WHAT DID THAT SKAAPSTEKER HAVE FOR DINNER?

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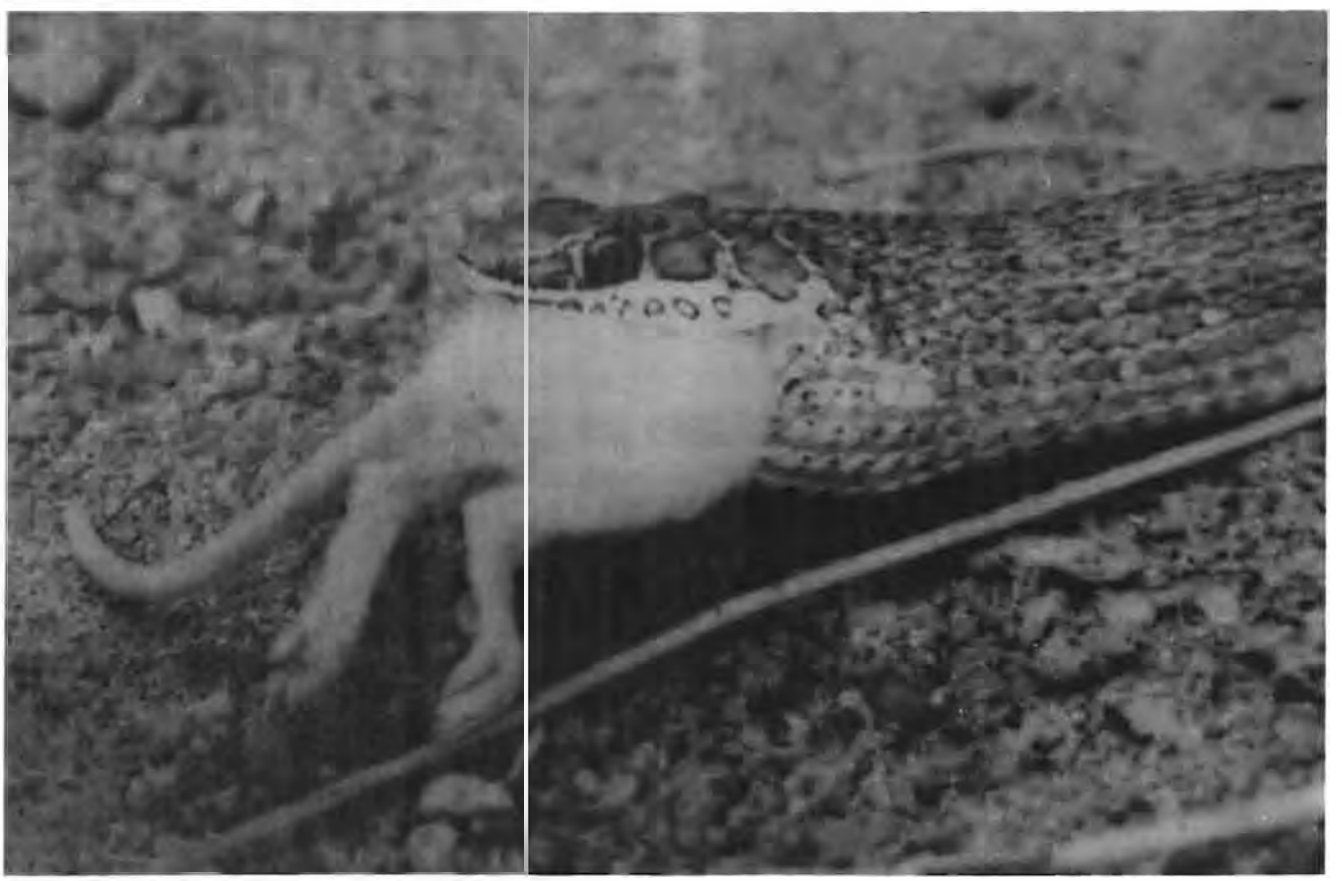
Snakes prey on a large variety of insects, birds, mammals, lizards and frogs. However, detailed studies on prey species are mostly lacking as literature reports are usually vague. Statements such as, Skaapstekers eat rats or mice, or simply just rodents, abound. Possibly owing to the fact that considerable time is involved, very little work has been done in the specific field of feeding ecology of snakes. It is important to know whether a species of snake is an opportunistic feeder or whether it is a specialised feeder and only feeds on certain types of rodents or frogs etc.

