A male lark bunting in the Pawnee National Grassland, Colorado. The plumage quality of the males determines their reproductive success, but different aspects of the black and white markings are preferred by females in different years. This variability alters the long-term sexual selection dynamics and may favor the evolution of multiple sexual ornaments. See page 459.

Photo: Bruce Lyon

Solutions for Nigeria
by Rita R. Colwell and Michael Greene

Antarctica Invaded
A. Ricciardi

A Closer Look at the IPCC Report
S. Solomon, R. Alley, J. Gregory, P. Lemke, M. Manning
Response M. Oppenheimer et al.

CORRECTIONS AND CLARIFICATIONS

Vienna in the Age of Uncertainty
Science, Liberalism and Private Life
D. R. Coen, reviewed by M. D. Laubichler

Musicophilia
Tales of Music and the Brain
O. Sacks, reviewed by J. Phillips-Silver

Application of Bloom’s Taxonomy Debunks the “MCAT Myth”
A. Y. Zheng, J. K. Lawhorn, T. Lumley, S. Freeman

Lining Up to Avoid Bias
A. Rokas

Enlightening Rhythms
O. Lipan

The Rise and Fall of a Great Idea
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Structural Nanocomposites
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Adaptive Composites
R. Vaia and J. Baur

Science and Technology for Sustainable Well-Being
J. P. Holdren
Chemically Derived, Ultrasmooth Graphene Nanoribbon Semiconductors
X. Li, X. Wang, L. Zhang, S. Lee, H. Dai
 Unlike nanotubes, 10-nanometer-wide graphene nanoribbons have smooth edges and can act as semiconductors.

10.1126/science.1150878

INNATE IMMUNE HOMEOSTASIS BY THE HOMEBOX GENE CAUDAL AND COMMENSAL-GUT MUTUALISM IN DROSOPHILA
J.-H. Ryu et al.

A Drosophila gene important in development also inhibits the production of harmful antimicrobial peptides that could kill off beneficial gut microbes.

10.1126/science.1149357

THE RIGHT RESIDENT BUGS
N. Silverman and N. Paquette

A complete bacterial genome is synthesized, assembled, and cloned, providing a method that will be useful for generating large DNA molecules de novo.

10.1126/science.1151721

R. Burgert et al.

Small metal clusters with an even number of atoms react rapidly with oxygen because electron spin is conserved, whereas odd clusters are more stable because it is not.

CHEMISTRY

Spin Conservation Accounts for Aluminum Cluster Anion Reactivity Pattern with O2
R. Burgert et al.

The flow of para-hydrogen through industrial catalytic reactors allows magnetic resonance imaging of the gas flow and of the hydrogenation reactions, facilitating optimization.

APPLICATION PHYSICS

GaN Photonic-Crystal Surface-Emitting Laser at Blue-Violet Wavelengths
H. Matsubara et al.

Surface-emitting lasers fabricated with photonic crystal structures can now emit at technologically relevant blue-violet wavelengths.

GEOCHEMISTRY

Comparison of Comet 81P/Wild 2 Dust with Interplanetary Dust from Comets
H. A. Ishii et al.

The silicate minerals found in interplanetary dust particles are not seen in Comet 81P/Wild 2, implying that the comet is devoid of material from the outer solar system.

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Soil Carbon Persistence

**CLIMATE CHANGE**

Irreconcilable Differences: Fine-Root Life Spans and Soil Carbon Persistence

A. E. Strand et al.

Two common ways to measure residence times of root carbon in soils measure different things; neither is correct for inferring carbon cycling in ecosystems.

**MOLECULAR BIOLOGY**

Control of Genic DNA Methylation by a jmjC Domain–Containing Protein in Arabidopsis thaliana

H. Saze, A. Shiraishi, A. Miura, T. Kakutani

A plant demethylase checks the spread of DNA methylation from silenced transposons and repetitive DNA to nearby genes, preventing their inappropriate inhibition.

**MOLECULAR BIOLOGY**

Concurrent Fast and Slow Cycling of a Transcriptional Activator at an Endogenous Promoter

T. S. Karpova et al.

A yeast transcription factor binds onto and off its promoter rapidly, controlling initiation, but also shows a 30-min cycle as the number of accessible promoters varies.
Human ITPK1.

Perspective: Human ITPK1—A Reversible Inositol Phosphate Kinase/Phosphatase that Links Receptor-Dependent Phospholipase C to Ca\(^{2+}\)-Activated Chloride Channels

A. Saiardi and S. Cockcroft

Studies of ITPK1 reveal subtle interconnections between simple metabolism and regulation of a signaling event.

Glossary

Find out what NOSIP, SIPK, and STAND mean in the world of cell signaling.