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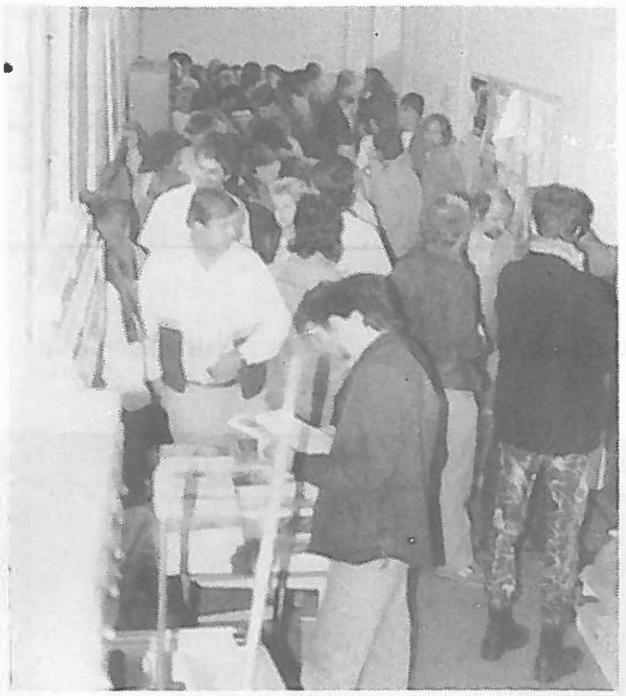


The Dutch Snake Society 'Snake Day' 1988

by Lee Bowler

The meeting this year was held on the 15th of October in the Botanical Laboratory on the Lange Nieuwstraat, Utrecht. We arrived at 9.30 am, half an hour before the doors officially opened. The laboratory was very large and spacious and the event was held on two floors. At first only a few stalls were present selling posters, stickers, pens and other snake paraphernalia. By ten o'clock the building was becoming crowded, with snake keepers of many nationalities chatting and looking at snakes. Many more people were arriving with boxes tucked under their arms containing snakes. By eleven o'clock, when the event was officially opened by the President of the Society, Pieter Stoel, the day was in full swing. Every possible space was jammed solid with snakes, venomous and non-venomous, common and rare. Some of the snakes being sold included Corn Snakes (Elaphe guttata), Royal Pythons (Python regius), Garter Snakes (Thamnophis sirtalis), Indian Pythons (Python molurus bivittatus), Reticulated Pythons (Python reticulatus), Green Tree Pythons (Chondropython viridis), Carpet Pythons (Morelia spilotes variegata), Boa Constrictors (Boa constrictor), Cook's Tree Boas (Corallus enydris cookii), many King Snakes (Lampropeltis), Indigo Snakes (Drymarchon corais couperi), Sand Boas (Eryx), Grey Rat Snakes (Elaphe obsoleta spiloides), Yellow Rat Snakes (Elaphe obsoleta quadrivittata) and many more. There were an equal amount of venomous snakes including common European Adders (Vipera berus), European Asps (Vipera aspis), a few Rattlesnakes (Crotalus), Tree Vipers (Trimeresurus) and the odd Rhinoceros Viper (Bitis nasicornis) plus various other species. All of the snakes for sale were being offered at very reasonable prices and many had been bred in captivity by members of the Dutch Snake Society.

A number of other herpetological societies were present displaying membership information and periodicals. A large bookstand from The Hague called 'Natuur & Boek' had many books for sale written in English, Dutch or German on various subjects ranging from the captive breeding of crocodiles to the structure of snake venom. The Vos firm from Amsterdam were present with a stall selling medical instruments including tweezers, probes, pinky pumps, grabsticks, various 'L'-sticks and many other clever ideas to help snake keepers.



A crowded corridor at the Botanical Laboratory. Photo: Lesley Close

Throughout the day three lectures were given, the first at 11.15am by Robert Jooris on 'A new view on bacterial infections and antibiotics'. The second lecture was at 2.45pm by Gerard Molenaar on the subject 'Thamnophis and Natrix in the terrarium (A discussion on the sterile and ecological way of keeping snakes)'. The last lecture was given at 3.30 pm by Vince Scheidt from America under the title 'The status of snake propogation in the United States, past and current trends'.

At 4.30pm the official adjournment was given by the President and the raffle was drawn and the prizes were given. Slowly the hall became quiet and empty as people packed their few remaining snakes up. By 5pm the Botanical Laboratory was empty.

We then followed the convoy of four or five cars to the last part of the day, the joint dinner in the 'Zorba de Griek' restaurant. Over 40 people attended this event including Dutch, Italian, German and English snake keepers. Conversation was not easy unless you could speak more than

Continued on page 18

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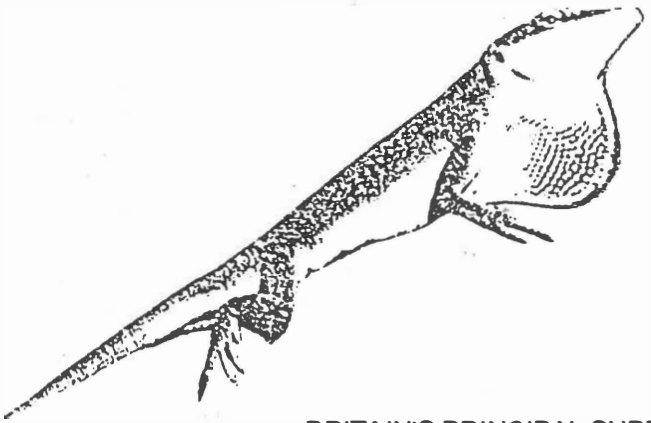
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An Account of First Year Growth in the Russian Ratsnake, *Elaphe schrenckii*

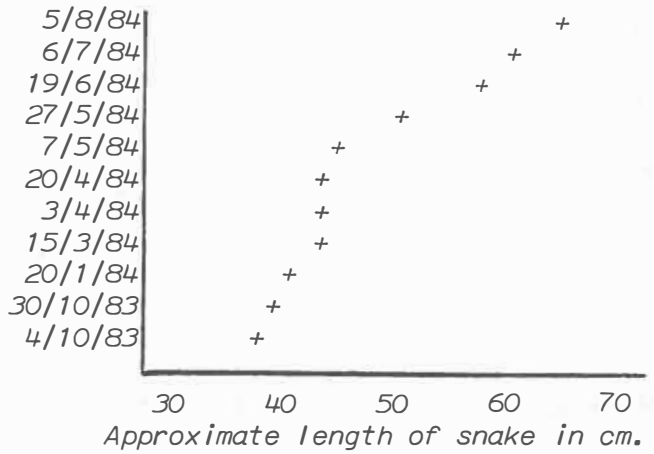
by Kevin J. Hingley

Introduction

My first pair of these snakes were obtained as week-old hatchlings purchased on the 1st of October 1983. They had been bred in Holland and brought to the UK for an International Herpetological Society regional meeting at Regent's Park Zoological Garden's Education Centre, or Centre for Life Studies.

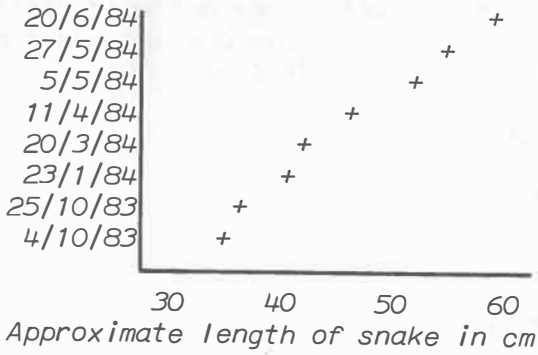
At that time both snakes were approximately 30 cm long and undergoing the neonate, or first, slough. From that time onwards all sloughs from the pair, and from a further specimen bought sometime later, were retained and carefully stored so that a guide to their growth rate could be obtained. Sloughs, of course, are usually larger than the snake they have come from due to stretching which exposes the interstitial skin beneath the scales, so I have deducted 10% from the length of each slough to give a table of figures nearer to the true length of each snake. Whilst this is not totally accurate, it will suffice to give an idea of growth rate in comparison to food intake.

Table 1 Growth rate data for Male No.1



The very gradual growth rate illustrated above between 4/10/83 and 7/5/84 seems to have been due to the lack of food I was able to offer between 30/10/83 and 20/1/84. Pink mice were in short supply at this time and, although the legs of adult mice were offered and eaten voluntarily, the effect seems obvious when compared to the sudden surge in growth from 7/5/84 to 5/8/84 when some 20 cm in overall length was gained and this particular specimen grew from roughly 43 cm to 63 cm due to an increase in food offerings.

