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LETTER TO EDITOR

Could Deadly Snake Venom Save Lives?

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هل يمكن أن يكون سم الأفعى مُنقذِا للحياة؟

ياجنافالكا بانيرجي، رياض بيومي، سيد فاروق

Figure 1: *Atractaspis micropholis andersoni,* commonly known as the mole viper, found in Oman and Southwestern Saudi Arabia. The average size of an adult snake is about 45 cm, with some growing up to 75 cm.

Figure 2: *Echis carinatus,* commonly known as the saw scaled viper, found not only in Oman and the Middle East, but also in the Indian sub-continent and central Asia. Size ranges between 38 and 80 cm in length, but usually no more than 60 cm

Snakes have always been creatures of myth, intriguing but fascinating, and long associated with good as well as with evil, representing life and death, creation and destruction. However, in modern times with the advent of scientific know-how, one aspect of these captivating creatures has given birth to a research discipline, christened "snake venom research", specifically pertaining to venomous snakes. Now, "What is snake venom?"

Snake venoms are complex mixtures of pharmacologically active polypeptides and proteins, and are therefore veritable gold mines for various drug leads.[1] A case in point is Captopril, the first venom-based drug, discovered in 1975 from *Bothrops jaracusa* (the Brazilian arrowhead viper venom) by Nobel Prize winner Sir John Vane and later commercialised by the pharmaceutical giant Squibb. Captopril is an angiotensin-converting enzyme inhibitor and therefore a potent anti-hypertensive agent.[2] At present in the Sultanate of Oman, there are 9 species of poisonous snakes (see Figures 1 and 2 for images of two of the venomous species), but little is known about the venom biochemistry of these enthralling serpents. One of the long term scientific interests of the lead authors of this communication has been to study the biochemistry of venoms in order to identify novel pharmacologically active molecules. In this endeavour, a team has been formed in the Department of Biochemistry in the College of Medicine and Health Sciences at Sultan Qaboos University. This group, designated the Venom Research Group, consists of Drs. Yajnavalka Banerjee, Professor Riad Bayoumi, Yahya Al-Tamimi and Naseer Al-Nazwani. Mr Seyad Farook of the University Small Animal House, who is in charge of the University herpetarium, is also an ardent member of this team. The team aims to obtain insight into the venoms of these 9 species of serpents through diverse proteomic and transcriptomic tools, which will hopefully lead to the identification of drug leads targeting some common

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human diseases. Additional goals of the Group include mapping the geographical distribution of these species as well as studying the evolution of these snakes. Researchers from the Ministry of Defense, under the supervision of Dr Yahya Al-Rashdi, will also participate in this project. Scientists from Saudi Arabia and Ministry of Health in Oman have also expressed their keenness to contribute towards this endeavour. In line with the enthusiasm expressed by researchers and clinicians, and in order to establish a more holistic group of researchers a workshop was organised on the 31st of March 2010 under the theme of "Initiatives into Snake Venom Research", which aimed at informing the scientific community and the general public about the immediate and long term goals of this project. In summary, we sincerely believe that the above project provides the revelation that "Deadly snake venom does have the potential to save life".

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