The Australian Lace Monitor (Varanus varius) in Captivity.

by Raymond T. Hoser

For a period of eight years in the 1970's and 1980's I maintained up to seven adult Lace monitors, Varanus varius, on a permanent basis in Sydney, NSW at the northern suburb of St. Ives. In 1978, these monitors measured as follows:

5 males 140 cm, 145 cm, 161 cm, 160 cm, 173 cm [55.1 in, 57.1 in, 63.4 in, 63 in, 68.1 in, respectively]
2 females, 111 cm, 140 cm [43.7 in, 55.1 in, respectively]

Three of these specimens were from Bingara NSW and one each from Cannowindra NSW, Nevertire NSW, Lightning Ridge NSW, and Turramurra NSW. All of these goannas were of the common V. varius colour phase, except for one male which was of the broad-banded colour phase and the smaller female which was a cross between the common and broad-banded phase.

None of these goannas had grown since being in captivity apart from the smaller female from Cannowindra, who grew only 11 cm (4.3 in) in 3 years. This would indicate that this species has a very slow adult growth rate.

Housing

These monitors were housed in enclosed adjoining pits, whose combined measurements were 17 x 7 m (55.8 x 23 feet)
Walls were constructed of smooth rendered brick approximately 1.6 m (5.2 ft) high. wire mesh (1 cm squares) covered the enclosure approximately 2.3 m (7.5 ft) above the ground. The same type of wire netting was buried 18 in (46 cm) below the ground in both pits to prevent the monitors from burrowing out. Two V. gouldii were also housed in the same pits.

Other than the buffalo and cooch grass which covered 95% of the bare ground in both pits, all other vegetation was native and was a major feature of the enclosures. Numerous logs, both hollow and solid, were placed throughout, along with rock outcrops and slabs. The porosity of the sandy soil and the slope of the land prevented flooding, which eliminated the need for special drainage. Full, direct sunlight was available to the monitors throughout the day.

Captive Habits and Observations

All monitors did well in captivity. Females produced eggs on at least 4 occasions, though none hatched. None of the animals proved difficult to feed. Although males would fight, there were never serious casualties. Most wounds, mostly scratches, appeared on and around the base of the tail and sometimes around the front legs, head, and neck. Combat mostly consisted of clawing and scratching rather than biting. On the contrary, friends reported incidents where a combatant had been seriously bitten and clawed, typically happening in enclosures smaller than those housing my V. varius.

The monitors appeared to establish a social hierarchy within the pits based solely upon size and strength. This hierarchy sometimes carried over to feeding, though I have seen smaller monitors approach the food while the larger ones were eating. I often witnessed larger lace monitors attack smaller ones which had not finished eating.

Captive lace monitors appear to spend more time in the open and basking during the day than those in the bush. Captives are also more likely to be out on cold days than their wild counterparts. After dark, some captives would seek shelter, though some often sleep in the open. Though this does happen in the wild, observations indicate it does not occur as often.

In my pits, the sandstone outcrops received most of the direct sunlight, though the monitors appeared to prefer basking on wood, including the logs and beams which held up the wire roof. They also preferred to shelter in logs rather than under rocks or in rock outcrops and shelters. Although the plants were large enough for the V. varius to sleep in, none ever did so and few ever bothered to climb the plants.

The 160 cm male from Nevertire frequently slept in a pond of water completely submerged except for its snout, with no apparent ill effects. Most captive lace monitors appear to become less timid with time. It may take years for a captive lace monitor to take food from one's hand without biting at the hand (see note at end of this paper), though many never become this tame. My experience has been that lace monitors kept individually seem to settle down much more rapidly than those kept in a group. (By "settling down", I mean they become less timid and feed in a regular, reliable manner.)

Lace monitors display varying personalities, so each seems to cope with captivity in a different way. Some also appear to undergo periodic changes in temperament for no apparent reason, for example from being shy to aggressive, or vice-versa.

Feeding

Feeding occurs throughout most of the year except in the colder winter months. (I never fed my goannas when it was cold to avoid potential digestive problems and potential health complications.) During the warmer months, the goannas will often eat even on cold days. The 160 cm male from Nevertire frequently ate at night. Their diet included: fish, bones, reptiles, frogs, mammals, snails and a variety of eggs (including goanna eggs). They had also accidentally ingested pieces of metal, plastic bags, rocks and sticks with no apparent ill effects. These objects were often regurgitated, as happened with egg shells, or subsequently defecated. Chopped meat (e.g., kangaroo) appeared to be the preferred type of food along with mammals and birds.

Breeding

All captives exhibited mating behaviour. Usually, the male approached the female and attempted to mount her, accompanied by tongue-flicking and stroking her head with either a foot or his head. He also frequently wrapped his tail around hers. A non-receptive female usually walked away, though sometimes she would run. males may persist for an entire day, even longer. There were instances where a male was preoccupied with a female for several weeks. I have also witnessed a single female copulate with more than one male in the same day as well as one male V. varius attempting to mount another male.

Fighting occurred only when two males were interested in the same female. This rarely happened in the pits, possibly because no goanna was inclined to dispute the well-established hierarchy.

Although eggs had been laid by both females, none hatched, all having been eaten by the other goannas. Only twice out of four occasions had eggs been buried. These were not adequately covered and were subsequently eaten. On the other two
occasions, the eggs were simply laid in the open. This may have been due to the fact that at that time they lacked the “proper” places to bury the eggs, such as termite mounds or ant hills.

Summary

Successfully keeping *V. varius* is not difficult if the correction conditions are provided and maintained. This means providing a large, escape-proof cage, preferably outdoors, furnished with logs, adequate vegetation and cover, and water. These monitors did not exhibit susceptibility to diseases, such as colds. They tend to feed well in captivity and have a long life span if properly cared for.

Note:

Feeding monitors by hand is not generally recommended since the monitor may not make the distinction between the food item and your hand.