

Find out more about **Dung Beetles** with author Chris Naylor

We all know that the moon helps us see at night, even though we don't use it very much these days. But before artificial lighting existed, we had to stop what we were doing after sunset and go to bed, or sit in the dark wondering what that strange noise outside was.

So imagine having a big, shiny full moon once a month, that lets you see at night and stay up late (*hurrah!*)... to do more of the exhausting drudgery you normally only had to do during the day (*boo!*).

Of course, it's not only humans that have their lives influenced by the light of the moon or the sun. Many animals are diurnal (active in daylight), like humans, dogs, sheep, er... anything you see wandering about during the day. And some are nocturnal (active at night-time), like bats, owls, fireflies, mice. Cats, being contrary, are both. They do whatever they want, whenever they want.

I know what you're thinking - *but what about about dung beetles - are they diurnal or nocturnal?* Some are nocturnal - the *Scarabaeus zambesianus*, which lives in Africa, is active at night.

Just to be clear, dung-beetles' entire lives revolve around balls of dung - being born in them, eating them, and for some kinds of dung beetle, pushing them all over the place. And just to be *extra* clear, 'dung' is piles of poo made by animals like cows, horses or elephants. *Yyyyyyum!*

Dung-beetles have a very sensitive sense of smell, which is very bad luck if you live in dung, unless you're a dung-beetle. They use it to sniff out their favourite thing - fresh dung, and roll balls of it back to beetle basecamp.

But researchers have discovered that *Scarabaeus zambesianus* beetles use polarised moonlight to navigate. 'Polarised' means the light has passed through dust

in the atmosphere and got jiggled about a bit, making a kind of stripey pattern in the sky that's invisible to humans. And this helps the beetles quickly whisk their pongy prize away before other insects have a chance to take a bite of it. Researchers saw that when the moon shone in the night sky, the beetles went off like a rocket in a straight line with their dung ball. When there was no moon or it was cloudy, they got a bit confused and took a much more wobbly path.

Then an experiment was created, using artificial polarised moonlight, and when the researchers changed the direction of the pattern, the beetles changed direction too, probably waving their little beetle fists and shouting "Can you **please** stop messing about with that polarised moonlight?! It driving me *mad!*"

We know that lots of animals use polarised sunlight to navigate, but this African dung-beetle was the first animal that was found to use moonlight this way, and because the polarising effect of the moonlight is a *million* times dimmer than the sun's, it means that these beetles have a very impressive and unusual night-vision talent.

These beetles' natural environment in grassy open savannah, without lots of trees blocking the view of the sky, helps the *Scarabaeus zambesianus*' to make use of its super-skill and has made them the All-Africa Night-Time Dung-Rolling Gold Medallists for three-hundred and fifty-thousand consecutive years.

Dung beetles live naturally in Britain but sadly not the kind that roll dung balls all over the place, so you won't be seeing any poop-manouvering in your garden. Even so, dung beetles in Britain are really important in recycling dung back into healthy soil for growing food in. So hold your nose and give them a big hurrah!

About the author:

Chris is originally from Bradford and studied illustration and graphic design at Bradford College of Art. In 2000 he moved to France where, amongst other things, he was an English teacher before working in newspaper layout and design.

When his children were small he realised he loved the picture books he read to them, sometimes even more than his children did – the Picture Book Bug had truly bitten.

Chris has since written and illustrated several books and is currently thinking about the next one, probably with a cuppa in hand at home near Limoges.