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FROGS

Large Horned Frog

Megophrys nasuta

Megophrys nasuta is a large, leaf-shaped frog from the rainforests of South-East Asia, where it lies motionless in the leaf litter waiting for prey. Females grow up to 13 cm, and the snout and upper eyelids are drawn out into pointed flaps, so the animal resembles a withered leaf. The species is delicate, especially when wild caught, and requires a cool, humid and well-ventilated enclosure.

Family: Megophryidae Former name: *Pelobatrachus nasutus*

KEY FACTS

THE ANIMAL

Adult size	**8-13 cm** snout-vent length
Lifespan	**5-10 years**
Active	**At dusk and at night**
Lifestyle	**Terrestrial**
Habitat	**Rainforest and wetland**
Skin toxins	**None known**
Difficulty	**Experienced**

CARE

Min. enclosure	**90 × 45 × 45 cm** L × W × H for 2 adults
Temperature, day	**21-24 °C**
Temperature, night	**18-21 °C**
Humidity	**70-95%**
Water	**Water dish**
UVB	**Optional** Ferguson zone 1
Diet	**Insects, vertebrates and worms/snails**
Kept	**Singly, in pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles in water**
Egg-laying site	**In water**
Sexually mature	**9-36 months**
Eggs per clutch	**300-2,400**
Hatching	**12 days**
Larval period	**90-210 days** from hatching to metamorphosis
Larval diet	**Complete diet**
Parental care	**None**

PROTECTION AND PAPERWORK

CITES	**Not listed**
IUCN	**Least Concern (LC)**

About the species

Megophrys nasuta is a stout, broad-headed frog with an angular body that makes it look like a dry leaf on the forest floor. The snout and upper eyelids are drawn out into pointed, triangular flaps, and two pairs of narrow skin folds run down the back. The species name nasuta refers to the long, triangular flap of skin on the tip of the snout. The base colour is light to dark brown, often reddish, with irregular dark markings and scattered tubercles on the back. The throat is dark, in some animals brick red or orange with black or cream marbling, and the limbs are cross-barred. The fingers have no webbing, and the toes only slight webbing.

The sexes differ greatly in size. Females reach about 13 cm from snout to vent and are stouter and rounder with a relatively larger head. Males reach 8-9 cm, and the female is often two to three times as large as the male. Males have dark brown nuptial pads on the first two fingers and a loud, metallic "honk" as their call. In animals from Borneo the male's throat is uniformly brownish black, while females have a dark stripe down the middle of the throat.

The species was described by Hermann Schlegel in 1858. In 2021 it was moved to the genus *Pelobatrachus* as *Pelobatrachus nasutus*, but the name *Megophrys nasuta* is still the most widely used in the hobby and is used here as well. The records from Thailand and parts of the Sunda Shelf may represent another, as yet undescribed species.

Skin toxicity: The species has no known skin toxicity, and no skin irritation in humans has been described. Wash your hands after contact with the animal, the water and the substrate all the same.

M. nasuta is an ambush hunter that lies still and strikes when prey passes by. It is shy and stresses easily. Many wild-caught animals die soon after import, and the large females in particular are delicate, so the species is not for beginners.

Read more: Buying animals: captive-bred, wild-caught and transport

Distribution and habitat

Megophrys nasuta lives in southern Thailand (including Yala Province), throughout the Malay Peninsula, in Singapore and on Sumatra and Borneo, where it occurs in Indonesia, Malaysia and Brunei alike. It is also known from smaller islands such as Tioman, Bintan and the Natuna Islands.

The animals in the trade come mainly from Malaysia. Most are wild caught, and most of those are males, because they are easier to find when they call.

> **Native range:** Thailand, Malaysia, Singapore, Indonesia and Brunei.

HABITAT

M. nasuta lives in permanently moist and cool rainforest in the lowlands and on the lower mountain slopes, on flat to steep terrain and preferably close to brooks and other watercourses. The animals lie on the forest floor in the leaf litter, often partly buried. Young animals hide under withered leaves during the day, while adults lie under large logs and stones. In the evening they are easier to find, because their eyes reflect light and because the males call loudly, especially in the breeding season.

