Perils at lunch: Mortality during feeding in macrostomatan snakes and other ectotherm stories.

Yurii V. Kornilev1,2,3*, Nikolay D. Natchev2,3, and Harvey B. Lillywhite4
* E-mail: yurii.kornilev@nmnhs.com

Erasmus Student
Workgroup: Patrick Lemell

1 Vertebrates Department, National Museum of Natural History, Sofia, 1 Tsar Osvoboditel Blvd, 1000 Sofia, Bulgaria
2 Department of Integrative Zoology, Vienna University, 14 Althanstrasse, 1090 Vienna, Austria
3 Faculty of Natural Science, Shumen University, 115 Universitetska Str., 9700 Shumen, Bulgaria
4 Department of Biology, University of Florida, Gainesville, Florida 32611-8525, U.S.A.

Snakes are able to immobilize, ingest, transport, and swallow prey of relatively large size as well as dangerous items such as other predators, hard-biting, spiny, or toxic prey. Various incidents have been reported of snakes failing to complete the prey consumption process and being injured or killed during different phases of feeding. Here we provide the first extensive review of such incidents, including 45 publications describing over 68 mortality cases caused by ingestion or attempted consumption of injurious prey. We also report 12 previously unpublished cases from the USA and Bulgaria, including mortality of five juvenile piscivorous snakes (*Natrix tessellata) from one location. Overall, we identified species representing at least 6 families and 29 genera. We discuss different feeding scenarios that can lead to negative or even fatal impacts of prey on predatory snakes, and we classify such incidents into four major categories. We discuss a special case of the highly toxic and invasive Cane toad (*Rhinella marina) in Australia and other locations in which it has been introduced. We perform a meta-analysis of the characteristics of the accumulated data in an attempt to elucidate overarching causes that led to the snakes’ mortality. We conclude the review with a set of general conclusions and propose ideas for further research.