

Correspondence

'Flammable ice' — extract with caution

Methane gas hydrates, also known as flammable ice, are an abundant but untapped source of clean energy. Last month, China successfully extracted gas hydrate from the Shenhu area in the north of the South China Sea. However, further exploration demands great caution.

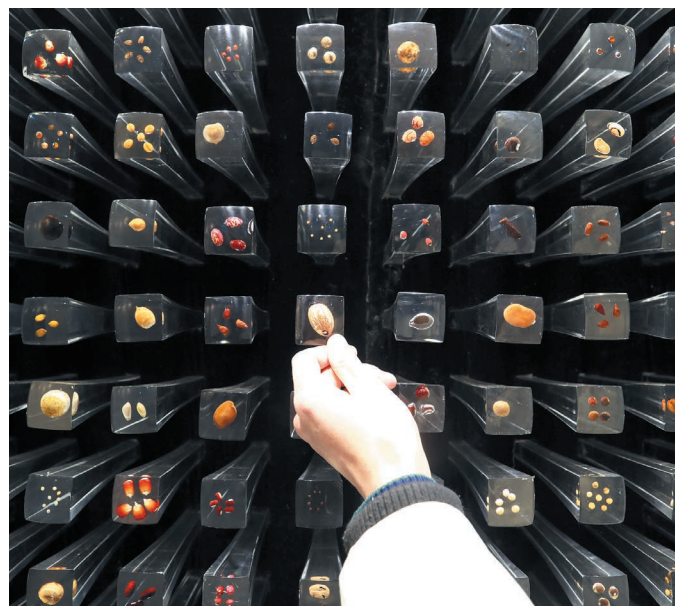
The challenge is to extract these gas hydrates from their reserves in sedimentary deposits along continental margins, and to find safe and economical ways to develop them industrially. Their stability depends on surface pressure and temperature, so transforming them from solid sediment into liquids and gases could weaken the sea floor, causing mass movement, landslides or subsidence. Hydrates are sensitive to changes in temperature and pressure and can rapidly release large amounts of methane, drastically altering the marine environment, harming sea creatures and affecting the climate.

We need a better grasp of the risks of such operations and how to manage them. Developing a solid and consistent regulatory framework will help industry and government agencies to avoid past mistakes, such as the horrendous consequences of the premature marketing of poorly understood chemicals, including DDT (see, for example, R. Dunn *Nature* **485**, 578–579; 2012).

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Growing threat of urban waste dumps

As researchers working on the sustainable management of urban waste, we are deeply concerned about developing countries' escalating production of municipal solid waste and of construction and demolition



Seed banks are used by both conservationists and taxonomists to study plants.

debris. Dump-site landslides have killed at least 220 people over the past 18 months in Shenzhen, China, in Addis Ababa, Ethiopia, and in Colombo, Sri Lanka. This growing threat to people and the environment demands greater attention, broader oversight and proper management.

Developing countries such as China and India are urbanizing at an unprecedented rate (see X. Bai *et al.* *Nature* **509**, 158–160; 2014). Many of the poorest cities in Africa and Asia are likely to double the waste they generate within 20 years. Drastic action is needed to control this trend (see, for example, D. Hoornweg *et al.* *Nature* **502**, 615–617; 2013).

Most such urban waste ends up in poorly operated landfill sites, or is dumped or burned. Some 3 billion people worldwide are not served by controlled disposal facilities. It is therefore crucial for governments in developing countries to provide safer alternatives for waste disposal, to pass and enforce regulations to eliminate the open dumping and burning of waste, and to finance sanitary landfill and recycling programmes. As cities continue to expand, careful and

sustainable planning is essential.

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Taxonomy: naming algae, fungi, plants

As president, vice-president and president-elect of the International Association for Plant Taxonomy (IAPT), we are concerned that Stephen Garnett and Les Christidis misrepresent the role of the IAPT in governing the nomenclature of algae, fungi and plants (*Nature* **546**, 25–27; 2017). The IAPT is not the equivalent of the International Commission on Zoological Nomenclature, as they suggest.

The IAPT provides the means for the community to undertake nomenclatural work, including our journal *Taxon* for publishing proposals. The governance of the rules for naming is laid out in Division III of the *International Code of Nomenclature for Algae, Fungi and Plants* (ICN; see go.nature.com/2rvaip8), and is in the hands

of the wider community. The ICN is debated and changed every six years by hundreds of international specialists as part of the International Botanical Congress, which this year is to be held in Shenzhen, China.

The role of the ICN is to facilitate, not to govern, the science of understanding life on Earth. We believe that fostering excellent science generally involves community engagement rather than regulation. The rules for naming algae, fungi and plants are governed collaboratively by the global community, not by the IAPT.

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Taxonomy: use the Red List as a registry

Taxonomy and conservation might seem to operate as separate bodies (S. T. Garnett and L. Christidis *Nature* **546**, 25–27; 2017). In fact, they are joined at the hip. Taxonomists provide the language to plead conservation's case. And conservationists could be taxonomy's greatest allies — the record of what lives and what might be lost is the field's strongest justification today.

The authors call for coordination between taxonomy and conservation, which is already happening informally. The International Union for Conservation of Nature (IUCN) has a huge stake in understanding species, with millions of organisms at risk but only 80,000 assessed so far. Its Red List of Threatened Species provides consistency in species' status. The IUCN also sets guidelines for predicting species' responses to climate change and for classifying the impact of invasive alien organisms. This interpretation of complex data underpins both