Tomato (Solanum lycopersicum) domestication and selection resulted in an explosion of different fruit shapes and sizes, as exemplified by heirloom varieties. Wild ancestors of tomatoes such as S. pimpinellifolium, the smallest fruit shown here, were round (middle row, second from left). See page 1527.

Image: Kelly Krause/Science; photos: Esther van der Knaap

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Epigenetic modifications that involve methylation cause female honeybee larvae to become queens rather than workers when they are fed royal jelly.
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F. Wang et al.
Application of electrical biases to single or double layers of graphene change its infrared reflectivity, mimicking aspects of transistors and opening up optoelectronic applications.
10.1126/science.1152793

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Impact of Artificial Reservoir Water Impoundment on Global Sea Level
B. F. Chao, Y. H. Wu, Y. S. Li
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The Late Pleistocene Dispersal of Modern Humans in the Americas
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Predators Induce Cloning in Echinoderm Larvae
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PHYSICS
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**Direct Visualization of Horizontal Gene Transfer**
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Visualization of DNA exchange between two bacteria reveals that the process is highly efficient, is mediated by the pilus, and occurs about once per replication cycle.

**MEDICINE**

**Neurokinin 1 Receptor Antagonism as a Possible Therapy for Alcoholism**
D. T. George et al.

A drug that inhibits a neural signaling pathway linked to behavioral stress may be a useful therapy in preventing relapse in alcoholics.

**CELL BIOLOGY**

**Using Engineered Scaffold Interactions to Reshape MAP Kinase Pathway Signaling Dynamics**
C. J. Bashor, N. C. Helman, S. Yan, W. A. Lim

A yeast signaling pathway acquires new regulatory properties (such as adaptation) when additional protein-protein interaction sites are engineered into a scaffolding protein.

continued

**GEOCHEMISTRY**

**Splitting of the 520-Kilometer Seismic Discontinuity and Chemical Heterogeneity in the Mantle**
A. Saikia, D. J. Frost, D. C. Rubie

A reaction in calcium-rich rocks in Earth’s mantle can explain a seismic signal that varies geographically and with depth, providing a means to map mantle compositions.

**GEOCHEMISTRY**

**The Chlorine Isotope Composition of Earth’s Mantle**
M. Bonifacie et al.

Analysis of ocean basalts imply that Earth’s mantle has a different chlorine isotopic ratio than crust or seawater, perhaps reflecting a late addition of material to Earth.

**PALEONTOLOGY**

**Caribbean Reef Development Was Independent of Coral Diversity over 28 Million Years**
K. G. Johnson, J. B. C. Jackson, A. F. Budd

An analysis of fossil and modern Caribbean corals shows that, for the last 28 million years, coral reef growth and persistence have not required high coral diversity.

**BIOCHEMISTRY**

**Amyloid Fibris of the HET-s(218–289) Prion Form a β Solenoid with a Triangular Hydrophobic Core**
C. Wasmer et al.

A structural model of a yeast prion shows that the amyloid fibrils form a left-handed β solenoid stabilized by hydrophobic and polar interactions and salt bridges.

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**A Retrotransposon-Mediated Gene Duplication Underlies Morphological Variation of Tomato Fruit**
H. Xiao et al.

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