

## NOTES ON THE NOCTURNAL ACTIVITIES OF THE NORTHERN VIPER *VIPERA BERUS* IN SOUTHERN ENGLAND

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Several of the European viper species are, to a greater or lesser degree, nocturnal in their habits and, although the Northern Viper *Vipera berus* has been found to be nocturnal in the southern parts of its range, in Britain and further north it is considered to be diurnal. Mattison (1986) states that a number of vipers, “notably the adder *Vipers berus*, hunt mostly during the day . . .” Stafford (1987) suggests they “emerge” as early as 0700 hours in the morning, whilst Prestt (1971) concluded that *V. berus* is diurnal after “extensive night searches failed to reveal a single active viper”.

Having made an in-depth, twenty-year study of *V. berus*, in the vivarium, in an outdoor reptiliary and in the wild in both the north-west and the south of England it was my firm belief that this species was active during at least part of the night. Captive, vivarium-held specimens were frequently found to be moving around at different times throughout the night and would often slough and feed under the cover of darkness. Those contained in a large outdoor reptiliary were also found to be active between dusk and dawn on warm summer evenings.

These activities, however, all took place in captivity and the conditions were therefore obviously artificial. It was, of course, entirely possible that human activity in the vicinity of the captives during the day inhibited the snakes from acting normally, forcing them to carry on their usual routines under the security of darkness. Having maintained a variety of reptiles in captivity over a period of some forty years I was also well aware that what occurs in the confines of an enclosure, no matter how large or how closely it resembles an animal’s natural habitat, is not necessarily what occurs in the wild.

During 1996 I visited several sites in the Dorset Purbecks, which I knew to have sizeable viper populations. It was a good summer and frequently so hot that many days passed without seeing a single specimen later than 0830 hours or earlier than 1630 hours. Several of those which were caught in the early morning, between the hours of 0600 and 0800, regurgitated undigested mice. Could these rodents have been hunted and eaten the previous night? Other vipers were observed moving through, or lying in, low vegetation or drinking from dew-covered foliage. Had these individuals been abroad all night or had they only just emerged from their sleeping quarters? I wanted the answers to these questions. I wanted to find out just exactly what happens in the life of *V. berus* after dark.

Watching even the largest of animals at night is difficult enough but looking for reptiles presents a real challenge. Their excellent camouflage and relatively small size makes them hard enough to locate in daylight never mind in the dark. They are also highly sensitive to movement and vibration, added to which most have a liking for habitats which have plenty of thick ground cover.



Fig 1: *Vipera berus* Heavily Gravid



Fig 2: The Study Site containing the Hibernaculum

Over a dozen night searches were made between May and June but, unfortunately, each one had to be aborted. I was ripped to pieces by gorse and brambles as I waded through waste-high undergrowth; I made too much noise as I stumbled over stones and boulders in disused quarries; the beam from my lamp was either too weak, or so strong it would have frightened away anything and everything upon which it fell long before I was near enough to see it; my head, neck, face and limbs were under a continual attack from a myriad of tiny biting insects; or a heavy sea mist would suddenly descend at a vital moment. Then, on a warm August evening some six weeks later I saw something which made me want to try again.

I had spent the day at Studland, taking photographs and looking at the local fauna and flora. It had been very hot with clear skies and a noon temperature of 28°C. Despite the area being home to all six of Britain's reptile species, with the exception of two sightings of adult female Sand Lizards, *Lacerta agilis* I saw no other reptiles, due almost certainly to the, at times almost uncomfortable, heat from an unforgiving sun.

I had wandered across the heath for several miles that afternoon and it was getting dark as I arrived back on the Ferry Road. I had not gone far when I was suddenly aware of something moving in the road just ahead of me. In the twilight I could just make out the familiar silvery-grey body and characteristic black markings of an adult male Northern Viper.

It was 2045 hours and here was, what seemed to be, evidence that *V. berus* is definitely active later than 1930 hours – the latest time recorded by Presst (1971). The heath borders each side of the Ferry Road and I hastened the snake's passage across the road and into the heather where I quickly lost sight of it.

Encouraged and excited by this I decided to plan another night search but, first, I needed to find a suitable site, and I needed to find a better method of illuminating what I was looking at. It all came together a year later in August of 1997.

I was engaged in photographing different colour variations in *V. berus* along the Dorset coast and was searching rough pasture and chalk grassland at Swanage, when I came upon three adult females, one heavily gravid (fig. 1). They had seen me approach and slid away into a hole in the bank on which they had been basking. I went away and revisited the spot on my way back some three hours later to find that there were now five individuals present around two entrances.

