

Making improvements in life possible

EDITORIAL

- 609 **Translational Ecology**
William H. Schlesinger

NEWS OF THE WEEK

- 614 **As Questions Grow, Duke Halts Trials, Launches Investigation**
615 **Defining Select Agents by DNA Sequence**
616 **Fresh Start for Fusion Project as New Leader Shakes Up Management**
616 **Diamond Feats Give Quantum Computing a Solid Boost**
617 **From the *Science* Policy Blog**
618 **New Map Illustrates Risk From the 'Other' Malaria**
619 **From *Science's* Online Daily News Site**

NEWS FOCUS

- 620 **'Arctic Armageddon' Needs More Science, Less Hype**
>> Science Podcast
622 **Seeing Deeply Into the Sea's Biodiversity**
623 **The Power of Two**

LETTERS

- 626 **The Time of Young Scientists**
E. P. Diamandis
Response
T. Brück et al.
Readers' Poll: The Time of Young Scientists
The Silver Lining of Language Loss
K. F. J. Heinrich
Cuban Health Care: Consider the Source
K. Hirschfeld
Cuban Health Care: Benefits Without Costs
L. Bodenstein
Response
P. K. Drain and M. Barry

- 628 **CORRECTIONS AND CLARIFICATIONS**

BOOKS ET AL.

- 629 **Decoding Reality**
V. Vedral, reviewed by E. Werner
630 **Happiness Around the World**
C. Graham, reviewed by P. Ak

POLICY FORUM

- 632 **China's Innovation Landscape**
K. G. Huang

PERSPECTIVES

- 634 **Bats, in Black and White**
P. Daszak
>> Reports pp. 676 and 679
635 **The Give and Take of Alcohol Activation**
A. J. A. Watson and J. M. J. Williams
636 **Which Parental Gene Gets the Upper Hand?**
L. S. Wilkinson
>> Research Article p. 643; Report p. 682
637 **When UV Meets Fresh Water**
C. E. Williamson and K. C. Rose
639 **In Praise of Exact Quantization**
M. Franz
>> Report p. 659
640 **Versatile Germline Genes**
C. Juliano and G. Wessel

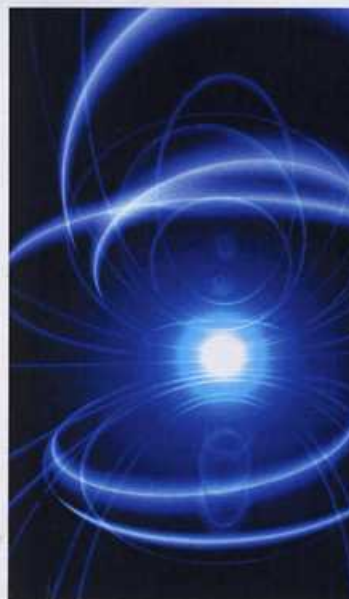
BREVIA

- 642 **Vanadium Nitrogenase Reduces CO**
C. C. Lee et al.
An enzyme that reduces nitrogen to ammonia can also reduce carbon monoxide to hydrocarbons.

CONTENTS continued >>



page 620



page 629



COVER

Mexican free-tailed bats roost at Bracken Cave near San Antonio, Texas. *Streicker et al.* (p. 676) describe how the spread of new forms of rabies virus is restricted between bat species; *Frick et al.* (p. 679) explain how a fungal disease of bats, white-nose syndrome, is likely to lead to local extinctions of once-common bat species.

Photo: © Merlin D. Tuttle, Bat Conservation International, www.batcon.org

DEPARTMENTS

- 606 **This Week in *Science***
610 **Editors' Choice**
612 ***Science* Staff**
613 **Random Samples**
697 **New Products**
698 ***Science* Careers**

All rights reserved. All content is the property of the American Association for the Advancement of Science. All content is the property of the American Association for the Advancement of Science.

