

ON THE RECORD

“Richard Dawkins has proven to be one of the most wicked human beings to ever walk the earth.”

Hardline Creationists behind the website <http://preachingyourfuneral.com> attempt to justify their decision to hold a mock funeral for their ideological enemy.

NUMBER CRUNCH

4 is the number of Internet cables damaged in a spate of incidents that has left much of the Middle East and India without telecommunications.

100% is the reported loss of Internet connection in Iran. Israel and Iraq were unaffected, leading some bloggers to suspect a conspiracy ...

1 is the number of ships accused of causing the most serious incident — it is still unclear whether an errant anchor off the Egyptian coast accidentally cut the first two cables.

SHOWBIZ NEWS**Back to bleak**

Deputy administrator of the US Environmental Protection Agency Marcus Peacock raised eyebrows by using his official blog to draw the all-too-obvious parallels between environmental degradation and the much-publicized drug addiction of British singer Amy Winehouse.

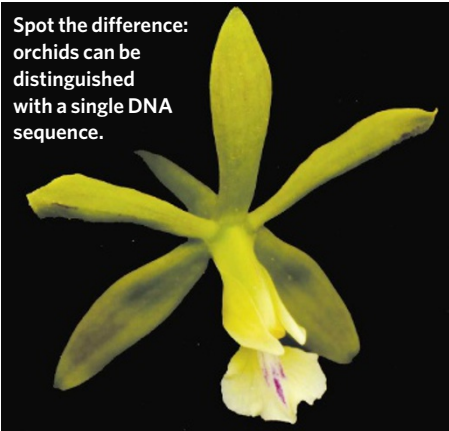
ZOO NEWS**Beetle's new release**

Staying with singers, the late, great Roy Orbison has received a new accolade — he's the inspiration behind the name of the newly discovered whirligig beetle *Orectochilus orbisonorum*.

Sources: Guardian, www.bloggernews.net, <http://flowoftheriver.epa.gov>, physorg.com

D. BOGARIN

Spot the difference: orchids can be distinguished with a single DNA sequence.



E. PUPULIN

Botanical identities

Researchers have used a DNA sequence to distinguish between more than 1,600 botanical samples from two biodiversity hotspots, providing the largest test yet of ‘DNA barcoding’ in plants.

But this will not end the ongoing debate over which barcodes botanists should adopt. “I think this is a step forward,” says John Kress of the Smithsonian Institution’s National Museum of Natural History in Washington DC. “But I don’t think it means we’re there yet.”

DNA barcodes are sequences that vary extensively between species but hardly at all within them, and so can be used to distinguish one species from another. Established barcodes could be used to quickly inventory biodiversity in a protected area, for example, or to monitor shipments of plants for illegal trading of endangered species.

Establishing a barcode for animals has been fairly easy; part of a gene called *COI*, which has been used for years to study animal family trees, fulfils the requirements well. But plants have been more problematic. Labs around the world have churned out paper after paper supporting various alternatives to *COI*. Each lab designed its experiments differently and tested its barcodes on different sets of plants. Some moved ahead on large-scale projects using their favoured barcodes regardless of the field’s lack of consensus.

“It’s a very contentious issue,” says Kenneth Cameron, director of the Wisconsin State Herbarium at the University of Wisconsin-Madison. “There are a lot of politics and personalities involved.”

It was against this background that Vincent Savolainen of the Royal Botanic Gardens, Kew in London decided to compare some of the leading barcode candidates across a large set of samples. As they report this week in *Proceedings*

of the National Academy of Sciences, he and his colleagues tested samples from 86 species from southern Africa and Costa Rica using eight barcodes (R. Lahaye *et al. Proc. Natl Acad. Sci. USA* doi:10.1073/pnas.0709936105; 2008).

The researchers found that barcodes from genes called *matK* and *trnH-psbA*, used either alone or together, correctly classified just over 90% of the species. Because *trnH-psbA* sequences can be difficult to compare across species, they went on to inventory another 1,036 species of orchid using *matK* alone.

But this does not make *matK* the untested champ. For one thing, researchers have reported difficulty amplifying the gene for sequencing in some plants. Savolainen says his team used an improved amplification protocol, but Kress says the new method still fails with some species. And a better idea of the technique’s range is needed: it may do well with orchids, but what of liverworts or ferns?

Most suspect that, in the end, a single barcode will not suffice. At a meeting of the Consortium for the Barcode of Life in Taipei, Taiwan, last autumn, the Plant Working Group proposed three barcodes: *matK*, *trnH-psbA* and another called *atpF-H*. Savolainen and his team think *matK* and *trnH-psbA* may suffice.

The next step will be a test of all the leading barcodes against 675 species of plants. This test is being coordinated by Peter Hollingsworth of the Royal Botanic Gardens in Edinburgh, UK, who runs the barcode consortium’s Plant Working Group. It will study the reproducibility of results in different labs, with the outcome expected in April. Kress is optimistic that this may lead to a consensus, but acknowledges that the delays and bickering have been frustrating. “I’m beginning to think I’m going to start working on fruitflies,” he jokes. ■

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