

EDITORIAL

- 987 **Epidemic Science in Real Time**
Harvey V. Fineberg and Mary Elizabeth Wilson

NEWS OF THE WEEK

- 996 **Past Pandemics Provide Mixed Clues to H1N1's Next Moves**
- 997 **Appearances Can Deceive, Even With Standard Reagents**
- 998 **Mars Rover Trapped in Sand, But What Can End a Mission?**
- 999 **Newsmaker Interview: NASA Asks Augustine to Point the Way**
- 999 **From *Science's* Online Daily News Site**
- 1000 **Lawsuit Challenges Legal Basis for Patenting Human Genes**
- 1000 **Group Calls for Rapid Release of More Genomics Data**
- 1001 **From the *Science* Policy Blog**
- 1003 **Scourge of Tobacco and Trans Fats Chosen for CDC**

NEWS FOCUS

- 1004 **Plagiarism Sleuths**
Repetition Is Not Duplication
>> *Science Podcast*
- 1008 **America's Uncounted Millions**
- 1011 **An Unprecedented Dilemma: One University, Two Political Systems**
- 1012 **Stressed Out Over a Stress Hormone**
>> *Reports pp. 1064 and 1068*

LETTERS

- 1014 **Robot Inventors: Patently Impossible?**
R. W. Stevenson et al.
Painless Deprivation
W. Vaughan Jr.
Shared Ownership of Biological Resources
P. D. Rajan and P. Divakaran

- Biological Invasions: Benefits versus Risks**
R. E. Gozlan and A. C. Newton
Response
P. E. Hulme et al.
NASA Must Be Held to Account
D. N. Clark

1015 TECHNICAL COMMENT ABSTRACTS

BOOKS ET AL.

- 1017 **Big Questions in Ecology and Evolution**
T. N. Sherratt and D. M. Wilkinson,
reviewed by H. Kokko
- 1018 **Bioethics at the Movies**
S. Shapshay, Ed., reviewed by J. Sugarman

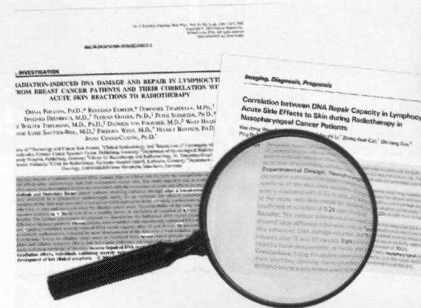
POLICY FORUM

- 1019 **Driving on Biomass**
J. Ohlrogge et al.
>> *Report p. 1055*

PERSPECTIVES

- 1021 **A Glucose-to-Gene Link**
J. C. Rathmell and C. B. Newgard
>> *Report p. 1076*
- 1022 **A Sound (and Light) Way to Measure Confined Electrons**
S. H. Simon
>> *Report p. 1044*
- 1023 **Phone Infections**
S. Havlin
>> *Report p. 1071*
- 1024 **The Rubber Juggernaut**
A. D. Ziegler et al.
- 1025 **Deep Tremors and Slow Quakes**
G. C. Beroza and S. Ide
- 1026 **Earth Vibrations**
P. D. Bromirski
- 1028 **Retrospective: John Maddox (1925–2009)**
N. Wade

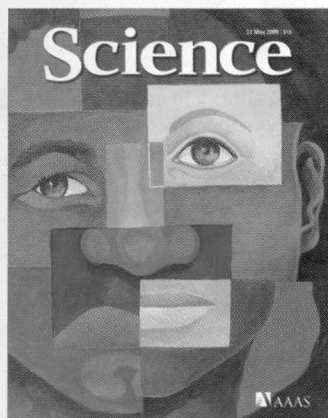
CONTENTS continued >>



page 1004



page 1017



COVER

Africa is the source of all modern humans. A genetic study of 121 populations from across the continent traces them back to 14 ancestral groups and documents the extent of diversity within and among African populations. See page 1035.

Image: Kaadaa/Corbis

DEPARTMENTS

- 983 **This Week in *Science***
- 989 **Editors' Choice**
- 992 ***Science* Staff**
- 995 **Random Samples**
- 1092 **New Products**
- 1093 ***Science* Careers**

REVIEW

- 1029 **Understanding the Warbug Effect: The Metabolic Requirements of Cell Proliferation**

M. G. Vander Heiden et al.

BREVIA

- 1034 **The SOS Response Controls Integron Recombination**

É. Guerin et al.

