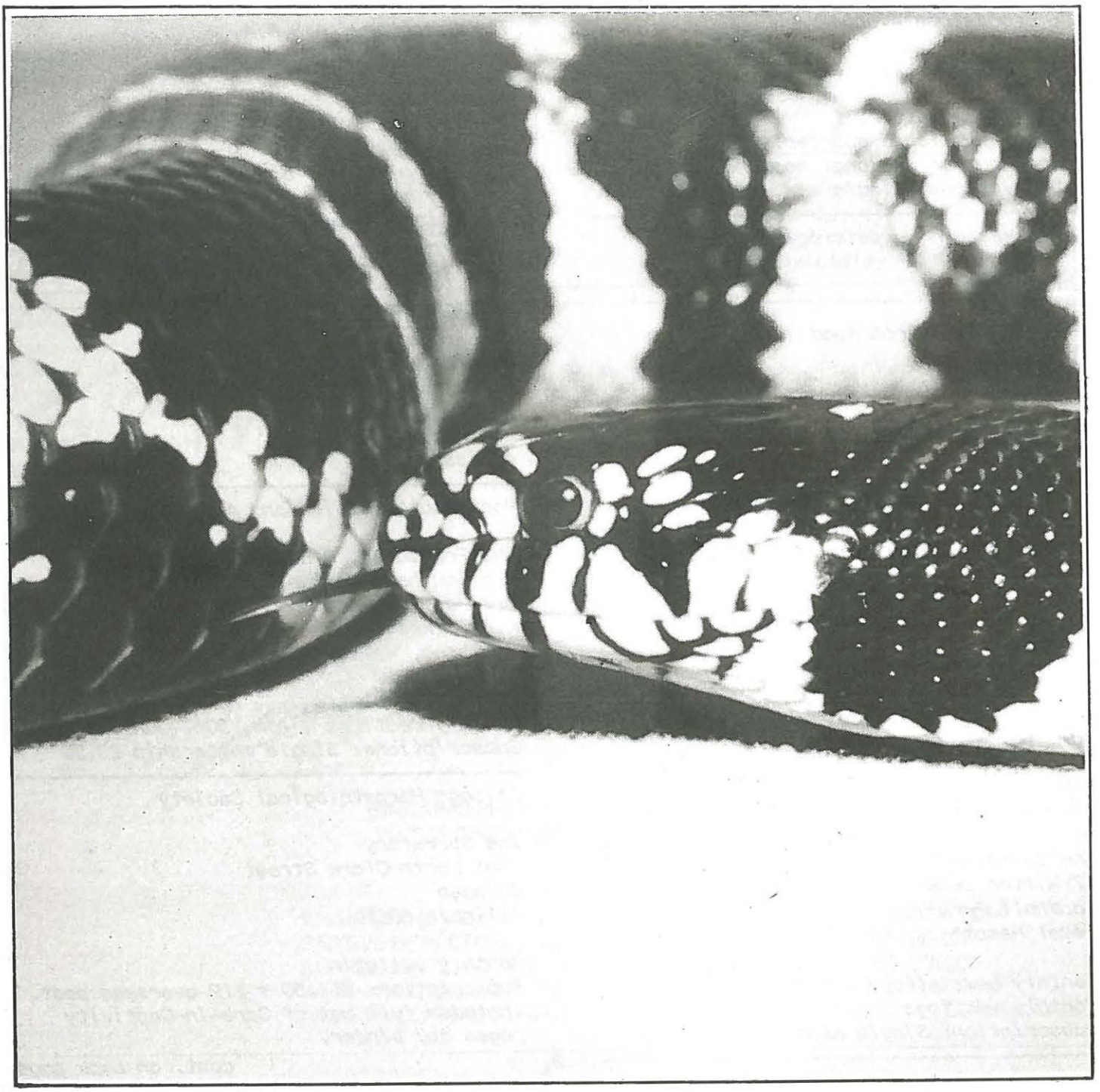
# SNAKE KEEPER

VOLUME 1 NUMBER 9 SEPTEMBER 1987 £1.00p



# INFORMATION

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*Subscription: $17.50 + $12 overseas post.*
*includes full set of Care-in-Captivity pages and binder.*



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SNAKE KEEPER

Vol 1 No 9 September 1987

Snake Keeper Magazine
159 Stanley Hill
Amersham
Bucks
HP7 9EY

Telephone: Amersham (02403) 22769

Editor Michael Connolley
Assistant Editor Lesley Close

Subscriptions: One year (12 issues)

U.K. £12
Europe £16 sterling
U.S.A. £18 sterling

Snake Keeper magazine does not hold itself responsible for any opinions expressed by the authors and contributors.

ISSN 0952-5653

Printed by Pyramid Press. Tel: 0272 556539

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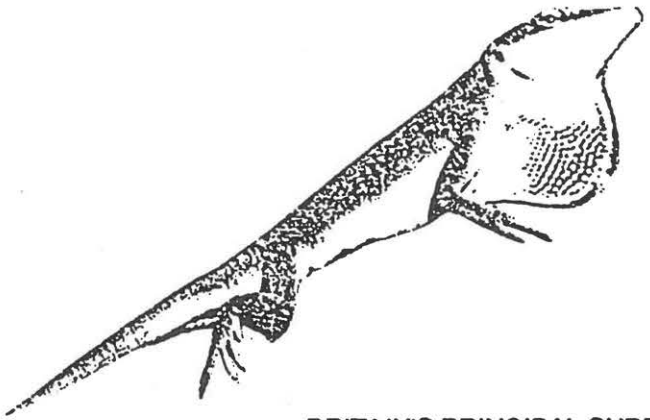
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Lampropeltis getulus
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# Hibernating Snakes by David Gales

*In the wild, many snakes, especially those from more temperate zones, hibernate for a period during winter. Hibernation may result in the snake laying dormant for a number of weeks, or for some months. During this time , the heartbeat and rate of respiration decrease and the snake becomes inactive. As the temperature increases, the snake becomes active once more, and hibernation is usually followed by a period of mating. In captivity it is not always necessary to hibernate snakes; indeed some snakes which would normally hibernate in the wild can be induced to breed by the usual lowering of the temperature and a decrease of the photoperiod. A higher temperature and longer daylight hours will normally be the stimulus for these snakes to breed.*

*However, there are a number of snakes which require a hibernation period, and it would appear that failure to fully hibernate these snakes will result in a failure to breed the following spring. My foxsnakes (Elaphe vulpina), currently being cared for by Kevin Hingley, have mated this year after a period of hibernation. I think it is doubtful that these particular snakes would breed if not fully hibernated. Indeed, before hibernation the snakes were still active even though the temperature had been significantly lower. It is for the individual to decide whether it is necessary to hibernate his own snakes, but it is worthwhile bearing in mind the natural weather conditions in the snakes' habitat during the winter period. Hibernation may also encourage snakes which do not respond to the normal lower temperature and photoperiod adjustment to breed.*

