

'Toxinology: An emerging area in Biomedical Science and its therapeutic application'

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Animal kingdom possesses numerous poisonous species that produce venoms (actively delivered) or toxins (passively delivered). Poisonous animals are found in most classes of the Animal Kingdom and in most habitats, both terrestrial and marine. Animal toxins are not to be understood as substances of random occurrence; they are of great importance in ecology. The venom-secreting organs have developed in a wide variety of ways and serve either as an offensive weapon or for protection against enemies. Accordingly, we may distinguish between actively venomous and passively venomous animals. There are other animals that are toxic rather by chance and due to extraneous factors; these we may call poisonous animals. Research into animal toxins is important from both the chemical and the biological points of view. In addition to basic knowledge, we may hope for interesting phylogenetic results from such research. Poisonous animals have a significant health problem for populations in the world and are neglected environmental diseases of the rural tropics. Poisonous animals include a variety of animal species; sea snakes, stinging fish, jellyfish, corals, cone shells, blue ringed octopuses, sea urchins, snakes (elapids, vipers, and rattlesnakes), scorpion, spiders, bee, wasp and ant. Poisonous animal are rich sources of toxins that often target-with high potency and variable specificity. Animal toxins have made a significant contribution to enhancing knowledge in human physiology and pharmacology. Information on the nature and mechanism of action of these toxins has enabled a more scientific approach to the treatment of their intoxications. This lecture enlightens the knowledge about the various aspects related to the name, habitat, biological and medical importance of poisonous animals of different major animal phyla and the mechanism of venoms or toxins toxicity and therapeutic uses of particular fractions of venoms or toxins from different sources. The present authors worked out with animal toxins and their bye products since for last 25 years. This lecture delivers an information on animal toxins and its biomedical importance which may be a good resourced for researchers and clinician and students of biological sciences.