



Super UV-ray vision

Martin Whitting

The Augrabies flat lizard *Platysaurus broadleyi* sees ultraviolet light three times better than any other lizard. Since males with more intense UV colouring are tougher, this may help rivals to size each other up in detail before picking a fight.



Really fast food

Aquatic bladderworts *Utricularia* spp. have bladder-like leaves with trapdoors that flip open, causing water and insect prey to flow in. This occurs in about 0.0005 second – the quickest motion recorded in a plant, and faster than prey can detect, let alone evade.

NEWS OF THE EARTH

IN BRIEF

HAPPY FAMILIES

In zebra finch *Taeniopygia guttata* families, personality matters. Couples with similar habits make better parents. Their chicks are bigger and healthier than those of parents that are less of a match, regardless of genetic make-up. This may be due to reduced conflict over parenting tasks (Anim. Behav., vol 81, pp609–18).

BEARS DON'T CHILL

Unlike other hibernators, a denning black bear *Ursus americanus* can actively lower its metabolism – by 75 per cent, breathing just once or twice per minute – without a large drop in body temperature. How it 'shuts down' without also turning off its thermostat is unknown, but studying the phenomenon could lead to new medical breakthroughs (Science, vol 331, pp906–9).

CREATIVE CAPUCHINS

The Brazilian blonde capuchin *Cebus flavius* has invented a new twist on termite fishing, a common behaviour in chimps. It taps a nest to rile the residents, then pokes a stick into it to fish out the defending swarm. This preliminary tapping triples the yield. The sly simian also rotates the stick as it is inserted to prevent it from breaking before it breaches the nest (Biology Letters, doi:10.1098/rsbl.2011.0034).



Bruna Bezerra



Luis Quijma/naturepl.com

Sperm whale populations in different parts of the world use distinct and different patterns of clicks, possibly to reinforce group identity.

Sperm whales use baby talk

Sperm whale conversation just got personal.

Little is known about how sperm whales *Physeter macrocephalus* communicate, other than that they produce patterns of clicks and that each pod may have its own repertoire. Research reveals that it gets a lot more personal than that.

A team led by Luke Rendell, from the University of St Andrews, and Hal Whitehead, from Dalhousie University, Nova Scotia, recorded more than 300 calls from a whale pod near the Caribbean island of Dominica. The whales remained in the area for 41 days – during which time no other whales joined them – making it possible, for the first time, to identify which individuals made which calls.

The team found that most of the whales did, indeed, usually sing the same song, so to speak. This

may help to maintain social bonds and/or announce group identity.

However, there were two striking exceptions: a mother, who repeated a slightly different tune, and her calf, which pretty much babbled. The researchers think that mum may have been using a type of 'baby talk' that tells her offspring where she is at all times. Regardless of its social significance, the finding shows that individual whales can, and do, change their tunes.

Indeed, most of the whales also produced a steady pattern of five clicks, which varied only slightly depending on the individual's size. Since it is unlikely that any two whales in a pod will be exactly the same size, this call could signal one's personal identity.

The study offers the first such detail on sperm whale 'language' and shows that it is more complex – and flexible – than thought.

CALL OUTS

- » The click of a sperm whale is purportedly the loudest sound made by an animal – it can exceed 230dB underwater.
- » The researchers identified a total of 16 distinct calls. The pod- and possibly identity-specific ones comprised up to 60 per cent of all vocalisations.
- » Adult females do most of the talking. The calf's calls were all over the map, as if it were trying to find its voice.
- » Pod members co-operate in many ways, both in defence and in the care of young. Group-specific calls may help in this respect.
- » Indeed, the calf in this study was watched over by a regular babysitter when its mother was away. The 'nanny', too, sometimes engaged in 'baby talk'.

SOURCE: Mar. Mammal Sci., vol 27, pp149–66 LINK: www.nmfs.noaa.gov/pr/species/mammals/cetaceans/spermwhale.htm

**DAVID BRIAN BUTVILL, ZOOLOGIST**

Our *Discoveries* sleuth David writes about science and nature for magazines, radio and tv. He lives in Costa Rica, where he eagerly assists his marine-biologist wife in the field.

DISCOVERIES

Elephants cry “Bees!”

Africa’s giants seem to have a vocal bee warning system.

It takes a lot to scare an African elephant *Loxodonta africana* – unless you’re an African honeybee *Apis mellifera scutellata*. The elephants turn tail and flee at the mere sound of the insects. New research shows that these mammoth beasts may use a bee-specific call to warn other elephants of the threat.

A team of researchers led by Lucy King, from the University of Oxford, broadcast the sound of disturbed bees to several elephant families in two different reserves in Kenya. They did this via a wireless speaker hidden inside a fake tree; as a comparison, the sound of a waterfall was also broadcast in some trials.

Only the sound of bees elicited a significant response – almost all families moved swiftly away from the speaker. They also shook their heads and tossed dust in the air, as if fending off a swarm.

