

Bite-size

Cannibalism begins at home

Most mothers would do anything to give their children the best start in life, but one amphibian mother is really dedicated: she lets her babies peel and eat her own skin.

A collaborative study between NERC and the Natural History Museum reveals a form of parenting never seen before in land-living animals. Females of the worm-like amphibian *Boulengerula taitanus* transform their outer skin into a nutrient-rich meal for their babies to peel and eat with specialised teeth.

www.nerc.ac.uk/publications/latestpressrelease/2006-21yummy.asp

Idle wasps inherit the nest

Female hairy faced hover wasps with a low rank work harder to help their queen than their lazier relations higher up the nest's hierarchy. This is because the lower ranks have less to lose and are prepared to take more risks and wear themselves out, said scientists in *Nature*, 10 May.

Wasps closer in stature to the queen have a greater chance of being the next in line to breed. It appears this makes them much lazier than their lower-ranked nest-mates. Rather than use up their energy in foraging to feed the

queen's larvae, these lazy wasps sit tight and wait for their chance to become queen themselves.

Jeremy Field from University College London said, 'Helpers wait peacefully in an age-based queue to inherit the prize of being the queen or breeder in the group. The oldest female almost always becomes the next breeder. We have found that the brighter the individual wasp's future, the less likely it is to take risks by leaving the safety of its nest to forage for food.'



Dr Adam Cronin/UCL

Do fish feel pain?

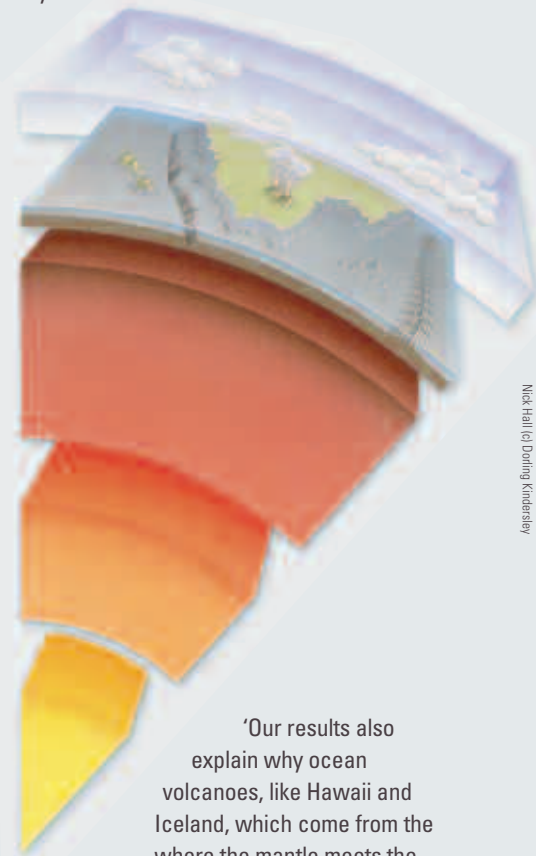
Researchers have shown that nerve cells in trout skin detect potentially painful stimuli. The next step is to explore central processing in fishes' brains. Lynne Sneddon from the University of Liverpool and her colleague, Annemie Van der Linden from Antwerp University, are using brain imaging equipment to identify brain areas that show a significant change of activity during a noxious event. Preliminary results show changes in brain areas of fish that correspond to pain processing in mammals, including humans.

Sea water found in Earth's mantle

Scientists at the University of Manchester have found seawater in volcanic gas samples originating from the Earth's mantle – the region just below the crust and extending down to the core – supporting the theory that seawater is subducted deep into the Earth, according to research published in *Nature*, 11 May.

Chris Ballentine and Greg Holland of the University's School of Earth and Atmospheric and Environmental Sciences found that up to ten percent of the Earth's oceans have been absorbed deep into the Earth since its formation.

Chris said, 'This accounts for about half of the water in the deep Earth, the remainder of which was trapped when the Earth first formed. This work, for the first time, quantifies the 'geological water cycle.'



Nick Hall/© Dorling Kindersley

'Our results also explain why ocean volcanoes, like Hawaii and Iceland, which come from the where the mantle meets the core, have a higher water content than ocean volcanoes that originate from shallower regions of the mantle,' he added.

The study, funded by NERC, is also the first to establish the precise composition of the noble gases in the Earth's mantle.

Rap gets deep

Drive-by shootings and failed relationships provide the raw materials for many rap lyricists, but not rapper and geologist, Toyin Solanke. Her deft rhymes articulate a fascination with rocks, geology and deep Earth science. She passed on her infectious enthusiasm to children at a NERC sponsored event in West Norwood, London, during National Science Week.

'It's great to hear 13 year-old

kids waxing lyrical about the Cretaceous, Jurassic and Triassic periods,' she said.

Toyin has produced a CD, 'Geothrilllogy', of her geological rhymes that she hopes will help children get excited about this topic.

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