

## Lacertids: Wall Lizards and Related Species

The family Lacertidae is exclusively Old World in distribution and contains some 200 species in 25 genera. The more frequently seen species are the small 'wall lizards', genus *Podarcis*, and the somewhat larger species from Europe and North Africa placed in the genus *Lacerta*. Several of these species are now difficult to obtain as they are protected in their countries of origin. Techniques for their successful maintenance and breeding, however, are fairly well developed and they are worth listing because a number of species are available captive-bred.

There is no doubt that, provided climatic conditions are suitable, many lacertids fare much better when kept in an outside enclosure, exposed to natural sunlight and a certain amount of natural food. Examples kept in glass vivaria indoors must be heavily supplemented with calcium and vitamin D<sub>3</sub> if they are to survive and breed satisfactorily. Advances in equipment and a better understanding of the dietary requirements of small insectivorous lizards, however, have led to more successes, even under difficult conditions.

Large cages are required as all lacertids are lively. In addition, all of them are highly territorial; males will not tolerate other males in their vicinity and breeding groups should consist of a single male and one or more females. Unfortunately, males are usually far more colourful than females and so beginners are often lured into buying a group consisting entirely of males. In those species which do not show an obvious sexual dimorphism in coloration (very few) the larger femoral and pre-anal pores of males make their identification straightforward.

In indoor cages, heating should be provided by an overhead spotlight, which should be capable of providing a hot-spot of around 40°C. This should be positioned at one end of the cage so that the lizards can thermoregulate naturally. In addition, a fluorescent lamp which emits ultra-violet is also recommended, even when vitamin D<sub>3</sub>

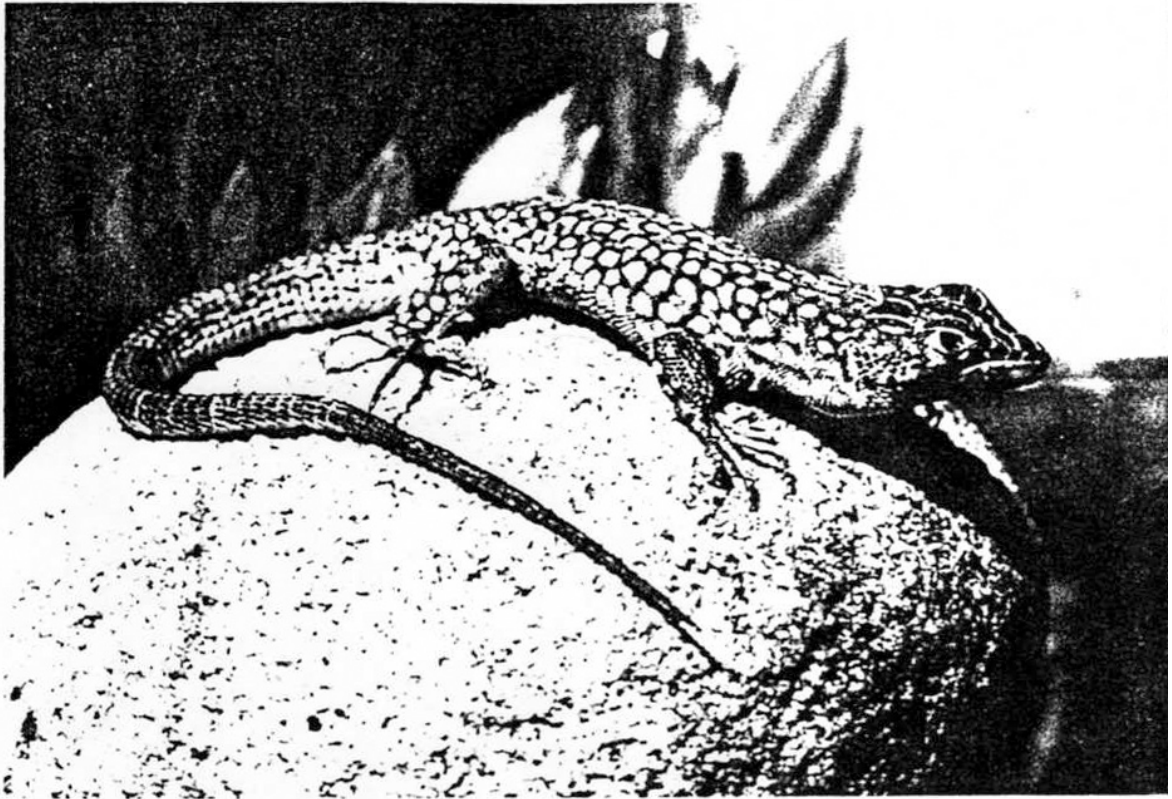
is given as a dietary supplement. Both heater and light should be wired up through a time-switch and the daylength should be altered throughout the year to coincide approximately with seasonal variation. During the winter, heat can be withheld altogether, provided the temperature of the cage is not likely to fall too low. Minimum temperatures will depend on the species concerned and its natural range, but most will withstand 10°C for long periods and short spells at slightly lower temperatures. Unless these natural light and temperature cycles are simulated the lizards are unlikely to come into breeding condition in the spring.