Table 2 Growth rate data for Female No.1



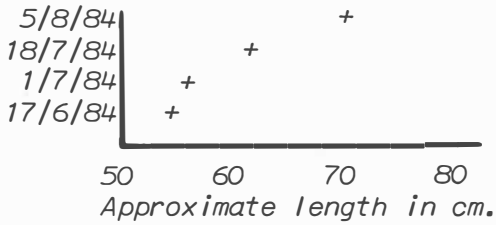
The growth rate for the female, (No.1), appears to be quite steady from the chart shown above although in reality the female only grew slowly for the first five months of her life with a surge of growth from 20/3/84 to 20/6/84. The reason for this is the same as for Male No.1, a low food intake during the winter due to a lack of pink mice. This female never fed as well as Male No.1 in any case and as a result she sloughed less frequently. She died inexplicably on 27/7/84, two days after feeding on 3 small rat pups. I don't think the size of the meal was the cause of death as she had eaten similarly sized meals previously without any ill effect. Compared to the male, (No.1), she had eaten 64 food items, (pinkies, furries and rat pups), during a ten month period, whereas the male, (No.1), had eaten a total of 90 food items.

Several other specimens were obtained at a later date, although only the sloughs from a male, from the same clutch of eggs as the first pair, were kept and growth data subsequently recorded. This male, (No.2), was obtained on 12/6/84 and his approximate length at that time was 56 cm. Table 3 shows the rate of growth from the

above date to 31/8/84.

Table 3 Growth rate for Male No.2

Date of slough



The above chart illustrates a fairly rapid rate of growth for male No.2, which grew approximately 16 cm in less than two months. Its food intake during that period totalled 25 furred mice or small rat pups.

It seems quite logical that all three snakes which were the subject of study should display increased growth rates in accordance with an increase of food/prey items offered and accepted. The potential growth rate of Elaphe schrenckii is quite good when the appropriate sized prey animals are in good supply. There is evidence that these snakes are capable of attaining lengths of 100 to 200 cm in the first year of life when there is an abundance of food, although the same can be said for many species of snakes. Unfortunately for the keeper, E. schrenckii ssp are known to fast from time to time, especially when food is offered regularly and in large quantities. This is best regarded as a 'safety valve' against overfeeding, thus preventing an accumulation of excess fat deposits within the body, the effect of which could be poor health, fatalities or failure to reproduce.

Personally I disagree with the desire of some herpetologists to grow their young snakes as quickly as possible to maturity: surely this can only have an adverse effect on the snakes' health, particularly when the animal is expected to reproduce at least annually in order to become a 'profitable pet'. It would surely be more profitable to be able to tell someone that a snake was 10 or 15 years old and reproducing adequately, and annually, rather than having to admit that the poor thing was worn out after 4 or 5 years and destined for the freezer.

I am in a position to be able to compare the growth rate of another species of Ratsnake, which I was fortunate enough to breed in 1987. The species, or rather subspecies, in question is the Foxsnake, Elaphe vulpina vulpina. Compared to E. schrenckii ssp, the Foxsnake is a much sturdier animal. Although the average size for Foxsnakes is roughly 120 cm, compared to 150 cm in the case of E. schrenckii ssp, Foxsnakes are more heavily built, being at least twice the girth of most Russian Ratsnakes, and probably twice the body weight. The eight baby E. v. vulpina I hatched successfully last year were comparable in length and stature to the baby E. s. schrenckii I raised during 1983/84. The food intake of the young Foxsnakes has been good and during the last 14 months they have consumed around 85 prey items each, ranging from pink mice when young to furred mice and rat pups as they have developed. Even so, the four E. v. vulpina that I retained have only doubled in size since birth and now measure approximately 60 cm in length. The adult snakes from which they were bred were also slow to develop compared to other Elaphe species, in particular some of the North American forms. Some of these have been bred at between eighteen months and three years of age, and I believe my adult pair to have been 7 or 8 years old before reproduction even took place. This tends to suggest that Foxsnakes, E. vulpina ssp, are either slow to mature or they are difficult to breed in captivity. It will be interesting to see at what age the four young Foxsnakes I have will reproduce. If the parent pair are anything to go by, I may be in for a long wait.

All snakes display differing appetites, as can be seen by comparing the number of prey items consumed by Male No.1 and Female No.1 E. s. schrenckii. During the same ten month period the male E. s. schrenckii ate 26 more prey items than his sister, Female No.1, yet, as can be seen from the growth tables, the total length of both snakes by 20/6/84 was very similar at approximately 60 cm. The female, therefore, had attained a similar size to the male even though her food intake was not as high, although the male had sloughed 9 times and the female only 8 times by 20/6/88. It is a shame that the female died, as it would have been interesting to monitor her progress and so be able to compare it to that of her brother, if only to see if she was capable of matching his size, or even exceeding it, on less food and with fewer sloughs.

Fangs for the Ferret

by D.R. Morgan

Smitten by my usual tendency to bring my work home with me, I recently presented my long-suffering wife with a pair of Lowland Vipers, Atheris superciliaris. Despite dire threats of Atheris eradication should they escape, I installed the snakes in our study on the premise that they would make a fascinating and exciting addition to our already large and multifarious menagerie. I had not reckoned on my wife's pet ferret's whole-hearted approval of this action. The trouble was that the ferret seemed to be under the largely erroneous impression that my Atheris had been provided by some beneficient providence expressly for her immediate consumption.

The repeated application of the flat of my hand to her backside and the provision of a locked study door failed to persuade the ferret that the Atheris' cages were out of bounds to animals of her gastronomical bent. An accident had to happen sooner or later. In the usual confusion and shouted contradiction that heralds the Morgan family's tardy departure to a supper date, the study door was not closed properly.

The ferret, piqued by the absence of the normal undivided attention she was used to receiving from my doting wife, regarded the ajar door as a heaven-sent opportunity to renew her restricted acquaintance with the legless delicacies inside. Thirty seconds was all that was necessary to tear through the wire-gauze top of the Atheris' cage. Fortunately, the sound of gauze being determinedly stripped alerted my wife, who managed to grab the portly backside of the ferret as she crammed herself into the cage, but not before an irritated Atheris managed to inflict multiple bites on the ferret's head and neck.

In the time it took to roundly curse each other, telephone the local veterinary surgeon and bundle ourselves and the ailing animal into the car, the ferret was comatose. On arrival at the vet's surgery, some fifteen minutes after the incident, the unfortunate ferret's head was swollen out of proportion and bleeding persistently from the right-hand nostril. The bemused vet, used to treating Rinkals bites on slightly larger animals, responded admirably to my bellowed demands for a cardiac stimulant. He promptly administered 15mg each of Heptaminol hydrochloride and Mepyramine antihistamine into the ferret's inner thigh.

During the hurried installation of an endotracheal tube down her throat, the ferret opened a bleary eye and shrugged off our hands. Rolling into an upright position, she spat out the tube with every evidence of extreme disgust and sneezed violently, liberally showering myself and the vet with clotted blood. After wiping a bloodied nose on my sleeve and closely inspecting the disused syringes littering the table, the ferret decided to enter into the spirit of the game and began frisking around the table in her usual "play-play" attitude when excited. Our amazement and immobility at her response terminated abruptly when her paws slipped on the highly polished surface of the examination table and she fell in an undignified heap onto the surgery floor. Ten minutes of a breathless chase amongst the surgery equipment finally secured the recapture of the animal which promptly fell asleep inside my wife's shirt. Within three days the facial oedema receded and her recovery was complete. We gained the distinct impression that she had recovered despite our panicked treatment. Needless to say, the Atheris responsible received not even a scratch!

Some animals never learn, however. A week later we caught her hopefully scratching a cage containing a large Gaboon Viper which was temporarily sharing the study with us. The ferret has since been banished to an outdoor pen and the study turned over to purely ophidian inhabitants. That the ferret survived at all was something just short of a miracle as far as I am concerned. Full-grown mice take approximately a minute to succumb permanently to the effects of an Atheris superciliaris bite. The ferret, approximately the size of a large rat, took several bites. An overkill, I would have thought.

Author's address: *D R Morgan (Curator)*
Transvaal Snake Park
P O Box 97
Halfway House
1685 Transvaal
South Africa

The Snakes of Transcaucasia
Part II Colubrids

by Dieter Schmidt

This article originally appeared in the magazine 'Aquarien-Terrarien' in the German Democratic Republic and is reproduced here by kind permission of the author.

