

A BLUE HOUSE GUIDE TO GENERAL REPTILE HUSBANDRY



ENVIRONMENTAL SELECTION



Before purchasing or building your vivarium you must first consider what reptile you are planning to get and, if you are getting a juvenile, its adult size and physical needs and capabilities must be considered.

For example, the large constrictors such as boa constrictors or Burmese pythons (which as babies are only a few feet in length) can reach 12-15 feet and 18-23 feet respectively as adults. This is especially important with the Burmese python, who as an adult can weigh upwards of 30-40 kg.

So - when buying or building your pet's vivarium, select for the future not the present!

Vivaria designs and construction materials can vary depending on personal preference, but all should be built to last as many reptiles can be long lived - especially large species of snakes and tortoises. They also need to be hard wearing, durable and easy to clean, as you will be doing a lot of cleaning of your pet's house.

Commonly used materials tend to be Perspex, fibreglass and reinforced glass. Wood is not ideal unless it is treated, as it can easily become damaged and rotten due to regular cleaning and maintenance and being soiled by your pet.

Transparent materials such as Perspex and glass can be desirable when you want to fully exhibit your pet and the environment you have painstakingly created, but many species cannot see the surfaces of these materials as we can. Over time, repeated rubbing or even striking at these "invisible" surfaces can lead to abrasions, especially around the mouth, which subsequently can lead to stomatitis - often known as "mouth rot".

The placing of a strip of tape along the outside of the vivarium can help alleviate the problem by allowing your pet to visualise the surfaces.



Above: nose abrasion



Above: mouth rot / stomatitis

Once you have selected your preferred material, you must now select your dimensions. There is no set guideline for reptile housing due to the myriad of species commonly kept, but there are several points which must be considered.

As previously mentioned, the full potential adult size of your pet must be taken into account, allowing them to fully express their normal behaviours such as eating, sleeping, exercise, basking, and shedding. Similarly you should also take into account what wild environment your pet would live in and where it would spend most of its time.

For example, species such as green iguanas or green tree pythons are arboreal, so spend a lot of time off the ground in the trees. In these cases your vivarium's dimensional emphasis should cater more towards vertical spaces rather than horizontal spaces. With terrestrial species, such as tortoises, providing lots of vertical space for climbing is rather pointless and their emphasis is more on horizontal spaces.

These are only rough guides; there are many species which will utilise and enjoy a combination of both vertical and horizontal spaces.

SUBSTRATE

Selecting an appropriate material (for the floor covering of your pet's house) is essential. The two most important things to ensure are that it is not toxic or irritant to them, and that it can be easily cleaned.

A lot of the time, using unbleached paper or even newspaper is totally sufficient - though it is not as aesthetically pleasing if you're looking to recreate your own little

piece of the rainforest or desert! Take care with smaller species as the ink can sometimes cause irritation.

Sand can be used for desert dwellers such as leopard geckos but it can cause blockages if accidentally eaten. In some cases of dietary insufficiencies they will freely eat sand – or any substrate in some cases. If this is seen you need to take your pet to see your vet, as this can cause major problems. You may need to see an exotic vet if your surgery does not see exotics on a regular basis.

Bark chippings can be useful where deep litter is desired, such as with breeding females, but these can make it difficult to assess cleanliness as reptile bodily secretions (which are mainly liquid in consistency) can run between chippings and sink underneath, avoiding our detection. Avoid cedar chips as the resin is an irritant.

Peat can also be used to create damp conditions, such as those needed by water dragons, but as with bark chips cleanliness can be difficult to assess and maintain.

HEATING AND U/V LIGHTING

These two aspects are of the most importance in reptile husbandry! It's these factors that can cause or lead to a lot of common problems, and it is also the area which is easy to get wrong when setting up.

Reptiles are well and truly solar powered (ectothermic), meaning that they require an external heat source to raise and maintain their internal body temperature. It is important to achieve what is known as the 'preferred body temperature' (PBT). Everything a reptile does, from moving about, eating and digesting its food, is dependent on being kept at its PBT. If it is not, it simply cannot function properly, inevitably leading to problems such as digestion issues (gut stasis) and suppression of the immune system, leading to an increase susceptibility of disease.

Heat can be provided via several different methods. The ideal way is by a combination of a heat pad and a heat lamp to provide a focal heat zone - otherwise known as a 'preferred optimal temperature zone' (POTZ). It is this area in which a reptile will bask to raise its temperature to its PBT. This lamp needs to be placed at one end of the vivarium to create a temperature gradient, with one hot end and one



cooler end. This allows the reptile to move between the two areas to maintain its PBT. Each species has its own PBT, so do your research as to what your pet needs. A guide for the commonly kept species can be found at the bottom. The bulb must be protected by a cover or cage to prevent your pet getting too close or, in the case of snakes, coiling round it. This can lead to severe burns. The bulb should be fixed to the mains via a thermostat, allowing maximum and minimum temperatures to be set.