The substrate can be of gravel or sand, depending to some extent on species, or an artificial substrate may be used. There seems to be a psychological need to dig and burrow and a substrate such as newspaper will soon lead to loss of condition. The substrate should be kept dry, although drinking water should be present at all times. One or more piles of rocks can be arranged in such a way as to provide basking surfaces on top as well as shelter underneath. Most species seem to relish an occasional spraying, provided that the humidity in the cage is not allowed to rise for too long. If potted plants are to be included, these should be of species which have little requirement for water, i.e. semi-desert species, and are best left in their pots.

Their diet consists of small insects and other invertebrates. Crickets are probably the most readily obtained live food but, whenever possible, the diet should be varied with other insects such as waxmoth larvae and mixed invertebrates which have been collected with a sweep net. Certain of the larger species may also accept young mice and some vegetable material. Large lacertids frequently eat small lacertids, so mixed communities of species which differ widely in size are not possible. It is essential to provide additional calcium and vitamin D<sub>3</sub> in the diet of all lacertids, whether they are maintained outside or in.

Breeding begins in the spring and often continues throughout the summer, especially in the case of small species. At this time the females, especially, benefit from ample calcium in order to form their eggs. Clutches are laid in damp sand and this should be provided in a separate container in inside cages. Outside enclosures should incorporate a sandy area for egg-laying and this should be positioned in such a way that it gains maximum benefit from the sun's rays throughout the day. The eggs are removed from the sand for artificial incubation in moist sand or vermiculite at a temperature of about 28°C.

Hatchlings will only survive and grow properly if their diet is carefully supplemented. Temperatures for juveniles should not be



76. The spiny-footed lizard, *Acanthodactylus erythrurus*, a small lacertid from southern Europe and North Africa.

allowed to fall below 15°C. Otherwise their care is much as for adults. They can be housed in fairly dense groups to start with but as they grow they require progressively more room. Once sexual maturity is reached it will be necessary to separate the males from one another.

### Representative species

Only a sample can be given. Very many species and subspecies are potentially available, although in many cases only occasionally. For our purposes they are most conveniently divided into large and small species.

The small species include all those at present placed in the genera *Podarcis*, *Psammodromus*, *Acanthodactylus*, *Takydromus* and others, as well as a number of the smaller members of the genus *Lacerta*.

The spiny-toed lizards, genus *Acanthodactylus*, are mainly North African although one species, *A. erythrurus*, also occurs in the Iberian peninsula. These species are adapted to living in arid regions, often around the fringes of deserts. They average about 20 cm in total length and are usually grey with paler stripes and/or blotches. Care and