Bacteria can mobilize antibiotic resistance under stressful conditions.

RESEARCH ARTICLE

- 1035 **The Genetic Structure and History of Africans and African Americans**

S. A. Tishkoff et al.

A genetic study illuminates population history, as well as the relationships among and the origin of major language families.

REPORTS

- 1044 **Dispersion of the Excitations of Fractional Quantum Hall States**

I. V. Kukushkin et al.

The dispersion of excitations in a buried two-dimensional electron system can now be probed.

>> *Perspective p. 1022*

- 1048 **Real-Time Infrared Detection of Cyanide Flip on Silver-Alumina NO_x Removal Catalyst**

F. Thibault-Starzyk et al.

Rapid initiation of a catalytic reaction through laser heating enables the spectroscopic detection of a key intermediate.

- 1051 **Fabricating Genetically Engineered High-Power Lithium-Ion Batteries Using Multiple Virus Genes**

Y. J. Lee et al.

A genetically modified virus is used to form an efficient cathodic battery material.

- 1055 **Greater Transportation Energy and GHG Offsets from Bioelectricity Than Ethanol**

J. E. Campbell et al.

Electric vehicles powered by electricity made from biofuels are more efficient than vehicles fueled by bioethanol.

>> *Policy Forum p. 1019*

- 1058 **Exploration of Victoria Crater by the Mars Rover Opportunity**

S. W. Squyres et al.

Water-induced alteration processes once acted on sedimentary rocks across a plain near the equator of Mars.

- 1061 **Bone Assemblages Track Animal Community Structure over 40 Years in an African Savanna Ecosystem**

D. Western and A. K. Behrensmeyer

Species abundances in African mammal bone assemblages show promise for reconstructing modern and ancient community structures.

- 1064 **Regulators of PP2C Phosphatase Activity Function as Absciscic Acid Sensors**

Y. Ma et al.

- 1068 **Absciscic Acid Inhibits Type 2C Protein Phosphatases via the PYR/PYL Family of START Proteins**

S.-Y. Park et al.

Links between two ancient multimember protein families signal responses to the plant hormone abscisic acid.

>> *News story p. 1012*

- 1071 **Understanding the Spreading Patterns of Mobile Phone Viruses**

P. Wang et al.

Current mobile phone usage prevents major mobile virus outbreaks, but conditions could arise leading to a phone epidemic.

>> *Perspective p. 1023*

- 1076 **ATP-Citrate Lyase Links Cellular Metabolism to Histone Acetylation**

K. E. Wellen et al.

Histone acetylation and gene expression in mammals are modulated by glycolytic metabolism.

>> *Perspective p. 1021*

- 1080 **Phasic Firing in Dopaminergic Neurons Is Sufficient for Behavioral Conditioning**

H.-C. Tsai et al.

High-frequency pulses in deep brain cells release dopamine and cause reward-related behavior in mice.

- 1084 **The Human K-Complex Represents an Isolated Cortical Down-State**

S. S. Cash et al.

A characteristic electroencephalogram pattern seen during sleep is accompanied by a steep decline in neural activity.

- 1087 **Crystal Structure of the Nuclear Export Receptor CRM1 in Complex with Snurportin1 and RanGTP**

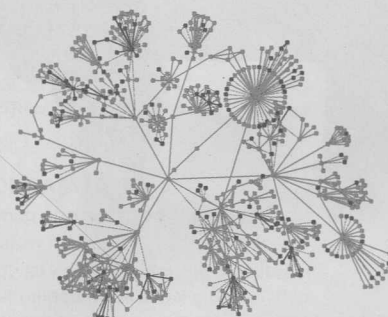
T. Monecke et al.

The structure of an exportin complex shows how nuclear transport complexes differentially recognize cargo.

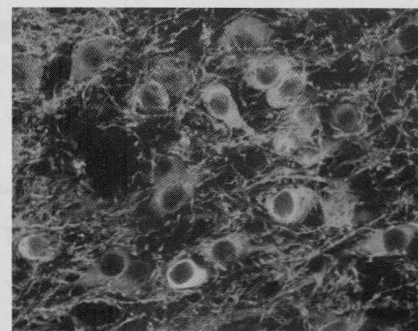
CONTENTS continued >>



page 1058



pages 1023 and 1071



page 1080