*Once you have decided to hibernate your snakes you should follow a few important steps. The first is never to hibernate a snake that is very young or, more importantly, one that is not completely healthy. I would not hibernate a snake that is ill, or one that has recently had some illness, even if cured. Under normal conditions, hibernation does no harm, but an ill or recently ill snake may not be strong enough to endure a period at low temperature. In this case it is better to concentrate on the health of the individual snake rather than on ideas of hibernation. There is no benefit in hibernation of young snakes. They will be too young to breed and they may not have built up enough fat reserves. They would benefit from being kept at a normal temperature for their first winter.*

*It is also unwise to hibernate newly acquired animals, particularly wild caught specimens. You can never be totally certain of the health of a new snake and, should it be necessary to breed from a newly acquired animal, the normal lower temperature and photoperiod adjustment should be tried.*

*Finally, always ensure that the snakes have access to water, or that they are packed away in damp material to avoid dessication. Food should not be offered during the two weeks leading up to the proposed period of hibernation. It is most likely that food would be refused but, if any food was eaten during this period, there would be a danger that it would remain undigested in the gut once the snake was hibernated, the low temperature preventing digestion.*

*Once the snakes have been hibernated, a constant check on the temperature is essential. If the snakes are in an unheated room, garage or shed etc, the temperature will fluctuate with the temperature outside. A maximum/minimum thermometer is useful for recording the minimum temperature during the night. Should there be any danger of the temperature dropping to freezing point, some form of gentle warmth will be needed or, better still, move the snakes to a slightly warmer place during any excessively cold period. Always check the snakes during their winter sleep, once a week usually being sufficient.*

*When hibernating snakes I start to decrease the photoperiod and day/night temperatures gradually over a period of 6 to 8 weeks prior to hibernation. This ensures the snake is not plunged into a cold box straight from a warm vivarium. Hibernation follows as a natural step from shorter days and a colder temperature, and this sequence should be faithfully recreated in the vivarium. As previously mentioned, the snakes usually stop feeding at this point.*

*I hibernate my snakes in polystyrene boxes, filled with damp hay and leaves. Air holes are made in the box, the snakes*

*are placed inside and the box closed up. A thermometer is placed inside the box with the snakes to monitor the temperature when the snakes are examined. The boxes are then kept in a cold place. A thermometer is used in the room the snakes are kept in.*

*I try to keep my Foxsnakes at a temperature of between 4 and 8 degrees C, but the temperature often rises above this, and has fallen to 2 degrees C. It is important to ensure the temperature does not fall below 0 degrees C - whether a snake is hibernating or not, a temperature at or below freezing point can be fatal. Remember that in the wild, although the air temperature may often be below freezing point, the hibernating snakes are usually well below ground in dens where the temperature remains fairly constant and above freezing point. Any snake which has not chosen a suitable place to hibernate will perish during periods of extreme cold.*

*It can be a problem maintaining the correct temperature, and some people hibernate their snakes in a fridge. This sounds drastic, but in fact is quite safe as long as the snakes receive proper ventilation, the temperature is checked prior to the the snakes being installed, and of course they are carefully monitored during the period of hibernation. This method avoids accidents due to the outside temperature falling unexpectedly. My snakes were kept in a shed outside. During very cold spells a light bulb was switched on in the snakes cage where the hibernation boxes were to prevent the temperature reaching freezing point.*

*The snakes don't have to be totally enclosed in a box. A closed cardboard box with a hole cut in it, and filled with damp hay, can be put into the snakes' cage as the temperature falls. The snakes will normally retire to this box, but remain free to come out and drink should the temperature rise for a few days. This may be a better method than boxing the snakes up if a constant low temperature cannot be maintained, as some snakes can become fairly active again if the temperature increases slightly.*

*The period of hibernation can vary from a few weeks to a few months. This should depend on conditions found in the wild, and the size and condition of the snakes. I hibernate my snakes for about six weeks, although the Foxsnakes could be hibernated for longer periods. They are returned to their cages, and usually are active after a few minutes. I do not heat the cages to the normal summer temperature but maintain a slightly lower temperature for a few weeks, gradually increasing the photoperiod to sixteen hours along with a corresponding rise in temperature.*

*Although certainly not important for all species, I believe hibernation is an integral part of many snakes' yearly cycle, and may be essential if successful breeding is to be achieved with these particular species.*

---

# The East Cowes Mouse Muncher

## by Stuart Gray

*Since my last article (Snake Keeper 5), Ken, my Royal Python has acquired a beautiful wife called Samantha. They seem to be made for each other, always in each other's coils. I call them the love birds and they are both eating well. However Samantha's story has only just begun.*

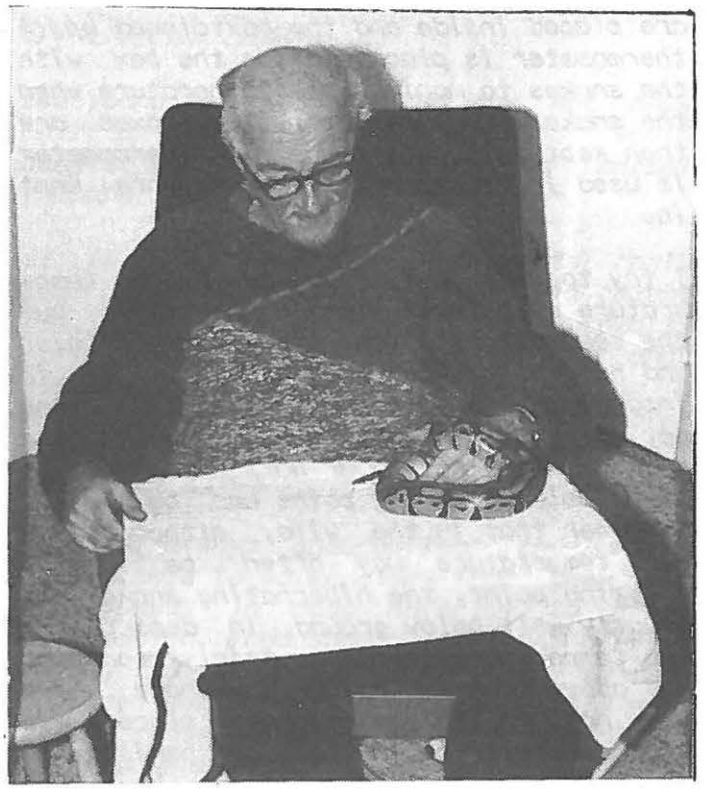
*A few days after Samantha took up residence, a friend of mine said, "Could you take over Taquin, my twenty-one year old Royal Python. I would like to travel abroad and can no longer look after him?" I agreed at once. So a few days later Taquin arrived, complete with his vivarium. Before he left, my friend mentioned that Taquin is an indifferent feeder and may need force feeding, and handed me a pair of forceps! I settled Taquin in, with his own bag, with name embroidered on it, his bed clothes and hide box. I decided to give him small mice - two inches from nose to tail base. I placed the first outside his hide box, and left him alone for an hour. By then the mouse was gone, so a second freshly killed mouse was placed outside his hide box, and an hour later that too had gone. The same was repeated next day and two more mice went; two days later he started to shed.*

