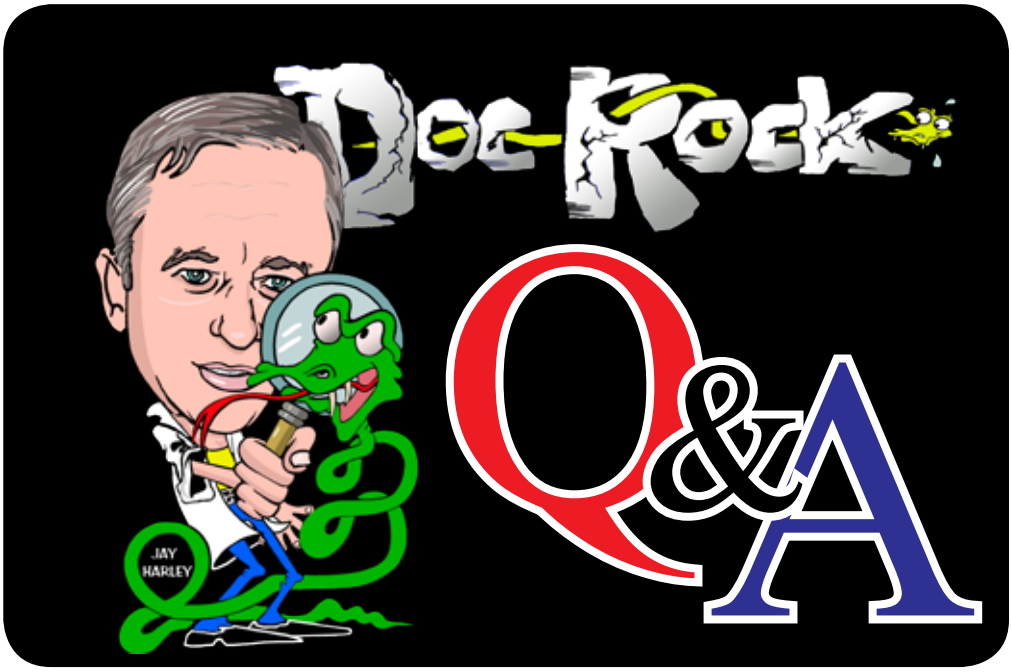


Q: ***"My Spotted Python has started to puff her throat out like a bullfrog … my python has got a mouth abscess … my snake's mouth has become all crusty and it's sticking together … my python has stopped feeding even though I've kept the temperatures high? What do you think the problem is? Can you help me?"***

A:

Each year with the onset of the cold winter months, we experience a dramatic increase in husbandry queries through our website at Southern Cross Reptiles from worried keepers describing a malady like those listed above. Each time I explain that it is impossible to diagnose a sick python over the internet and that the animal should be taken to a vet if there are health worries. However, I also ask about cage conditions to see if there are any clues to help me provide some practical husbandry advice.

Although bacterial infections of the lungs and mouth can be caused by a broad range of issues spanning captive stress through to rodent bites, in my experience the most common cause is exposure to temperatures which are inadequate for the snake to maintain an effective immune system. Temperature related husbandry problems develop at this time of year, not only because it's colder over most of Australia, which puts cage equipment under more stress, but because many keepers are cooling their animals deliberately in order to try and trigger breeding.

Like most, I have had my share of mistakes and mishaps over the years. These days I like to think of our pythons as behaving like "heat batteries", especially during the winter months. When a snake requires heat and moves to its basking site, it increases the flow of blood to the surface of its body so that the heat can be absorbed and carried back into the body to raise the temperature of the whole snake. When the body has soaked up enough heat (i.e. the battery is full), the snake can close down much of the peripheral blood supply so the heat is conserved to maintain body functions. Depending on the snake's needs, it may simply curl up tightly in its hide box (a sphere has the smallest surface to volume ratio and so is the best shape to curb heat loss), it may sit in a branch and hawk for food, it may start mating or it may just pace its vivarium for a reason only known to itself. Eventually, their accumulated heat is lost to the environment and the snake returns to the basking site to replenish its heat battery once more. Using this concept, one reason a snake can get sick is simply that the heat battery is not receiving sufficient charge to maintain its health.

There are three aspects of cage temperature that I always pay a lot of attention to. The first is the overall air temperature, the second is the floor temperature and the last is the basking site. Because we tend to view the world from a human perspective, we readily understand that if we are in a room full of cold air it will make us cold. We rarely think about floor temperatures however. Imagine if you were wearing next to nothing and you lay down so that as much as possible of your body was in contact with a cold floor. Even if the room was warm, it would chill you to the bone (alcoholic overindulgence and romantic interludes aside of course). Unless they are climbing over their cage furniture, snakes have most of their bodies in contact with the floor of their cage and therefore air temperature is only a secondary influence.

