

said one display. “Smash the watermelons!”

So why does *Nature* this week devote two pages to such absurdities? We now have more than two decades of evidence that closing our eyes will not make the climate sceptics go away. Instead, in the United States at least, they have cemented their propaganda into a broader agenda that pits conservatives of various stripes against almost any form of government regulation. The sceptics like to present the battlefield as science, but, as the News Feature on page 440 makes clear, the fight is, in fact, a violent collision of world views.

Does the following sound familiar? “They distort science, ignore reality and will not tolerate opinions or facts that conflict with their beliefs.” “Cynical manipulators or simple pawns, their purpose is only to keep funds flowing to a corrupt few who profit from the status quo.” Those are the kinds of words scientists use, often correctly, to describe the sceptics, many of whom would have the financial interests of today continue their dominance tomorrow. Yet this is also how sceptics characterize climate scientists, whose careers and reputations they claim are intertwined with protecting the science of anthropogenic global warming.

To address this conflict might be seen as lending respectability to the spurious claims made by sceptics against respected scientists and robust science. So, let’s be clear: *Nature* is not endorsing the Heartland Institute as a serious voice on climate science. Instead, the News Feature is intended to offer researchers outside climate science a window into the motives and tactics of those who have set themselves up as such a voice. (Those inside climate science, of course, are all too aware of these already.)

Despite criticizing climate scientists for being overconfident about their data, models and theories, the Heartland Institute proclaims a

conspicuous confidence in single studies and grand interpretations. A 2009 report by the Nongovernmental International Panel on Climate Change, which the institute supports, is well sourced and based on scientific papers. Yet it makes many bold assertions that are often

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questionable or misleading, and do not highlight the uncertainties. Many climate sceptics seem to review scientific data and studies not as scientists but as attorneys, magnifying doubts and treating incomplete explanations as falsehoods rather than signs of progress towards the truth. As the News Feature points out, although the sceptics feel

that they have already won the political battle in the United States, their attacks on science will continue.

Scientists can only carry on with their work, addressing legitimate questions as they arise and challenging misinformation. Many climate scientists have already tried to engage with their critics, as they did at the Heartland event. The difference, of course, is motive. Scientists work to fill the gaps in human knowledge and to build a theory that can explain observations of the world. Climate sceptics revel in such gaps, sometimes long after they have been filled.

It is scientists, not sceptics, who are most willing to consider explanations that conflict with their own. And far from quashing dissent, it is the scientists, not the sceptics, who do most to acknowledge gaps in their studies and point out the limitations of their data — which is where sceptics get much of the mud they fling at the scientists. By contrast, the Heartland Institute and its ilk are not trying to build a theory of anything. They have set the bar much lower, and are happy muddying the waters. ■

## Origin of species

*Zoologists should follow botanists in allowing online-only announcements of new species.*

Ida had a difficult birth. This remarkably well preserved primate fossil was introduced to the world in May 2009, in a description in the online journal *PLoS ONE*. Arguments raged over the evolutionary importance of the unquestionably photogenic new species *Darwinius masillae* and the role of a television company in its unveiling; a more technical criticism came from taxonomy specialists. Under the International Code of Zoological Nomenclature, publication of species names must be in a ‘durable medium’ — that is, on paper or CD-ROM, which must be made available at specific libraries. The online-only naming of Ida as a new species was therefore illegitimate. The journal rushed out a correction stating that a “separate print-only edition is available” to fulfil the requirements and ensure that Ida really was *D. masillae* (J. L. Franzen *et al.* *PLoS ONE* 5, e5723; 2009). But the underlying problem remained: if zoologists and botanists wished to publish their findings in online journals, they would still have to physically distribute print copies to suitable repositories.

Last year, Sandra Knapp, a botanist at the Natural History Museum in London, got around the plant-science version of the same rules, the International Code of Botanical Nomenclature. She described four new plants, again in *PLoS ONE* (S. Knapp *PLoS ONE* 5, e10502; 2010), printed out hard copies of the online paper, and posted them to libraries.

At a meeting in Melbourne, Australia, last week, the International Botanical Congress took the first steps to end this situation and bring botany into the electronic age (see *Nature* <http://dx.doi.org/news.2011.428>; 2011). The congress’s nomenclature section, chaired by Knapp, voted to amend the code to allow purely

electronic publication. They also agreed to abandon the need for a Latin description, although the names themselves must still be Latinized. The wider congress must endorse the changes before they can take effect, but it is expected to do so in time for the new rules to apply from January next year.

Now, zoologists should follow suit. More than ten years have passed since the first creatures — fossilized microorganisms called protists — were described in an electronic journal (D. B. Scott *et al.* *Palaeontol. Electron.* 3; 2000; see [go.nature.com/pt1cmz](http://go.nature.com/pt1cmz)), with physical copies sent to libraries to meet the criteria. *Nature* greeted the news at the time with a headline that now seems premature: ‘Online naming of species opens digital age for taxonomy’ (see *Nature* 408, 278; 2000).

Yet, despite much discussion in the scientific community and numerous articles published on the topic, both in print and online, the rules governing zoologists remain as strict as ever.

Researchers pushing for online publications to be given equal status insist that electronic copies can now be considered a permanent record. They say that widening the number of journals that can publish discoveries will benefit the field, and that online-only journals often publish faster than traditional print publications.

At this point, it seems that there is little reason to continue to demand paper on a shelf to make a species name official.

Sometimes, taxonomists — and scientific publishers — resist change and the adoption of new technology. There are often good reasons for this. Proper rules are important and taxonomic anarchy would ruin science. Slavishly embracing every new technology as it appeared would be a disaster, and a demonstrably robust archive is invaluable — just ask a historian.

But electronic publication has already altered the face of publishing, and it will continue to do so. Taxonomy and publishing are likely always to lag behind technological progress; in fact, both already have to run faster and faster just to keep up. Still, botanists are about to narrow the gap slightly, and zoologists should pick up the pace. ■

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