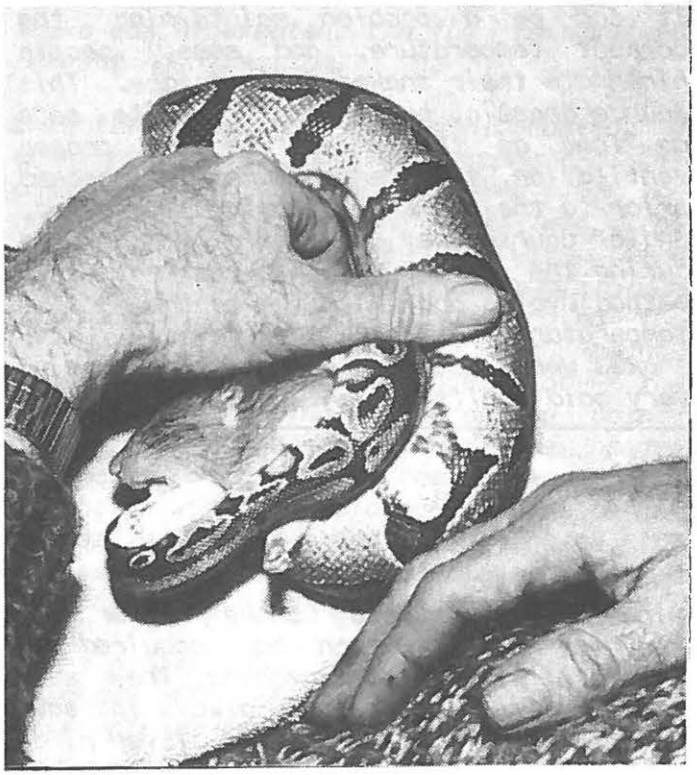
*Fourteen days later he began to feed in earnest. Ron Lilley, the senior reptile keeper at Robin Hill Zoo on the Isle of Wight, gave me three mice which had been injected with vitamins after being killed.*

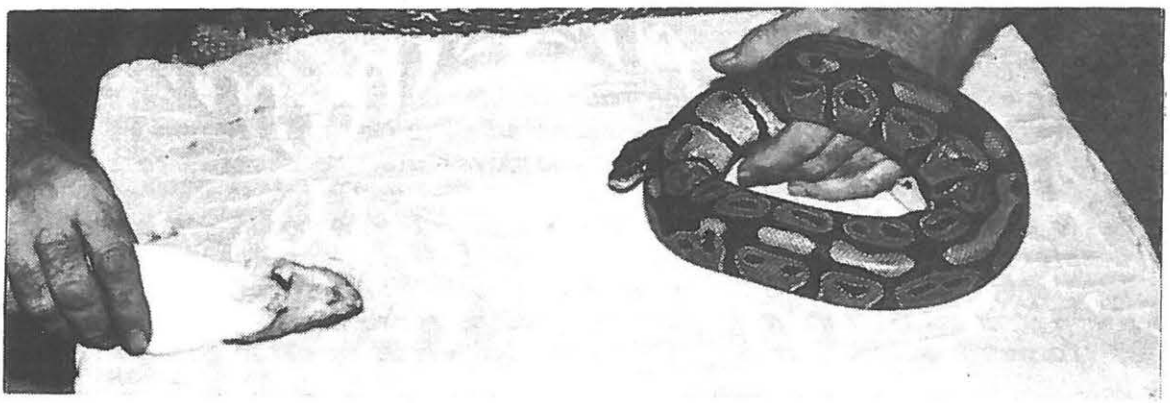
*Once again I placed a mouse outside his hide box. This time he came flying out of the box and caught my finger without stopping to apologise. He struck at the mouse, like it was his worst enemy. The same thing happened again, but this time striking my finger, not biting, before he set about the mouse. So the munching had started. Taquin now expected food every time I entered my bedroom. Gerbils, mice, defrosted chicks, they all went down; between the 11th March and the 29th April twenty five items were consumed. A local breeder said, "I am sorry you had the last mouse yesterday." A pet shop owner said, "We may have some on Wednesday." I said to Ron, "When is he going to stop?" Ron said, "When the island runs out of mice." I looked at the aviary next door and a little boy's pet mice in a new light. I said to Ron, "Could I bring Taquin to the zoo to watch the mice breeding?" "You keep him out of here!" said Ron.*

*At the last feast Taquin ate one gerbil, four mice and four chicks. Ken ate one rat, one mouse, and one gerbil at one sitting. Samantha ate three mice.*

*The snakes are housed in my bedroom, Samantha and Ken on the left side of my bed and Taquin on the right. I often wake just before dawn, and I could have sworn I heard a voice from Taquin, "Look at it, call itself an owner, goes to the pub for an hour every night, never gives us a thought." "Oh he's not too bad," said Ken, "He has to fight the lions when he goes for our mice." "If you believe that you will believe anything," replied Taquin. "Shut up you two", said Samantha, "You will wake it." "Nothing will wake that drunken ape," said Taquin. "It's not an ape, its a human," said Ken. "Call it what you like, it looks like an ape to me," replied Taquin, "besides, its a light phase one and they are the most dangerous." A car started in the street and brought me fully awake. I must have been dreaming, or was it the wind blowing or could it have been...*







*Feeding time for Ken, the Royal Python*

*Photographs Stuart Gray*

Part 1

# The African Egg-Eating Snake, Dasypeltis scabra

by Dietmar Emmrich

*This article was originally published in 1986 in the magazine 'Aquarien-Terrarien' in the German Democratic Republic. It is reprinted by kind permission of the author.*

*Translated by John Hackworth*

## *Introduction*

*The Egg-eating Snake has fascinated many observers because of its unique method of feeding. This species is becoming even more popular with herpetologists because of the ease of providing its natural diet without coming into conflict with nature conservancy laws.*

*Less well known, however, is its similarity in appearance and behaviour to African vipers. As well as a description of their habitat, detailed information on their husbandry and breeding will also be given. The Author's experience with over 150 captive-bred animals will be compared with other published details of experience with these snakes. The morphological adaptation to its nutrition will be described in detail and several nutritional experiments will be discussed. This is the first time, however, that the breeding of the F2 generation has been reported. Also, as yet unpublished, are details of the observation and documentation of the "copulation bite" whilst mating.*

