

**TOXICOLOGICAL STUDIES OF *I JNGARUS* (KRAIT)
VENOM IN MICE**

THESIS PRESENTED BY

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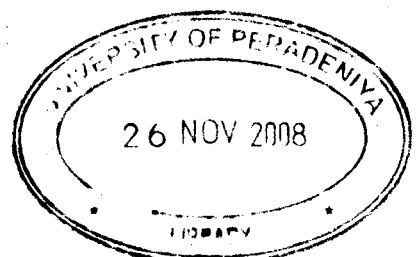
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TOXICOLOGICAL STUDIES OF *BUNGARUS* (KRAIT) VENOM IN MICE

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Snakebite is one of the leading causes of accidental deaths in Sri Lanka. There are six species of snakes in Sri Lanka, which are considered highly venomous and include two species of *Bungarus*, namely *Bungarus caeruleus* and *Bungarus ceylonicus*. *B. caeruleus* carries the highest case fatality among these species. The study was designed to assess their median lethal dose following intramuscular administration to mice and also to investigate the histopathological changes produced following administration of venom from *Bungarus* snakes found in Sri Lanka and also

The median lethal dose of *B. caeruleus* and *B. ceylonicus* were determined following administration of serial dilutions of venom to mice intramuscularly. The time of death of mice since injection of venom as well as the total number of mice dead at 24 hours in each concentration of the venom samples was recorded. Median lethal dose following intramuscular administration of venom was 0.953 (0.807 - 1.121) $\mu\text{g}/\text{mouse}$ for *B. caeruleus* and 7.123 (6.791-7.5) $\mu\text{g}/\text{mouse}$ for *B. ceylonicus*, (Average weight of mouse was $27.37 \pm 1.41\text{g}$).

Venom of *B. caeruleus* and *B. ceylonicus* were injected to different groups of mice at concentrations of 0.5, 1.0 and 2.0 $\mu\text{g}/\text{mouse}$. The mice were anaesthetized and tissue samples of liver, brain, kidney, cardiac and skeletal muscle were obtained at different time intervals: 1, 3, 6, 12 and 24 hours. They were fixed in formaline, processed in a series of alcohol and xylene and

stained with haematoxyline and eosine. Histopathological changes of these tissues were studied light microscopically. There were tissue congestion and inflammatory infiltration in sections of liver, kidneys and brain following injection of both *B. caeruleus* and *B. ceylonicus* venom. In addition there were necrotic foci in the liver and brain.

In conclusion, the action of both *B. caeruleus* and *B. ceylonicus* venom is seen predominantly in the brain, liver and the kidney. The toxicity of *B. ceylonicus* venom is much lower compared to *B. caeruleus* venom.