I checked the site (fig. 2) the following day but found only two adults. The next day there were four laying out around the entrances – three females and a male. A further two smaller males were nearby in long grass. I had found a hibernaculum to which the vipers were returning for the oncoming winter. As it was located in the bank of a deep hollow, possibly an old stone excavation site, it was ideally situated for watching the vipers' activities from the opposite bank without them being too aware of my presence.

I have always been dubious about the merits of watching the nocturnal behaviour of animals with the aid of a spotlight or such similar forms of lighting. I cannot see how one can be certain that the subject is acting naturally after it suddenly finds itself illuminated with a bright light.

Recent wildlife documentaries on television in which animals are filmed in complete darkness with special infra-red cameras and equipment which amplify available light have been impressive. I was therefore extremely fortunate to be given the opportunity of

using just such a piece of equipment – a Moonlight Night Vision 100 Compact – which meant I would now be able to sit and observe, unseen, in total darkness.

After one night of drizzly rain and several with heavy sea mists I finally had one where the conditions were just right. Monday 25th August had been hot and humid and as the afternoon progressed any clouds were quickly burnt away to reveal a clear blue sky.

I arrived at the hibernaculum at 1930 hours, some thirty minutes before sunset, and found myself a position from which I would have an unrestricted view of the entrance holes and immediate surroundings. I briefly searched the area and disturbed two snakes, about three metres from each other, both of which disappeared into the grass in the bottom of the hollow. Returning to my position I sat down and waited.

For a while I tested the Night Vision equipment by focusing on a dry stone wall, foliage, and trees nearby. Finally, peering through the scope's eye-piece, I panned it to the left and right aiming at the top of the bank and working my way down in a zig-zag motion. Immediately I noticed a movement in the opening of one of the holes. It was a viper. I followed it with the scope as it left the hole and slowly moved off into the grass. It was now 2040 hours and a second viper was moving down the bank from above. It came to rest on a rocky ledge where it remained in loose coils. There was a possibility that it could feel warmth that the rock had absorbed during the day although I must admit I could not detect any warmth in the rocks or soil around me.

For the next two hours I watched seven different individual vipers. Three remained within two or three metres of the hibernaculum while the other four seemed to leave the site altogether, possibly to search for food. I was beginning to feel a bit chilly by this time and, for a while, I thought the snakes were too for the three that remained on the bank retired into a hole and disappeared from view.

The view through the Night Vision scope shows everything in various shades of green. It was fairly simple however to distinguish male vipers from females, in most cases, by the tone of their markings, and one specimen from another by the markings on their heads and necks which are unique to each individual.

At 2235 hours a viper emerged from a different crevice in the bank and, tongue flicking rapidly, followed the trail of the three I had been watching earlier into the inner depths of the bank. Everything then remained still with no activity noticed, although a rustling from an unidentified source was heard in the grass nearby. The temperature at this time was 16°C.

Thirty five minutes later, at 2310 hours, I aimed the night scope in the direction of yet another rustling coming from nettles at the base of the bank on which I was sitting. After a minute or two a very large female viper emerged from the grass and slowly climbed the opposite bank towards one of the entrances to the hibernaculum. As she neared it I noticed that there was another snake just inside. I could not determine the sex of this individual but as their heads met they both became very excited, crawling over each other for some minutes, their tongues flicking continually, before they finally disappeared inside.

Apart from three or four short breaks of some fifteen minutes each, to stretch my legs and warm myself a little with a hot drink, I stayed in position at the site all night. Although activity in and around the hibernaculum appeared to decrease somewhat as the night went on, individual vipers continued to come and go until 0305 hours after which

no more were seen again until an adult male was observed entering another crevice, some two metres from the main entrance, at 0453 hours.

As the sun rose at 0610 hours I was able to scan the site without the aid of the Night Vision equipment and could see two females lying together in tight coils on bare chalky soil on the top of the bank. As the sun rose still higher one moved off into the dew-covered grass at the bottom of the bank while the other merely shifted position.

I wandered around the area, treading softly and moving slowly. During the next two hours I watched two of the individuals I had seen leave the hibernaculum the previous night return. One had a noticeable bulge and looked as if it had recently fed but I was unfortunately unable to examine it closely.

I finally left the area at 0840 hours, by which time only one viper was to be seen at the mouth of the main entrance to the hibernaculum – a large and very gravid female. The day turned out to be another hot one and I returned to the site again that night, between 2030 and 2230 hours, during which time I watched one viper enter the bank, two leave and a third, a sub-adult, moving about inside one of the entrances.

I was pleased with what I had seen over just two nights but, regrettably, could not devote any more nights to it. However, further night time field work is planned for 1998 to ascertain, if possible, whether nocturnal activity occurs at other times of the year, in other weather conditions, and in other locations.

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