The optimum temperature is 22-24 °C. The species breeds all year round in small streams and lays its eggs under stones and logs in the water.

Care

THE ENCLOSURE

A pair needs an enclosure of at least 90 × 45 × 45 cm, and a group of 3-4 animals needs at least 100 × 50 × 50 cm. The floor area matters most, because the species hardly climbs, but the height must not be less than about 40 cm: otherwise the animals bump their snouts and horns against the lid and get scrapes and bald patches. Females grow large and need space.

The substrate must retain moisture, e.g. 4-5 cm of unfertilised sphagnum, coconut fibre or orchid bark, with a thick layer of dried leaves on top. Provide hiding places made of large cork tubes or half tubes and tree roots. Plants on the floor get trampled, so use plants on the back wall, artificial plants or robust species such as golden pothos and ferns, which do not need much light. Avoid substrate that can be swallowed, because the species is an eager eater and can become impacted from gravel. The frogs often sit in the same spot, so change the substrate in exactly that place regularly, and change it completely when it turns sour or mouldy.

TEMPERATURE

The species does not tolerate heat. Keep the enclosure at 21-24 °C during the day and 18-21 °C at night, and do not let it exceed 25 °C for any length of time. Extra heating is rarely necessary; if you cannot keep the temperature below about 24 °C in summer, choose another species. Place the enclosure in a cool room out of direct sunlight, and measure with a digital thermometer.

For breeding, a drier and cooler period of three to four months is used, with 40-60 % humidity and about 18-21 °C, followed by artificial rain (see breeding). A proper winter rest is not necessary.

Read more: Humidity, misting and ventilation

HUMIDITY AND MISTING

Keep the humidity at 70-95 %. The species tolerates high humidity as long as ventilation is good, but long periods of a wet substrate and stagnant air can kill it. It must not dry out either. Mist daily or use a rain system, and set up the enclosure with both moister and drier areas.

Mist with water that has stood for a day, or treated tap water. Measure the humidity with a digital hygrometer.

WATER AND WATER QUALITY

Always provide a large, stable water dish or a small water section with no more than 6-8 cm of water, so that the frog can lie and soak and can easily climb out again. A larger water section is not necessary, but is a plus in a large enclosure. Use water free of chlorine and chloramine, e.g. treated tap water or rain water.

Change the water often, and clean the dish without soap. Amphibians absorb substances through the skin, so avoid residues of soap, insecticides and cleaning products in and around the enclosure.

LIGHTING AND UVB

The frog does not need UVB to survive, but a weak UVB source (Ferguson zone 1) for 10-12 hours a day can be a benefit. Hang the light over one side, so that the rest lies in shade, and keep a day length of about 12 hours. The frog is most active at dusk and at night and lies hidden in the leaves during the day.

Read more: Lighting and UVB

FEEDING

Megophrys nasuta is greedy and has a large mouth. In the wild it takes insects, spiders, worms, snails, crabs, scorpions and centipedes, and also small vertebrates such as lizards, frogs and young rodents. In the enclosure, crickets, grasshoppers, cockroaches, silkworms, earthworms and snails are used; a pinkie mouse can be given once in a while to large animals. The food must not be too fast, and movement triggers the strike, so feeding with tweezers works well. The frog readily eats during the day, especially right after misting.

Juveniles are fed daily. Adults are fed 2-4 times a week, because daily feeding easily leads to obesity. Gut-load the feeder insects well, and dust them with calcium and multivitamin at every second to third feeding. Do not give feeder insects that are too large, and remove leftovers. Food for juveniles is described under breeding.

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

BEHAVIOUR AND HANDLING

M. nasuta is a shy, sedentary frog that prefers to lie hidden in the leaves with its head raised and its back sloping upwards, so that it looks like a leaf. Stress is the most common cause of illness, especially in newly imported animals, so calm surroundings and plenty of hiding places are important. The species should not be handled; move it in a clean, transparent tub when cleaning.