Translated from the original German by John Hackworth.

The water snakes which are quite common in Central Europe are very rarely seen in Transcaucasia. The Grass Snake is represented by Natrix natrix persa, the Striped Grass Snake. The animals which were caught near Tbilisi (Georgia) were steel-grey with an intense orange collar. This subspecies is, however, very variable. According to Mertens (1947) the Striped Grass Snake is possibly the original form of the entire Grass Snake species. He thought the southern coast of the Caspian Sea was the centre of their distribution range and that from there they spread throughout Caucasia, Asia Minor and the southern Balkan States and Islands. Muller, however, stated in 1931 that it could be argued whether the Striped Grass Snake was a species in its own right or merely a mutation. The view that a large part of the entire distribution range of the Grass Snake is inhabited exclusively by its striped form is incorrect. Muller (1931) added that within the range of the striped species in many places the existence of the unstriped species has also been proven. We can confirm the observations of Rotter (1958) who found a young Striped Grass Snake near Tbilisi on a dry steppe far from any water. Rotter (1958) assumed that these animals probably feed on Green Toads (Bufo viridis) since he found no other amphibians in the area.

A similar situation was found with their relative the Dice Snake (Natrix tessellata). Apart from near Tbilisi, several Dice Snakes were found at Sardarabat and Mezamor in the Arax Plain west of Yerevan. They gathered in a concrete reservoir and on the banks of a small stream where they fed on frogs. Compared with the Grass Snake, the Dice Snake has a much narrower head, a light tongue and a lighter iris. According to Bannikov (1971), Dice Snakes occur up to an altitude of 2800 metres. The animals which were observed were greyish-brown in colour and had normal dark brown diced markings. The undersides were checkered black and white.

The members of the Coluber (Whip snake) family are the thinnest, quickest snakes and are also the snakes most ready to bite. Their largest representative is the Large Whip Snake (Coluber jugularis) which can reach a length of 1.5 metres. The subspecies Coluber jugularis schmidti was found on the outskirts of Tbilisi and was immediately recognisable by its reddish-brown dorsal colouring and wonderful red underside. Georgian and Armenian farmers are completely wrong when they regard this as the most dangerous and venomous snake of the area but they still have enormous respect for the animal (Peters, 1967). According to Bannikov, the Large Whip Snake feeds on mammals, lizards, snakes, amphibians and birds and their young as well as insects. An example of a red Large Whip Snake in the author's collection refused mice and young sparrows for several months. A Sand Lizard (Lacerta agilis) which was offered as food was taken immediately after which the self-imposed fast was broken. Subsequently only mice, young hamsters and sparrows were eaten. Near Tbilisi we found a small concentration of these snakes in a limited steppe-like area which offered a sufficient number of adequate hiding places. When we attempted to dig out these animals we were soon convinced of their readiness to bite, a disposition which continues even after the animals have been kept in captivity for several years. The eggs laid by a wild-caught female hatched after only 45 days and the young, with their colourful spotted markings, bore no resemblance to their uniformly coloured parents.

The German name of Slender Whip Snake (in English Dahl's Whip Snake) for Coluber najadum is certainly deserved for this animal. This snake, which can attain a length of 100 cm, is the most slender and beautiful of all Whip Snakes. It

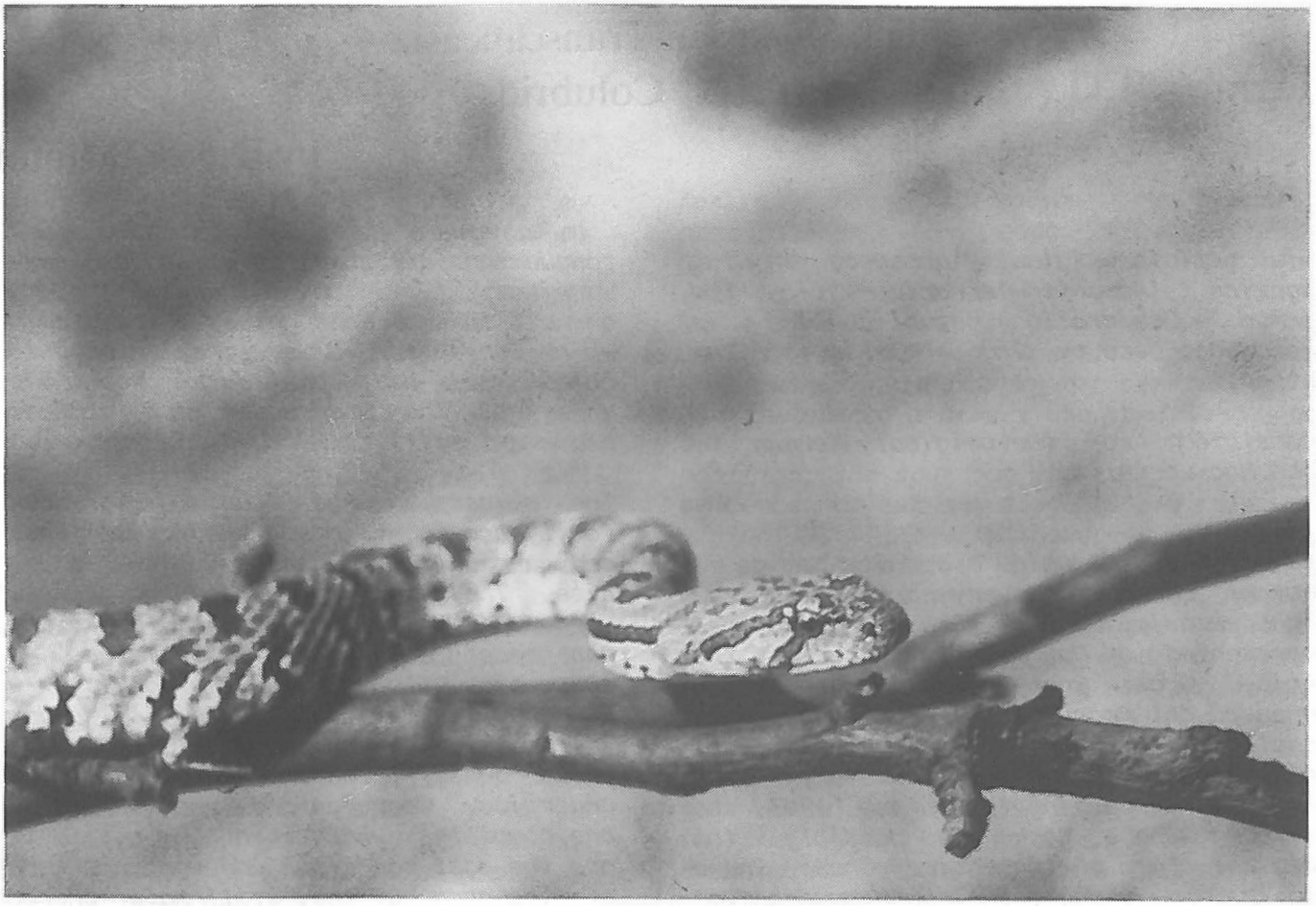


Photo 1 Coluber ravergieri chernovi

Photo: Dieter Schmidt

distinguishes itself from the Large Whip Snake by dark circular spots on the sides of the neck and a light grey to yellowish-grey body colouring. Its range is from Italy to Central Asia and it was seen in Armenia and Georgia. Whip Snakes prefer dry, stony territory with little vegetation. One specimen was even found in the ruins of a temple excavated at Svartnoz, west of Yerevan, a site which every day attracts hundreds of curious tourists. Dahl's Whip Snake is considered a very sensitive vivarium subject which always remains shy and ready to bite. It also causes problems by feeding almost exclusively on small lizards. According to Klingelhoffer, a Dahl's Whip Snake ate three to four lizards weekly but totally refused young mice. It has also been observed to eat insects. In the Yerevan region Lacerta strigata and the very common Eremias serve as the main source of food. An interested herpetologist can easily convert these Whip Snakes to a more nourishing diet by tying a food lizard to a freshly-killed young mouse or to strips of beef heart.

