

ELAPHE MANDARINA



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■ INTRODUCTION

In this article we describe our experiences with the mandarin ratsnake, *Elaphe mandarina*. This snake is admired because of its colours and despised because of the difficulty associated with keeping it alive in captivity. Many hundreds have been bought, cherished and then died within a short period. A frustration for many snake keepers that has now turned to resentment for this species. After various trips to China, particularly Beijing, we now know more about the snake trade, including human consumption and the dangers of this trade for vulnerable animals like snakes. The final part of our article describes how we have kept these snakes in captivity for a prolonged period. We describe the terrarium and the behaviour in the terrarium. Little is documented about behaviour in the literature and we hope to increase the information about this important aspect.

■ SPECIES DESCRIPTION

Elaphe mandarina is a species of *Elaphe* that was initially described in 1842 by Cantor as *Coluber mandarinus*. The form of mandarin ratsnake living on Taiwan has been described as *Elaphe mandarina takasago*. However in the present taxonomic classification, subspecies are no longer recognised.

The status of the phenotypically similar *Elaphe perlacea* is still debated. This snake is described from a few specimens found by Stejneger in 1929. The localities where these were found are in the vicinity of Chengdu where *Elaphe mandarina* is also found. It has been suggested that *Elaphe perlacea* is a variant of *Elaphe mandarina* (Schulz, 1989), or could be from misdescribed specimens. Of *Elaphe perlacea* there are only a few preserved specimens.

Both snakes are known to live in the mountains and have been found at an altitude of 2000/2500 m. *Elaphe mandarina* has been found at 3000 m (Schulz, 1996). Further investigation will prove the correct nomenclature and classification.

Elaphe mandarina is a medium sized snake with an average length of 0.9-1.2 m. Larger specimens are known from the south of their distribution range (1.5 m, Schulz, 1996). The snake is heavily built, the head distinctly defi-

ned from the body. There is no sexual dimorphism, but during the mating season the males are recognisable by a swollen tail base. The ground colour is grey, varying from dark to a pale grey. Some specimens display a reddish line in the centre of each scale. The head is banded yellow and black, these colours continue on the back in the shape of black squares along the dorsum. In the centre of each is a bright yellow square shaped spot.

■ GEOGRAPHICAL RANGE

The range description includes South China, Taiwan, Vietnam, Burma and India. Besides these countries there are some reported findings in northern Laos (Boilstone, 1993, Schulz, 1996). The geographical range particularly in China has not been fully mapped. Discussion remains about the presence of *Elaphe mandarina* in the hills north of Beijing. Recently this question has been positively answered. Heimes (1996) found specimens in valleys around Jundu Shan, about 100 km north of Beijing. This discovery makes the range of *Elaphe mandarina* enigmatic. Prior to this the nearest locality was 300 km to the south. Further investigation will prove if this is an isolated population or if there are connections with the southern populations. Another hypothesis is: the population originated from escaped animals designated for consumption. These could have escaped during transportation in the vicinity of Beijing. The whole geographical range, as described by Schulz (1996) is not a well-defined area.

Large parts exist without the presence or knowledge of this species. Particularly in China the geographical range is a disjointed rather than continuous area.

■ NATURAL LIFESTYLE

Little is known about the ecology of *Elaphe mandarina*. Various authors mention stony slopes and woodland vegetation, where the snakes are found under rocks. Besides this the snake is found in agricultural areas (rice paddy's and subtropical forest), particularly in the tropics. A snake dealer told us that the snakes are found in the soil, immediately beneath the grass, where they burrow in search of nests of small rodents which forage in the litter. This is in part confirmed by their behaviour in captivity, and the amount of soil and dirt they have on them immediately after they have been captured.

■ TRADE

In China almost everything that walks or crawls is on the menu. A well known Cantonese saying points out that the Chinese will eat anything on four legs except a table and everything that flies except a plane (van Galen & Floor, 1996). From a snake dealer friend we understood that in Beijing alone, during the so-called "Spring Festival" 20 tonnes of snake are consumed. This consists primarily of several *Elaphe* species (*carinata*, *mandarina*, *rufodorsatum* and *taeniura*), *Dinodon rufozonatum*, *Ptyas korros* and *Zaocys dhumna*. We found these species in restaurants



Photo by F. Gillisen

A Chinese merchant with his merchandise

and at markets. Besides this it is known that several species of *Bugarus* and *Naja* were being offered. Apart from the snake species, *Cuora amboinensis*, *Geochelone elongata* and several other species of tortoise were being offered for consumption. Some species of tortoise were imported (Suurmond, personal communication). It was feared that this will in time apply for snakes. Every day of the three summer months of last year 3 tonnes of young soft shelled turtles were imported from Thailand, Vietnam, Malaya and Bangladesh (about 5 million turtles each year). The production of soft-shelled turtles is already 2000 tonnes each year. This is done in special ponds covering over 13000 hectares (China Daily, March 1997).

Imported snakes are notorious for pet keeping, especially from Hong Kong. Often dehydrated, usually infected with all kind of worms and bacteria, these animals arrive only to quickly die. When I stated this to the afore-mentioned dealer, she explained that the snake trade is almost entirely concentrated in Beijing. Snakes are thus being captured in southern China and then transported to the north. The journey, often for months has many casualties. Snakes are collected in nylon bags, with approximately 50-100 in each bag depending on their size. The bags are then packed in bamboo baskets, which are transported by plane and stored (sometimes for weeks until a buyer is found. On arrival in



Photo by F. Gillisen

Elaphe mandarina on the market

Beijing airport you can see the baskets being stored on the runway.