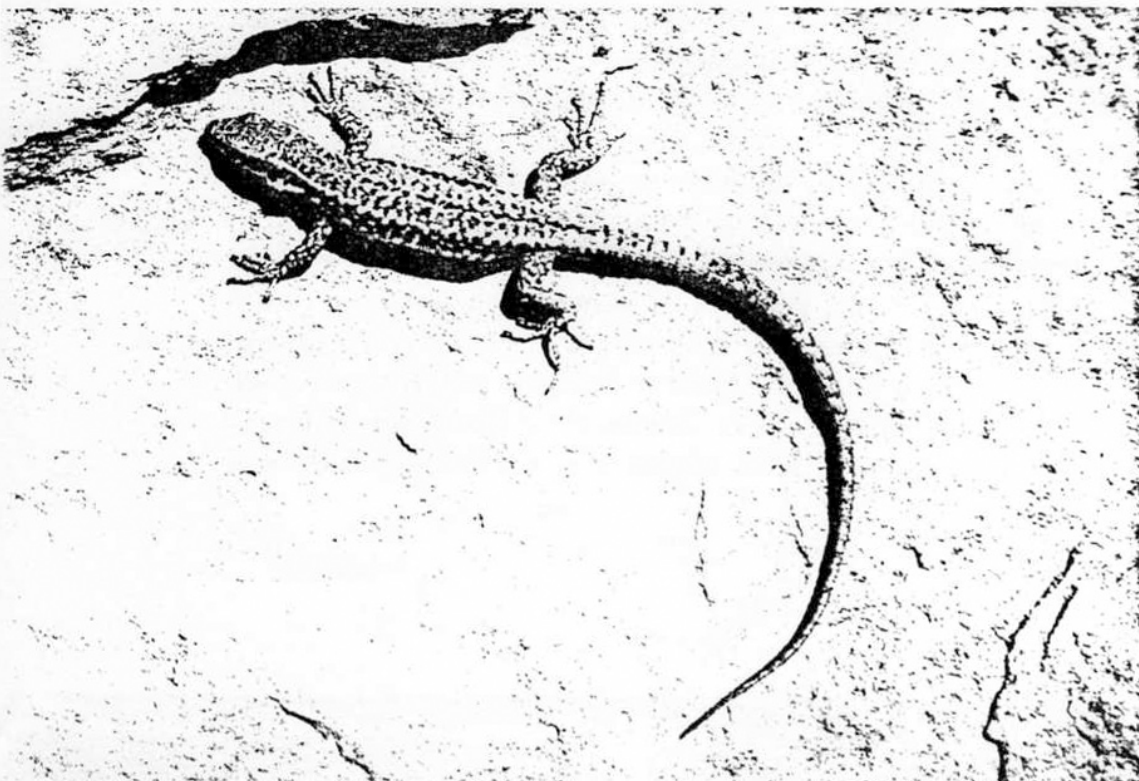
## KEEPING AND BREEDING LIZARDS

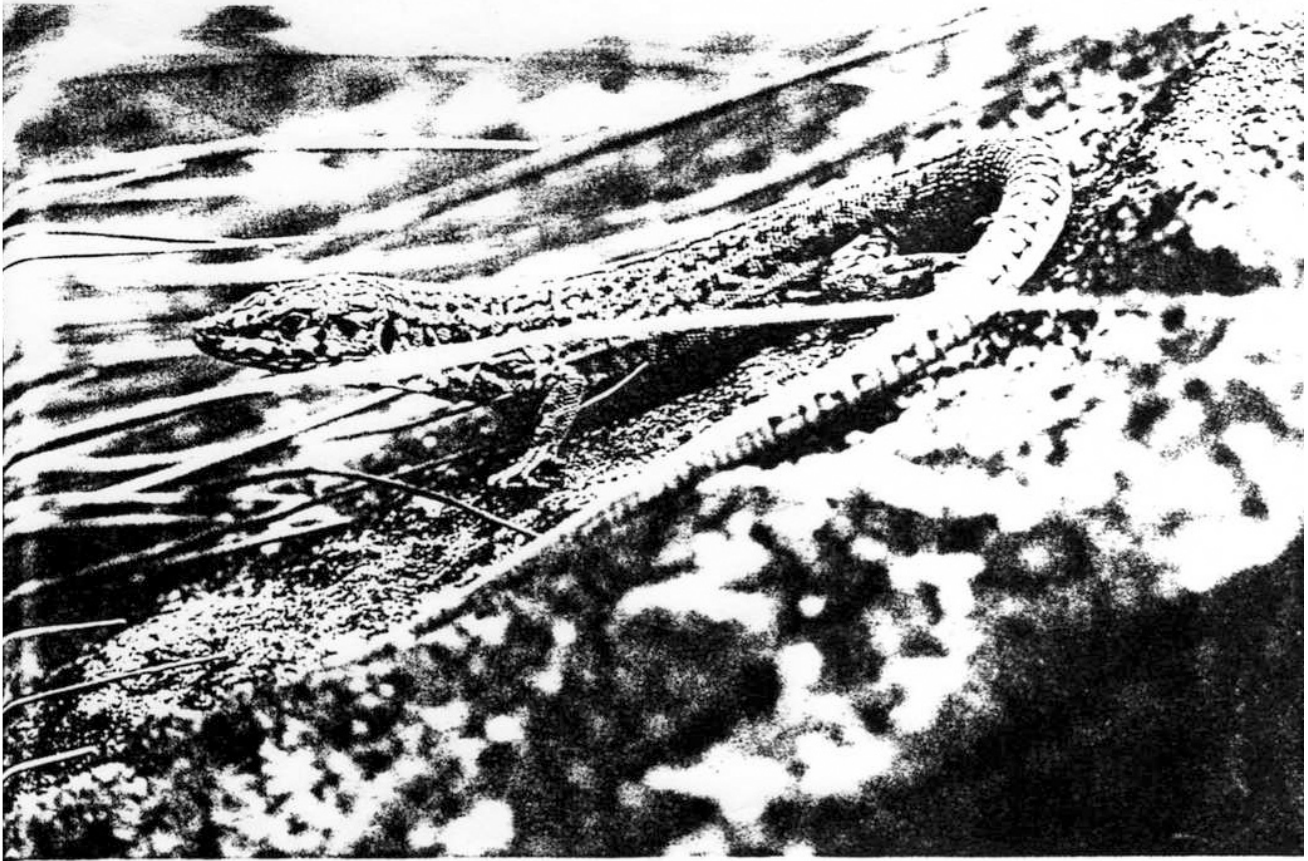
breeding are as in the family description, although these species probably require higher temperatures than the European wall lizards and the temperature during hibernation should be maintained at around 12°C. Clutches of 1–6 eggs are laid throughout the summer. These hatch after an incubation period of about 40 days at a temperature of 28°C.



