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MONITOR LIZARDS

Roughneck Monitor

Varanus rudicollis

Varanus rudicollis is a dark, long-necked monitor from the forests and swamps of South-East Asia, named after the strongly keeled scales on the nape. It climbs as willingly as it walks on the ground, and it needs a large, warm and very humid enclosure. Only a little brief care information exists for the species, so it suits only an experienced keeper who is prepared to find their own way.

Family: Varanidae

KEY FACTS

THE ANIMAL

Adult size	**90-130 cm** total length incl. tail
Lifespan	**15-20 years**
Active	**By day**
Lifestyle	**Arboreal and terrestrial**
Habitat	**Rainforest and wetland**
Difficulty	**Experienced**

CARE

Min. enclosure	**210 × 90 × 180 cm** L × W × H for 1 adult
Temperature, day	**28-32 °C**
Basking spot	**35-60 °C**
Temperature, night	**21-29 °C**
Humidity	**80-95%**
Water	**Water section**
UVB	**Recommended** Ferguson zone 2
Diet	**Insects, vertebrates and worms/snails**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**4-23 eggs**
Incubation	**163-234 days** at 24-30 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Data Deficient (DD)**

About the species

Varanus rudicollis is a medium-sized monitor with a dark grey body, yellowish crossbands across the back and yellowish marbling on the neck and limbs. Young animals are more clearly patterned than adults. The neck is relatively long, the snout long, pointed and curved, and a heavy ridge runs over the eye. The large, keeled scales on the nape give the neck a rough surface. The nostril sits midway between the tip of the snout and the eye and not out at the tip of the snout as in *V. salvator*, which lives in the same areas.

The snout-vent length is up to 51 cm and the total length about 90-130 cm, and large animals in the wild can reach up to 150 cm. The tail can be up to 1.6 times as long as the snout-vent length. The weight is not documented.

The species was described in 1845, but the type locality (the Philippines) was an error. *V. rudicollis* is seldom seen in the wild and poorly studied, and on the IUCN Red List it is listed as Data Deficient (DD). It belongs, with *V. dumerilii* among others, to the subgenus *Empagusia*, and the two are often mentioned together.

Only a few, short husbandry reports exist for this particular species. The figures are based on them and on natural history from wild animals, and where something is borrowed from related forest monitors, this is stated in the text. Use the guide as a starting point, not as a definitive answer.

For anyone considering the species: *V. rudicollis* grows to about a metre long, probably lives at least 15 years and needs a room or a large home-built terrarium that is humid and warm all year. Food is a fixed expense several times a week, and the space and the electricity bill are a lasting cost. The animal is not a pet to pick up, but an animal to watch.

Distribution and habitat

Varanus rudicollis is found in southern Myanmar, southern Thailand, Malaysia (both on the peninsula, including in Johor and on the island of Penang, and on Borneo) and Indonesia (Sumatra, Bangka, the Riau Islands and Borneo). The Philippines given as its homeland is based on an error and is not counted. There are no records from Singapore.

The species is rarely seen, and the records are scattered. Most are in Malaysia and Indonesia, fewer in Thailand and very few in Myanmar.

> **Native range:** Myanmar (Burma), Thailand, Malaysia and Indonesia.

HABITAT

Varanus rudicollis lives in lowland swamps, in ravines with streams in hilly terrain, in lower montane forest up to about 1,200 metres and in mangroves. It is seen on the forest floor, by streams, on fallen trunks and high up on tree trunks, and it shelters in hollow trees. The species is diurnal. Animals have been seen basking on a dead trunk, resting vertically on a trunk about 6 m up and searching for prey on the ground.

The species swims well. In swamp forest on Borneo, young animals have been seen swimming along the riverbanks in the middle of the day, often alone, but occasionally two or three animals within a few metres of each other, and they sought cover in the dense vegetation along the banks.

The diet is poorly known, but crabs seem to be included where they are plentiful. The climate is warm and humid all year, and the forest and streams provide both shade and sunny patches. It is this combination of climbing space, water, hiding places in cavities and warm spots that the enclosure must imitate.