■ PERSPECTIVE FOR THE FUTURE

With an increase in prosperity, one can also expect a rise in consumption as people have more money (the Chinese spend approximately 60% of their income on food). As well as this a huge improvement of infrastructure has created more effective and faster ways of transportation.

"Snake is good for your health, you should eat it regularly". It is considered a rare delicacy despite the enormous numbers of snakes being eaten. It is offered in the most luxurious restaurants. The price is relatively high, about NGL 80.- per kilo. It is expected that snake habitat will decrease due to an increase in human population and industrialisation. All development makes us fear for the future of *Elaphe mandarina* as a pet snake. Before any reasonable captive population can be established, this animal will be threatened by extinction from consumption. The first offspring have been hatched in captivity (Schulz & Munzenmair, 1990), but the mandarin ratsnake seems to be a hard snake to keep. Along with the many other snakes that die before they start to eat, raising the young seems to require patience. Mandarin ratsnakes eat relatively small prey in small numbers (Schulz, personal communication). Often the captured snakes die soon after arrival without any obvious reason, sometimes even immediately after eating a mouse. Animals taken from

Beijing had only slightly infected faeces, usually only flagellates that should be easily treated. Even so these animals died soon after arrival in Holland (1-2 weeks later). Clearly more factors play a role besides infection and dehydration.

■ PERSONAL EXPERIENCES

In spring (April) 1996 we bought five *Elaphe mandarina*, 2 males and 3 females, from a market in Beijing. Two were young, we estimated them to be 2-3 years of age. Of the others one was extremely pale and heavily built, the length being about 1.3 m. The other female, the smallest, being approximately 1.0 m was very dark. The weight of the 3 largest snakes varied between 500 and 600 g. The 2 smaller snakes weighed about 200 g. All snakes were in good physical condition, no wounds, clear eyes, no damage to the mouth and no smelling faeces. Interestingly about 50% of the offered mandarin ratsnakes were missing part of their tail. We could not find out why, maybe it had something to do with the way they were captured.

The first action we took after purchase was to offer the snakes water. We locked the hotel room door, filled the bath and let them drink. A newly purchased specimen often drank for 10-15 minutes, (as opposed to our captive animals whom we rarely see drinking). The snakes were upon purchase, filthy. Lots of mud washed off their skin during their daily bath. I think this has to do with the natural way of life of *Elaphe mandarina*. After a few

sloughs their colour became remarkably paler, some were almost white.

■ HUSBANDRY

The enclosures in which the snakes were housed was simple. A chipboard enclosure (50x35x35 cm), the floor was covered with a thick layer of beech chips. In the enclosure was a plastic container with a lid in which was a round hole 5 cm diameter. This was filled with moist wood shavings that were replaced every three weeks to prevent fungal infection.

The heating/lighting consisted of a 15 W bulb. Temperature varied between 10-16 °C at night and 22-27 °C during the day, this depended on the room temperature.

■ BEHAVIOUR

To enjoy *Elaphe mandarina* one ought to become nocturnal. They consistently only ate in the container of wood shavings. In the year we have taken care of these 5 animals we have seen two of them only occasionally. The other 3 we have never seen outside their hiding place. Only on inspection do we see all the animals. In the year of their arrival the snakes ate only occasionally (only just enough to survive). Despite, this four snakes kept their original weight, even after hibernation. In early 1997 we decided to force feed one of the smaller snakes because its weight became critical. The other four now eat considerably more than in the year of import. Prey is placed in the container and mostly eaten at night and

when the snakes are hidden.

In spring the male has been restless on a couple of occasions. He crawled out of the container and stayed hidden in the beech chips for days before eventually returning to the container. This behaviour in the male may be attributed to mating behaviour, though actual mating was never observed due to their secretive nature. In light of our experience with tens of specimens of *Elaphe mandarina* we can determine some aspects of their behaviour. *Elaphe mandarina* normally remains continuously hidden. If it is in sight or exposed something is wrong (except for mating behaviour). Laying outside its hiding place is often, as we experienced, a sign of imminent death. In this situation the colour of the snake darkens and may become almost black and the eyes cloudy as if a shed is approaching. Healthy animals are a bright colour when they hide in moist surroundings, even prior to shedding. Eating patterns remain a mystery. We have only observed eating once. Eating takes place in the containers, mostly at night. Mandarin ratsnakes refuse large prey items, they prefer pinkies, fuzzies and baby rats.

During the warm summer of 1997 none of the snakes ate, probably because of the elevated temperature. In spring and particularly after the summer the snakes ate a lot, sometimes 5-10 baby rats each week.

■ RETROSPECT

As a whole the mandarin ratsnake continues to appeal to us. The snake can not be recom



Photo by H.J.A. in den Bosch

Elaphe mandarina

mended because of its unsuitability to captivity and the fact that it remains hidden almost all the time.

The colour and pattern is remarkable and attractive, unfortunately the snake rarely shows this beauty. We hope that within 5 years we will have offspring from our *Elaphe mandarina*. This snake is only for the specialist and experienced snake keeper and we believe, due to its difficult husbandry, it will remain this way.

Due to the enormous consumption in China this snake will certainly become rare. Though at present it appears in large quantities in its natural habitat. We estimate 2 tonnes of

Elaphe mandarina are being consumed each year.

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