CAGES

Caging, while it need not be elaborate or expensive, should be designed to ensure the well-being of the occupants.

The most important single physical factor in the ecology of reptiles is temperature, and in many species a large percentage of their daily activity is devoted to the regulation of body temperature by responding in certain ways to changes in temperature in their habitat. This is partly due to the fact that most reptiles, unlike mammals or birds which produce internally large amounts of metabolic heat, rely primarily on the external environment for thermoregulation. It can therefore be appreciated that in providing for captive reptiles, thermoregulation is the most important factor to be considered. It affects cage design, placement, and furnishing, and although many reptile species can adapt remarkably well to the dietary and territorial changes imposed on them by captivity, they are unable to adapt to radical departures from the thermal microclimates prevailing in their natural habitat. This can explain why people keeping geckos in different areas can have differing degrees of success in maintenance and breeing, when caging design and feeding methods are very similar.

Successful caging for geckos is therefore not merely a a question of physical design, but also of careful placement, taking into account such factors as sunlight, prevailing winds, and humidity. Experience has shown that most New Zealandgeckos fare better in outdoor cages, where they can bask in natural sunlight unfiltered by glass. There is much room for experimentation in this area, and the new herpetoculturist should be aware that any cage designs suggested here are by no means the ultimate in cage design. They are merely good basic designs which have proved reasonably successful in use, and have the advantage of simplicity of construction. Newcomers to the hobby can undoubtedly benefit from visits to established keepers to look at their cages.

Indoor Cages

As indicated above, serious herpetoculturists will find their interests better served by setting up outdoor caging. There can be times however, when for convenience it may be necessary to maintain geckos indoors, especially for classroom or laboratory studies.

An aquarium fitted with a wire mesh top may be used, provided that precautions are taken to ensure that the interior does not become overheated due to the sun shining through a window onto the glass sides. If this caging method is used though, it should be regarded as a temporary arrangement, and is certainly not suitable for long term permanent use. A more satisfactory indoor cage may be constructed quite easily from dressed pine or particle board, with one side being wire mesh, and the other a sliding glass door, to enable the occupants to be easily viewed, and at the

same time provide easy access for feeding and cleaning. A useful size is 60 cm x 60 cm x 30 cm. Problems can be encountered with indoor caging. Rooms which are heated by day during the winter, but which are allowed to cool completely at night, provide conditions which are particularly unfavourable for keeping geckos. Adequate ventilation must be maintained at all times. There is also evidence to suggest that the breeding cycle is to some degre connected with seasonal climatic variations, and better breeding results are achieved with outdoor caging. Health problems are much more likely to occur with indoor caging. Without natural sunlight, geckos are unable to synthesise the vitamin D^3 needed to absorb sufficient calcium, and deficiency will almost invariably result. This can be combated by feeding a D^3 supplement, and/or by providing lighting of a type suitable for reptiles. The problem with this solution however, is that there have been no recognised long term studies to ascertain the optimum amount of UV for our native species. Overall, indoor caging has its uses, but such housing is probably best regarded as temporary.

Outdoor Cages

Outdoor cages can be constructed in a variety of ways, embodying the basic elements of wire mesh for ventilation and to admit unfiltered sunlight, and a fairly large door for ease of cleaning. Many keepers in the past have used a glass panel for ease of observation, which does have the advantage of allowing unrestricted viewing, but many keepers now think that there are greater advantages to be had in using mesh alone, allowing the geckos to benefit from unfiltered sunlight in all areas of the cage, and avoiding the possibility of overheating in exceptionally warm weather. Visibility through wire mesh can be improved by painting it matt black, but strangely enough, this can result in less available UV than leaving shiny metallic mesh. Mesh should be used for at least the whole of one side of the cages; it can also be used for ends and for internal partitions in multi-cage blocks to allow a good airflow. It is normally advisable to roof cages to give some protection from rain and sun. In some situations it may also be advantageous to have one wall of the cage sheathed with solid material rather than mesh. An example of this is when cages are exposed to prevailing winds. This is not usually necessary if cages are backed onto a fence or hedge. If cages are roofed with metal, it is advisable to place some form of insulation (e.g. polystyrene sheet) underneath to limit heat transmission. Some keepers use cages with a mesh top covered by a hinged or removable roof, which can be propped up or removed altogether in fine weaher.

