

# CONTENTS

29 MAY 2025 | VOLUME 388 | ISSUE 6750

# 903

Microbial diversity should be protected, just like threatened animals and plants, scientists argue.

## EDITORIAL

### 897 Critical statistical infrastructure

—N. Potok and E. L. Groshen

## NEWS

### 898 Researchers question Abbott's rapid malaria tests

Reports of false negatives prompted a World Health Organization internal memo, but company denies problems —C. Offord

### 900 Leprosy was an American scourge long before Europeans arrived

Scientists find DNA from an enigmatic bacterium in 1000-year-old skeletons —M. Price

### 901 Studies making lasting paradigm shifts are on the rise

New metric identifying "persistently disruptive" papers offers a "bright spot" amid signs of declining innovation —J. Brainard

### 902 California hummingbirds are evolving fast—because of feeders

Beaks have grown longer and larger, and ranges have expanded to follow the feeders —R. Nuwer

### 904 A giant telescope shrouded in mystery

China is readying to build one of the world's largest telescopes—but only scant details have emerged —R. Stone

### 905 China sets out to sample an unusual asteroid

Kamo'oalewa, a rare quasi-satellite of Earth, could be a chunk of the Moon —D. Normile

## FEATURES

### 906 The organ farm

Gene-edited pig kidneys are finally moving the long-stymied field of xenotransplantation forward —J. Cohen

## COMMENTARY

### PERSPECTIVES

### 914 Social impacts of glacier loss

More than three-quarters of global glacier mass is projected to disappear under present-day conditions —C. Howe and D. Boyer

RESEARCH ARTICLE p. 979

### 916 Sleuthing out the symmetry of a superconductor

Experimental observations provide clues to understanding an enigmatic superconductor, uranium ditelluride —A. H. Nevidomskyy

RESEARCH ARTICLE p. 938

### 917 A wave of emotion

Sustained brainwide patterns of activity enable emotions to outlast their triggers —S. Karamihalev and N. Gogolla

RESEARCH SUMMARY p. 933

### 918 Growing anxious—Are preschoolers matched to their futures?

Evolutionary and developmental factors may contribute to anxiety in young people —M. A. Hanson and P. D. Gluckman

## BOOKS ET AL.

### 920 The next best way to teach and learn

Technology always seems poised to revolutionize education—until it doesn't —J. Wai

### 921 Look beyond the longevity drips and supplements

There is a path to living longer and healthier that doesn't require reversing the aging process —E. J. Topol

## LETTERS

**922 Philippine fisheries put food security at risk**—R. B. Cabral *et al.***922 Remobilized metals threaten urban wetlands**—C. Li *et al.***923 Scientific timidity enables oppression**

—M. Omar

## ANALYSIS

## POLICY ARTICLE

**924 What patents on AI-derived drugs reveal**

Less in-depth, in vivo testing before patenting may affect overall research and development

—J. Freilich and A. K. Rai

## REVIEWS

## REVIEW SUMMARY

**928 Ecology**

Ecological and evolutionary consequences of changing seasonality

—D. Hernández-Carrasco *et al.*

## RESEARCH

## HIGHLIGHTS

**929** From *Science* and other journals

## RESEARCH SUMMARIES

**932 Domestication**

A single domestication origin of adzuki bean in Japan and the evolution of domestication genes

—C.-C. Chien *et al.*

**933 Neuroscience**

Conserved brain-wide emergence of emotional response from sensory experience in humans and mice

—I. Kauvar *et al.*

PERSPECTIVE p. 917

**934 Signal transduction**

BRAF oncogenic mutants evade autoinhibition through a common mechanism

—H. Lavoie *et al.*

**935 Ancient DNA**

Prehistoric genomes from Yunnan reveal ancestry related to Tibetans and Austroasiatic speakers

—T. Wang *et al.*

**936 Diapause**

Functional polymorphism of CYCLE underlies the diapause variation in moths

—S. Zheng *et al.*

**937 Plague**

Attenuation of virulence in *Yersinia pestis* across three plague pandemics

—R. K. Sidhu *et al.*

## RESEARCH ARTICLES

**938 Superconductivity**

Pair wave function symmetry in  $\text{UTe}_2$  from zero-energy surface state visualization —Q. Gu *et al.*

PERSPECTIVE p. 916

**945 Atomic physics**

Testing interelectronic interaction in lithium-like tin

—J. Morgner *et al.*

**950 Nanomaterials**

Resiliency, morphology, and entropic transformations in high-entropy oxide nanoribbons

—H. Shahbazi *et al.*

**957 Solar cells**

Vapor-assisted surface reconstruction enables outdoor-stable perovskite solar modules —X. Sun *et al.*

**964 Solar cells**

$\text{C}_{60}$ -based ionic salt electron shuttle for high-performance inverted perovskite solar modules

—S. You *et al.*

**969 Paleoproteomics**

Enamel proteins reveal biological sex and genetic variability in southern African *Paranthropus*

—P. P. Madupe *et al.*

**974 Paleontology**

Arctic bird nesting traces back to the Cretaceous

—L. N. Wilson *et al.*

**979 Glaciers**

Glacier preservation doubled by limiting warming to  $1.5^\circ\text{C}$  versus  $2.7^\circ\text{C}$  —H. Zekollari *et al.*

PERSPECTIVE p. 914

**984 Carbon cycling**

Thermal acclimation of stem respiration implies a weaker carbon-climate feedback

—H. Zhang *et al.*

## WORKING LIFE

**994 Finding strength in sensitivity**

—N. Stanojević

**989** AAAS News & Notes  
**992** Science Careers

## ON THE COVER



Newly hatched birds explore a 73-million-year-old Arctic environment. Modern birds breed in the Arctic to take advantage of abundant seasonal resources, but the evolutionary origins of this behavior remain elusive. Exceptional new fossils from northern Alaska reveal birds lived and nested alongside non-avian dinosaurs in Arctic Alaska long before the radiation of modern birds after the end-Cretaceous extinction. See page 974.

Illustration: Gabriel Ugueto



*Science* serves as a forum for discussion of important issues related to the advancement of science by publishing material on which a consensus has been reached as well as including the presentation of minority or conflicting points of view. Accordingly, all articles published in *Science*—including editorials, news, commentary, and book reviews—are signed and reflect the individual views of the authors and not official points of view adopted by AAAS or the institutions with which the authors are affiliated. *Science* (ISSN 0036-8075) is published weekly on Thursday, except last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005. Periodicals mail postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 2025 by the American Association for the Advancement of Science. The title *Science* is a registered trademark of the AAAS. Domestic individual membership, including subscription (12 months): \$165 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$2865; Foreign postage extra: Air assist delivery: \$135. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request. GST #R125488122. Publications Mail Agreement Number 1069624. Printed in the U.S.A. Change of address: Allow 4 weeks, giving old and new addresses and 8-digit account number. Postmaster: Send change of address to AAAS, P.O. Box 96178, Washington, DC 20090-6178. Single-copy sales: \$15 each plus shipping and handling available from backissues.science.org; bulk rate on request. Authorization to reproduce material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act can be obtained through the Copyright Clearance Center (CCC), www.copyright.com. The identification code for *Science* is 0036-8075. *Science* is indexed in the *Reader's Guide to Periodical Literature* and in several specialized indexes.