

EDITORIAL

- 777 Capably Communicating Science
Alan I. Leshner

NEWS OF THE WEEK

- 782 A roundup of the week's top stories

NEWS & ANALYSIS

- 785 Policy Shifts on Emergency Use of Cholera Vaccines

- 786 Big or Small, Science Will Suffer If Sequestration Goes Into Effect
>> Science Podcast

- 788 In Mock Case, Biological Evidence Reduces Sentences
>> Report p. 846

- 789 Negative Report on GM Crops Shakes Government's Food Agenda

NEWS FOCUS

- 790 Stopping Alzheimer's Before It Starts
How to Talk About Alzheimer's Risk

- 793 Mountains of Data

- 796 As Isolation Ends, Myanmar Faces New Ecological Risks

LETTERS

- 798 A Global Perspective on HIV/AIDS
S. K. Saxena et al.

HIV/AIDS: The Next Generation
D. Futterman

Maximizing Endangered Species Research
D. K. Rosenberg et al.

- 799 CORRECTIONS AND CLARIFICATIONS

BOOKS ET AL.

- 800 Processes of Life
J. Dupré, reviewed by C. J. Villabona-Arenas

- 801 Epigenetics in the Age of Twitter
G. Weissmann, reviewed by M. A. C. Ingram

POLICY FORUM

- 802 Citizen Involvement in the U.S. Endangered Species Act
B. J. Brosi and E. G. N. Biber

>> Science Podcast

PERSPECTIVES

- 805 Circadian Time Redoxed
M. D. C. Belle and H. D. Piggins

>> Report p. 839

- 806 Reproduction in Early Amniotes
P. M. Sander

- 808 A Swiss Army Knife of Immunity
S. J. J. Brouns

>> Research Article p. 816

- 809 Water Vapor in the Lower Stratosphere
A. R. Ravishankara

>> Report p. 835

- 811 Cuprates Get Orders to Charge
J. M. Tranquada

>> Report p. 822

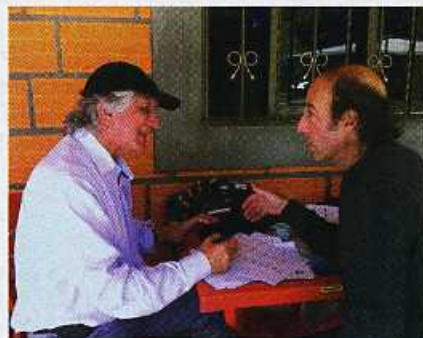
- 812 Order from Disorder
D. Wang and A. Fernandez-Martinez

>> Report p. 825

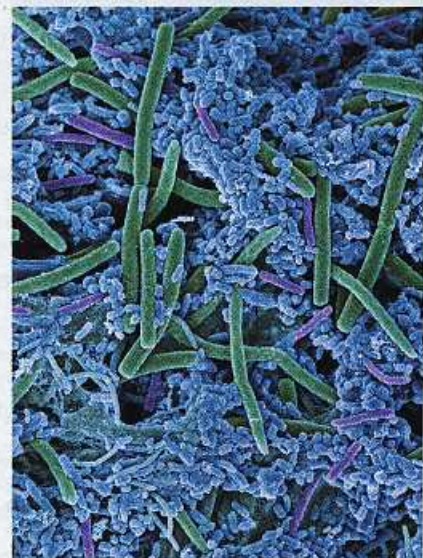
- 813 An Ancient Portal to Proteolysis
A. Matouschek and D. Finley

>> Report p. 843

CONTENTS continued >>



page 790



page 800



COVER

Male rhinoceros beetles (*Trypoxylus dichotomus*) wield a huge forked horn on their heads. Sexual selection may favor the evolution of exaggerated trait sizes because the developmental mechanism responsible for increased growth also results in signal reliability. See page 860.