Heat pads are easily procured; they should be placed on the outside of the back wall of the vivarium. The size of pad depends on your vivarium length, but aim to cover roughly 50% of the wall lengthwise. This should then be insulated to promote heat reflection back into the vivarium rather than out into the room. Another reason to place the mat on the outside is that it eliminates the risk of your pet destroying or eating the mat and soiling over it!



Reptiles tend to hail from sunny climates where the sun's ultra-violet rays are intense; therefore U/V light plays several key roles in reptile physiology, including day and night cycles and breeding behaviours. In some cases it even influences appetite. One of the most important roles of U/V light is the stimulation of vitamin D3 production in the skin, and vitamin D3 plays a vital role in how the body uses and absorbs calcium from the food or supplementation.

In growing juveniles, as with lots of animals, calcium plays an important role in bone growth and development. Where there is a lack of artificial U/V light the body cannot use calcium, leading to bony deformities caused by weakness and poor bone development. This can in turn lead to fractures of the bone caused by even the gentlest handling or the animal's own movement. This is known as metabolic bone disease (MBD).



Above: MBD in a green iguana

Some species, such as certain snakes or nocturnal species, do not tend to suffer with MBD due to a lack of U/V exposure. The current thinking is that these animals get enough vitamin D3 from their diet for it not to be a problem, but where there are any dietary deficiencies they can still be vulnerable to MBD.

When providing artificial U/V light, the source must be placed close to the animal and above the animal's head - roughly 30cms high. This is due to the fact that U/V light has a very low intensity, meaning the further away it is the less of an effect it will have, if any. Another reason for it to be positioned above the head is that natural U/V, being from the sun, reaches us from above our heads and this has a big effect on daily function, circadian rhythm and breeding.

This is especially evident in lizards, which have a parietal eye (known as the third eye). This sensory organ is used for the physiological purposes mentioned above, and in some individuals it is used for detecting airborne predators. U/V lights should not be placed along the sides as this can cause stress to your pet (imagine someone shining a U/V bulb in your eyes for 12 hours a day!) and it can damage their eyes.



Above: third eye in an anole lizard

HUMIDITY

Humidity can play a role in several aspects of reptile care, especially when it comes to shedding of skin or shell scutes (a process known as 'ecdysis'). If the vivarium is too dry this can lead to partial dehydration of your pet, which has a knock-on effect on their ability to shed their skin, especially with snakes which classically shed their skin in one full body length – like taking off a sock.

With shedding disorders, instead of coming off in one piece the skin comes off in many smaller pieces. In some cases it doesn't come off at all, especially on the spectacles (or eye scale) in snakes. Damage or even loss of the eye can result if removal is attempted at too late a stage.

This is not an issue with lizards as they naturally shed in bits and pieces, and given that they have eye lids the spectacle scale is not an issue. However they can still have difficulties when shedding due to lack of humidity, especially on their toes where the shedding layer of skin can roll down and get stuck, causing strangulation of the toe underneath (similar to wrapping an elastic band round your finger tip). This can cause infections and even loss of the affected toes.



Above: toe strangulation



Above: normal shedding begins

Humidity can be provided by spraying the tank with boiled then cooled water, or spraying of natural foliage. Even a mound of sphagnum moss can provide sufficient air moisture. As previously mentioned, humidity can be provided by the substrate - in this case peat - but with any form of artificial humidity (when mixing water and warm temperatures) there are potential risks, such as bacterial/fungal growth in the environment. This can cause skin infections in your pet, so regular cleaning and maintenance is essential.

Some species require very specific humidity ranges, so the provision of a humidity monitor is recommended. This also applies when rearing a clutch of eggs.

The provision of warm water bathing can help with shedding, along with plenty of abrasive surfaces, but regular bathing can also play a key role in general wellbeing. Some species will even appreciate the provision of a bowl of water that is big enough for them to climb in, actually positioned inside their vivarium; this needs daily changing, as they will toilet in this water leading to bacterial growth, which can cause issues if they drink it. Even though reptiles get a lot of their water from their diet, the provision of fresh clean drinking water is essential.

If you have any questions or concerns regarding your pet, please don't hesitate to give us a call on 01782 522100.

PBT (preferred body temperature) of commonly kept species

Mediterranean tortoises	20-27°C
Green iguana	25-32°C
Leopard gecko	25-34°C
Water dragon	24-30°C
Bearded dragon	25-32°C
Corn snake	23-30°C
Burmese python	25-30°C