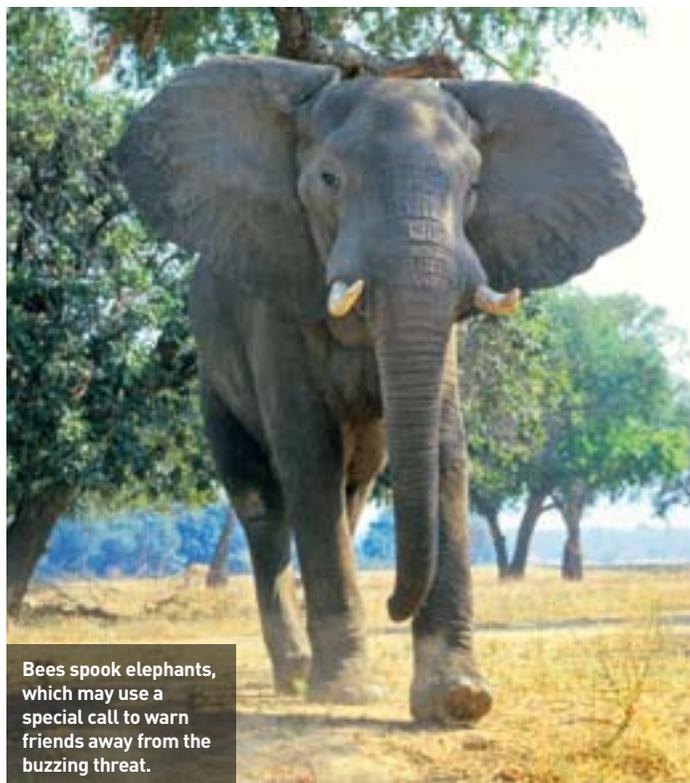
Most intriguing to the team, however, was that fleeing elephants always produced a unique rumbling sound.

To investigate that call further, the researchers recorded it and played it back to other herds in the area. The targeted elephants exhibited the same reaction, even though there were no bees or alarmed-looking elephants in sight.

Moreover, upon analysing the rumble, the researchers identified an acoustic feature not heard in any other known elephant vocalisation, even those associated with fear. And when they broadcast the exact same rumble that had spooked the animals, but with that feature modified, targeted elephants barely batted an ear. In other words, the rumble is clearly a warning – and that specific feature seems to scream “Bees! Run!” in elephant language.

The team is still looking into whether or not it really is specific to bees, but it seems likely. African elephants are not often challenged by foes. And when they are – say, by a lion or pack of hyenas – the goliaths typically charge while making a deafening roar or trumpeting. But if attacked by a swarm of bees, there’s little an elephant can do but grumble – and tell its friends and family to run.

SOURCE: PLoS One, vol 5, e10346 **LINK:** www.eol.org/pages/289808



Bees spook elephants, which may use a special call to warn friends away from the buzzing threat.

Tom & Pat Leeson/ardea.com

STINGING TRUTHS

- » Throwing dust in the air may be an elephant’s way of swatting bees – it may knock them down or away.
- » Elephants are vulnerable to bee stings in sensitive spots such as around the eyes and inside the trunk.
- » The elephants’ fear of bees is surprisingly profound. They avoid even empty beehives.
- » This fear seems to be transmitted

socially. In earlier work by King and others, only 1 of 17 groups did not react to bee sounds: a young couple with a calf. They’d probably never been stung, and there was no one else to teach them of the threat.

» The phenomenon could be used to reduce human-elephant conflicts, for example, by playing bee sounds in crop fields disturbed by elephants.



A bat gains shelter, a plant is fed – both win.

Bat outhouse

A plant trades shelter for bat poo.

The Bornean pitcher plant *Nepenthes rafflesiana elongata* may have evolved as an insect eater, but now it’s hungry for bat manure.

Like all pitchers, the smooth cup-like leaves of *N. r. elongata* cause insect visitors to slip and tumble into a pool of digestive enzymes inside. But this species is

puzzling: it’s much longer than its close relatives but catches far fewer insects and thus ‘eats’ a lot less than smaller kin. Or so it was thought.

A group led by T Ulmar Grafe, from the University of Brunei Darussalam, has discovered that woolly bats *Kerivoula hardwickii hardwickii* regularly take naps inside *N. r. elongata* pitchers – and nowhere else, though there are plenty of other siesta sites around.

The structure is a perfect place for a nap. The deep tubular neck

can comfortably hide two of the golf-ball-sized bats from predators, and the thick cuticle blocks direct sunlight. An umbrella-like ‘lid’ above the entrance keeps out rain. And the tube quickly tapers, so that even if a bat slips, it won’t fall into the acidic liquid below.

The guest pays for its stay in faeces. The researchers calculate that bat scat provides up to half of this pitcher’s total nitrogen needs. It is currently the only plant known to consume bat guano.

SOURCE: Biology Letters, doi:10.1098/rsbl.2010.1141 **LINK:** http://nepenthes.merbach.net/english/_rafflesiana.html

Michael Schönert/University of Würzburg