RESEARCH ARTICLES

- 643 **High-Resolution Analysis of Parent-of-Origin Allelic Expression in the Mouse Brain**
C. Gregg et al.
A large repertoire of genes shows preferential expression of the paternally or maternally inherited allele.
>> *Perspective p. 636; Report p. 682*
- 649 **Role of Secondary Sensory Cortices in Emotional Memory Storage and Retrieval in Rats**
T. Sacco and B. Sacchetti
An emotional memory gradually becomes widely distributed throughout the cortex.

REPORTS

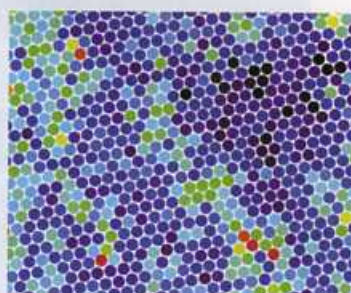
- 656 **Normal Modes and Density of States of Disordered Colloidal Solids**
D. Kaya et al.
The motion of colloidal gel particles is used to determine the mechanical and thermal properties of a disordered system.
- 659 **Massive Dirac Fermion on the Surface of a Magnetically Doped Topological Insulator**
Y. L. Chen et al.
Adding magnetic atoms to a topological insulator breaks its time-reversal symmetry.
>> *Perspective p. 639*
- 662 **Quantum Correlations in Optical Angle–Orbital Angular Momentum Variables**
J. Leach et al.
Strong quantum correlations are induced between the angular position and angular momentum of two photons.
- 665 **MESSENGER Observations of Extreme Loading and Unloading of Mercury's Magnetic Tail**
J. A. Slavin et al.
Relative to Earth, Mercury's magnetospheric substorms are more intense and occur on shorter time scales.
- 668 **Evidence for Young Volcanism on Mercury from the Third MESSENGER Flyby**
L. M. Prockter et al.
Volcanism and associated deformation on Mercury may have lasted well into the last half of the history of the solar system.
- 672 **Mercury's Complex Exosphere: Results from MESSENGER's Third Flyby**
R. J. Vervack Jr. et al.
Mercury's exosphere is more varied and more intertwined with its magnetospheric environment than previously thought.

- 676 **Host Phylogeny Constrains Cross-Species Emergence and Establishment of Rabies Virus in Bats**
D. G. Streicker et al.
Rabies virus' innate capacity to replicate and adapt cannot overcome host genetic barriers to cross-species transfer.
- 679 **An Emerging Disease Causes Regional Population Collapse of a Common North American Bat Species**
W. F. Frick et al.
Like the passenger pigeon, millions of little brown bats face the possibility of rapid extinction, this time from disease.
>> *Perspective p. 634; Science Podcast*
- 682 **Sex-Specific Parent-of-Origin Allelic Expression in the Mouse Brain**
C. Gregg et al.
The relative contributions of the paternal and maternal genomes differ in distinct brain regions and also in males and females.
>> *Perspective p. 636; Research Article p. 643*
- 686 **Nonlinear Elasticity and an 8-nm Working Stroke of Single Myosin Molecules in Myofilaments**
M. Kaya and H. Higuchi
Single-molecule measurements refine our understanding of how muscle myosin works.
- 689 **Long Noncoding RNA as Modular Scaffold of Histone Modification Complexes**
M.-C. Tsai et al.
The long noncoding RNA HOTAIR binds two distinct protein complexes that modify chromatin and repress transcription.
- 693 **FAN1 Acts with FANCI-FANCD2 to Promote DNA Interstrand Cross-Link Repair**
T. Liu et al.
The nuclease FAN1 acts with Fanconi anemia proteins to help repair damaged DNA.

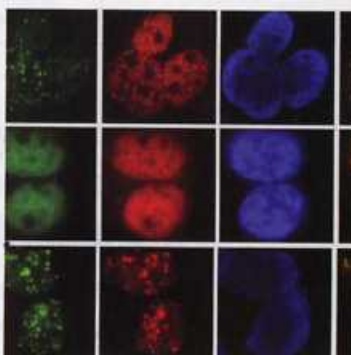
CONTENTS continued >>



page 637



page 656



page 693