

# Correspondence

## Fund natural-history museums, not de-extinction

The only way to study extinct species is by leveraging the irreplaceable collections of natural-history museums. It is unfortunate, then, that instead of supporting these often imperilled institutions, private investors are spending millions on attempts to resurrect species. For example, the US start-up firm Colossal Laboratories

and Biosciences, co-founded by synthetic biologist George Church, is exploring such feats.

Museum collections have helped to arrest extinctions of birds of prey (J. J. Hickey and D. W. Anderson *Science* **162**, 271–273; 1968) and have documented local extinctions of small mammals (O. R. W. Pergams and S. Nyberg *J. Mammal.* **82**, 984–992; 2001). They have also provided biologically inspired design for myriad fields and insight into how humans erode biodiversity. Yet museums are often underfunded and understaffed (see [go.nature.com/3agsnzb](http://go.nature.com/3agsnzb)).

Diverse sampling of life over time means that natural-history collections hold answers to many unsolved conservation questions (F. Grewe *et al. Biol. Lett.* **17**, 20210123; 2021), some of which are only now being revealed by new technology. With so many species teetering on the edge owing to climate change, habitat loss, pollution, pesticide use and more, philanthropists should invest in stopping their demise instead of trying to bring back species that are already lost.

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## Remembering a giant of chemical crystallography

Crystallography has lost one of its most prominent practitioners and teachers. Jack Dunitz, whose 1951 suggestion prompted Linus Pauling to call his model of a protein secondary structure an  $\alpha$ -helix (rather than an  $\alpha$ -spiral), died last month aged 98. His career spanned more than 70 years.

His early feats in crystal structure analysis included cyclobutane (J. D. Dunitz and V. Schomaker *J. Chem. Phys.* **20**, 1703; 1952) and ferrocene (J. D. Dunitz and L. E. Orgel *Nature* **171**, 121–122; 1953). He was among the first to inspect Watson and Crick's DNA model; the  $\alpha$ -helix term inspired Crick to describe DNA as a double helix.

Dunitz used to say: "Be a crystallographer, meet the world." He studied at the University of Glasgow, UK, and was a research fellow at the University of Oxford, the California Institute of Technology in Pasadena, the US National Institutes of Health in Bethesda, Maryland, and the Royal Institution in London. In 1957, he became a professor at the Swiss Federal Institute of Technology in Zurich.

His horizons spanned science, history, linguistics and music. Precise, simple language was crucial to him, hence the Dunitz rule: "Almost every scientific paper can be improved by deleting the first sentence." Morning tennis and shared lunches were his way to listen, learn and move research in new directions. We miss him greatly.

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## Poor planning compounded Europe's flooding catastrophes

Climate change was not the only driving force behind this year's deadly floods in Germany and neighbouring countries (*Nature* <https://doi.org/gw3d>; 2021). Their disastrous effects were compounded by a lamentable lack of preparedness and public awareness.

After the great 1755 Lisbon earthquake, the philosopher Immanuel Kant (1724–1804) wrote: "If humans are building on inflammable material, over a short time the whole splendor of their edifices will be falling down by shaking. However, is this reason to blame providence for it?" And the geographer Gilbert White (1911–2006) declared that "Floods are 'acts of God' but flood losses are largely acts of man".

Climate change can trigger heavy rainfall, causing rivers to burst their banks. But saying that it was to blame for the disasters resulting from the recent floods is akin to claiming that SARS-CoV-2 is fuelling the COVID-19 pandemic. The virus triggered the pandemic, but its spread was facilitated by many countries' lack of preparedness and delayed control measures.

Countries must urgently take steps to mitigate the risks associated with extreme flooding and other natural and human-induced hazard events, if future damage is to be averted (C. Albert *et al. Nature* **596**, 486; 2021).

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## Sports concussions: sex differences in outcome are not a biological given

Biological factors might influence sex-based disparities in recovery time from sports concussions (see *Nature* **596**, 26–28; 2021), but such differences could also stem from female athletes' unequal access to training and medical care.

Evidence from the Concussion Assessment, Research and Education (CARE) Consortium, the largest prospective study of sport concussion to date, shows that women and men with sports concussion have almost identical recovery times (C. L. Master *et al. Br. J. Sports Med.* <https://doi.org/gxsb>; 2020) and outcomes (S. P. Broglio *et al. Sports Med.* <https://doi.org/gxsc>; 2021) when they have equal access to athletic training and prompt medical care, as stipulated in the United States by Title IX legislation (see [www.justice.gov/crt/title-ix](http://www.justice.gov/crt/title-ix)).

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