

SOME EXPERIENCES WITH THE SPOTTED SKAAPSTEKER

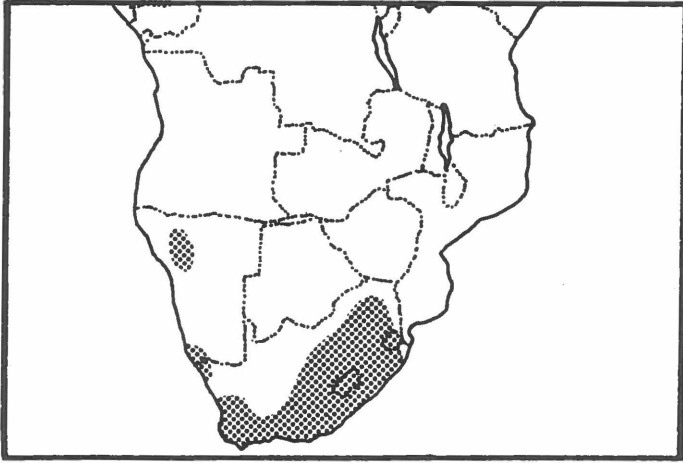
PSAMMOPHYLAX RHOMBEATUS.

By: Ton Steehouder, Theresiaplein 24, 5041 BJ
Tilburg, The Netherlands.

Contents: Introduction - *Psammophylax rhombeatus* -
Toxicity - Observations - Epilogue -
References.

INTRODUCTION

The genus *Psammophylax* is represented by two species in southern Africa. The Spotted skaapesteker, *Psammophylax rhombeatus*, is found through most of the savanna of South Africa and scattered localities in southern Angola. (Branch, 1981). A distinct race, *Psammophylax rhombeatus ocellatus*, occurs in southern Angola. The Striped skaapesteker *Psammophylax tritaeniatus*, extends from the northern regions of South Africa, through Botswana, Namibia and Zimbabwe to southern Angola, southeastern Zaire and southern Tanzania. Specimens from Natal are now known to be the striped form of *Psammophylax rhombeatus rhombeatus*. There is a third species, *Psammophylax variabilis*, with three races, in the montane grasslands of Malawi to Ethiopia. All these species are small to medium-sized diurnal foragers with a wide range of prey. Except for *Psammophylax variabilis variabilis*, all forms are oviparous. *Psammophylax rhombeatus* lays up to 30 eggs measuring up to 35 x 18 mm; *Psammophylax tritaeniatus* lays 5 to 18 eggs, measuring up to 25 x 12 mm. Both species have been observed to coil around the eggs, possibly indicating incubation or some form of caring for the eggs. *Psammophylax variabilis variabilis* could have extended this reproductive strategy further and have



Map 1. Distribution area of *Psammophylax rhombeatus rhombeatus*.

become ovo-viviparous.

PSAMMOPHYLAX RHOMBEATUS

The Spotted skaapsteker is a stout-bodied snake, reaching a length of up to 120 cm. The relationship with species of the genus *Psammophis*, like *Psammophis sibilans* and *Psammophis subtaeniatus* is manifest. The name "Skaapsteker" is misleading, as an opisthognath snake (possessing poison-glands connected with enlarged and grooved rear fangs) *Psammophylax rhombeatus* could not possibly bite a sheep in a harmful way.

The Spotted skaapsteker is found in dry savanna and grasslands, even high in the mountains. It is still locally abundant. It is a placid snake rarely biting. It feeds on mice and lizards. The eggs are laid in piles of rotting leaves or in other suitable places.

TOXICITY

A number of colubrid species of South Africa is known to have caused obvious cases of envenomation, though none of the reported cases have been serious. Care has to be taken, though, if only for the reason that all snake venoms consist of strange proteins which could cause immunological hypersensitivity following bites. If warmblooded prey die soon after being bitten by a colubrid snake, one should take care.