Cage air temperature is not always a simple measure either. If your snake's cage is in a cold room and the cage has ample ventilation then you can be sure that there will be cold air flowing through it. Just because the thermometer at the back of the cage says the air is warm doesn't mean this is the snake's experience. Recently, one of our friends had some expensive Pygmy Pythons *Antaresia*

perthensis quarantined from the rest of their collection in their bedroom. The animals were being kept in plastic tubs on heat tape. Thermometers indicated the warm end of the cage was 32°C and the cold end was 22°C, so everything should have been fine, right? Wrong! The room was frequently in the mid teens so the floor of the tubs away from the heat tape were too cold, the vents were causing drafts so that the overall air temperature was too low and the snakes got mouth infections. To solve the problem he borrowed a radiant oil heater from us, raised the room temperature to the low twenties, raised the temps on the heat tape a bit more and reduced the ventilation. This fixed the problem. The crucial clue that he missed was that the pythons were constantly sitting at the warm end and not shuffling between their hide boxes and their basking sites, a sure sign that temperatures needed to be raised.

The basking site is a critical factor in charging the snake's heat battery and so in keeping it healthy. Often keepers will say to me that temperature can't be a problem with their snake because they have a constant basking site of 28°C. Firstly, 28°C is too low and well below the preferred operating temperature of many snakes. I like to provide our pythons with a basking site that is at least 32-34°C for a while each day. Secondly, if you want to understand the thermal environment your snake is experiencing you need to know the temperatures all over its vivarium, not just at one or two points.

There are so many aspects to reptile temperatures that a whole edition of Reptiles Australia could be spent discussing the subject. Researchers have shown that there is no single optimum temperature and the needs of a snake will depend on the season, its hormones, its activity levels, whether it's digesting food etc. Each species has its own quirks with nocturnal animals typically operating at lower temps than diurnal snakes and southern species being less tolerant of high temps than northern desert species and so on. It is for this reason that it is good practise to provide a thermal gradient across a cage to allow the animal to pick the temperature that suits it best.

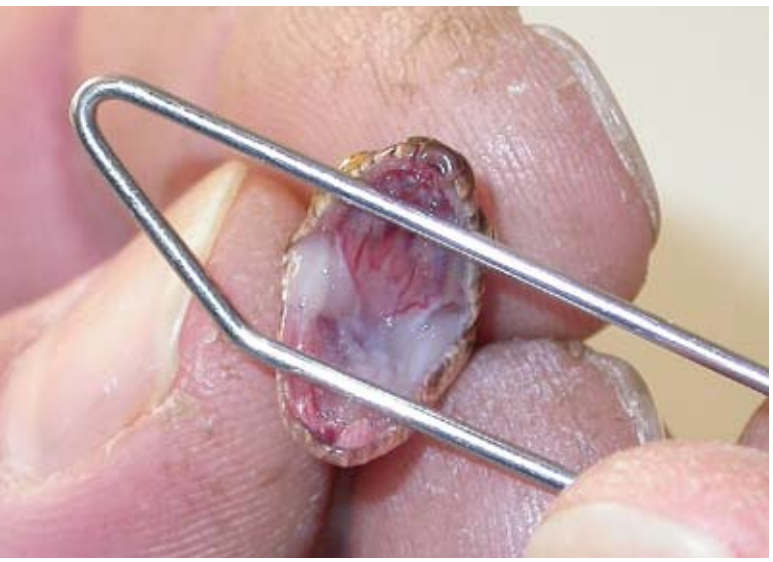
We have found that as long as our pythons have access to a basking site which enables them to charge their body battery to a temperature of at least 30-32°C most days that their immune system remains effective and they remain healthy. When it comes to breeding time, we simply lower the night-time temps and reduce the period the basking site operates (see Reptiles Australia Vol 2(5) for a discussion of breeding temps). While flat cooling can work (the practice of lowering temperatures 24/7 over a number of weeks), I don't recommend it as it carries significant health risks for the snake.

Putting all of the above in a nutshell:-

- Think of your snake as being like a heat battery. Without enough charge, it won't power the immune system adequately placing its health at risk
- Do not try and maintain too great a temperature differential between average cage and room temperatures – around 5°C is ideal.
- Know the temperatures across the whole of the vivarium – back, front, sides, floor, basking site – so you can understand the regime your snake is experiencing. *A non-contact thermometer is of huge benefit when doing this.*
- Whether you are trying to breed your snakes or not, provide a daily basking site which can lift the snake's body temperature to 30°C or more if it chooses.
- Observe your snake's behaviour and raise temps if it is constantly on its basking site and lower temps if it is constantly at the cold end.

A healthy Woma mouth.

A healthy mouth from a Gammon Ranges Carpet.



The healthy mouth of the Pygmy Python.

Pygmy Python with mouth infection. Image: Erin Eldridge.

Do you have a question for Doc Rock?

If you have any questions you would like Doc Rock to answer, please send them to:
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