

HERPETOLOGIA

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SACRED SNAKES THAT HEAL

By: René van der Vlugt, Pomona 106, NL-6708 CD Wageningen.

English corrections by Kevin J. Hingley.

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The Aesculapian snake (*Elaphe longissima*) is the symbol of the medical profession and for ages has been associated with religious and medical practice. Already in ancient Greek history Asklepios (or Aesculapius to the Romans), the god of medicine was accompanied by a snake. In temples to this god inscriptions or marble carvings have been found that tell of a sacred snake that heals diseased limbs by licking them. 'A man had his toe healed by a serpent. He, suffering dreadfully from a malignant sore in his toe, during the daytime was taken outside by the servants of the temple and set upon a seat. When sleep came upon him, then a snake issued from the *abaton* and healed the toe with its tongue, and thereafter went back again to the *abaton*. When the patient woke up and healed he said he had seen a vision: it seemed to him that a youth with a beautiful appearance had put a drug upon his toe'.

It is likely that the role of the sacred healing snake was played by either of two species from the genus *Elaphe*: the Aesculapian snake *Elaphe longissima* or the four-lined snake *E. quatuorlineata*. Both occur in Greece and Italy and are easily handled in captivity. They were well known to the ancient writers and continued to be associated with religious and medical beliefs well into the 20th century.

That these stories can not be completely discounted as part of mythology has been made more likely by Italian researchers. In the authoritative medical journal *The Lancet* they report the presence of a cell growth stimulating protein in the saliva of the four-lined snake *Elaphe quatuorlineata* (Angeletti et al., 1992). This protein, also called 'epidermal growth factor' or EGF occurs in the saliva of many animal species and stimulates the growth of skin cells and thereby the closing of wounds. It is supposed to play a role in the recovery of cells that get damaged by ingestion of prey or promote the secretion of mucous necessary to lubricate prey.

The authors do not exclude the influence of other potentially therapeutic elements such as psychological factors, drugs or sleep, in the healing mentioned above. In their opinion however, other biological and archeological data support the hypothesis that the role of sacred serpents in the medical rituals of Asklepios/Aesculapius was connected with the empirical exploitation of the healing properties of the EGF in the saliva of the snake.

REFERENCES

Angeletti, L.C., U. Agrimi, C. Curia, D. French & R. Mariani-Costantini, 1992. Healing rituals and sacred serpents. *The Lancet* 340: 223-225.