77. The European viviparous or common lizard, *Lacerta vivipara*, a good candidate for outdoor vivaria in cooler parts of the world.

78. *Podarcis muralis*, one of several small lacertids known as 'wall' lizards.





79. *Podarcis pityusensis*, just one of the small lacertids from the Balearic Islands.

A few members of the genus *Lacerta* are small enough to be included in this section. The best known of these is the European common lizard, or viviparous lizard, *L. vivipara*. This small species grows to about 15 cm in total length. It has rather dull coloration in comparison with many other lacertids, but has the distinction of being the only viviparous species and by far the hardiest. Basically brown in colour, males are usually spotted with black, some of these spots having light centres. Females are usually striped, or have spots arranged longitudinally, and the juveniles are dark brown, almost black. This species should be kept outdoors or in a cool place indoors. Although it likes to bask, consistently high temperatures do not suit it. It is more secretive than most other lacertids and likes to forage amongst dead leaves, fragments of bark and so on. Females produce only one brood of 4–10 young in late summer after a gestation period of two to three months.

The Caucasian rock lizard, *Lacerta saxicola*, and a few other related species of small lacertids are unusual in being parthenogenetic: females are able to lay fertile eggs without ever having mated. This trait has also evolved independently in several other lizard families, notably among the whiptail lizards of the family Teiidae. *Lacerta saxicola* is a fairly drab species which lives amongst rocks and is flattened as an adaptation to hiding in crevices. Although it is not

widely kept in captivity it can be treated in the same manner as other wall lizards, with the 'advantage' that males are unnecessary for breeding to take place. Males of this species do exist, however, but are extremely rare. Conventional (i.e. sexual) reproduction results in offspring of both sexes, but parthenogenetic reproduction results in female offspring only. Small clutches of two or three eggs are laid throughout the summer.

*Podarcis muralis*, the common wall lizard, is a typical small lacertid, growing to a total length of about 20 cm and occurring in a variety of colour variations, many of which have subspecific status. Specimens from Central Europe tend to be mainly brown, whereas those from Southern Europe are often more colourful. For instance, *P. muralis brueggmanni* from Italy is bright green with a network of black reticulations covering its back and flanks. Males are invariably brighter than females, dorsally and ventrally. This species is usually fairly hardy in captivity and is an ideal subject for outdoor enclosures (small feral populations have even established themselves in several parts of Britain). Small clutches of 3–6 eggs are laid throughout the summer.

*Podarcis sicula*, the ruin lizard, is slightly larger than the preceding one and less variable. Most individuals are green, with a vertebral stripe of brown with black spots. The flanks are beige with black markings. Females are similarly marked but their coloration is less intense.

