



I ONLY HAVE  
*aye-ayes*  
for you

There are many animals around the world – chameleons in Africa, narwhals in the Arctic, spirit bears in British Columbia, komodo dragons in Indonesia and vampire bats in South America – that, owing to their unusual appearance or some other distinguishing characteristic, have become the unwitting subject of folklore and superstition. On this score, few animals, if any, can compete with the aye-aye, which is endemic to Madagascar. To many Malagasy people, it instils fear and revulsion and they avoid it at all costs – failure to do so will lead to bad luck, illness and even death! For scientists, however, the animal is so unusual that it has been placed in its own family.

**Nick Garbutt** separates aye-aye fact from fiction. ▶

TEXT & PHOTOGRAPHS BY NICK GARBUTT





ABOVE In what was seen as a last-ditch effort to save the species from extinction, in the mid-1960s aye-ayes were introduced to the island of Nosy Mangabe, where they have thrived. Subsequently, however, they have been found to be more widespread than previously thought.

OPPOSITE The remarkably wide spacing between the aye-aye's piercing eyes is a consequence of its peculiar dentition.

PREVIOUS SPREAD Exclusively nocturnal and difficult to track, aye-ayes are not easy to see in the wild.

Since its discovery and description in 1788, the aye-aye *Daubentonia madagascariensis* has been the cause of some confusion. On the basis of its appearance, the animal was first classified as a squirrel-like rodent and it was only some 100 years later that the aye-aye was finally accepted as a primate and a lemur. Even the name 'aye-aye' is an enigma and its origins are unclear. In a supposed reference to the animal's call, it was thought to come from the Malagasy *hai-hai* or *hay-hay* (high-high), but its vocalisations bear little resemblance to this description. Another possibility is that the name was coined by early

European explorers in response to exclamations of surprise by rural Malagasy folk when confronted by an aye-aye, 'Aiee, aiee!' However, the name is consistently used in even the remotest parts of Madagascar, far away from historic European influence, so this seems unlikely.

Perhaps a more plausible explanation is that the name is derived from *hey-hey*, which in Malagasy refers to something that is not talked about. What seems certain is that it is the aye-aye's bizarre and scary appearance that gave rise to and nurtured the fear and loathing that Malagasy people feel for the animal.

The aye-aye is the epitome of anatomical deviance – no other primate combines such an odd amalgamation of morphological features and behavioural traits. Top of the list of peculiar features is its dentition; as with rodents, the incisors grow continuously throughout the animal's life. Next in line are its ears, which are massive, mobile and leathery, like those of a large bat. Then, its extraordinary hands have clawed digits and a skeletal middle finger, while its mammary glands are low on the torso, between the hind legs. Add to these characteristics widely spaced, piercing orange eyes; a coarse, shaggy black coat and long, bushy tail, and the overall effect resembles a witch's cat with gargoyle features.

Malagasy folklore suggests that the aye-aye's appearance was designed by the devil, an indication of how tightly the animal is entwined with the island peoples' psyche and beliefs. The specifics vary from region to region, but the gist remains consistent across the island – the aye-aye is associated with evil and is considered *fady*, or taboo.

These beliefs are most prevalent in northern Madagascar. In many rural villages there, locals think that if they see an aye-aye in the forest, someone in the village will fall ill and die. Worse still, if an aye-aye enters a village, the whole population must evacuate or everyone will die. At its most extreme, some people believe aye-ayes eat humans.

These myths change subtly from village to village. Some inhabitants believe that the age of the person who sees an aye-aye is significant. If an elderly man sees one, he or another elderly villager will die, whereas a sighting by a young person will have an equally dire effect on the youth. Similar beliefs in a neighbouring village include a switch – the age of the person destined to die is

dependent on the age of the aye-aye. (It is thought to live about 26 years in the wild.) In other places, locals believe the evil effects of an aye-aye can be remedied. If one is seen, it must be killed and the whole animal or its tail hung on a pole at a crossroads outside the village. They hold that killing the aye-aye will prevent deaths in the village and that, when passing strangers happen upon the corpse, its curse and ill-fortune will pass to them and be carried away.

In the west of the island, the Sakalava people believe that an aye-aye is able to enter houses during the night and murder the sleeping occupants by cutting their aortic arteries with its thin middle fingers. The Sakalava preempt this by killing aye-ayes.