*Important literature sources were kindly made available to me by Prof Dr G. Peters and Dr R. Gunther (both of the Natural History Museum, Berlin). I also thank Dr D.G. Broadley (National Museum, Bulawayo, Zimbabwe) for extending the same facilities to me, and the same applies to Prof Dr H. Dathe (Berlin Zoo), Dr R. Gaedicke (Entomological Institute, Eberswalde), P. Hallman (Kulturbund, Berlin), F.J. Obst (National Museum of Natural History, Dresden) and H. Stallknecht (of the publishers of Aquarien-Terrarien, Berlin). I am especially grateful to Dr W. Guntert (Rontgen Institute, Aarau, Switzerland) for permission to reprint his X-rays of Dasypeltis scabra.*

## *Systematic placement*

*The African Egg-eating Snakes are a colubrid species and are placed in the sub-species of Egg-eating Snakes (Dasypeltinae). Here the phenomenon arises that the sub-species is connected to the aglyphic genus Dasypeltis (African Egg-eating Snakes) and the opisthoglyphic genus Elachistodon (Indian Egg-eating Snakes). The reason for this somewhat confusing placement is the common anatomical peculiarities which exist in relation to their feeding habits. Gans and Williams (1967) give a comprehensive report of these pecularities. Peters (1967) criticised this placement which has been supported by many other authors (e.g. Reinhard and Vogel 1980) and even varied somewhat in that the genus Elachistodon has been elevated to the status of an individual sub-species (e.g. Englemann, Obst 1981). According to Gans (1959, 1964) the genus Dasypeltis contains six species: D. scabra, D. fasciata, D. atra, D. palmarum, D. inornata and D. medici, which in turn, is further divided into D.m. medici and D.m. lamuensis.*

## *Description*

*Dasypeltis scabra is a slimly built snake. The head is not set-off from the neck. The eyes have vertical, elliptical pupils. The scales are variably keeled according to their position on the body, and this assists them in their arboreal lifestyle. At the end of each scale there are two small apical pits which appear light in colour. These are easily visible under a stereo-microscope but cannot be seen with the naked eye. There are 20-29 rows of scales at mid-body. These animals are magnificently marked and are somewhat reminiscent of an expensively woven oriental carpet. The variable ground colour is sand-coloured to grey or brown. Down the centre of the back there is a longitudinal row of dark brown to black patches. There are transverse stripes extending downwards from these patches, but these vary between the various sub-species. On the top of the head there are two dark, forward pointing, V-shaped stripes. The underside is a light cream colour. The anal plate is undivided. At*

the rear of the mouth, minute teeth can be felt but these are mostly covered by the gums. Females can attain a length of around 1 metre, whilst the males are usually around 70 cm long.

Distribution and habitat

Reinhard and Vogel (1980) generally state that the genus Dasypeltis occurs over the whole of the African continent. Stemmler (1971) however confirms that their area of distribution covers the entire Ethiopia region extending to the whole of Egypt and Somalia in the north east, west to the Gambia and south to the Cape. Their existence in south west Morocco has also been proven by Stemmler.

They inhabitat all types of habitats apart from total desert, rain forests and extreme altitudes. Of the six known species, Dasypeltis scabra has the widest distribution range in Africa.

My breeding group 2.2 were obtained from Ethiopia. One male animal was caught 20km south of Addis Ababa at Dukam (altitude 1990 m) and the remaining 1.2 were caught at Meki (altitude 1760 m) near the Lake Zway Rift Valley (Emmrich 1985).

Boulanger proved in 1912 that D. scabra could be found in Addis Ababa, but by 1982 M.J. and S.E. Largen proved that because of the ever increasing population, the Egg-eating Snake was no longer to be found in the capital. In spite of several years of intensive searching, I personally did not discover any within the city limits. The nearest place to find these animals was the already mentioned Dukam. Here 1.1 Egg-eating Snakes were caught. The habitat was a hilly vineyard. At the second capture site at Meki, a further six animals were caught within six months. It would therefore appear that they are more abundant in the valleys and significantly warmer zones (mean annual temperature about three degrees Centigrade warmer than in the capital). Here the habitat is much different from that at Dukam. Partially cultivated, dry thorny grass steppes with occasional individual acacia trees, but also some river bank areas on Lake Zway which have papyrus growths, bushes and trees, making them suitable nesting places for a variety of birds.

Gans, Laurent and Pandit (1965) describe one capture site in neighbouring Somalia, 5 km north of the capital Mogadishu thus:

"The animal was caught in the thatched roof of one of the huts in a nomad encampment, the hut being 100m from the outer perimeter of the encampment. The biotopsy showed only a few bushes 5 - 30 cm high and lots of open space. The nearest dense growth of bushes and trees over 3m high was at a distance of at least 1 km from the encampment."

The descriptions of these four types of habitat serve to clearly illustrate the flexibility of this species.

Mimicry

The mimicry or imitating of a strong, strikingly coloured animal by a harmless one is a phenomenon which often occurs in the animal kingdom. It serves mostly as a function of protection.

With snakes this mimicry is realised by the assumption of a deceptive colour pattern. The most obvious case is that of the American "real" and "false" Coral Snakes of the genus Micrurus, Lampropeltis and Erythrolamprus. Whether the harmless "false" Coral Snakes (Lampropeltis) scare off enemies by having a warning, deterrent colour pattern similar to that of the "real" Coral Snakes (Micrurus) can not be determined with any certainty. The bite of a "real" Coral Snake (Micrurus) is almost always fatal so that the experiences of the enemy cannot be passed on to future generations. Mertens attempted to explain this contradiction. In his opinion, the snakes which had the primary coral pattern were the most venomous and most aggressive species of the genus Erythrolamprus. The enemy could build up a certain reflex and in some cases pass this on. Micrurus and Lampropeltis have thus "used" this effect in a secondary manner. This triangular relationship is now called the 'Mertensian mimicry' (Reinhard, W. and Vogel, Z. 1980, Obst, Richter and Jacob 1984, Black 1983).

The mimicry which D. scabra has developed can possibly be explained in the same way. Dasypeltis scabra is deceptively similar to the Night Adder (Causus rhombeatus) which occurs in Ethiopia but which is not very venomous. The body size and shape, the pattern of the markings and the keeled scales are the most obvious common characteristics. Whenever I got hold of an Egg-eating Snake in Africa I was always extremely cautious and always carefully opened its mouth to determine the presence of venom fangs. With more experience

however, differentiation can be made from the shape of the pupils (Egg-eating Snake - vertical, elliptical, Night Adder - round) and the "Eagle-eyed stare" (somewhat overlapped supraoculars) between the Egg-eating Snake and the Night Adder.

