



World's Deadliest Venomous Animals

Prof. Ashis K Mukherjee

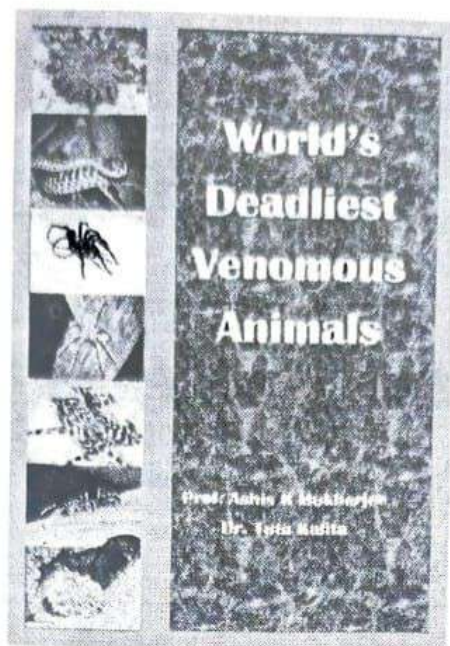
Dr. Tutu Kalita

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Published by: IASST, Guwahati

Authors: Prof. Ashis Kumar Mukherjee and Dr Tutu Kalita

Publisher: Publication Cell Institute of Advanced Study in Science and Technology, Vigyan Path, Boragaon Paschim, Garchuk, Guwahati-781035, Assam, India.

First version: November 2025

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ISBN : 978-81-962249-9-8

Cover Image : Dr. Tutu Kalita

Cover Design: Dr. Tutu Kalita

Printer: Eskebee, Chandmari, Guwahati-03

Price : Rupees 300.00

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Professor Ashis Kumar Mukherjee is the Director of the Institute of Advanced Study in Science and Technology (an autonomous R & D institution under the Department of Science and Technology, Ministry of Science and Technology, Government of India) located in Guwahati, Assam. He is also an Outstanding Professor at the Academy of Scientific & Innovative Research (AcSIR), Ghaziabad, Uttar Pradesh. Prof. Mukherjee secured first division in Bachelor of Science (B.Sc) Chemistry from Banaras Hindu University and first division in Master of Science (M.Sc) in Biochemistry from the same University and was awarded the Gold Medal. He completed his PhD at Burdwan Medical College under the University of Burdwan, where he researched snake venom. Subsequently, he obtained a D.Sc. degree from the University of Calcutta, where he studied biochemistry and biotechnological applications of snake venom enzymes.

Prof. Mukherjee has worked tirelessly for nearly 30 years on snake and scorpion venom, the treatment of snakebites and scorpion stings, and the discovery of life-saving drugs made from snake venom.

Prof. Mukherjee is an experienced teacher with over 28 years of teaching experience at the postgraduate level at Tezpur Central University. Notably, he was the Head of the Department and Coordinator of the Department of Molecular Biology and Biotechnology at Tezpur University. Prof. Mukherjee was the Dean of Research and Development (2016 - 2019), Tezpur University, Head and Coordinator, DBT Nodal Cell for Medical Colleges and Biomedical Research Institutes of NE India, etc.. He has published

over 190 research papers in national and international journals, several books and book chapters and guided 20 PhD students. He has been honoured with many prestigious awards and medals for his academic excellence and research achievements, the most notable being the Presidential Award for Research on Snake Venom in Basic and Applied Sciences from the Hon'ble Shri Ram Nath Kovind, former President of India, in 2018. Prof. Mukherjee is a member of the Task Force on Research on Snake Venom of various agencies of the Government of India, such as DBT, ICMR, and WHO.

Dr. Tutu Kalita:

Dr. Tutu Kalita completed B.Sc. in Biochemistry from St. Edmund's College and her M.Sc. in Biochemistry from North-Eastern Hill University (NEHU), Shillong. Dr. Kalita earned her Ph.D. in Enzyme Biotechnology from the Department of Biochemistry, NEHU, Shillong. She has also worked as a research associate at IIT Guwahati, Assam, and as a Scientific and Technical Assistant at IASST, Guwahati thus gaining valuable experience in advanced scientific research.

In addition to her focus on enzymes, Dr. Kalita is deeply interested in investigating the effects of proteins, inhibitors, and synthetic drugs at the cellular level, contributing to a broader understanding of their biological and therapeutic potential.

Preface

Venomous species throughout the Tree of Life depend on their capacity to create and administer intricate chemical mixtures into other organisms for defence, competition, and predation. Nature hosts more than 200,000 species of venomous animals, encompassing everything from tiny insects to larger mammals.

Venomous creatures have intrigued and terrified humanity for countless ages, symbolizing the natural world's fragile balance between existence and demise. The box jellyfish possesses a neurotoxic sting, while the king cobra, the largest venomous snake, wields a potent venom capable of quickly killing humans. These creatures have evolved extraordinary biochemical tools for survival, defence, and hunting strategies. Although their harmful characteristics may evoke apprehension, venom possesses considerable scientific importance and presents substantial opportunities in pharmacology and medicine.

The World's Deadliest Venomous Animals delves into the intriguing world of venomous species, investigating their biology, ecological significance, and effects on human health. This book explores the variety of venomous creatures, emphasizing their distinctive methods of venom delivery and their remarkable adaptations. Every chapter meticulously examines the composition of venom, its physiological effects, and the currently available treatments.

This book caters to students, scholars, and enthusiasts keen to explore the intricacies of venomous species and their significance in the natural world. The World's Deadliest Venomous Animals

aims to cultivate a greater understanding of these remarkable beings, moving past their intimidating image by sharing scientific findings in a captivating and approachable way.

We sincerely appreciate the researchers, institutions, and scholars whose significant contributions to venom research have motivated this work. We aspire for this book to spark curiosity and promote further exploration in toxicology, ultimately paving the way for discoveries that will enhance science and medicine.

Ashis Kumar Mukherjee

Tutu Kalita

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