On the other hand, envenomation by an opisthophthalmid snake is only to be expected when the animal is handled and in most cases only if handled roughly. For the snake has to firmly hold a finger and chew thoroughly to introduce venom into the wound. If you wear gloves while handling a Skaapstekker, you can avoid any risk. FitzSimons (1919) reported on some crude experiments indicating that *Psammodromus rhombellus* has a toxic venom, possibly neurotoxic in nature. He allowed Skaapstekkers to bite bare patches on the legs of eleven chickens, and noted that three died within 10 to 360 minutes. In one fowl that did not die, the bite site turned greenish/yellow and the whole limb was swollen. In a later publication FitzSimons (1929) recorded that "Skaapstekker venom is both a nerve and a blood poison. The symptoms are giddiness, lassitude, cold clammy skin and cold sweat on the forehead. A little swelling occurs at the site of the fang punctures, with discolouration of the surrounding tissues".

Presumably, FitzSimons is describing symptoms in humans. It is not clear, however, what the basis is for his statement that Skaapstekker poison is "relatively more poisonous than those of the Dreaded cobra or Mamba". He never gave more detailed data. Branch (1981) notes that further modern analysis is required. He cites Chapman (1968) who observed "a slight reaction of bruising

and swelling, one with a rigor" caused by three *Psammophylax* bites in Natal, and similar symptoms following a bite from an East Cape specimen.

OBSERVATIONS

In December 1986 I acquired a wild caught specimen of *Psammophylax rhombeatus* which had been recently imported from South Africa. I do not know exactly where the animal had been captured. It was, however, a strongly striped specimen, so I assume it belonged to the striped form of *Psammophylax rhombeatus rhombeatus* from Natal. The dorsal stripe was brown-black, three scales wide and edged with a black line. Laterally there was a yellow stripe about one scale wide, then a brown- to metalgrey stripe of about three scales wide. Next there was a thin black line, folled by a thin yellow line bordering the anthracite-coloured side and belly.

Any unsuspecting visitor of a pet shop would easily be fooled to think it was a North American Garter snake species, as many of my friends indeed did. In the neck region, however, the side-stripe was replaced by a series of round blotches.

The animal had 177 ventral scales, 67 subcaudals (partially in a double row), a divided anal plate, and 16 middorsal scale rows. The body-tail ratio was about 4:1. The total length was 92 cm (measured dead after four month of captivity).

The scale structure strongly resembled that of the related species *Malpolon monspessulanus*: through the middle of each dorsal and lateral scale there is a groove (a kind of "reversed keel"). The head was shorter and blunter than that of *Malpolon monspessulanus*, and there was no scowl, caused by a pronounced supraocular shield in *Malpolon monspessulanus*.

This specimen resembled *Malpolon monspessulanus* in some aspects of its behaviour but not others. For

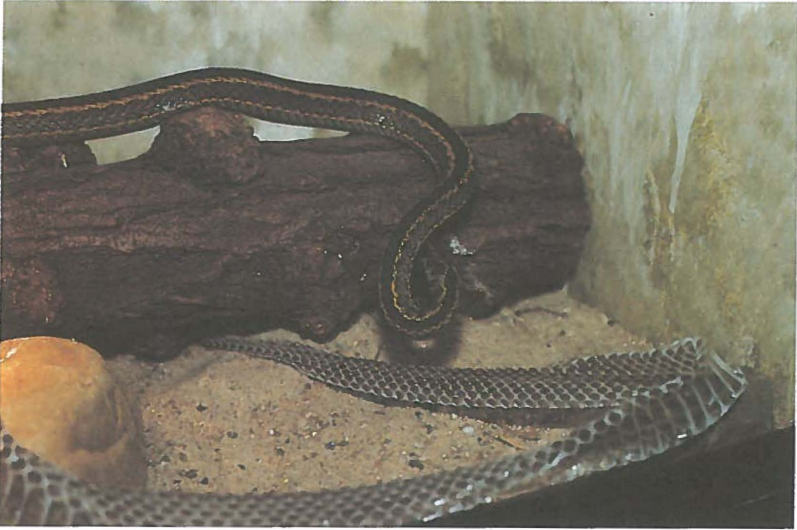


Foto 1. *Psammophylax rhombeatus*, poetsgedrag / showing rubbing behaviour. Foto: Ton Steehouder.



