PREFACE

Use of venoms as medicine has been illustrated in old Indian writings by Sushruta and Nagarjuna as early as 2500 B.C. and 800-700 B.C. respectively. In India, particularly two institutions, The University Colleges of Science and Technology, Calcutta University, Calcutta, and The John Hoffkins Institute, Bombay, are pioneer in venom research.

In the University Colleges of Science and Technology, Calcutta University, venom research was initiated in the year 1936 by Prof. B.N. Ghosh and later on by Prof. B.B. Sarkar, in collaboration with an able scientific team formed by the persons like Dr. N.K. Sarkar, Dr. S.R. Maitra, Dr. Anima Devi, Dr. D.K. Chaudhuri, Dr. S.S. De and others, with the prime object of utilizing these valuable natural resources not only against the hazards of snake bites but also for implementation of the venom as basic medical tool for human welfare. Their researches have opened up a new era in the field of venom research and suggested enormous possibilities. With this perspective in view the research programme has been undertaken by the present author primarily to rejuvinate such researches in the Department of Physiology and the University Colleges of Science and Technology as well on cobra (Naja naja) and Russell's viper (Vipera russelli) venoms.

Keeping this in mind, the author has considered presenting within the feasible limit a short review of the present-day knowledge on toxicilogy, pharmacology, physiology and isolation of different snake venoms (Chapter I). Toxicology of snake venoms of cobra and Russell's viper with special reference to comparative studies on toxicology in different animal species as well as on the effects of different heat treatments on toxicity has been presented in Chapter III. Chapter II deals with methods and materials. Certain pharmacological and physiological studies with

with heated venoms, suggesting a possibility that Russell's viper venom heated at 100°C for 30 minutes can be utilized in the resuscitation of the respiratory failure, are presented in Chapter IV. Separation through Sephadex G-50 has provided isolation of different proteinacious materials from both cobra and Russell's viper venoms heated at 100°C for 30 minutes, having different biologica properties. The isolated factors from cobra venom heated at 100°C for 30 minutes do not show any significant biological effects, but those from Russell's viper venom solution heated at 100°C for 30 minutes show some definite medical importan and are presented in Chapter V.

Within the laboratory limitations the author has tried her best to hint at some ideas about the future possibilities of medical scope for utilization of venoms towards the benefit of mankind, which, although small, will add new facts to the existing body of knowledge of the subject.

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