CONTENTS

11 APRIL 2025 VOLUME 388 ISSUE 6743

143

A Zenker's fruit bat, caught by researchers documenting Nigeria's bat diversity

<u>NEWS</u>

IN BRIEF

132 News at a glance

IN DEPTH

SCIEI

O. SUNDAY

134 Health agencies reeling as leaders, staff slashed

NIH loses five heads of institutes; FDA and CDC offices also gutted *By J. Kaiser*

136 A global warming 'hole' where you'd least expect it

India has so far warmed at about half the global average. Scientists aren't sure why *By V. Chandrashekhar*

137 Squirrels in Ivory Coast may be an animal reservoir for mpox

Outbreak in mangabeys gives researchers a unique opportunity to study the virus' elusive origins *By K. Kupferschmidt*

138 No one can replace the U.S. as it retreats from global health

Other countries, foundations, international groups are unable to make up for billions in Trump administration cuts *By I. Jooste*

139 Is Indonesia's rice farming megaproject doomed to fail?

Poor soils and dry climate could undermine effort to add 1 million hectares of paddies, scientists say *By D. Rochmyaningsih*

140 Landmark bioweapons pact needs upgrade, researchers say

Technological advances are challenging the effectiveness of the 50-year-old Biological Weapons Convention *By R. Stone*

142 The AI revolution comes to protein sequencing

By identifying unknown proteins, new systems could aid research in many areas *By R. F. Service*

FEATURES

143 A passion for bats

Biologists Benneth Obitte and Inoro Tanshi are exploring Nigeria's bat diversity, and trying to save it *By O. Sunday*



PERSPECTIVES

146 Closing the gap in the neutrino mass New measurements make an important step toward demystifying the fundamental particle *By L. Gastaldo* RESEARCH ARTICLE p. 180

148 Reformation by light

Light-driven chemistry enables threedimensional printing of recyclable polymer parts *By X. Lopez de Pariza and H. Sardon* RESEARCH ARTICLE p. 170

149 A natural defense against plant disease

Wild citrus plants contain a natural defense against a devastating bacterial disease By C. Opachaloemphan and S. Y. He RESEARCH ARTICLE p. 191

150 How does cancer affect motivation?

Inflammatory cytokines hijack a brain circuit to cause apathy in cancer *By J. W. Dalley and M.-E. Lynall* RESEARCH ARTICLE p. 169

POLICY FORUM

152 Fixing the science of digital technology harms

Technology development outpaces scientific assessment of impacts *By A. Orben and J. N. Matias*

BOOKS ET AL.

156 Diversity is a feature, not a bug An interdisciplinary tour of sexual strategies

in the animal kingdom offers lessons for humanity *By J. R. Garcia*

157 Empires and their philosophies

Conflicting ideas about citizenship and sovereignty shaped the Americas, argues a historian *By J. Cañizares-Esguerra*

LETTERS

158 Editor's note By H. H. Thorp

158 Implementing equitable wildfire response plans *By J. Xu* et al.

159 Wildfires jeopardize drinking water safety *By X. Li* et al.

159 Modernizing wildfire management in China By J. Li

RESEARCH

IN BRIEF

161 From Science and other journals

RESEARCH ARTICLES

164 Signal transduction

Structural pathway for PI3-kinase regulation by VPS15 in autophagy *A. S. I. Cook* et al. RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: DOI.ORG/10.1126/SCIENCE.ADL3787

165 Immunology

A distinct priming phase regulates CD8 T cell immunity by orchestrating paracrine IL-2 signals *K. Jobin* et al. RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: DOI.ORG/10.1126/SCIENCE.ADQ1405

166 Molecular biology

Rules of engagement for condensins and cohesins guide mitotic chromosome formation *K. Samejima* et al. RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

DOI.ORG/10.1126/SCIENCE.ADQ1709

167 Metabolism

Retrograde mitochondrial signaling governs the identity and maturity of metabolic tissues *E. M. Walker* et al.

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: DOI.ORG/10.1126/SCIENCE.ADF2034

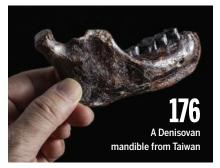
168 Evolution

The genetic architecture of and evolutionary constraints on the human pelvic form

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: DOI.ORG/10.1126/SCIENCE.ADQ1521

169 Neuroscience

A neuroimmune circuit mediates cancer cachexia-associated apathy X. A. Zhu et al. RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: DOI.ORG/10.1126/SCIENCE.ADM8857 PERSPECTIVE p. 150





170 Polymers

Circular 3D printing of high-performance photopolymers through dissociative network design *B. Yang* et al. PERSPECTIVE p. 148

176 Paleoanthropology

A male Denisovan mandible from Pleistocene Taiwan *T. Tsutaya* et al.

180 Particle physics

Direct neutrino-mass measurement based on 259 days of KATRIN data *KATRIN Collaboration* PERSPECTIVE p. 146

186 Selection

Most bacterial gene families are biased toward specific chromosomal positions *X.-P. Hu* et al.

191 Plant pathology

Targeted MYC2 stabilization confers citrus Huanglongbing resistance *P. Zhao* et al. PERSPECTIVE p. 149

199 Quantum information

Beyond-classical computation in quantum simulation *A. D. King* et al.

204 Parkinson's disease

Commander complex regulates lysosomal function and is implicated in Parkinson's disease risk *G. Minakaki* et al.

211 Dielectrics

Ultrahigh capacitive energy storage through dendritic nanopolar design *Y. Liu* et al.

217 Aquatic pollution

Pharmaceutical pollution influences river-to-sea migration in Atlantic salmon (*Salmo salar*) *J. A. Brand* et al.

DEPARTMENTS

131 Editorial Al drug development's data problem *By E. R. Gold and R. Cook-Deegan*

226 Working Life An awakening By M. Martignoni

ON THE COVER

Huanglongbing (HLB)—also called citrus greening—is a devastating bacterial disease of citrus trees spread by the Asian citrus psyllid. HLB causes crop damage worth 10 billion US dollars annually, and most trees die within a few years



once infected. Researchers have uncovered a resistance mechanism against HLB and developed therapeutic peptides that may be able to save and revive infected citrus trees. See pages 149 and 191. *Image: Xuefeng Wang*

SCIENCE (ISSN 0036-8075) is published weekly on Friday, 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): \$156 (574 allocated to subscription). Domestic institution (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 #125488122. 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 AAS, 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.