univ., Andhra Pradesh) described hypochlesterolemia in marine *Ancylostomiaris*, while Dr. R. Baghereval (Veterinary College, Mhow, M. P.) and Dr. Ashok Sharma (Govt. Auto. Holker Sci. College, Indore M.P.) discussed susceptibility of ticks to Ascaricides, Dr. P.K. Sanghvi (Gov. College, Jhabua M.P.) highlighted immune response during experimental infection of *N. dubius* and Dr. H. Mehta (Krishi Vigyan Kendra, Jhabua M.P.) presented morphology and clinical observation of *T. annulata* under experimental conditions.

Chapter five includes people related to the Economic Zoology. In this chapter Dr. T.P.S. Chauhan, Dr. V. Lakshmanan, Dr. E. Rajalakshmi and Dr. V. Thiagarajan (Reg. Seri. Res. Station, Coonoor, Tamil Nadu) discussed Biotechnological approach for the improvement of sericulture. Dr. S.R. Ramgiri, Dr. H.K. Mehta and Sri. I.S. Tomar (Krishi Vigyan Kendra, Jhabua, M.P.) in his paper assesses yield losses caused by certain insects, while in another paper Dr. Ramgiri alongwith Dr. Y. Mishra, Dr. R. Singh (K. V. K. Jhabua M. P.) discussed sources of resistance to loose smut, wireworm insect of wheat.

The sixth chapter includes those research papers which mainly deal with limnology—relatively a new branch which is gaining a lot of attention during recent years. Dr. J.P. Kaushik and Ku. S. Saxena, (Jiwaji Univ., Gwalior, M.P.) described effects of flora and fauna on fish population of a pond, while Dr. M.M. Prakash (Govt. College, Jhabua M.P.) pointed out some salient features of a wintering habitat of aquatic birds, whereas Dr. R.K. Dave (Govt. College Dhar, M.P.) Dr. N.K. Dhakad (Govt. College Indore, M.P.) and Dr. M.M. Prakash studied Secchi Disc Transparency and its relationship with Ph and productivity. Mrs. Saroj Shrivastava (M.P. Pollution Board, Indore) assessed the water quality of River Narmada.

The Seventh and last chapter includes Biology of snake (Mrs. Madhu Vyas & Dr. T.P. Vyas, Govt. College, Dhar).

We are thankful to the Deptt. of Higher Education, Govt. of M.P. for entrusting us with the prestigious responsibility of organising a national level research seminar. The Editorial Board is indebted to the learned referees who have taken pains for assessing the suitability of papers to be included in this book. We also thank the contributors for submitting their research findings.

We are grateful to Dr. S.S. Shrivastava, Additional Director, Higher Education, Indore-Ujjain-Division, Madhya Pradesh Govt., who has been kind enough to go through the manuscript and also consented to write a Foreword for this book. He had been a constant source of inspiration and guidance throughout the proceedings of the Seminar. Finally, editors wish to express their heartiest thanks to Dr. T.K. Dwiwedi, Principal, S.C.A. Govt. P.G. College, Jhabua (M.P.) for providing requisite facilities, encouragement and support.

P.K. Sanghvi and D. Shinde

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