Foto 2. *Psammophylax rhombeatus*, poetsgedrag / showing rubbing behaviour. Foto: Ton Steehouder.

instance, it lacked the aggressiveness of the Montpellier snake. Though it was extremely alert and reacted immediately to visual stimuli (like the movements of a hand in front of the cage, or someone walking in the room) it did not hiss, and showed no inclination to attack, not even if carefully taken up by hand, though it would excrete a nasty smelling fluid from the cloaca, together with urine.

From its arrival the snake greedily accepted mice and young rats, which were caught in the same way as *Malpolon* does: the snake dashes up to prey animal, waits bent like a bow with the head just above the prey until it runs away, and only then catches it by the neck region. Prey that does not run away, is taken in the end, but only after long hesitation. The actual catching of the prey takes place with great vigor. The snake waits, chewing now and then, often keeping the prey under control by constricting it, until the venom has done its work, which is after some minutes. If the temperature is high enough, digestion is fast: after a day or two defecation takes place. I have observed this manner of hunting with specimens of the related *Psammophis subtaeniatus sudanensis* too. As with this species, there is sometimes a hunting failure - the mouse biting the snake in the lip region. I have the impression that in these cases inflammation of the upper lip region (more or less in the neighbourhood of the fangs) happens more often than is the case with other snake species. Anyway, this has been the case with two specimens of *Psammophis subtaeniatus sudanensis*, and with this specimen of *Psammophylax rhombeatus*. It never happens with my other snakes.

After feeding, and in addition irregularly at high temperatures, this specimen exhibited rubbing behaviour: up and downward movements of the head

alongside the entire ventral side of the body, during which a nasal secretion is applied to the ventral and caudal scales. The snake lifts the ventral side of its body from the ground and slightly turns over to facilitate this rubbing. Though I have not been able to study this rubbing behaviour as detailed as C. de Haan has done with *Malpolon monspessulanus*, the rubbing of *Psammophylax rhombeatus*, as far as I have been able to determine, is near identical. *Psammophis subtaeniatulus sudanensis* also exhibits this rubbing behaviour, but in a more "elegant" and complicated way (De Haan, 1982; Steehouder, 1984). The exact reasons for this rubbing behaviour is, as far as I know, unknown. An interesting observation with this animal is that the fangs (enlengthened, grooved teeth in the upper jaw under the eyes) are actively used in the swallowing of the prey. When the jaw element in which they are located, makes the fore- and backward movement, the fangs are turned over: the fang can clearly be observed turning over from a backward to a foreward position, driven into the prey and subsequently used to help draw the prey in. C. de Haan (1982) described this in *Malpolon monspessulanus*.

EPILOGUE

The animal died after a short period of time because of a blunder. I assumed that this species was as warmth (or better heat) loving as the Montpellier snake, so I used a strong light bulb in the cage. I also hoped that the inflammation of its upper lip would heal sooner if the animal was kept warm. Unfortunately, the lamp was too warm. Although the animal had no inclination to escape from the heat (for example by going to a cooler corner, or to the front pane), temperature in the cage rose too high. When I realised this, it was