The species is mostly solitary, but does not form territories and can be kept in pairs or as one male with two females without aggression outside the breeding season. Keep an eye on feeding, because the larger females can take it all. Do not keep it with other species: anything it can fit its mouth around will be eaten. The male's call is a loud "honk", heard especially during rain, and when the rain starts, the animals turn darker.

Breeding

SEXUAL MATURITY AND SEXING

The female is far larger and rounder than the male and has a relatively larger head; the male is slimmer, has nuptial pads on the first two fingers and calls. The sex can be hard to tell in young animals and only becomes clear when they are almost sexually mature. In adults, size is the best distinguishing feature.

The age at sexual maturity is uncertain: it lies between 9 months and 3 years. Wild-caught animals are almost always males, so a pair is not easy to obtain.

MATING

Breeding rarely succeeds and requires a large enclosure with a rain system and a large water section of 5-8 cm. Keep the animals drier (40-60 % humidity) and cooler (about 18-21 °C) for three to four months, preferably during the winter half of the year, and then let it rain from a sprinkler ring in the lid, connected to a pump so that the water is recycled.

The males start calling as soon as the rain starts. At first let it rain for a few hours at a time, and gradually extend to 8-10 hours, with the longest periods at night. Amplexus often occurs within a day, but egg laying can take anything from a few days to a week, and amplexus does not always lead to eggs. Avoid very heavy or very long rain, which stresses the animals. Females can, however, also lay eggs in a water dish without rain.

EGGS AND TADPOLES

The female attaches the eggs to logs, stones, cork or plants just below the water surface, in the wild on the underside of stones and logs in streams, and the eggs lie in a long, scattered mass. A clutch is 300-2,400 eggs. If the female lacks surfaces, she lays eggs on top of eggs, and then only a small proportion hatch, so provide plenty of cork and large surfaces under water. There is no parental care.

The eggs are about 2 mm and whitish. The tadpoles have a funnel-shaped, upward-facing mouth and feed only from the water surface, so provide floating food such as powdered fish food or tadpole food several times a day. Armoured catfish can take what sinks to the bottom. The tadpoles do best in large tubs with gravel and biological filtration rather than small tubs with frequent water changes. The water must be clean and free of chlorine.

Read more: Rearing tadpoles

METAMORPHOSIS

The eggs develop slowly and hatch after about 12 days. The tadpoles are then 12-20 mm and settle down into the gravel, where they live off the yolk; after about a week they feed at the surface, and after just under two weeks they swim freely. The hind legs appear after about two and a half months, and metamorphosis takes place after 3-7 months at 21-27 °C.

When the front legs appear, the tadpole needs shallow water and easy access to land with many hiding places.

REARING THE YOUNG

Newly metamorphosed juveniles are very shy and need plenty of hiding places and access to shallow water. Keep the humidity high by covering part of the mesh lid and misting daily. Sort the juveniles by size, because the large ones can eat the small ones.

The juveniles take small feeder insects such as newly hatched crickets, banana fly larvae, enchytraeids and small waxworms, dusted with calcium and vitamins. They grow quickly and measure about 4 cm when sold.

Health and common mistakes

M. nasuta is delicate in captivity, especially when wild caught:

- Stress after capture and transport is the most common cause of illness. Keep new animals in quarantine in a separate room for 60-90 days, and care for them after your other animals.
- Parasites: wild-caught animals often have many worms without it being visible. Have a faecal sample examined by a vet with amphibian experience; fenbendazole and ivermectin work against roundworms.
- Bacterial sores and red areas on the belly or head. Red patches can also be caused by chytrid fungus, so have them examined.
- Constipation from swallowed substrate.
- Injuries to the snout if the enclosure is too low.
- Obesity from overfeeding.

A healthy frog sits still and partly hidden with its head raised above the substrate and its back at an angle of about 45 degrees, has a round belly and sturdy limbs and a large appetite. If the animal will not eat, loses weight, or develops swellings, sores or red skin, contact a vet with amphibian experience.

Read more: Quarantine and hygiene

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.