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COVER
An ear of Zea mays (maize) shows color variation among kernels. Maize is one of the most important crop species worldwide, a vital source of food and fuel, and a valuable model organism for genetic research. Reports starting on pages 1112 and 1115 describe the genome sequences of the B73 and Palomero Toluqueño varieties. See also the related Report (p. 1118), Brevia (p. 1078), and Perspective (p. 1071).

Photo: Kate Mathis/Getty Images

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Published by AAAS
Pleistocene Megafaunal Collapse, Novel Plant Communities, and Enhanced Fire Regimes in North America
J. L. Gill et al.
The decline in Pleistocene megafauna led to the formation of novel plant communities and increased fire.
>> Perspective p. 1072; Science Podcast

High Symbiont Relatedness Stabilizes Mutualistic Cooperation in Fungus-Growing Termites
D. K. Aanen et al.
In symbioses of independently reproducing partners, a genetically uniform population of symbionts excludes cheating variants.

Epicontinental Seas Versus Open-Ocean Settings: The Kinetics of Mass Extinction and Origination
A. I. Miller and M. Foote
Three major mass extinctions affected organisms inhabiting open-ocean-facing coasts much more than those inhabiting shallow seas.

A Periplasmic Reducing System Protects Single Cysteine Residues from Oxidation
M. Depuydt et al.
A thioredoxin-like enzyme controls the oxidation state of the bacterial periplasm.

The B73 Maize Genome: Complexity, Diversity, and Dynamics
P. S. Schnable et al.
The sequence of the maize genome reveals it to be the most complex genome known to date.
>> Perspective p. 1071; Brevia p. 1078

A First-Generation Haplotype Map of Maize
M. A. Gore et al.
In maize, recombination in the genome has been a limiting factor affecting evolution and breeding efforts.
>> Perspective p. 1071; Brevia p. 1078

Paternal Dominance of Trans-eQTL Influences Gene Expression Patterns in Maize Hybrids
R. A. Swanson-Wagner et al.
Gene expression variation in maize hybrids is influenced by distant DNA sequences subject to paternal genomic imprinting.
>> Perspective p. 1071; Brevia p. 1078

Symbiotic Nitrogen Fixation in the Fungus Gardens of Leaf-Cutter Ants
A. A. Pinto-Tomás et al.
Leaf-cutting ants engage in a mutualism with nitrogen-fixing bacteria that help fertilize their fungus gardens.

The Schizophrenia Susceptibility Gene
dysbindin Controls Synaptic Homeostasis
D. K. Dickman and G. W. Davis
The dysbindin protein is required for the modulation of presynaptic neurotransmitter release in Drosophila.
Socially Awkward? Check Your Genes

Researchers link a single genetic difference to the ability to read others’ emotions.

A Silent Killer in Bangladesh Wells

Researchers discover the cause of arsenic contamination in the country’s aquifers.

Meditation Halves Risk of Heart Attack

A relaxation technique may be as powerful as modern drugs.

The New Science Careers Communities

Science Careers Staff
Expand your professional network in MySciNet, a community for scientists from diverse backgrounds, and CTSciNet, the Clinical and Translational Science Network.

Perspective: Cognitive Enhancement Therapy in a Mouse Model of Down Syndrome

F. K. Wiseman
Cognitive deficits in mice can be reversed with precursors to the neurotransmitter norepinephrine.

Perspective: Acetylation Goes Global—Tyrosine Phosphorylation of a Metabolic Enzyme

K. L. Norris, T. Hitosugi
Proteomic analysis shows protein acetylation to be more prevalent than previously appreciated.

Perspective: PKM2 Tyrosine Phosphorylation and Glutamine Metabolism Signal a Different View of the Warburg Effect

C. V. Dong
Aerobic glycolysis in cancer cells is associated with tyrosine phosphorylation of a metabolic enzyme.

Perspective: Acetylation Goes Global—The Emergence of Acetylation Biology

K. L. Norris et al.
Proteomic analysis shows protein acetylation to be more prevalent than previously appreciated.

Glossary
Discover what TRPA, GJIC, and miR mean in the world of signaling.

ScienceCareers
Free Career Resources for Scientists
Audacity, Part 3: Funding
A. Sasso
What are the best strategies for funding high-risk, high-reward research?

Tooling Up: The Project Management Career Track
D. Jensen
Project management, as a career and a skill, requires detail management, good communication, and people skills.

ScienceCareers
Free Career Resources for Scientists
The New Science Careers Communities
Science Careers Staff
Expand your professional network in MySciNet, a community for scientists from diverse backgrounds, and CTSciNet, the Clinical and Translational Science Network.

ScienceTranslationalMedicine
Integrating Medicine and Science
Perspective: Researching Genetic Versus Nongenetic Determinants of Disease—A Comparison and Proposed Unification
J. Ioannidis et al.
Studies are needed that concurrently measure genotypes, nongenetic exposures, and outcomes.

Pyruvate kinase M2 in tumor metabolism.

Perspective: Frequent Release of Low Amounts of Herpes Simplex Virus from Neurons—Results of a Mathematical Model
J. T. Schiffer et al.
A stochastic mathematical model elucidates constitutive herpes simplex virus 2 release in the genital tract in infected individuals.

Perspective: Restoration of Norepinephrine-Modulated Contextual Memory in a Mouse Model of Down Syndrome
A. Salehi et al.
Cognitive deficits in mice can be reversed with precursors to the neurotransmitter norepinephrine.

Direct Imaging of Bridged Twin Protoplanetary Disks in a Young Multiple Star
S. Mayama et al.
An infrared image taken with the Subaru Telescope reveals young binary stars and their circumstellar environments.

Universality in Three- and Four-Body Bound States of Ultracold Atoms
S. E. Pollack et al.
The interactions involved in the formation of few-body bound states can be probed in a cloud of ultracold atoms.

Overexpression of Alpha2A-Adrenergic Receptors Contributes to Type 2 Diabetes
A. H. Rosengren et al.
Sequence variations in an adrenergic receptor gene cause reduced insulin secretion and contribute to type 2 diabetes.

The Signal Transduction Knowledge Environment
RESEARCH ARTICLE: Trypanosoma cruzi Targets Akt in Host Cells as an Intracellular Anti-Apoptotic Strategy
M. V. Chuenkova and M. PereiraPerrin
A surface protein of the intracellular parasite T. cruzi directly interacts with Akt to protect infected cells from pro-apoptotic stimuli.

RESEARCH ARTICLE: Tyrosine Phosphorylation Inhibits PKM2 to Promote the Warburg Effect and Tumor Growth
T. Hitosugi et al.
High levels of PKM2 are associated with cancer progression.

Data and figures from the paper "A Silent Killer in Bangladesh Wells: Researchers discover the cause of arsenic contamination in the country’s aquifers."

The title "A Silent Killer in Bangladesh Wells: Researchers discover the cause of arsenic contamination in the country’s aquifers." is followed by a citation to a scientific paper. The text highlights the discovery of a cause for arsenic contamination in the country's aquifers.

The text then moves on to discuss other topics such as meditation halving the risk of heart attack, perspective on PKM2 tyrosine phosphorylation and glutamine metabolism, and more.

Finally, the text ends with a perspective on cognitive enhancement therapy in a mouse model of Down syndrome, highlighting cognitive deficits in mice and the potential reversal with precursors to the neurotransmitter norepinephrine.
Editor's Summary

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