It is interesting to note the proaposematic behaviour which Dasypeltis has developed in that they lunge at their attacker in a warning and threatening manner (Tembrock 1982). Their behaviour is similar in many ways to the reactions of the Night Adder. Dasypeltis scabra coils itself and inflates the throat area with air before lunging at its attacker with its mouth wide open. Because the inside of the mouth is black, this is quite impressive. If these movements are carried out with any vehemence it actually appears that the snake is attacking the enemy. This has been proven by macaques and baboons retreating from Dasypeltis scabra.

Because of the protective function and similar appearance there are also great similarities to another species of snake, this time a highly venomous one. The known behaviour of the Saw-scaled Viper (Echis carinatus) i.e. the rattling, is also part of the extended 'repertoire' of the Egg-eating Snake. The Night Adder does not demonstrate this behaviour because its scales are too lightly keeled. The Egg-eating Snake, as is the case with the Saw-scaled Viper, has keeled scales each of which carries a small tooth. These tooth-carrying scales can make quite a noise when vibrated against one another. In addition, the Egg-eating Snake coils itself into a kidney shape and quickly passes the body coils over one another. This is always very imposing behaviour. For me it is always quite an experience that the snake can move its entire body without altering its position and can keep its head protruding from the coils whilst at the same time showing the black inside of its mouth to the enemy. This behaviour usually stops after the snake has been kept in a vivarium for some time but can vary between individual animals. According to Kulmus (1984) the aggressive behaviour is much more pronounced in the male than in the female.

If the animals have sufficient space and enough hiding places in their vivarium however, this behaviour can be witnessed for a number of years. This mimicry even confused Stemmler (1971) in that he described a case in which one of his friends kept what was supposedly a Saw-scaled Viper which constantly refused to eat small mammals. When Stemmler took the snake into his care however he was astounded that it was not in fact a Saw-scaled Viper but a Dasypeltis scabra.

Duff-Mackay (1965) describes the astonishing similarity in the colour, the scale keeling and behaviour of Dasypeltis scabra and Echis carinatus pyramidium. He states also that the Egg-eating Snakes of Northern Kenya have much more strongly keeled lateral scales than the snakes of Southern Kenya where no mimicry (scale rattling) of E. carinatus pyramidium is possible because this species does not inhabit that area.

For me it was interesting to see how newly hatched snakes from different clutches of eggs already demonstrated the complete programme of this proaposematic behaviour.

It should be also be mentioned that, like the Saw-scaled Viper, D. scabra does not hiss. In comparison however, the Night Adder hisses very loudly. Physio-ecologically this form of noisy expression can be explained by the special adaptation to dampness. The Saw-scaled Viper and the Egg-eating Snake both inhabit extremely dry territory and would thus experience water loss through the lungs by hissing (Engelmann and Obst 1981). The toad-eating Night Adder however does not have this problem because it lives in damp habitats.

Gans (1960) has examined the mimicry behaviour of Dasypeltis quite extensively. In his opinion, Dasypeltis is protected in three ways from animal enemies: (1) through the confusing colouring, (2) through the warning behaviour and (3) by the dorsal pattern which is easily confused with that of various small vipers. D. scabra is the most widely distributed variety of the species. In the Savannah Region it lives alongside Causus rhombeatus or Causus filippii or both. In the dry regions of South West Africa where Causus does not occur, it is similar to Bitis caudalis. In Egypt and the Sudan as well as the sub-Saharan regions down to Ghana where Causus does not occur, D. scabra can easily be confused with Echis carinatus. The mimicry is thus only advantageous for the protection of the species if enemies can be influenced by it and can pass on their experiences. D. scabra is active during the evening and

night. Markings and colour, therefore, probably should not have any influence on the nocturnal hunters, e.g. small cats (Felinae), owls (Strigidae) or cobras (Naja). Of more interest however are the diurnal hunters who could disturb Dasypeltis in their hiding places; these would include the omnivorous wart hogs (Phacochoerus aethiopicus) and baboons (Papio). Gans (1964a) discusses a report which he received from the Director of a National Park and which proved that baboons had been observed eating snakes. They also attacked venomous snakes of the Dasypeltis "model". The baboons behaved in different ways according to their age. The older baboons sought to overpower the snakes with much greater caution than did their young. This could have been a matter of teaching that caution regarding Dasypeltis mimicry is expedient.

Perhaps the African mimicry forms between two snake species can be explained as a similar triangular relationship between very venomous, harmless and "experience transferrable" mildly venomous snake species in the way that Mertens described it between the American species Micrurus, Lampropeltis and Erythrolamprus. We could thus proceed from the fact that the common, highly venomous Saw-scaled Viper and the harmless Egg-eating Snake can not manifest any experiences on their enemies for known reasons. This could however be imagined in the case of the less-venomous vipers e.g. the Night Adder. All three species live together quite agreeably in Ethiopia.

Finally it must be stated that this mimicry of form and behaviour of the Egg-eating Snake serves no purpose as far as human beings are concerned. On the contrary! Where the animals in their natural habitat are not pursued and killed by humans for simply being snakes, their existence is now threatened because they are so easily mistaken for venomous species, so that the advantages with which evolution provided them have rapidly turned into disadvantages with the evolution of the human race.

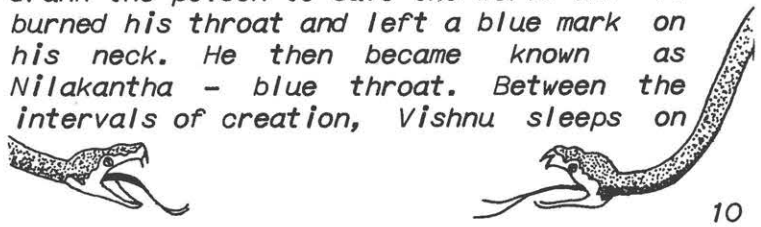
Part Two of The African Egg-eating Snake will appear in October's Snake Keeper.

Part Two

# The Mythological Snake

## by Cassandra Oakes

Indian mythology is full of snake gods; some are still worshipped today. VASUKI was the king of snakes and appears in one of India's best known legends. Vishnu, a Hindu god, was instructed by Indra, king of gods, to churn the sea of milk to produce the liquid of Immortality using Vasuki as a rope and Mandara, the mountain, as a stick. (A rope is wrapped around the stick and each end is pulled alternately, producing a churning action.) In the churning, not only were the ocean's creatures and all the animals on the mountains slopes damaged but the mountain caught fire from the rotation. Vishnu had to make rain to put out the fire and the whole mountain was nearly destroyed. Vasuki had the gods pulling his tail and the demons pulling his head. Venom shot out of his mouth and a huge river was formed that threatened to kill all of the gods, demons and mankind. The god Siva drank the poison to save the world and it burned his throat and left a blue mark on his neck. He then became known as Nilakantha - blue throat. Between the intervals of creation, Vishnu sleeps on SESHA, the serpent, whose seven heads make a canopy for him.