Also reaching a length of around 100 cm is the third Whip Snake to be found in Transcaucasia, Coluber ravergieri, which is known in Russian as the Variegated Whip Snake. Coluber ravergieri has several geographic forms and distinguishes itself by greyish-brown markings on a light grey background (Vogel, 1963). The specimens which we found obviously belong to two different subspecies in that, as opposed to the nominate form, Coluber ravergieri ravergieri, which occurs in the east, they did not have a dark head. A heavily-marked mountain species found near Byurakhan (see photo 1) was identified as Coluber ravergieri chernovi. It was found north-west of Yerevan in the Aragaz Massif at an altitude of around 2400 m near a small stream. Compared with these animals, those found in the steppes near Yerevan are considerably lighter and have only pale markings. They could not belong to the subspecies Coluber ravergieri plumbeus (Fritzsche, 1975) which was mentioned by Bannikov in 1971. All Variegated Whip Snakes feed primarily on lizards but also take mammals, birds, large insects and amphibians. Coluber ravergieri chernovi appears to prefer the mice which were quite common at the place where it was caught. In the vivarium, dead mice were accepted.

Mamanov (1976) warned about complications

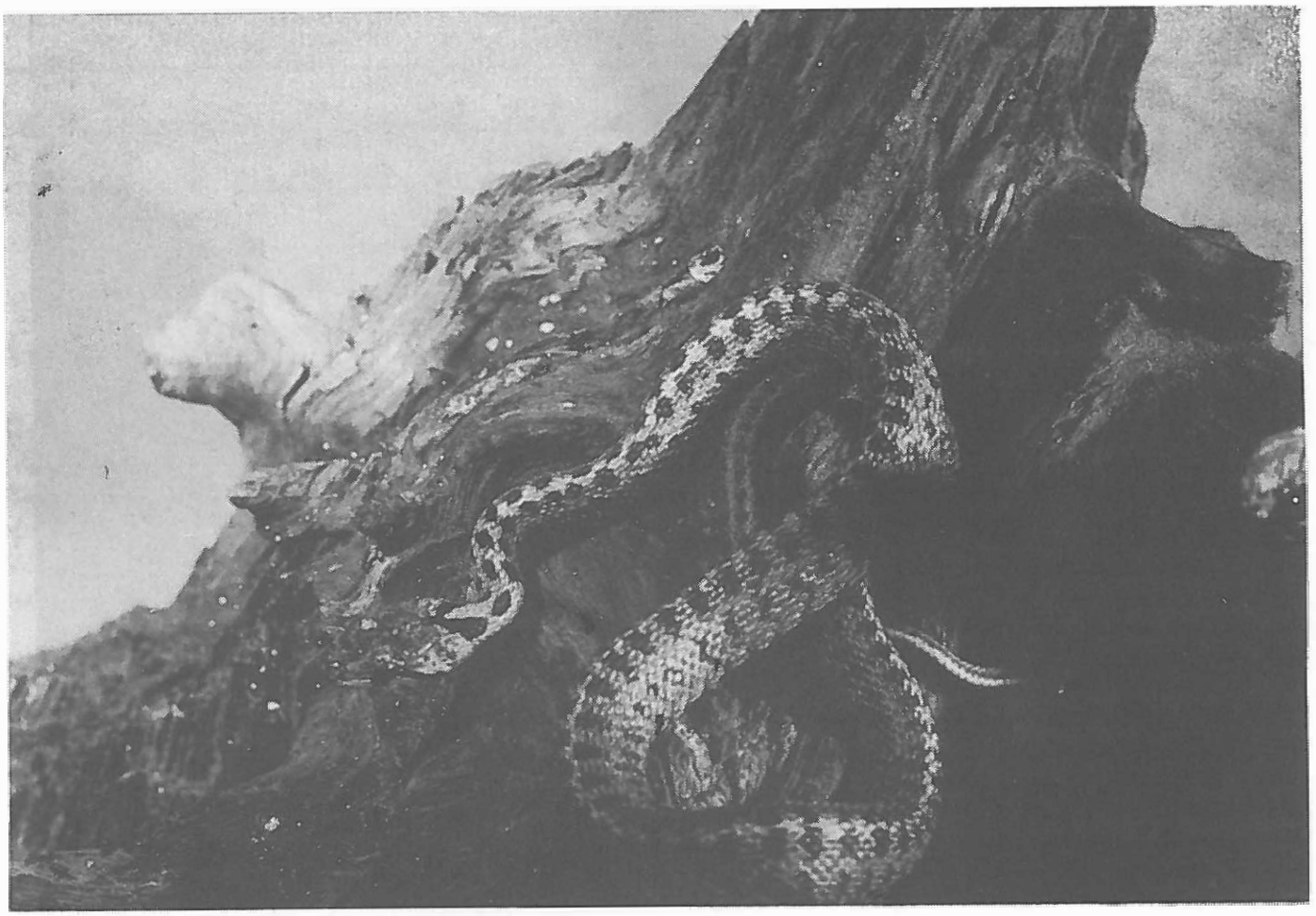


Photo 2 Elaphe hohenackeri hohenackeri

Photo: Dieter Schmidt

after bites from this otherwise totally harmless Whip Snake. After the bite, the hand swelled and showed red discolouration and the movements of the fingers were restricted; these effects occurred after anything from several seconds to a few minutes after the bite. These symptoms disappeared after a few days. Care should therefore always be taken when handling these animals.

The forty species of Rat Snakes (Elaphe) of Europe, Asia and North America are some of the most beautiful and amenable of snakes. Of these, four occur in Transcaucasia. On our trip, two were found. Something of a rarity for the herpetologist is the Transcaucasian Rat Snake (Elaphe hohenackeri) which occurs in Georgia and Armenia and in North East Turkey in its nominate of Elaphe hohenackeri hohenackeri (see photo 2). In the south of its Turkish distribution range it is represented by the subspecies E. h. tauricus (Steward, 1971). The Transcaucasian Rat Snake is an active snake which only reaches a length of 75 cm. It climbs well over rocks and into bushes and trees. It has significant grey and light to reddish-brown markings on a light grey to greyish-brown background. Considerable colour variation was found amongst several specimens caught in the same area. This Rat Snake lives on more or less rocky terrain and can be found at altitudes of up to 2500 metres (Bannikov, 1971). Young snakes of this species, some 28-30 cm long, were found under rocks in the immediate vicinity of Tbilisi. At Mzcheta 20 km north of Tbilisi large specimens fled into the stonework of an old ruin. In Armenia they were seen on the banks of a mountain stream in the vicinity of Gechard Cave Monastery in the Gegam Mountains (see photo 3). A snake basking on a rock was disturbed. In this region the Transcaucasian Rat Snake lives in close relationship with the Smooth Snake (Coronella austriaca austriaca) and the Ottoman Viper (Vipera xanthina raddei). Like other Rat Snakes, it eats mammals but does not refuse the various types of lizard which share its habitat.

The eastern variety of the Four-lined Snake (Elaphe quatuorlineata sauromates), which does not in fact have any stripes, can reach a length of 1.5 metres. It can be found from the Balkans to Western Kazakhstan. Compared with specimens found