Two species and many subspecies of brightly coloured wall lizards occur on the Balearic Islands in the Mediterranean. *Podarcis pityusensis* is the Ibiza wall lizard, a highly variable species, populations of which are found on almost every islet and emergent rock off the coasts of Ibiza and Formentera, and numerous subspecies have been named. This is a large and robust wall lizard which may be green, blue or black in basic colour. The blue and green forms have variable black markings on their back and flanks and may be white, yellow or orange beneath. The population on the small islet of Vedra, *P. pityusensis vedrae*, is a stunning bright blue colour and could well be the world's most brightly marked lizard. The black forms come from melanistic populations and often have deep blue undersides. Hatchlings of these forms are lighter in colour and have markings similar to those of other subspecies, but gradually darken as they mature. Care and breeding are as in the family description. All forms are generally tough and undemanding in captivity.

Lilford's wall lizard, *Podarcis lilfordi*, parallels *P. pityusensis* on and around the other two Balearic Islands, Majorca and Menorca. Again, the colours and markings are highly variable and numerous subspecies



80. A juvenile Algerian racer, *Psammodromus algirus*, a species which is also found in southern Iberia.



81. Male *Takydromus sexlineatus*, a small Asian lacertid with an unusually long tail. The female is less boldly striped. This species appears to adapt well to captivity but is not regularly bred.

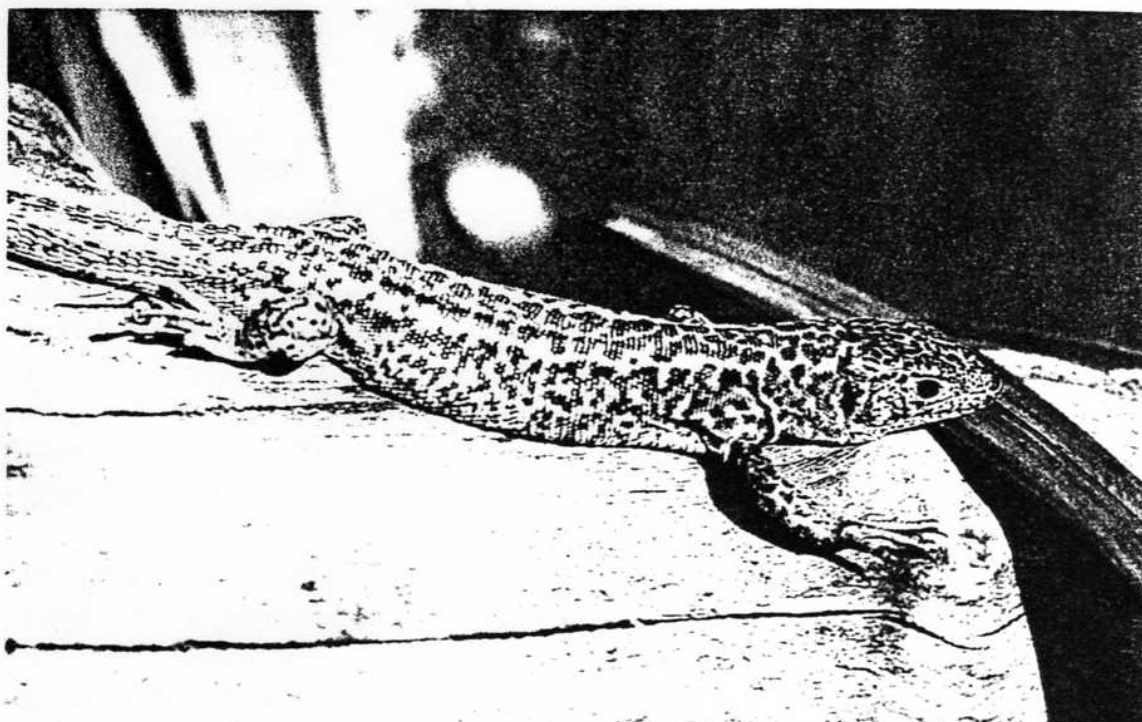
are recognised. The nominate race, *P. lilfordi lilfordi* is melanistic, even as a juvenile. This is one of the most hardy wall lizards, and will live for many years in captivity. They will eat a certain amount of vegetation, including fruit and vegetables, as well as insects, and well-fed examples have swollen tails; this acts as a food storage organ. Males are not as aggressive towards one another as are those of most other lacertids. Small clutches of relatively large eggs are laid.