Sesha, a 'good' snake, was nevertheless one of the NAGAS, a powerful and dangerous race of snakes which usually appeared as ordinary snakes, sometimes as startling looking snakes or in human form. The Nagas and their wives, the Naginis, used surprise and trickery to get their own way. They had snake-kings such as TAKSHAKA, who had a kingdom that was the envy of the underworld. A popular legend about Takshaka is the tale of him stealing a pair of earrings and returning them because the Nagas' kingdom had been threatened by fire. Statues placed under trees are still commonly worshipped in South India; the custom on private property is that the ground around the statue should be left untouched so that the god-snakes have their own domain and will leave humans alone. The Nagas can be put into the category of a cult and some royal families claimed them as their ancestors.

In ancient Japan, the snake was considered to be the god of Thunder. SUSANOO, an

agricutural and fertility god, was also the God of Thunder, Storm and Rain so he has a strong association with snakes. There is a myth in which an old couple had eight daughters and every year an eight headed snake ate one of them until there was only one left. Susanoo got eight bowls of rice wine which the snake drank. When the snake passed out, Susanoo cut the snake into pieces; in the middle of the snake's tail was a beautiful sword which he gave to his sister, the sun goddess.

An allied Chinese legend tells of the WHITE SNAKE which lived in a mountain cave near Hangchow. It was immortal, powerful and evil and caused many disasters. The White Snake had planned to destroy Hangchow but a Buddhist priest imprisoned it and buried it beneath the Pagoda of Thunder and Wind. The Snake is still believed to be the cause of disasters. In 1931, when the Pagoda had been destroyed by a storm, it was blamed for the invasion of Manchuria.

Snake myths are abundant in Oceania. In the Fiji Islands, NGENDEI was half snake, half rock. For the Maori of New Zealand, snakes and sea snakes were frequently deities. On islands in the vicinity, the earth is said to be formed by a snake, or chips of wood made by Tonga, the heavenly carpenter, landing on the snake swimming in the sea.

The South Australians believed that the turtle had venomous fangs which he didn't need but the snake had none, therefore he had no protection. The turtle gave his fangs to the snake and the snake gave the turtle its head.

Across the ocean in the New Hebrides, snakes are said to be reborn after changing their skins. In the beginning, men changed their skins in the same manner as the snake but became mortal because children damaged the cast-off human skins during play. Snakes were seen to be immortal - every shed was a new life!

On New Britain, fire is said to have been brought by a man called EMAKONG from the land of the snake-men who lived at the bottom of the river. In the Admiralty Isles, a snake owned fire and gave it to the people of the Isles.

In North America, the Algonquin tribes believed that snakes and aquatic creatures are communicators with the lower powers; they also believe that beings in human form live under water.

The GREAT SERPENT MOUND in Adams County, Ohio, is three feet high and 1,300 feet long. Its mouth is open as if in the act of swallowing an egg. It may represent the union of earth and water and is said to have the power to make crops grow through germination and regeneration. It was built by the Adena people in the first century B.C. There is also a legend in which the HORNED SERPENT represents the fertilising power of water.

The Central American people of Yucatan had a god called CUKULCAN who was a bird-snake. In Guatemala, GUCUMATZ was the feathered snake who was the civilising and agricultural god. QUETZALCOATL was the Aztec god of wind, master of life, creator and civiliser, patron of all art and inventor of metallurgy. He represents the union of air, land, heaven and earth. He is represented as a snake-bird and is closely related to Cukulcan. The FIRE SERPENT was the bearer of the sun on its daily passage.

Further down the continent in Chile, South America, the CHERRUVE were spirits which were the cause of comets and shooting stars, said to be the omens of disaster if one landed on a village. The Cherruve are represented as snakes with human heads.

The African continent with its abundance of colourful and dramatic legends also holds the belief that, after death, the soul is reincarnated in the body of a snake or crocodile, or dwells among the trees, rapids, rocks etc. The snake is a sacred animal and has a lesser known cult of its own.

The Bible

The snake or serpent is usually a personification of the Devil or Evil such as the Serpent in the Garden of Eden. God had warned Adam and Eve not to eat the fruit of the Tree of Knowledge of Good and Evil on pain of death. The snake persuaded Eve to try some of the forbidden fruit and she, in her turn, tempted Adam. They didn't die, but God turned them out of Paradise for disobedience and condemned the snake to going on its belly, to eat dust and to be at emnity with man for ever (Genesis 3).

Whilst the Children of Israel were in captivity, Moses complained to the Lord that no-one would believe that He existed.

*Moses was told to throw down his rod - it changed into a snake. He picked it up by the tail and it then changed back into a rod. When Moses and Aaron were arguing with the Pharaoh to let the Israelites go, they cast down their rods which became serpents and the wise men and sorcerers of Egypt did the same, but Aaron's rod/serpent swallowed up their rods/serpents (Exodus 4 & 7). When Moses was leading his people through the desert, 'fiery serpents' were sent by the Lord because some had spoken against Him; many died from bites. Moses was instructed to make a 'fiery serpent' of brass and to put it on a pole; everyone who had been bitten and looked at the bronze serpent lived (Numbers 21).*

*In Revelation 12 a great red dragon with seven heads, ten horns and seven crowns on the heads appeared in heaven and his tail knocked a third of the stars to the earth. He was waiting to devour the child of a heavenly woman as it was born. God rescued the child and a war began in heaven. The dragon - "that old serpent, called the Devil, and Satan" - and his angels were defeated and thrown to earth where they continually war against the good people.*

*The Ophites were a second century semi-Christian sect which revered the snake. They believed in the union of Intellect (masculine) and Spirit (feminine) that created Man. The female principle produced Christ. In his Ascent, a ray of light, Sophia, the Wisdom, fell on water and created Ialdabaoth, who in his turn created the snake. Wisdom had turned itself into a serpent.*

*The Occult*

*Within the Occult, a snake or serpent is usually regarded as an incarnation of Satan. ORIAS is a demon or a representative of Satan in the form of a lion riding a horse carrying a snake in each hand. PURSON appears as a big man with a lion's head and carries a viper in one hand. AINI appears with three heads - a man's, a cat's and a snake's - and rides on a viper.*

*The Crown of the Magician represents the Attainment of the magician's Work. The main feature of the Crown is the Uraeus Serpent (see Ra, part 1 of this article), which is made of gold. The serpent has an erect head and expanded hood, and represents royalty, initiation and Satan, the Secret Serpent.*