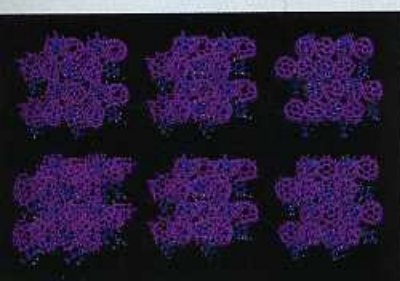
Photo: Will Frehofer and Douglas Emlen

DEPARTMENTS

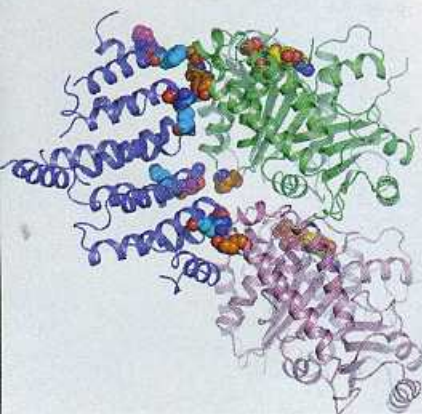
- 775 This Week in Science
778 Editors' Choice
780 Science Staff
865 New Products
866 Science Careers



page 801



pages 812 & 825



page 857

BREVIA

- 815 **Type 6 Secretion Dynamics Within and Between Bacterial Cells**
M. Basler and J. J. Mekalanos
Time-lapse video records a bacterial protein transportation machine in action.

RESEARCH ARTICLE

- 816 **A Programmable Dual-RNA-Guided DNA Endonuclease in Adaptive Bacterial Immunity**
M. Jinek et al.
A prokaryotic RNA-directed targeting system can be designed to cleave any DNA sequence.
>> *Perspective p. 808*

REPORTS

- 821 **Long-Range Incommensurate Charge Fluctuations in (Y,Nd)Ba₂Cu₃O_{6+x}**
G. Ghiringhelli et al.
Scattering experiments uncover an order competing with superconductivity in a cuprate family.
>> *Perspective p. 811*
- 825 **Long-Range Ordered Carbon Clusters: A Crystalline Material with Amorphous Building Blocks**
L. Wang et al.
Amorphous carbon clusters can be constructed into a crystalline material.
>> *Perspective p. 812*
- 828 **Camouflage and Display for Soft Machines**
S. A. Morin et al.
Soft robots with microfluidic channels in a skin layer show camouflaging abilities.
- 832 **Mixed-Phase Oxide Catalyst Based on Mn-Mullite (Sm, Gd)Mn₂O₅ for NO Oxidation in Diesel Exhaust**
W. Wang et al.
Costly platinum catalysts for removing nitrogen oxide pollutants could potentially be replaced with metal oxide catalysts.
- 835 **UV Dosage Levels in Summer: Increased Risk of Ozone Loss from Convectively Injected Water Vapor**
J. G. Anderson et al.
Convective injection of water vapor into the stratosphere increases the rate of ozone destruction there.
>> *Perspective p. 809*

- 839 **Circadian Rhythm of Redox State Regulates Excitability in Suprachiasmatic Nucleus Neurons**
T. A. Wang et al.
Diurnal metabolic changes in circadian clock neurons are coupled to changes in potassium channel activity.
>> *Perspective p. 805*
- 843 **Identification of the Cdc48•20S Proteasome as an Ancient AAA+ Proteolytic Machine**
D. Barthelme and R. T. Sauer
The AAA+ enzyme Cdc48 combines with the 20S peptidase to function as an alternative type of proteasome.
>> *Perspective p. 813*
- 846 **The Double-Edged Sword: Does Biomechanism Increase or Decrease Judges' Sentencing of Psychopaths?**
L. G. Aspinwall et al.
An empirical study of sentencing judgments suggests that perceived biological predisposition induces leniency.
>> *News story p. 788; Science Podcast*
- 849 **Hippocampal Place Fields Emerge upon Single-Cell Manipulation of Excitability During Behavior**
D. Lee et al.
Nonspatial, cellular factors can play a decisive role in how neurons respond to inputs in awake behaving animals.
- 853 **Neural Representations of Location Composed of Spatially Periodic Bands**
J. Krupic et al.
The brain performs a Fourier analysis of space to produce the representations of space in and around the hippocampus.
- 857 **A TOG:αβ-tubulin Complex Structure Reveals Conformation-Based Mechanisms for a Microtubule Polymerase**
P. Ayaz et al.
Conformation-selective interactions with microtubule subunits explain how assembly enzymes recognize the growing end.
- 860 **A Mechanism of Extreme Growth and Reliable Signaling in Sexually Selected Ornaments and Weapons**
D. J. Emlen et al.
Rhinoceros beetle horns, a sexually selected weapon, are more sensitive to nutrition and reliably indicate male quality.
>> *Science Signaling Podcast by D. J. Emlen and A. M. VanHook*