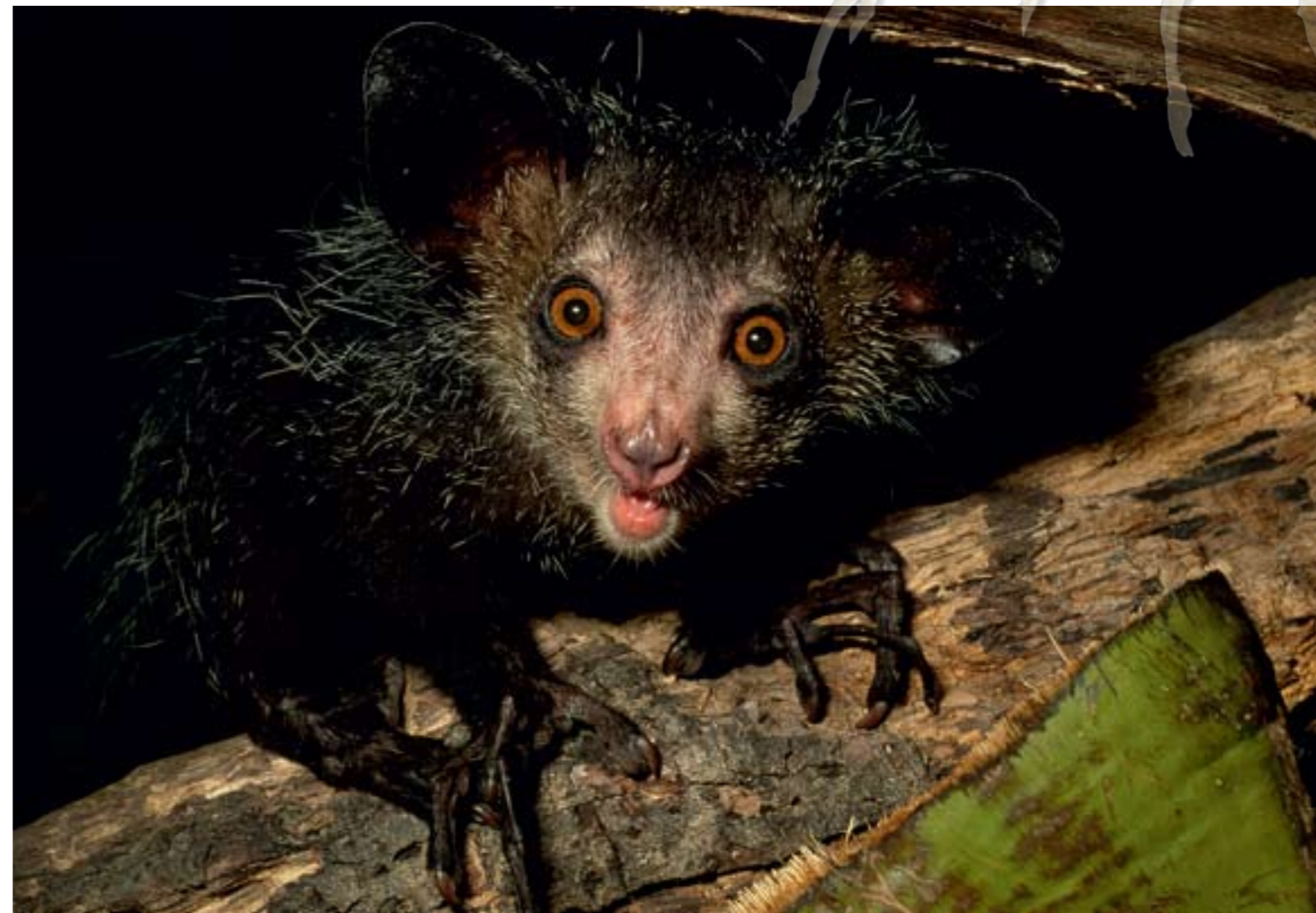
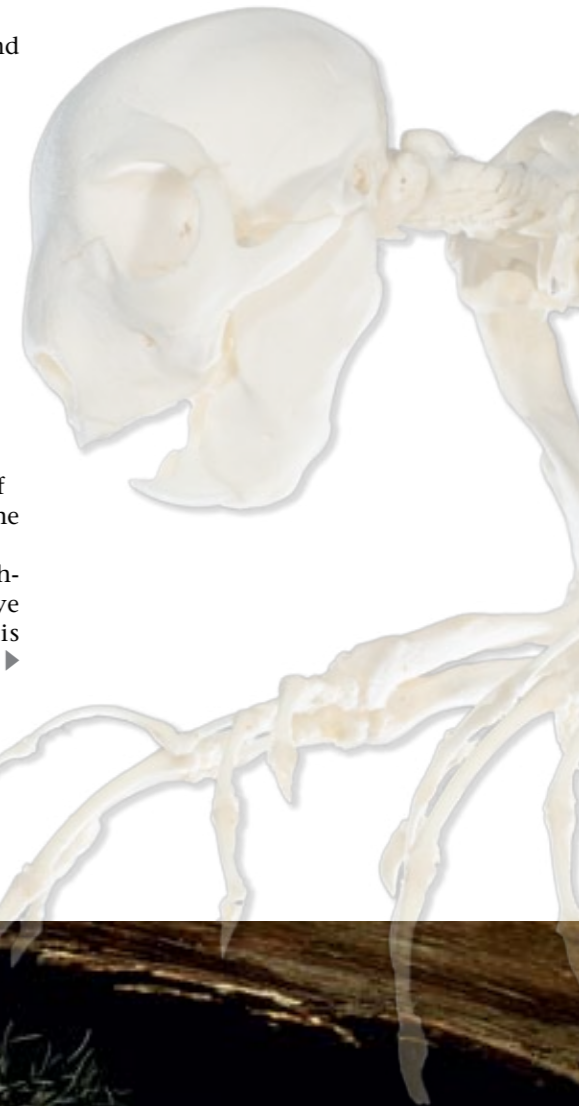
In other western regions, the animal is feared far less, but is still linked with bad luck. In fact, in some areas the aye-aye