Care

THE ENCLOSURE

An adult needs a large, tall enclosure of at least 210 cm in length, 90 cm in width and 180 cm in height. Bigger is better, and best of all is a whole room or a custom-built aviary. *Varanus rudicollis* lives half in the trees: it is high up early in the day, forages on the ground for most of the day and goes up again when it gets dark. There must therefore be branches at several heights, preferably walls it can climb, and hides both high up and near the ground, for example cork tubes, large nest boxes and hollow trunks. The hides high up are used a lot.

The substrate must be deep and hold moisture. A mixture of soil or coconut fibre and sand in a ratio of 70/30 with a layer of leaf litter on top works well, preferably as a bioactive substrate in which small animals break down droppings and food remains. Provide at least 15-20 cm so that the animal can dig. There must be a large water container to bathe in, and it must be changed daily, because the animal often passes droppings in the water.

Doors and fastenings must be able to withstand a strong animal that pushes and climbs. All heat sources must be shielded with mesh or baskets so that the animal cannot burn itself. Juveniles can start in a smaller enclosure where they easily find the food and feel secure, but they grow quickly and must move to the adult size early, so it is practical to plan the large enclosure from the start.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

By day the background temperature must be 28-32 °C, about 30 °C outside the basking spot. The basking spot must be 35-60 °C measured as surface temperature with an IR thermometer. The right basking-spot temperature has not been measured for the species, so start at the low end, and raise it only gradually while watching how the animal uses the spot. Provide a large gradient from the warm basking spot to cooler, humid corners, so that the animal can choose for itself.

At night it must be 21-29 °C. Let the temperature fall a few degrees, but not below 21 °C. The heat is controlled with a thermostat, and heat bulbs and heat emitters must sit behind mesh or in baskets. Watch the animal: if it lies constantly under the heat source, it is too cold, and if it gapes and seeks down into humid hides, it is too hot. Most problems with the species are caused by wrong heat or humidity.

Read more: Heat and temperature Read more: Humidity, misting and ventilation

HUMIDITY AND WATER

Humidity is crucial to the health of the species. The relative humidity should be at least 80 %. Keep it up with a deep, damp substrate, a large water container, dense planting and daily spraying or a fogger, but also provide ventilation so that the air does not stand still and the substrate does not turn sour.

Shedding shows whether the humidity is right. The animal sheds in pieces, and with the right humidity this rarely causes problems. If remains stick to the toes and tail, the air is too dry.

WATER AND WATER QUALITY

Varanus rudicollis lives by streams, in swamps and in mangroves and swims well, so it needs a large water container that it can lie fully submerged in. The water is changed daily, because the animal often passes droppings in it. The container must be easy to clean, and the water should be roughly at the temperature of the enclosure so that it does not cool the animal down. A ramp or sloping stone makes it easy to get in and out.

LIGHTING AND UVB

The species needs UVB and a basking spot. UV light for 10 hours a day together with heat bulbs works well. Ferguson zone 2 is a sensible starting point for a basking forest monitor (borrowed from related species, not measured for *V. rudicollis*), and there must be shade and branches so that the animal can choose for itself how much light it wants.

Keep the day length at 10-12 hours all year round, controlled by a timer. Replace UVB tubes according to the manufacturer's instructions, even if they still light up, because the UV output declines over time.

Read more: Lighting and UVB

FEEDING

What *Varanus rudicollis* eats in the wild is poorly known. The food that has been recorded is insects and other invertebrates as well as amphibians, and crabs seem to be included where they are plentiful. In captivity it takes earthworms, insects, eggs, lizards, birds, mice and fish. It takes crabs only when they are small enough for it to swallow whole.

The staple diet should be insects (crickets, grasshoppers, cockroaches) and earthworms. As the animal grows, supplement with whole prey such as quail chicks, mice and rat pups, and with eggs and small fish for variety. Avoid furred rats, because the fur is coarse and difficult to digest. Rodents must not become the main food, because that leads to obesity and fatty liver. Adjust the amount so that the animal stays slim.