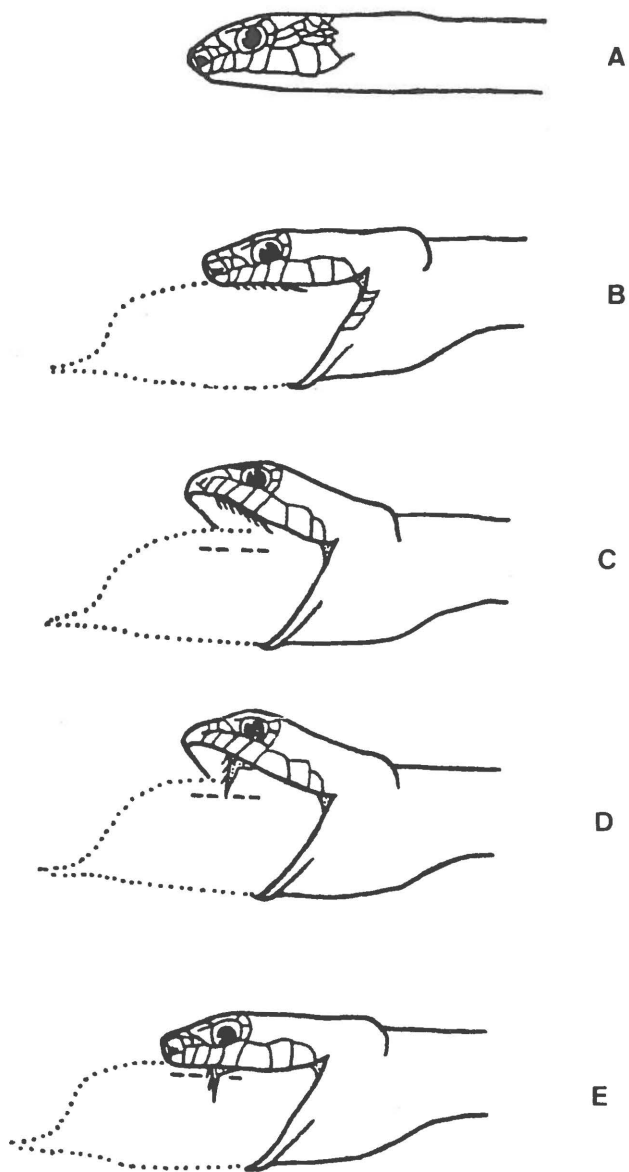


Fig. 1. Respective positions of the fangs and the jaw element, which are actively used in the swallowing of the prey.

too late. The snake showed spasmodic muscle-contractions, as are seen with snakes that have a Vitamin B deficiency (such as Garter snakes that have been fed with frozen fish), and the rest was apathetic. Injections with a multivitamin (Duphrafal, 0.2 ml) and with calcium (Calci-Tad 50, 0.2 ml), both subcutaneously, seemed to be successful at first: the snake became quiet, and the muscle-contractions stopped. The process appears to have been irreversable though, the animal died after a couple of days.

I lost this snake in a shameful way, and mention this as a warning for others. I do not know exactly how high the temperature had risen, but I estimate it must have been above 40°C for a length of time. It is interesting to note that specimens of *Malpolon* and *Psammophis* often bask for hours in places that are considerably warmer. Maybe it is important that there is enough air movement under these circumstances (in this case, the terrarium was not very well ventilated).

REFERENCES

- Branch, W.R., 1981. Venomous Snakes of Southern Africa. 3. Concluding Part: *Colubridae*. Bull. Maryland Herp. Soc., Vol. 17 (4): 125-150.
- Chapman, D.S., 1968. The symptomatology, pathology and treatment of bites of venomous snakes of central and southern Africa. In: Venomous animals and their venoms, Vol. 1: Venomous Vertebrates. Eds.: Wolfgang Bücherl, Eleanor E. Buckley & Venancio Deulofeu. Academic Press, New York/London. Pp. 468-527.
- FitzSimons, F.W., 1919. The Snakes of South Africa. Their venom and the treatment of snakebite. Maskew Miller, Cape Town. Pp. i-xvi, 1-550.
- , 1929. Snakes: and the treatment of snakebite.

- Specialty Press, Cape Town. Pp. 1-70.
- Haan, C.C. de, 1982. Description de comportement de 'frottement' et notes sur la reproduction et la fonction maxillaire de la Couleuvre de Montpellier *Malpolon monspessulanus*. Bull. Soc. Herp. France, No. 23: 35-49.
- Steehouder, A.M., 1984. Repeated successful breeding of the Red-striped sand snake *Psammodphis subtaeniatus sudanensis*, and some remarks on the 'polishing behaviour' of this species. Litt. Serp., Vol. 4 (3/4): 90-103 / Dutch Ed.: 94-108.
- Trutnau, Ludwig, 1981. Schlangen im Terrarium I: Ungiftige Schlangen. Eugen Ulmer Verlag, Stuttgart. Pp. 182-183.