is eaten, especially during festivals and celebrations, such as weddings. To banish the evil associated with it, though, villagers must first sing at each corner of the village.

In the rainforest regions of eastern Madagascar, there are still more variations. Here, many regard the primate as a predictor or harbinger of evil; if an aye-aye enters a village and sits on top of a house, illness or death will occur shortly afterwards. In villages to the south-east of Andasibe (the location of one of the island's most popular national parks), it is believed that a person will die if an aye-aye looks or points at them. The only way to avoid this is to kill it.

In complete contrast, in some south-eastern areas, locals hold the aye-aye in high regard. Here the animal is associated with good rather than

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evil, as it is believed to be the embodiment of ancestral spirits and is consequently accorded the same rites as a chieftain after death. It is not difficult to imagine how these beliefs came to be; the aye-aye's sinister appearance sets it apart.

In other parts of the world, odd-looking animals are dealt a similar fate. In Borneo, the Puana people think that the goblin-like western tarsier *Tarsius bancanus* has been made by the 'evil one'.

Indeed, since Madagascar's original human colonists came from South-East Asia, the Malagasy may have inherited beliefs about weird-looking forest animals from their ancestors.

Compounding the problem, the aye-aye regularly feeds and nests in the ramy tree *Canarium madagascariensis*, which often grows adjacent to sacred forest burial grounds, fuelling the local peoples' association of the animal with death. Its *fady* status is probably enhanced by its nocturnal, solitary habits and low population density, which mean that encounters with local people are infrequent, thus adding to the mystery.

So much for the myths and superstitions – what about the facts and reality?

Despite historic confusion and debate, the aye-aye's classification as a primate is now universally accepted, although, because of its singular morphology, determining its closest relatives amongst fellow primates has been problematic. Recent advances in genetic techniques have helped and research indicates that the aye-aye, along with all the other lemurs on Madagascar, evolved from the same colonising ancestor primate, which rafted onto the island around 50 million years ago. However, there is little doubt that the aye-aye is the most unusual and distant offshoot of the lemur evolutionary tree and, as such, is placed all on its own, in the family Daubentoniidae.

As if its strange appearance weren't enough, the aye-aye's feeding habits are equally unique. Combining elements of both woodpeckers and squirrels (neither of which is found on Madagascar), it hunts for insect grubs in rotting trees by tapping on the



## fast facts

### Aye-aye *Daubentonia madagascariensis*

A second species, the giant aye-aye *D. robusta* is known only from subfossil remains found in southern and south-western Madagascar. It is estimated to have been up to five times heavier than *D. madagascariensis*.