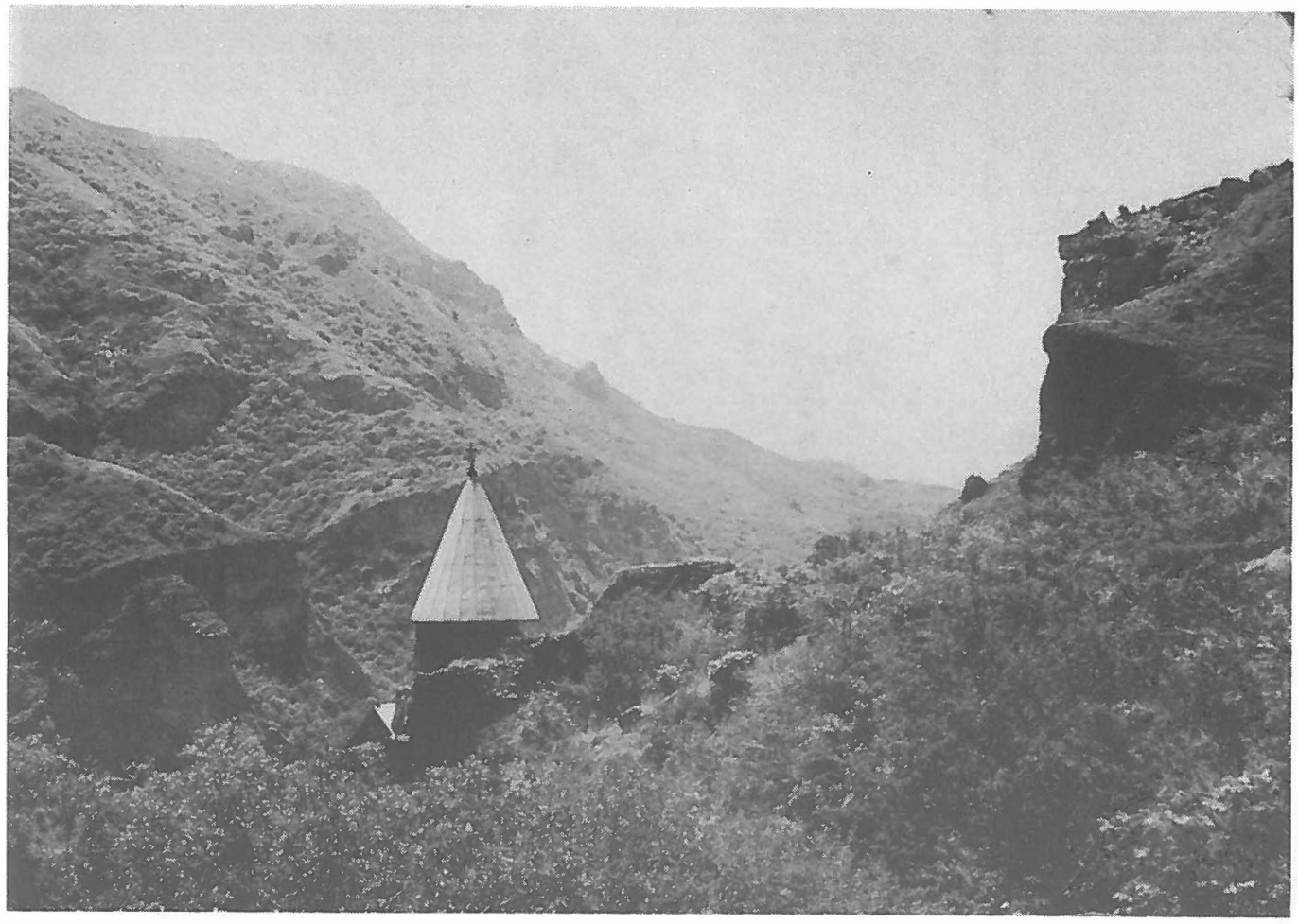
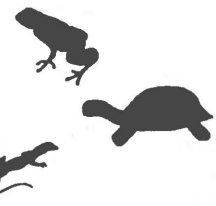


Photo 3 The Cave Monastery at Gechard. Habitat of Elaphe h. hohenackeri, Coronella a. austriaca and Vipera xanthina raddei. *Photo: Dieter Schmidt*

in Bulgaria those found near Tbilisi have a beautiful yellowish-brown ground colour. Bulgarian specimens have a more "washed-out" colour. The colouring of this Rat Snake is however extremely variable. It lives in dry steppe-like regions with thick undergrowth but, as mentioned by Klingelhoffer (1959) can also be found at the edges of marshes and bogs. This large and powerful animal eats mice, rats, lizards, birds and their eggs, and, according to Bannikov (1971), has even been known to eat young leverets. That young animals in the wild feed only on lizards may also be true (Vogel, 1954) but, in captivity, they can be converted to mice without any great difficulty (Schmidt, 1975). The Four-lined Snake is a peaceful and undemanding vivarium subject which can also be persuaded to reproduce in captivity without any great difficulty.

The most widely distributed snake in Europe is the Smooth Snake (Coronella austriaca austriaca); its distribution range extends from Sweden to Transcaucasia and to Western Kazakhstan. This snake reaches a length of 70 cm and gives birth to live young. It has been given its common name because of its completely smooth scales which give it a somewhat porcelain-like sheen. The background colour is a light yellowish-brown to dark grey. A very variable pattern on the back often leads to it being confused with a viper. On both sides it has seven upper labials whilst Elaphe have eight. In this way they can be immediately distinguished. It should also be mentioned that there is a sex-specific difference in colouring. The males have a more reddish-brown background colouring whilst that of the females is more greyish-brown. In Georgia and Armenia the Smooth Snake was found at very high altitudes. At Passanauri on the southern edge of the Caucasus specimens were found burrowed under rocks during rainy weather. According to Bannikov (1971) this snake can be found in the Caucasus at an altitude of up to 2800 metres. In the gorges on the northern banks of Lake Sevan these snakes were also found burrowed under rocks, mainly in damp places, during extremely hot weather. As is the case in our own country, we saw day-trippers indiscriminately killing these harmless snakes. As already mentioned, they occur in the same areas as

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the Transcaucasian Rat Snake and the Ottoman Viper. When handled the Smooth Snake will always bite but the bite is usually released immediately. Because of its occurence at such high altitudes, its main food would appear to consist of lizards. It does however eat Slow Worms (Anguis fragilis), small snakes, small mice and nestling birds. In the vivarium it can be fed on mammals of the appropriate size.

Correspondence to: Dr.sc. Dieter Schmidt
1282 Schonow bei Berlin
Heinrich-Heine-Strasse 86
German Democratic Republic

The final part in this series, The Snakes of Transcaucasia, Part III, Eirenis, Telescopus and Vipera, will appear in next month's issue.

The Trouble with Harry

by Martin and Gail Wise

A year ago we purchased a 1.8m (6') Boa Constrictor. We called him Harry after the Boa in the film 'SSSnake' (a very informative film, may we add for those who have not seen it).

Harry was by far the most handsome looking specimen we have come across, with a great temperament to match. He would lie around your neck and go into a deep sleep. If you spoke he would jump with the shock and then nod off again.

The trouble started the following weekend. We fed Harry a rat which he took quite quickly but, halfway through eating it, he opened his mouth as wide as possible and spat it out. Thinking that there was something wrong with the rat, we checked it by smelling it but it seemed fine. We offered Harry some mice but he didn't want to know.

By late afternoon we noticed mucus coming from Harry's mouth and nose. Swotting up from our snake books we realised that Harry had got a cold, probably from the change in environment and a little stress. We regulated the temperature in his vivarium and isolated him from our Indian Python.

By the next morning Harry was holding his head up with his mouth gaping open as he struggled for breath in a pose I can only describe as like a Cobra before it attacks.

I tried several local veterinary surgeons and rang experienced snake keepers for advice as Harry was deteriorating fast. Luckily we came up trumps; our local practice had a veterinarian on duty who was experienced with snakes. We rushed Harry to their surgery. She said that Harry had a respiratory infection and was in quite a bad way. She administered an antibiotic and also gave him a vitamin injection to see him through the following twenty-four hours. The vet also took a mouth swab which was sent off for analysis; Harry decided to take a swab of his own from the vet's finger!

Over the next two days Harry improved with less bubbling from the mouth. He had to visit the surgery every other day for injections which he did not mind at all, much to the vet's surprise. We were stared at a few times in the surgery waiting room but mainly from fascination rather than fright.

The following week the result of the swab arrived and we were told that Harry had two different infections. One of these was that which they had been treating and the other was a rare one which they might be able to treat if they could administer a certain type of antibiotic to the snake. Our vet phoned a herpetologist at London Zoo who advised that it would be alright and so we went ahead with the treatment.

Our main concern at this time was with feeding Harry. He was not interested in rats or mice so, after three weeks, our vet decided to feed him through a tube inserted into his stomach. She gave him a specially prepared food full of vitamins and minerals to restore his appetite but to no avail. By now we had become quite experienced in force-feeding him liver and steak (liquidised with blood) every Sunday. After three weeks we decided enough was enough; we were keeping Harry going and it was time he started to fend for himself. Eventually he did start eating mice but he was very choosy. He sloughed perfectly from tip to tail a few

weeks later; this must have been due to all the vitamins, and good living on best steak.

There is one very important message to snake owners in the Surrey area. Don't condemn all veterinary practices thinking they lack experience. Our vet certainly put Harry back on the road to recovery; she explained that snakes are becoming more and more popular as pets so it is time to learn how to treat such animals.

Thank you to Elaine Savage, Mr Ball and Carl Boyde for all the help you gave us.

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The Palestine Viper, *Daboia palaestinae* (Werner, 1938)

by Hans Esterbauer



A young Daboia palaestinae from the Golan Heights Photo: Hans Esterbauer

This article originally appeared in the West German magazine 'Das Aquarium' in October 1987. It is reprinted by kind permission of the author.

Translated from the original German by John Hackworth.

The genus Daboia (Gray, 1842) is part of the family of Viperidae and contains a number of interesting but venomous species which have evolved their lifestyle to three ecosystems.

