

## **Deadly Sea Snakes: Alike But Not The Same**

**Monday, December 03, 2012**

<http://www.asianscientist.com/in-the-lab/australian-and-asian-beaked-sea-snakes-2012/>

*AsianScientist* (Dec. 3, 2012) - Researchers from Australia and Indonesia have discovered that the lethal beaked sea snake (*Enhydrina schistosa*) is actually two species with separate evolutions, which resulted in identical snakes.

Senior author Associate Professor Bryan Fry from The University of Queensland said the Australian and Asian beaked sea snakes were originally thought to be from the same species, however, in comparing their DNA, the research team had found these two snakes were unrelated.

Analyses of five independent mitochondrial and nuclear loci for populations spanning Australia, Indonesia, and Sri Lanka indicate that this 'species' actually consists of two distinct lineages in Asia and Australia that are not closest relatives.

The finding, published recently in the journal *Molecular Phylogenetics & Evolution*, is an example of a situation where two species evolved separately but ended up looking similar - a phenomenon known as convergent phenotypic evolution, says Fry.

Convergence in the characteristic 'beaked' morphology of these species is probably associated with the wide gape required to accommodate their spiny prey, he explained, as both species occupy the same specialized habitat of silt-filled shallows of tropical estuaries throughout the Asian and Australian regions.

The beaked sea snake is also responsible for the large majority of recorded deaths and injuries from sea snake bites.

Fortunately, the only available sea snake anti-venom available - raised against the Malaysian *E. schistosa* - is also effective against the new Australian species.

“This mixup could have been medically catastrophic, since the CSL sea snake antivenom is made using the venom from the Asian snake based on the assumption that it was the same species,” said Fry. “Luckily, the antivenom is not only very effective against the Australian new species but actually against all sea snakes since they all share a very stream-lined fish-specific venom.”

The Asian snake will retain the original name *Enhydrina schistosa*, while its Australian counterpart has been elevated to species status and is provisionally referred to as *Enhydrina zweifeli*, which identifies the region in New Guinea where it is found.

The new snake will be placed in a separate genus to the true *Enhydrina* genus in a follow-up publication that will resolve the complex higher order relationships of sea snakes.

The article can be found at: [Ukuwela KDB et al. \(2013\) Molecular evidence that the deadliest sea snake \*Enhydrina schistosa\* \(Elapidae: Hydrophiinae\) consists of two convergent species.](#)

-----

Source: [University of Queensland](#).

Disclaimer: This article does not necessarily reflect the views of AsianScientist or its staff.