*The KUNDALINI SERPENT is another version of the Uraeus Serpent except that this one is the manifesting side of the Godhead (Satan) of the Magician. In the Hindu system, this serpent is usually coiled at the base of the spine and, with hood erect, rises above the Yogi and unites with the Lord of All. It is also the poisonous force that destroys the manifested Universe as well as a version of the Emerald Snake that encircles the Universe which has the three jewels of the holy elements - ruby, emerald, sapphire - on each side of its hood.*

*The OUROBOROUS, or snake swallowing its tail, is a symbol of rebirth and regeneration. It is often given to people as a personal symbol for part of an amulet. Combined with the rigid serpent of the Indian snake-charming trick, it gives the number 10 which means 'mathematical perfection' and God. Alternatively, the two snakes spell Io, the Greek name for Isis. The Athame, a ritual knife that is never used for cutting, has on its hilt the serpent as a symbol of Life and Rebirth.*

*The CADUCEUS, two snakes wrapped around a vertical shaft, is carried by Hermes/Mercury, the messenger of the Greek/Roman gods. It represents the male/female union, as Hermes is held to be a female god. A modern meaning of the Caduceus is that it is the number of Isis - 18 - the staff being 1 and the snakes 8. Within the Occult, the Caduceus is ultimately the symbol for the Astral Light, although Witchcraft recognises the male/female union.*

*Tasseography (tea-leaf reading) holds that if the symbol of the snake appears, an enemy or a personal hurt will present itself.*

*As you will have realised, the snake occurred frequently in many systems of belief. It seems incredible that we keep these highly revered or feared animals in our homes - usually as pets! The snakes' silent, legless power makes them a good basis for religions, cults and fears, and this is something that will probably never change.*



Part Two

# Conservation of Grass Snakes

## by Paul E. Hopwood

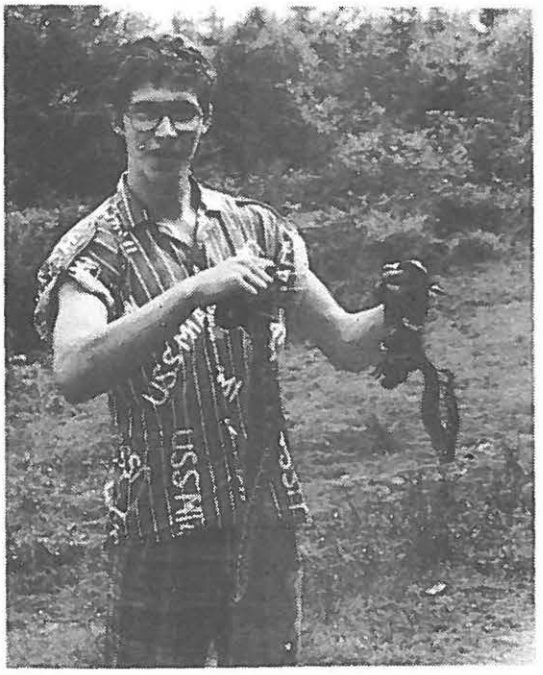
*It is incredible how many grass snakes will use even a moderately sized heap of rotting vegetation. My most successful heap measures about 18 feet by 10 feet and is about 3 feet deep. It consists of about 90% hay (roadside verge grass cuttings) and the rest is unrotted sticks and small branches of trees which help aerate the mound. It is dumped on top of a network of disused rabbit holes, on a steep bank, surrounded by dense vegetation, and is about 500 yards from the nearest permanent water. Every year at about the end of May the heap is topped up with fresh grass. The well-rotted hay near the ground actually steams if you uncover it.*

*In the early days of July it is not unusual to see 10 or more females basking on or in the vicinity of the heap. They generally lay their eggs from about the 5th to the 20th July at this site depending on the year. It would be difficult to prove, but I think it is highly likely that not only grass snakes, but also adders, slow worms and common lizards hibernate below ground beneath the hay.*

*Early in the Spring, a great many reptiles (mainly grass snakes and male adders) are to be found basking in the immediate area, after their emergence. By the end of May all the snakes have dispersed. In late June/early July gravid female grass snakes return. At this time of year the female grass snakes spend a week or two basking. During this time they do feed as some captured specimens regurgitate undigested food items being mainly toads, but frequently mice and sometimes small birds. In captivity I have found grass snakes will feed right up to the day that they lay their eggs. One this year ate three half-grown mice, four days before laying 27 eggs.*

*The longest snake I have caught there was 3'9" in length. This snake laid 33 eggs. A 3'2" snake laid 41 eggs.*

*At the compost heap, the female snakes disperse after egg-laying and it is rare to find a snake which has recently laid eggs staying to bask there. Some of the snakes seem to lay their eggs in clusters containing the eggs of many other females. Often there are up to 200 eggs in one of these communal bunches, perhaps laid by 10 different snakes. The reason they lay their eggs together may simply be due to the small size of the heap.*



Paul holding 7 freshly caught female grass snakes

*I am sure that a well placed compost heap can do wonders for a small grass snake population. Any site where grass snakes have been seen, which is relatively secluded and, ideally, has nearby basking*



Male grass snake eating a frog

spots can be considered for building your own hay pile. If you find a suitable site on private land you should ask for permission before you engulf the property with a decomposing meadow. A minimum amount of maintenance is required, just adding fresh hay each Spring. It is possible to encourage wild grass snakes to use the hay pile with a small amount of captive breeding. For a couple of years I caught adult grass snakes and hatched and reared their young in captivity, eventually releasing both adults and young on the heap. This gave my hay pile a flying start and I released nearly 200 baby snakes in two years.

Grass snake eggs are very easy to incubate. I hatched my first batch in a borrowed incubator designed for chicken eggs, burying the eggs in damp moss-peat. I now use a converted 1' cube aquarium, with a mixture of wood shavings and Micafil soaked in warm water as the incubation medium. The temperature is kept at or around 30 degrees C. The young snakes can be given a headstart by keeping them in a vivarium through the Winter and feeding them on home grown froglets, or they can be released soon after hatching.