**Measurements** *D. madagascariensis* measures 740 to 900 millimetres from nose to tail tip, with the tail making up more than half its length. At around 2.5 kilograms, the aye-aye is the largest nocturnal lemur. Indeed, it is the world's largest nocturnal primate.



**Movements** Strictly nocturnal and largely solitary, it sometimes forages in pairs. The day is spent in a nest constructed from interwoven twigs and dead leaves, usually high in the canopy in a dense tangle of vines or branches.

**Call** When active, vocalisations are frequent – typically a short 'cree-cree-cree' lasting two to three seconds.

**Breeding** A single offspring is born after a gestation lasting 160 to 170 days. At birth, the infant weighs approximately 100 grams. It remains with its mother for a long period, allowing it to learn the complex foraging techniques needed for survival. Females begin breeding at three or four years and there are probably two- to three-year intervals between births.

wood and listening for hollow sounds or movement. Once a grub is located, the aye-aye chisels in with its pronounced teeth and rips open a hole, then winkles out the juicy morsel with its flexible middle finger. Not that it feeds only on insect finger food; this technique is also used to break into coconuts and ramy nuts, and to feed on the nectar from flowers and the pulp from fruits, like lychees and mangos.

Indeed, most of the aye-aye's anatomical peculiarities are derived from its foraging and feeding adaptations. Relative to body size, it has the largest brain of any prosimian, a consequence of the complex hand, eye and auditory coordination that it requires. ▶



**Distribution** The aye-aye is one of the most difficult lemurs to see in the wild. The best place is Ile mon Désir (Roger's or Aye-aye Island) near Mananara. Several aye-ayes were introduced here and are free-ranging. Sightings are frequent, but the animals are difficult to follow. On the island of Nosy Mangabe in the Bay of Antongil, aye-ayes are seen from time to time, but not as regularly as in the past (although the population has not declined). Aye-ayes are also very occasionally seen at other localities, such as Daraina, Andasibe-Mantadia, Ranomafana and Tsingy de Bemaraha national parks. In all localities, the evidence of their presence – gnawed holes in tree trunks, *Canarium* nuts with telltale teeth marks or nests in the canopy – are far more likely to be seen than the animals themselves.

**Conservation status** A number of zoos have aye-aye exhibits that are well worth seeing. Parc Tsimbazaza in Madagascar's capital, Antananarivo, has a new nocturnal house with two aye-ayes. Other collections that have successfully bred and kept aye-ayes include Durrell Wildlife in Jersey, London and Bristol zoos in the UK and Duke Primate Centre in the US.

**OPPOSITE** With finely tuned hearing, the aye-aye can locate insect grubs in rotting wood. It then excavates a hole with its chisel-like teeth, before winking out the tasty morsels with its skeletal middle finger.





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The roots of its huge, rodent-like teeth extend far back into the jaw, resulting in the unusually wide spacing between the eyes. And the middle digit on each hand is not only excessively thin, but is also incredibly flexible and can rotate through 360 degrees. Unlike other digits, it articulates through a ball-and-socket joint.

For most of the second half of the last century, the aye-aye was thought to be on the brink of extinction. Fearing the worst, in 1966 and '67 the Malagasy government translocated nine animals (four males and five females) from capture sites on the mainland to the offshore island of Nosy Mangabe in the north-east. At the time, the general consensus was that there might be no more than 50 animals left in the wild. Over the subsequent 20 years, the aye-ayes on Nosy Mangabe thrived, but on the mainland they were still thought to be

restricted to pockets of lowland rainforest in the north-east.

However, as more and more field research has taken place in Madagascar during the past 15 years, a dramatically different picture has emerged. Not only have aye-ayes been recorded at numerous sites that stretch the entire length of the eastern rainforest belt, but they have also been found in drier forests in the far north and in a number of deciduous forest localities on the western side of the island. This makes them the single most widely distributed primate species on Madagascar. That said, nowhere are they common and where they do occur, it only ever seems to be at very low densities.

So, if you visit Madagascar and have the good fortune to see a wild aye-aye, you can count yourself extremely lucky. You may even celebrate, safe in the knowledge that you and your family will not succumb to a terrible fate. ■

ABOVE Like a built-in Swiss Army knife, the aye-aye's extraordinary hands and fingers are versatile and exquisitely adapted tools for foraging.

INSET Many of the aye-aye's eccentric morphological adaptations are clearly visible in its skeletal structure.