1. Mountains with dry, warm rocky crags

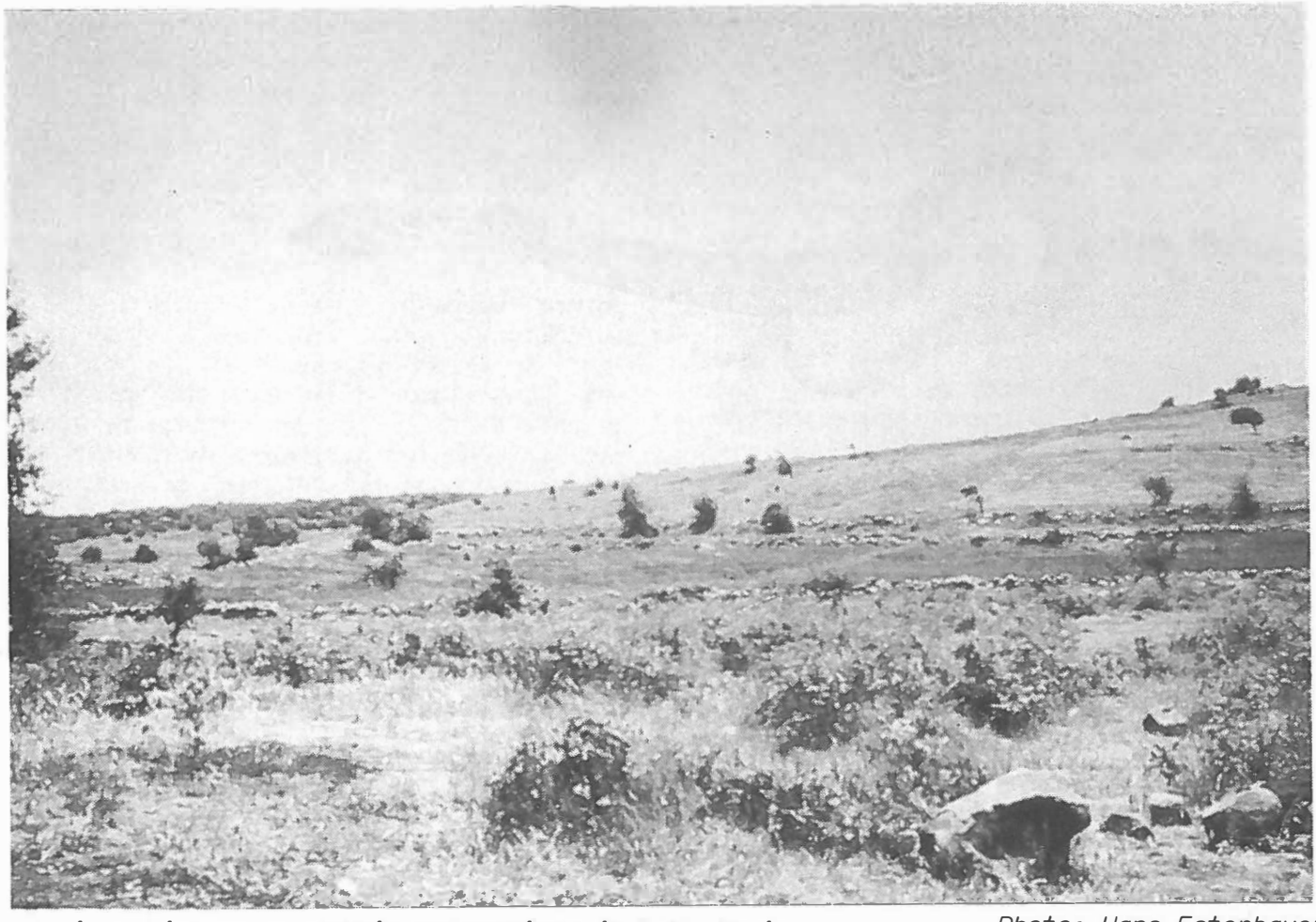
with severe cooling at night.
2. Mountainous rocky steppes and rocky desert areas.
3. Sub-tropical and tropical lowland from the tropical forest to the edge of the tropical rain forest.

A typical inhabitant of the sub-tropical lowland is the Palestine Viper (Daboia palaestinae, Werner 1938). The male of this attractively coloured venomous snake reaches a maximum length of 129cm with the female not noticeably smaller at 128cm. The tail takes up around 15cm. On average the body is around 5cm in diameter.

The ground colour on the upper side of the body is a dirty olive-green to a reddish brown. The colour is lighter on the sides. In males the ventral surface is yellowish with dark spotting whilst the ventral surface of the female is grey. From the neck to the tip of the tail there is a wide, dark brown zigzag stripe which can also take the form of individual oval or rhomboid spots. On the flanks there are large, dark, almost black spots with a light centre. The sharply pointed head with small, smooth scales is triangular in shape and is wider than the neck. The top of the head is characterised by two dark stripes which join together in the centre to form a V-shape. Between the eyes there is a dark patch. The eyes and the edge of the mouth are connected by a spotted pattern. A temporal patch runs from the eye to the corner of the mouth. The large eyes, which are adapted for nocturnal activity, have vertical pupils and a gold-coloured iris.

In Israel the Palestine Viper can be found in the Jordan Valley, on the Golan Heights and in the Mediterranean area but, however, its southernmost occurrence is still essentially unknown (Mendelssohn, 1963). In 1985, in a vivarium in the garden of a restaurant in the vicinity of Ein-Yahao, I saw a magnificent specimen some 115 cm long. According to the restaurateur the snake was caught south of Be'er Sheva'(Beersheba).

In Jordan, Daboia palaestinae has been found in the north-west (Irbid-Ajlun), south of Ammān and at Al-Khalil (Hebron). Only very few discoveries of this species have been made in Syria. Werner (1939) found it south of Al-Ladhiqiyah (Latakia (Jablah)) and Schwarz (1936) found it at



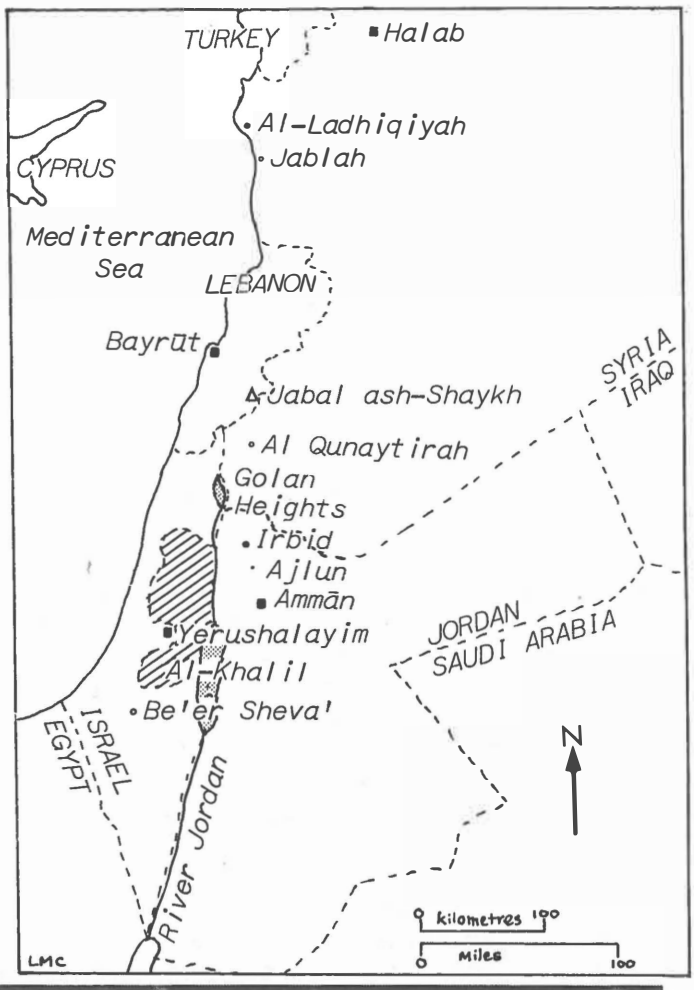
A typical biotope of Daboia palaestinae in S.W. Syria

Photo: Hans Esterbauer

Halab (Aleppo). In south-west Syria I have found Daboia palaestinae at the following places: 3km north of Maidal Shams (alt. 1579m), 2.5km west of Taraniah (alt. 900m) and 1.5km north of Hadar (alt. 1290m).

In 1985 one of my colleagues who was staying about 800m north-west of Al Qunaytirah (alt. 940m) made a personal aquaintance with a 60cm Daboia palaestinae when the snake, which was obviously hunting for food, entered his room. According to Haas (1951), D. palaestinae has also been found in the Lebanon in the Bayrūt (Beirut) area. Because the Palestine Viper has also been found in the Syrian-Israeli border region I assume that it can also be found in Southern Lebanon.

