

THIS WEEK

EDITORIALS

MOON SHOT Fresh estimates support cosmic-collision origin **p.132**

WORLD VIEW Test aircraft engines to benefit from volcano science **p.133**



APRON STRINGS Hundred-million-year-old insect mothered young **p.134**

All that glitters

A review of the United Kingdom's progress towards 'gold' open-access research is instructive — for funders, publishers and scientists both at home and abroad.

In 2012, the United Kingdom took a bold leap on open-access publishing, announcing that all research articles produced by its publicly funded scientists should be made free to read. A fine pledge, but three years on, it has experienced some practical difficulties. It is instructive to examine them.

To quote the mantra of Research Councils UK (RCUK), the umbrella body for the seven national funding agencies that is overseeing the publishing conversion: “open access is a journey, not an event.” Continuing that metaphor, it seems that the United Kingdom has been sent out as an advance party on this journey. Its scientists and publishers are scouting through thickets of confusion on their way to bringing about ‘gold’ open access. This is the system in which a published article is immediately made freely available, with maximum opportunity to reuse it for applications such as text-mining and translation.

Many nations have not set open-access policies. Others, including the United States, are loitering with little intent, and mandating only delayed access to an author's version of a peer-reviewed manuscript — a ‘green’ form of open access that ultimately benefits science less (see *Nature* **494**, 401; 2013). RCUK favours a mixed model, but one that gradually migrates towards gold. A review of its progress, published in March, serves as a useful guide and should be examined by funders, publishers and institutions (see go.nature.com/tz2orl).

One problem is that it is hard to track progress, good or bad. RCUK and many British institutions cannot systematically count RCUK-funded papers, let alone those published as open access. As a result, RCUK, although strongly confident, cannot be entirely sure whether the £17-million (US\$25-million) open-access fund it gave to universities in 2013–14 has produced the desired result of at least 45% of its funded papers being either green or gold open access.

This underlines the need for researchers to use the ORCID system, a single digital identifier for individuals that links their published papers and grant applications. Use of FundRef, a service from non-profit publisher alliance CrossRef for reporting funding sources, is also essential.

Open-access licences are another major source of confusion. The London-based biomedical charity the Wellcome Trust, which has long mandated gold open access and provides the funds to cover it, reported last month that it now sees 87% compliance with its policy — but that only 66% of papers are accompanied by a liberal publishing licence that allows extensive reuse of text. Licence information, it says, is often ambiguous or contradictory, and records for open-access payments can be lost between authors and publishers.

RCUK says that the licence problem is compounded by researchers not understanding which licence they need to use to comply with the open-access policy, and by publishers offering a range of ‘open’ licences. (Since January, all 18 open-access journals owned by Nature Publishing Group have switched to using the fully liberal CC-BY 4.0 licence as a default, and to charging a flat fee.)

And then there are costs. All experiments should be encouraged in

the evolving gold open-access market, but academics should know that fees for papers published in fully open-access journals are lower than those of ‘hybrid’ subscription journals that allow an open-access option. The Wellcome Trust says that the average fee levied by hybrid journals is 64% higher than that charged by fully open-access titles. British funders are now pondering steering the market by dissuading researchers from publishing in hybrid journals, as other countries have done.

“Britain looks increasingly isolated in its gold-leaning stance.”

The RCUK review did not have the remit to question whether RCUK should continue to hand out money for gold open-access publishing. But with a new UK government in the offing and the country looking increasingly isolated in its gold-leaning stance, there must be a concern that the agency might end up scrapping its gold preference. Last year, four influential UK university-funding bodies announced a green open-access policy that will further steer academics towards delayed public archiving of manuscripts.

In conclusion: the road to gold open access will be bumpy and hard to navigate. But what is encouraging is that these issues are being aired, with publishers, funders and researchers talking to each other about the costs and challenges. The take-home message from the RCUK review is the need to keep discussing difficulties publicly — for only then can other nations learn from the United Kingdom's experience. ■

Seeds of change

The European Union faces a fresh battle over next-generation plant-breeding techniques.

The US plant-breeding company Cibus is proudly rolling out its first crop created with an innovative precision gene-editing technology: herbicide-tolerant oilseed rape.

The crop will be planted in the United States this spring and the firm already has authorization to cultivate it in Canada. The technology switches just a few nucleotides in a plant's DNA; the company's webpage points out that because it works without integrating foreign genetic material, the resulting plants cannot be stigmatized as transgenic. They will, it optimistically declares, “be globally acceptable”.

Cibus, based in San Diego, California, hopes that plants imbued in this way with traits that improve their robustness or nutritional value will also find favour in the European Union (EU), where many countries vehemently oppose genetically modified (GM) crops created by transfer of specific foreign genes.