(Photographs - Paul E. Hopwood)

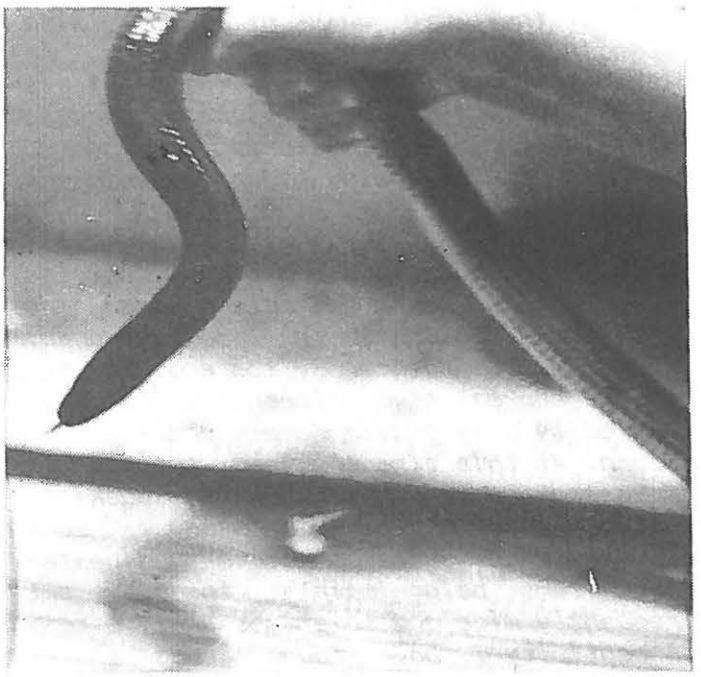
# The Sunbeam Snake

## by C.L. Hindley

The Sunbeam Snake (Xenopeltis unicolor) is a burrowing snake from South-east Asia that grows to about 120 cm (4') in length. It is a strange snake because it is both primitive and advanced. It has two lungs and a rigid skull, which are usually found only in primitive snakes, but it has no vestigial hind-limbs, which is advanced. Its head is flattish with very small eyes that seem to be looking upwards. The snake's body is dark brown, but very iridescent so it looks very colourful in bright light.

The Sunbeam Snake is nocturnal. It spends the daytime underground and comes out at night to eat. It feeds on small mammals, other snakes, and amphibians, which it kills by constriction. It can only eat small food because it can't open its mouth as wide as other snakes can. The only defence a Sunbeam Snake has is to make a rustling noise amongst vegetation by vibrating the tip of its tail rapidly. If this doesn't work, the snake looks for a place to hide.

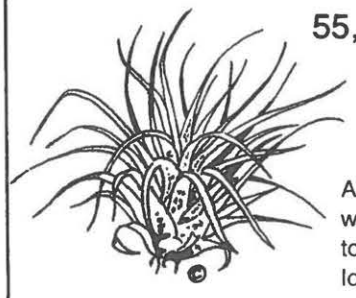
My Sunbeam Snake, Izzy, is a wild caught female measuring 75 cm in length. She lives in a 90x45x45 cm vivarium heated to 85 degrees F with cooler spots of 70




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degrees F. The substrate is shredded paper deep enough for her to burrow in and a few hollow logs for her to hide in. She has a large water dish that she bathes in for a few days before she sloughs.

Izzy eats 2 or 3 half-grown live mice once a week. She will not eat dead mice at all, not even if they are freshly killed and moved in front of her nose. I have also tried her with dead snakes but she won't eat them either.

Izzy doesn't like to be handled. She struggles a lot and then begins to vibrate her tail when she gets really mad, although she has never tried to bite.

Other names for the Sunbeam Snake are, the Iridescent Earth Snake and the Sunbeam Python. Some people think the Sunbeam Snake is related to the Mexican Burrowing Python, Loxocemus bicolor, to which it is very similar.

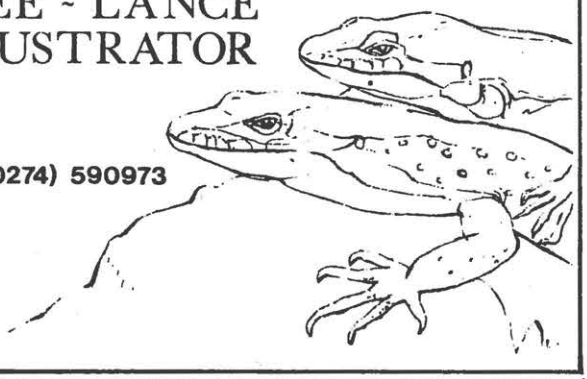
Photograph - C.L. Hindley

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# JUNIOR SNAKE KEEPER

## The Montpellier Snake

### by Lee Bowler

The Montpellier Snake (Malpolon monspessulanus) is an average sized snake, reaching a maximum length of two metres (approx. six feet). It can be found in most countries in the Mediterranean area and West Asia, and all of Southern Europe except Italy. This snake's habitat is dry, stony locations where there is a plentiful supply of lizards. In Macedonia it has been found in piles of stones and rubble around fields and near ruins of old buildings.

The Montpellier Snake is a poisonous member of the Colubrid family, being a rear-fanged snake. It kills its prey with venom from its enlarged, grooved teeth on the back of its upper jaw. Prey mainly consists of lizards and, occasionally, small rodents and other small snakes. When hunting prey, it stops every now and then and rears up the front part of its body, rather like a Cobra, and looks around for movement. When the snake feels threatened it will hiss loudly and strike with its mouth closed. If a human was unlucky enough to be bitten, he or she would suffer from painful local swelling and, in some cases, a splitting headache; medical treatment should be given, as with any bite from a poisonous snake.

In late April, the female lays up to 20 eggs which can be found in piles of stones; this helps to preserve the moisture which is essential for the development of the snake embryos. When hatched, the young snakes have contrasting marks on their background colour, which can be anything from sandy brown through olive green to black. The adults have the same background colour as the young but with black markings, often with white edges along its back and tail. These markings are small and sometimes hard to see unless close up.

One feature which distinguishes the Montpellier Snake from other Colubrids is the prominent ridge above the eyes. The eyes are very large and have a round pupil; sight is one of the Montpellier Snake's best senses. This snake has an average life span of ten to twenty years.

INFORMATION

The Association of British Wild Animal Keepers

Membership Secretary
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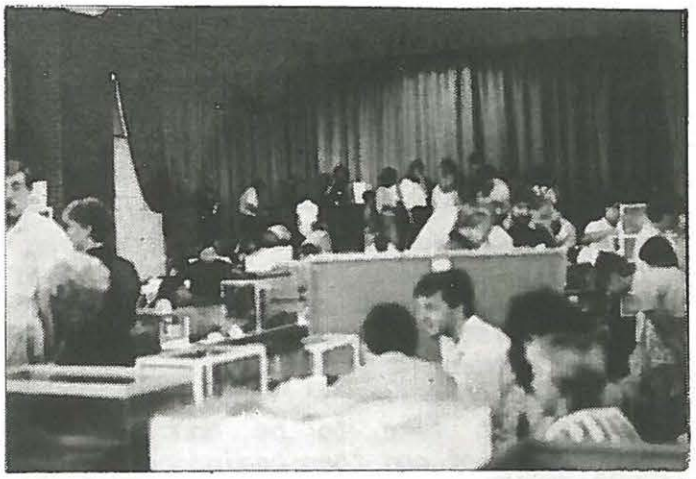
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