The *Psammodromus* species are found in North Africa and the Iberian peninsula. They differ from *Podarcis* in having heavily keeled scales, giving them a somewhat spiky appearance. *P. algirus* is brown in colour with four white or yellow longitudinal stripes. It grows to about 25 cm in total length.

*P. hispanicus* is smaller, about 12 cm in total length, and may be grey or brown in colour. The markings consist of longitudinal rows of dark spots, sometimes running into each other to form stripes. Occasional specimens are without markings.

*Takydromus sexlineatus*, the six-lined takydromus, is by far the most frequently offered species of Asian lacertid as it is imported in large numbers and distributed through the pet trade. *Takydromus* is an extremely slender lacertid, with a greatly elongated tail; this can





82. Schreiber's lizard, *Lacerta shreiberi*, is a large and attractive lacertid from southern Europe which is closely related to the more common green lizard and can be cared for in the same way.

account for over three-quarters of its total length, which reaches about 30 cm. The male has a bronze back, and a dark brown line running down either flank. The lower flanks are pure white. Females have a similar arrangement of lines but the colours are less bright and the markings less distinct. These interesting lizards have a wide range across central and southern Asia and apparently inhabit grassy plains. In captivity they climb fairly well. They should be kept warm throughout the year, although a slight temperature drop in winter would probably do no harm, and fed on small insects. The females lay small clutches of 2-3 eggs, but there appear to have been no serious attempts to breed them regularly.

The larger lacertids are placed in the genera *Lacerta* and *Gallotia*. A group of some six or seven species of *Lacerta* are sometimes known collectively as green lizards. The *Gallotia* species, from the Canary Islands, are of a similar size. All are colourful species, most of which have been bred in captivity on a limited but regular basis. Their requirements are similar to those outlined under the family description but due to their size these species require larger cages, preferably large outdoor enclosures. Many of them will eat small vertebrates such as young mice as well as insects and, on occasion, vegetable material.

*Gallotia galloti* and *G. stehlini* occur on the Canary Islands, along with one or two other, less common species. They reach a total length of about 35 cm and both species are brown or olive in colour. Males have large black heads, blue throats and jowls and several blue areas on the flanks. Females are paler brown in colour and have darker longitudinal stripes. These are amongst the more aggressive species and should be housed in pairs. Their general maintenance and breeding is as in the family description but their diet can include fruit, vegetables and even canned pet food. Females lay clutches of 3–6 eggs during the summer and these hatch in 40–60 days.

*Lacerta lepida*, the eyed lizard or jewelled lizard, is the largest and most impressive lacertid, with a total length approaching 75 cm. Eyed lizards are found in southern Europe and North Africa. They are basically green in colour but have a series of large, blue eye-spots along each flank. Males are more brightly marked than females and have much larger heads when adult. The juveniles are totally different, being brown or green with black-edged white spots over the body. There is a totally black (melanistic) form of this species which is also bred in captivity. This species needs a very large cage or enclosure. It will usually eat small mice readily, and can give a painful bite. At least two clutches can be laid each year by a single female and these range from 10–20 eggs. The hatchlings are large, about 10 cm in length, and easily reared if an adequate diet is provided.

*Lacerta viridis*, the European green lizard, grows to about 40 cm or more and is overall green in colour. Males are usually unmarked except for a fine stippling of black over emerald green. Females may also be uniformly coloured but often have a pair of light, longitudinal stripes running down the back. These differences are not totally consistent, however, and the sexes should be confirmed by checking the femoral pores. Adult males also have larger heads and thicker, more powerful, necks, and their throats are blue, especially during the breeding season. *Lacerta trilineata*, the Balkan green lizard is a larger version of the green lizard, growing to 50 cm in total length. It also differs in being slightly more heavily built and the breeding males have a yellow throat.

Both of these green lizards fare very well in captivity provided that they are given adequate space and a suitable diet. They are among the more prolific species of lacertid, with two or more clutches averaging around 15 eggs per clutch laid each summer. Females therefore require large quantities of calcium and vitamin D3. Breeding is most successful if they are kept in outdoor enclosures.