Juveniles are fed six days a week, four of them with insects. Adults are fed 3-4 days a week, 2-3 of them with insects. The insects must be well fed or dusted with calcium and vitamins. How much D3 the species needs is not documented, so follow ordinary monitor practice. There must always be fresh drinking water.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Safety: *Varanus rudicollis* has needle-sharp claws, strong jaws and a tail that can lash. How powerful the bite and tail whip are in this particular species has not been described, but an adult animal of about one metre can inflict deep wounds. The animals are manageable once they have got used to their surroundings, and most rarely bite but hiss loudly. That is no guarantee, and the claws make handling unpleasant. Never grab the tail.

Tame slowly. Open the enclosure calmly and let the animal get used to your hand. Keep handling short and support the whole body when you lift. Use long tweezers when feeding, so that the animal does not associate the hand with food. Newly imported animals need peace and stable conditions for several weeks.

Wash your hands thoroughly with soap after touching the animal, the enclosure or the food. Reptiles often carry salmonella, so children and people with weakened immune systems should not touch the animal or its things.

Keep the species singly. Whether the animals tolerate each other outside mating has not been documented, and if a pair is put together, it requires plenty of space, many hides and the ability to separate them quickly.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

Sexual differences, sexing methods and the age and size at sexual maturity are not documented for *Varanus rudicollis*. In related monitors the animals are sexed by probing the hemipenal pockets or by ultrasound and X-ray at the vet, and they become sexually mature only after several years. This has not been tried on the species and should be taken with reservations.

MATING

Varanus rudicollis has been bred in captivity a number of times, especially in zoological collections, but information on breeding season, resting period and pairing is scarce. Only put the animals together in a large enclosure with many hides, keep watch over them and be ready to separate them quickly.

EGG-LAYING AND CLUTCHES

Varanus rudicollis lays eggs, but clutch size and the number of clutches a year are not documented. The figures in the fact box (4-23 eggs) are borrowed from the closely related *V. dumerilii* and have not been measured for the species. The female needs a deep, damp place to lay her eggs, for example a box with damp soil or a cavity. This is an assumption based on related forest monitors, not an observation in the species.

INCUBATION

Incubation period and temperature are not documented for *Varanus rudicollis*. The figures in the fact box (163-234 days at 24-30 °C) are borrowed from the closely related *V. dumerilii* and have not been tested on the species. As with other monitors, the eggs are carefully removed without being turned and placed in a box with damp vermiculite or perlite at a stable temperature. Expect a long incubation and some losses.

Read more: Incubating eggs

REARING THE YOUNG

No detailed information exists on rearing the juveniles. In related monitors the juveniles are given small insects as their first food and are fed almost daily in a warm, humid enclosure with hides. Juveniles are relatively delicate, while adults are robust when heat and humidity are right. Plan for the juveniles to grow into monitors of about one metre, and for there to be space and money for them.

Health and common mistakes

Varanus rudicollis is one of the monitors that are traded most, and by far most monitors in the trade are wild-caught or farmed, while only a small share are captive bred. How large a share of this particular species is captive bred is not documented, so assume a wild-caught animal unless otherwise shown. Newly imported animals are usually dehydrated and have many parasites, so they need fluids, and a vet experienced with reptiles should examine a faecal sample.

The typical problems are caused by wrong heat and humidity:

- Too low humidity, which causes shedding problems with remains on the toes and tail.
- Too low temperatures or too little UVB, which cause poor appetite and calcium deficiency with soft jaws and tremors.
- Obesity, if the animal gets too many large prey animals and too little space to move around.
- Parasites and infections, especially in wild-caught or stressed animals.
- Burns from unshielded heat sources.

See a vet if the animal loses weight, does not eat for several weeks, has swellings or breathing problems or seems lethargic.

Read more: Common diseases and signs of illness Read more: Buying animals: captive-bred, wild-caught and transport

Always ask someone who knows

This guide is a good place to start, but it cannot replace experience. Animals differ, and much of what matters most is learned from people who have kept the species for years. Talk to a breeder, an experienced keeper or a vet who knows reptiles and amphibians before you get the animal - and again if anything looks wrong.