

Correspondence

Satellite megaclusters could fox night-time migrations

The brightness to the naked eye of giant megaconstellations of satellites could create the greatest alteration to the night sky's appearance in human history (see *Nature* <https://doi.org/fdz8>; 2020). This could have potentially catastrophic effects on celestial navigation by wildlife, and therefore on terrestrial ecology.

Migrating species such as birds, dung beetles and seals use stars as a source of directional information (see J. J. Foster *et al. Proc. R. Soc B* **285**, 20172322; 2018). Some use bright objects as their main cue, and others rely on the starry sky's centre of rotation, or the fainter band of the Milky Way.

Constellations of satellites can form coherent patterns that could affect night-time migrations in a similar way to the Milky Way, for example. Such errors would have a global effect on migratory populations. Their energy balance could be altered, with long-term repercussions for survival and reproduction, as has been found for excessive or misdirected light (S. A. Cabrera-Cruz *et al. Sci. Rep.* **8**, 3261; 2018).

We call for astronomers and field biologists to identify and quantify the possible ecological effects of satellite megaconstellations. A regulatory framework could then be developed to control their proliferation, based on how species respond to spatio-temporal cues in the field.

Chris Lintott University of Oxford, UK.

chris.lintott@physics.ox.ac.uk

Paul Lintott University of the West of England, Bristol, UK.

Myanmar amber fossils: a legal as well as ethical quagmire

The ethical status of fossil material in Myanmar amber is one of palaeontology's most contentious issues. In our view, two aspects of the debate over calls for a moratorium on publication of research related to this material warrant further consideration (see M. S. Engel *Nature* **584**, 525; 2020).

First, there is a potential legal problem with many collections of Myanmar amber held outside the country. Myanmar law has forbidden the permanent export of fossils since 1957 ([go.nature.com/2fmckea](https://www.go.nature.com/2fmckea)). And, although exporting Myanmar amber is legal under gemstone laws from 1995 ([go.nature.com/3djqvvdw](https://www.go.nature.com/3djqvvdw)), it is the fossil content of the amber that has driven purchases by palaeontologists. Amber inclusions therefore fall into a legal grey zone between these statutes – it is unclear which law has precedence. Researchers would be ill-advised to publish on material whose legal status is questionable, whatever its scientific value.

Second, foreign researchers must do more to address the loss of Myanmar's fossil heritage. We agree that amber palaeontologists should work with colleagues from Myanmar to establish clear ethical guidelines for research on these often-spectacular specimens in full compliance with local law. This would enable Myanmar to benefit from its own scientific patrimony, as has occurred with finds of fossil primates, for example (see J. J. Jaeger *et al. Nature Commun.* **10**, 3531; 2019).

Paul M. Barrett, Zerina Johanson Natural History Museum, London, UK.

p.barrett@nhm.ac.uk

Uruguay: slashing funds is no way to thank scientists for COVID-19 success

Uruguayan scientists have worked successfully with the government to get COVID-19 under control: with just 52 deaths out of 2,623 cases (as of 22 October), the figures are so far among the best in South America. But scientists are still confronted by the mass freezing of government research funds, proposed before the pandemic. Dismantling its fragile scientific system could leave the country ill-equipped to face the next unexpected challenge (see *Nature* **586**, 169–170; 2020).

Uruguayan President Luis Lacalle Pou's government acted early in the pandemic to appoint a scientific advisory board to guide evidence-based decisions (see L. Taylor *Br. Med. J.* **370**, m3575; 2020). Scientists and other scholars offered support by debunking misleading information, amplifying recommendations from the health ministry, pitching in grant money for coronavirus testing, and developing faster tests. This effective cooperation with researchers has been an example for politicians worldwide.

Uruguay allocates only 0.5% of its gross domestic product to science, putting research at a serious international disadvantage. Yet Uruguay still met its research-publication quota against investment last year (J. Paruelo *et al. Preprint* at <https://doi.org/ffm5>; 2020). Slashing these government funds could destroy three-quarters of the country's research effort (see [go.nature.com/3jpkpy9i](https://www.go.nature.com/3jpkpy9i)).

Daniel Prieto Instituto de Investigaciones Biológicas Clemente Estable, Montevideo, Uruguay.
dprieto@fcien.edu.uy

Europe's public-health systems gear up for future epidemics

The COVID-19 pandemic has highlighted failures to implement the European Union treaty provision to safeguard the well-being of its citizens (see [go.nature.com/35kxn3c](https://www.go.nature.com/35kxn3c)). European leaders have now announced plans to reform EU public-health systems through a €750-billion (US\$886-billion) coronavirus recovery package ([go.nature.com/3obozab](https://www.go.nature.com/3obozab)).

In our view, the reforms would best be served by a transdisciplinary strategy that addresses individual, local, regional and global needs. A Europe-wide National Reference Centre for infectious diseases that have epidemic potential should be set up and incorporated into national health-protection plans.

Initiatives would include epidemiological surveillance and early-alert systems; cooperation between national and international public-health bodies; dissemination of technical guidance and clinical protocols for disease management; coordination of research; increased laboratory capacity for rapid identification of new pathogens; and trained public-health officials ready to implement large-scale testing, contact tracing and quarantine measures.

Such programmes would need to work with the proposed EU agency for Biomedical Advanced Research and Development and the European Centre for Disease Prevention and Control (see [go.nature.com/3m5jfis](https://www.go.nature.com/3m5jfis)).

Giuseppe Ippolito* National Institute for Infectious Diseases, Rome, Italy.

giuseppe.ippolito@inmi.it

*On behalf of 16 co-signatories; see [go.nature.com/2hk7vkv](https://www.go.nature.com/2hk7vkv)