Daboia palaestinae avoids the true deserts and is also quite rare in the mountains and dunes near the coast. On the Jabal ash Shaykh it lives on rocky cliffs on both the Israeli and Syrian sides but, however, does not appear to go to any greater altitudes. The Palestine Viper often lives in the vicinity of farm buildings and prefers grassy places like small woods which are not too dry but which guarantee sufficient sunshine, adequate hiding





Adult Daboia palaestinae. The rostral scale which, is much higher than it is wide, can be clearly seen. *Photo: Hans Esterbauer*

places and which are good for finding food. The hibernation, if indeed they do hibernate, is dependent upon the climatic zone and varies from a few weeks to several months.

According to where they are found, May or June is the mating season. The male tries to stimulate the female by flicking his tongue and making jerky movements along her back. If the female is receptive she lies outstretched to enable the male to glide along her back so that successful copulation can be achieved. This copulation can last for up to two hours. The oviparous Palestine Viper lays 9 to 36 eggs in a slightly moist place below ground. The young hatch around mid-August to the end of September. They measure around 18.7 to 23.3 cm and already have quite effective venom fangs. They slough quickly and seek out suitable hiding and hunting places. Up to their first hibernation they grow around six to nine cm. Small snakes and lizards serve as their initial food.

Birds and small mammals are the main food of adult Daboia palaestinae. Because the Palestine Viper is equipped with well-developed venom apparatus it is not necessary for it to stalk and follow its prey. More often it lies in wait. After the bite, the head is immediately withdrawn and the snake waits for the venom to take effect. The prey is then sought and devoured head first. The Palestine Viper does, however, actively hunt one prey deep in its underground burrows. This is the 15cm long Spalax ehrenbergi which is totally adapted to a subterranean existence. In the stomach of a 80cm long D. palaestinae which had been killed by a motor vehicle, three S. ehrenbergi of eight to nine cm length were found. These had obviously been recently eaten (Mienis, 1982).

In temperament, Daboia palaestinae is much more peaceful than aggressive. If, however, it is threatened or surprised it coils its body together in a horizontal s-shape, vibrates its tail, flicks its tongue in and out rapidly and prepares to strike. The actual strike is amazingly quick and for this around half the body length is brought into play being thrust quickly forward. The Palestine Viper does not however normally bite humans except when caught or disturbed. The venom, which is manufactured in a gland in the upper lip (Glandula labialis superior), is passed through solenoglyphic teeth into the victim and works essentially through coagulating, haemoglytic toxins. The venom is capable of killing a human but varies in strength according to the time of year as well as to the size of the snake and how recently it fed. If the bite connects directly with a blood vessel then death is very rapid. In Israel, 418 bites were recorded within three years (1955 to 1957). Seventeen of these proved fatal. Unfortunately no figures are available from neighbouring countries for comparison. After being bitten, mild swellings occur but after a while these sometimes subside. There then follows the formation of a blister at the place of the bite. This leads to bleeding and an effusion of blood. At the same time general difficulties such as nausea, sickness, abdominal pains, diahorrea and fever occur. Normally there is an improvement after a week but even a shock can lead to death.

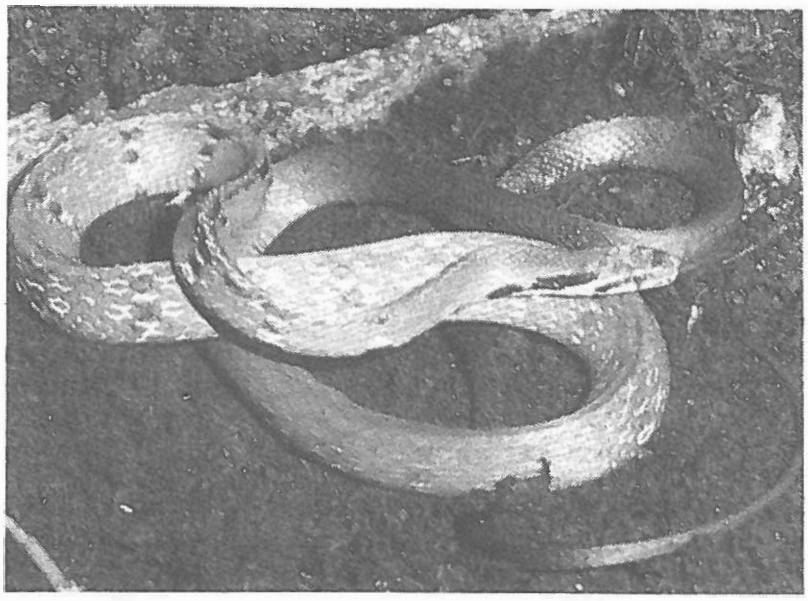
The bitten person is restless and sweats profusely. Breathing becomes rapid and the blood pressure drops. After that, unconsciousness sets in and death follows quickly.

In Austria I know of only two institutes which keep Daboia palaestinae in captivity. These are the 'Haus der Natur' (House of Nature) in Salzburg and the Reptile Zoo in Klagenfurt. This article is intended solely to give information about this uncommon venomous snake because many tourists go to Israel each year. Under no circumstances should this article be regarded as encouragement to keep one of these snakes in a private collection. On the contrary, I would strongly warn against it.

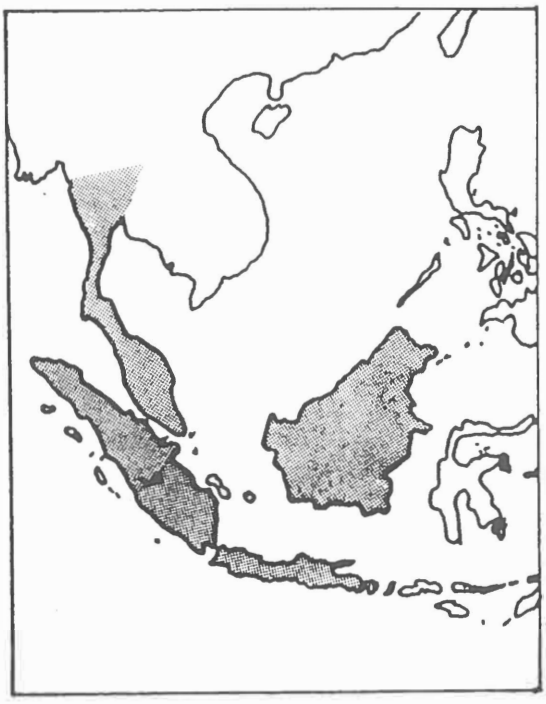
Editor's note. This article has been printed in its original (translated) form but we should point out that, although Herr Esterbauer uses the older generic name of Daboia for the Palestine Viper, readers may also find it referred to by some authors as Vipera palaestinae. In 'Living Snakes of the World' John Merhtens states that "the relationships of many vipers is not clearly understood and the correct classification of the Palestinian Viper is not to be considered a closed book".

Asian Rat Snakes of the *Elaphe* Genus
Part X *Elaphe flavolineata* (Schlegel,1837)

by Klaus-Dieter Schulz



Elaphe flavolineata from the area of Butterworth, Malaysia. Photo: W. Grossmann



Distribution range of Elaphe flavolineata by K-D Schulz

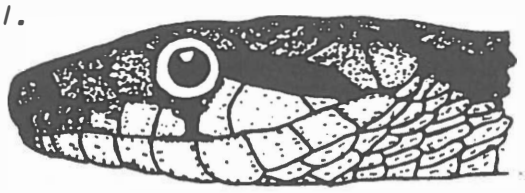
This series of articles was originally published (beginning in 1985) in the magazine 'Sauria' and is reproduced here by kind permission of the author.

Translated from the original German by John Hackworth.

The Malayan Black-tailed Rat Snake which was at first called Coluber melanurus and later Elaphe melanura is still not very well known to herpetologists. These snakes only appear very occasionally on the open market and even then as single specimens. In older and, inevitably, foreign literature Elaphe flavolineata is frequently described and is not classified as rare.