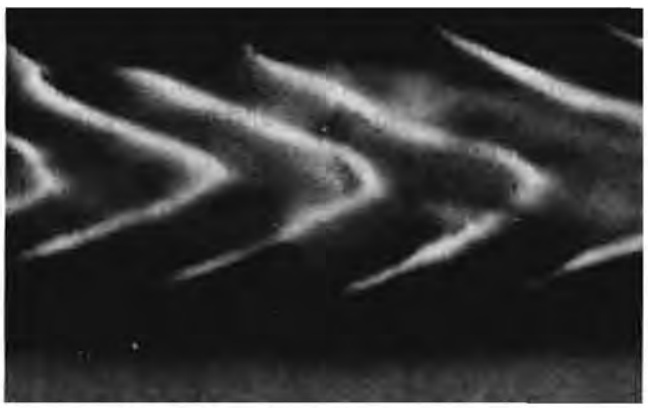
The digestive acids of snakes are extremely strong, much more so than in humans or other mammals. Prey items are totally digested, even bones and teeth, leaving very little for identification purposes. There are, however, a few items which are not digested such as hair, certain parts of insects, lizard scales and the snake's own teeth which are swallowed during the continual process of tooth replacement or when prey items are seized and teeth are lodged in the prey.



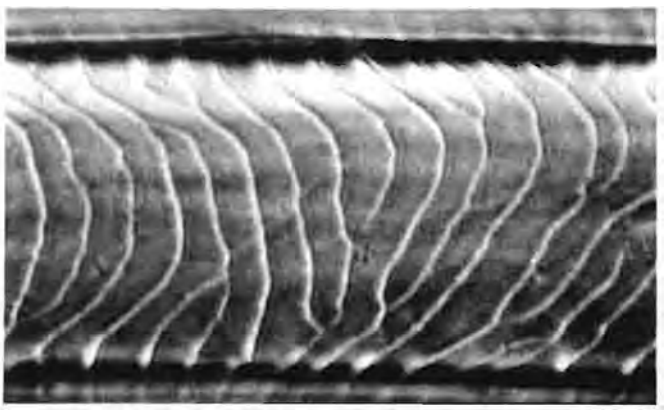
A sand snake, PSAMMOPHIS sp. eating a mouse.

Medulla (multiserial ladder, three row) pattern in the hair of Kreb's fat mouse.

Medulla (alternating uniserial and multiserial two row) pattern in the hair of the Hairy-footed gerbil.



Scale (chevron cuticular) pattern on the hair of Kreb's fat mouse.



Scale (regular wave cuticular) pattern on the hair of the Hairy-footed gerbil.

Hair from stomach contents can therefore be used to identify a snake's diet with regards to the kind of mammals it has eaten. The procedure used to do this is as follows: the hairs from the sample are placed onto a slide which has been covered with a thin layer of dissolved gelatin. The gelatin is allowed to dry and the hair removed from the slide. The result is a negative imprint of the hair in the gelatin. Examination under a microscope of the imprint reveals the cuticular scale pattern of the hair, which is diagnostic of many species, such as rodents, although in other groups such as the mongooses very little difference between the species exist. Other facets such as cross sections, medulla patterns, colour, shape and size are often used in conjunction with scale imprints to identify an unknown hair. After all the above characteristics have been considered, cross references or keys are used to establish exactly what the Skaapsteker had for dinner.

Hair identification was most probably first used extensively in the animal fibre industry to distinguish various types and grades of sheep wool. It also found popularity in the commercial furbearer industry. The method has long been used for identifying game in poaching and illegal hunting convictions. The identification of prey species in owl pellets, jackal and hyaena scats, and other carnivores is yet another area where the method is used. One of the most important areas is in medicine, where examples of prey identification in rabies control, plague and Lasser fever can be cited. The analysis of vulture pellets in anthrax studies has also proved most useful. More recent applications are in the fields of ecology and taxonomy and so the list can go on and on.