It is a common mistake to make the door too small, with the result that it is very difficult to install and remove larger cage furnishings such as logs or pot plants. Some people have a small feeding door separate from the main door, or use a hole with a stopper in it for putting live food into the cage.

Outdoor cages can be constructed in banks of three of four. The use of PVC or fibreglass mesh outdoors must be treated with caution as it can be chewed through

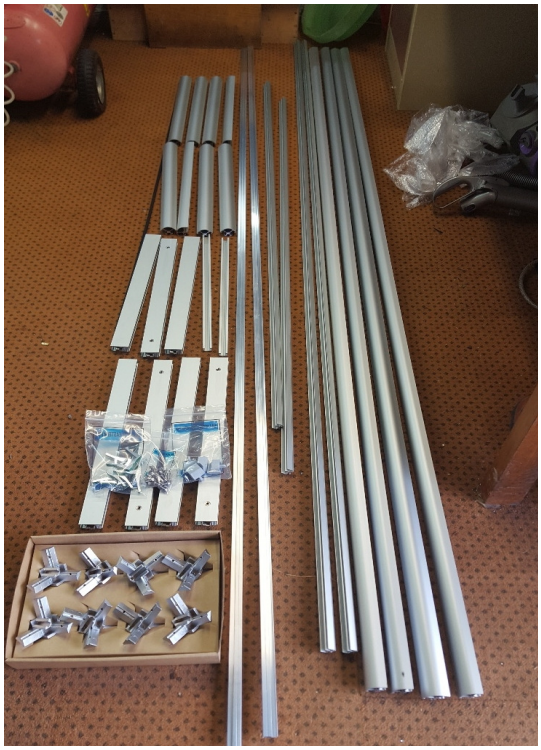
by rodents and by some insects, such as crickets. Traditionally, wooden framing has been used for cage construction, but aluminium can be used with good results, and virtually eliminates problems such as warping and splitting.

A useful size for an individual outdoor cage is 60 cm x 60 cm x 90 cm high, while smaller cages of around 30 cm x 30 cm x 60 cm high are of value for selective breeding, or for raising young animals. Cages which are too large and heavily planted may cause difficulties in keeping track of individual animals, which may become sick and die without being noticed. It can also be extremely difficult to locate newly-born geckos in very large cages. Serious keepers should not be afraid to experiment with cage sizes and designs. While guidelines may suggest that a "one size fits all" approach can work, in practice this is not so, as there are many factors to be considered including the size of the species being kept, differences in the requirements of species to feel secure and therefore thrive, and the fact that UV requirements can differ markedly between species.

Another factor which is often overlooked is the financial cost of building cages, particularly where the keeper may be a student with limited financial resources. It is quite possible to build cages from recycled materials, adapting the overall size to make use of what is available. One idea is to use second hand aluminium window frames (with glass removed and mesh substituted) as cage fronts. It's certainly a lot easier and neater, and much less time consuming, than building doors. There are many alternative possibilities for building cages, like adapting commercial shelving for the purpose. Keepers, while needing to ensure that caging considers primarily the well being of the animals, are really only limited by their imaginations.

Some photos are included here, showing cages in various stages of construction, as well as some of the materials that can be used in cage building.

Hopefully these will give prospective keepers an insight into what is required. Probably the best approach however, is to discuss cages and their construction with other enthusiasts. Viewing as many established cages as possible is undoubtedly the best way to get ideas, and also to think of possible improvements.



The above photos show cages in various stages of construction. On the left are a selection of metal components, the use of which will result in cages which are lighter, stronger and much more durable than those with traditional wooden frames.That is not to say that wooden framed cages do not still have their place. There are many in use by keepers around the country.

New keepers sometimes express concern at using treated timber, fearing that the chemicals used for wood treatment may prove harmful to the animals. Thankfully this seems to be groundless, with no proven cases of harm.

Keepers often see the potential in utilising surplus materials in cage construction, or converting items which were designed for other uses. The above pictures show a large dispay cage constructed by converting an aluminium bay window.

Some more examples of cages

A variety of shapes and sizes of cages for keeping geckos. The top photo shows a series of smaller cages suitable for housing individual pairs for selective breeding, or for rearing babies. The larger cage pictured below is more suited to housing a larger colony,

All cages should be provided with suitable basking spots.