BOOK-ABSTRACT

BURROWING ASPS

Family AtractasPididae

Peter Stafford.

These essentially venomous snakes represent a somewhat unconventional group in that they include species with different dentition and biting mechanisms. Most have fixed, grooved fangs in the rear of the mouth, in which respect they resemble the rear-fanged (opisthoglyphous) colubrids, while others have hollow, movable, front-mounted fangs like those of vipers. Atractaspidids, or burrowing asps, as they may be collectively called, mostly live underground and are highly adapted for burrowing. Their bodies are cylindrical and of about the same circumference throughout, with no discernible narrowing at the neck. The skull is compact, and the small head often has a projecting snout. Many species have tiny eyes. The tail is typically very short, and in some species bears a sharp spine at its tip. Some of the larger species grow to just over 1 m (3.3 ft), though most are considerably smaller.

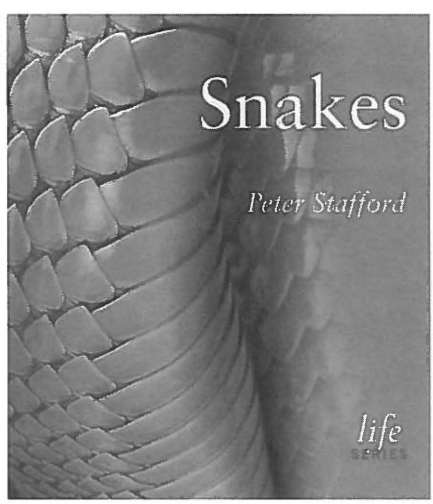
Several atractaspidids are sufficiently dangerous to be considered medically important. The bite of the Natal black snake *(Macrelaps icrolepidot),* in particular, has been known to result in a temporary loss of consciousness, and bites from the larger species of *Atractaspis* may also have serious consequences. The venom is predominantly neurotoxic in its effect, although it also produces local swelling, severe pain, and other symptoms more typical of viper bites.

The Atractaspididae is essentially African in distribution, with some species ranging into the Near East, and occurs in habitats as diverse as rainforest, grasslands, and semi-desert. Except for one species, Jackson's centipede-eater *(Aparallactus jacksonii),* they are all viviparous.

STILETTO SNAKES

Subfamily Atractaspidinae

A group of 18 species contained within a single genus, *Atractaspis,* the stiletto snakes, or 'mole vipers', are remarkable for their disproportionately large, hollow fangs, which are erected independently of each other and extended downwards into a biting position without opening the jaws. There are typically two fangs on each side, one functional and the other a replacement. All other maxillary teeth have been lost, and except for a few on the palatine bones and two or three on the dentaries, the mouth has no other teeth. The venom-injecting apparatus of *Atractaspis* is unusual in a number of other respects, too. Each fang bears a small cutting edge opposite its orifice, and the venom gland in some species, such as the small-scaled stiletto snake



(Atractaspis microlepidota), is extraordinarily long, extending under the skin behind the head for approximately 15% of the body length. The venom itself also has a special composition.

FEEDING AND PREDATOR EVASION

Stiletto snakes hunt and feed underground, largely on rodents and their nestlings, and, without the need to open the mouth to bite, are capable of killing prey in the most restricted of spaces. In delivering the predatory strike, a single fang is erected from whichever side of the head is next to the animal, and jerked sideways, downwards, and backwards with a quick 'stabbing' movement. The rotating maxilla displaces the upper lip, thus opening a slit through which the fang can be extended. Should a foraging snake encounter more than one rodent at a time, it will typically bite and immobilize all avail prey before beginning to feed, and may consume the occupants of an entire nest of mice in this manner if presented with the opportunity. Skinks, amphisbaenians (worm-lizards), frogs, and other snakes are also eaten.

In response to an assault from a predator, stiletto snakes will arch the neck and strike rapidly with a slashing backwards movement. They bite with little provocation, and owing to their peculiar fang erection mechanism and the unusual flexibility of the neck vertebrae, are almost impossible to restrain safely if handled. If molested, an *Atractaspis* may also use the tail-distraction ruse

BELOW: Skull of stiletto snake. Note the enormous fangs. On the basis of their dentition, Atractaspis species were long believed to be vipers. Unlike vipers, however, the fang-bearing maxillary bone pivots on a lateral ball and socket joint, and the fangs cannot be rotated forwards.