Description

The ground colour over the first third of the body is mainly light brown to olive. Some individual scales are dark brown in colour; an orange or yellowish stripe begins at the neck and runs down the back. This stripe is bordered at first by black which changes to dark brown. On the sides of the body, especially in young animals, there are several black 'eye-spots' each with a lighter centre of white to yellow. In the second third of the body the pattern becomes steadily weaker. The last part of the body and the tail are a uniform dark grey to black. As a rule, adult animals are very darkly marked whilst young animals have very strongly defined markings. There is a narrow vertical line from the bottom of the eye to the mouth, and from the rear of the eye a dark broad line runs to the corner of the mouth. The top of the head is uniformly brown or olive-green. On each side of the neck there is a broad black stripe. The first third of the ventral surface is a cream or yellow colour with black-bordered scales which gradually becomes darker towards the tail. The golden-yellow eyes have a round black pupil.



Head of E. flávolineata by K-D Schulz

Length

Up to 180 cm (Hoesel, 1959).

Distribution and Habits

The limits of distribution of Elaphe

flavolineata are not known even today. The species has been found over the whole of Malaysia including the island of Penang, in Southern Thailand (Narathiwat, Taylor 1965), on the island of Phuket, 5 km south of Takau Pa (Frith 1977) and in the Mergui Archipelago on the island of Elphiston (Anderson 1889). Smith (1943) mentions lower Burma (Tenasserim) as the northern most limit of this species. Trutnau (verbal report 1983) found *Elaphe flavolineata* in Central Thailand (Pak Chong). Its existence has also been proved on the Andaman Islands, Sumatra, Simalu, Nias, Siberut, Banka, Java and Borneo. The existence of this snake on the Celebes (Sulawesi) is apparent and should be proved in the near future by new finds. Grandison (1972) found *Elaphe flavolineata* on the Gunong Benom Massif (Malaysia) at an altitude of 540 metres. On the island of Java this snake is often found near paddy fields and even in the vicinity of houses (Hoesel, 1959). Newly-caught snakes are extremely aggressive and always ready to bite. *Elaphe flavolineata* also exhibits the same threatening posture as its close relation *Elaphe radiata* in that it inflates itself vertically and bends its body into an 'S' shape. Its food consists of frogs, birds and, especially, small mammals (Hoesel, 1959).

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Kopstein (1938) reports on a clutch of eggs laid by a Javanese animal. After a gravidity of some fifty six days, five elongated eggs were laid on the 11th March 1936. These measured on average 60 x 25 mm. The snake remained coiled around the eggs and only left them after two days. The first egg hatched on the 26th June and the remaining young emerged on the 28th June. The incubation thus took 107-109 days.

Maintenance in the Vivarium

I have no information regarding the successful maintenance of this snake under vivarium conditions.

Asian Rat Snakes of the *Elaphe* Genus, Part XI, *Elaphe helena*, will appear in next month's issue.

The Dutch Snake Society 'Snake Day' 1988.
(Continued from page 2)



Snake keepers (left) Klaus-Dieter Schulz, author of the series 'Snakes of the Genus Elaphe', Holger Bartz (centre), author of 'The Care and Breeding of Elaphe subocularis', Snake Keeper Vol.1, No.8 and (far right) Jaap Kooij, Secretary of the Dutch Snake Society. Photo: Lesley Close

one of these languages but Anton van Woerkom, the Editor in Chief of 'Litteratura Serpentium' (the Dutch Snake Society publication), acted as translator as his English and Italian were very good. After an enjoyable meal we were invited to Anton's house, where we spent a very interesting evening. His snake collection includes many Corn Snakes (*Elaphe guttata*) and many beautiful vipers, which were all kept in unusual vivariums which Anton had designed and built himself. He also possesses a massive herpetological book

collection which covers one wall from floor to ceiling.

The next day we drove to Blijdorp Zoological Gardens, Rotterdam accompanied by Anton and four Italian snake keepers; this party of five only stayed a short while as they were travelling on to Belgium. The features of Blijdorp Zoo include a large covered complex containing the Reptile House (which makes a visit to the Zoo worthwhile whatever the weather), a nocturnal house, a fresh- and salt-water aquarium and a children's zoo. The building containing the reptiles also housed the parrots which sat screeching everytime someone passed by. The reptile house had a number of free standing vivaria which were hexagon-shaped and made of wood. We were lucky enough to be given a tour of the reptiles by Judit, a friend of Anton, who worked at the reptile house. She told us about the maintenance, feeding habits and breeding of the Zoo's reptiles and answered the many questions we asked. The Zoo has a very impressive incubation room which is in full public view. The eggs are all incubated in redundant baby incubators which were purchased from local hospitals.

The reptile house has a very good breeding record. At the time we were there the hatching room contained many tortoises, lizards and snakes.

The snakes on show included Royal Pythons (Python regius), False Water Cobras (Cyclagras gigas), Red-tailed Racers (Gonyosoma oxycephala), Garter Snakes (Thamnophis sirtalis), Indian Pythons (Python molurus bivittatus), Reticulated Pythons (Python reticulatus), Yellow Anacondas (Eunectes notaeus), Green Tree Pythons (Chondropython viridis), some Cuban Boas (Epicrates angulifer) which breed every year and also various Australian pythons. No venomous snakes were on show. All the snakes looked very healthy and were kept in large, well planned vivaria. The Reptile House also had many tortoises, lizards, crocodiles and turtles. The Zoo was very interesting and I would recommend it as worth a visit by anyone interested in animals.

In summary, the Snake Day was very enjoyable and well worth attending. The whole weekend was one I would like to repeat and one I would recommend to anyone interested in snakes.

I would like to thank all the people who made this visit enjoyable, especially Anton and Ans van Woerkom, and Judit of Blijdorp Zoo.

SNAKE KEEPER TRIP 1989

If you are interested in a possible Snake Keeper trip to the Dutch Snake Society 'Snake Day' next year, let us know - now!

CO-OPERATION AGREEMENT

Snake Keeper Magazine and The Dutch Snake Society have agreed to co-operate and encourage contact between their respective readers/members. If you would to know more about the Dutch Snake Society, examine a copy of their excellent publication 'Littertura Serpentium' or correspond with Dutch snake keepers, please let us know.

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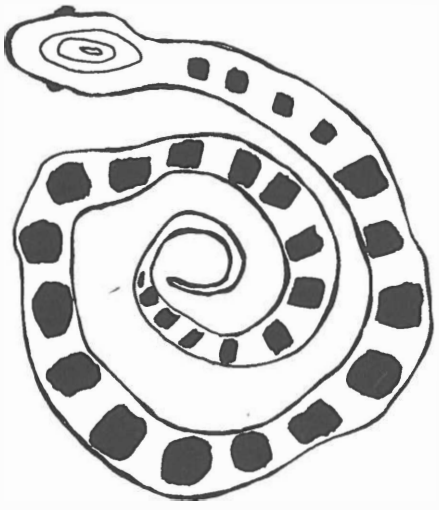
JUNIOR SNAKE KEEPER

Camelia by Zoë Danecker (age 12)

Dear Snake Keeper,

I thought you would like a picture of my baby Corn Snake called Camelia. We got her on the 27th August and she has settled in very well and is feeding well. I think she is very pretty.

from
Zoë Danecker



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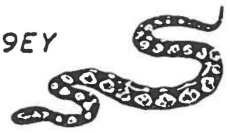
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Dear Reader,

With the publication of this issue, Snake Keeper Magazine celebrates its second anniversary. We now distribute approximately 800 copies of Snake Keeper a month and, although the majority of our readers are located in the British Isles, we have a rapidly increasing readership in Europe, North America and Africa.

We would like to thank the many readers who have contributed articles and offered help during the past two years. Many thanks also to the advertisers who have supported the magazine during its brief existence.

From January 1st 1989 the cover price of Snake Keeper will rise to £1.50p. For two years we have kept the cover price as low as possible but we desperately need extra income to develop the magazine. The money will be used to produce occasional 24 page editions, attract more readers and advertisers by increased mailshots/advertising and to engage a professional designer to improve the magazine's appearance. We realise that for some readers this will be an unacceptable increase but, without it, we are unable to make these necessary improvements to the magazine.

In the January 1989 issue of Snake Keeper you will be able to read Paul Hobson's article 'A Visit to Thailand'. This fascinating account of his recent trip includes details of a visit to a snake exporter; Paul describes the conditions in which snakes are kept prior to export. Further articles to look forward to during next year include 'The Snakes of South East Bulgaria' by Petr Velensky and 'Encounters with European Snakes' by Werner Munsch.

We are always searching for articles for the magazine (especially with the possibility of several 24 page editions) and we would welcome your contribution.

Due to the Christmas/New Year holidays, the publication date of Snake Keeper Volume 3, Number 1 will be a little later than usual.

Thank you for your support.

With best wishes for Christmas and the New Year

Michael Connolley

Lesley M. Close