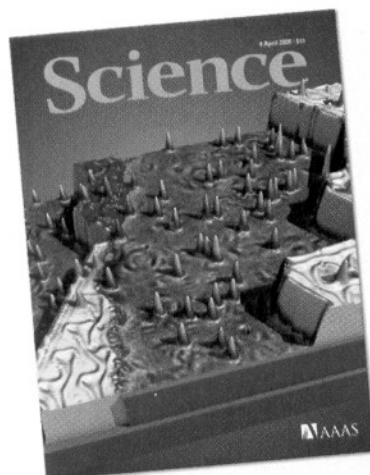




COVER

Single cobalt atoms (cones) on a stepped platinum substrate (blue), with attached stripes of one atomic layer of cobalt, magnetized up (yellow) or down (red), as imaged by spin-polarized scanning tunneling microscopy. Recording such images at successive magnetic fields enables measurement of the magnetic properties of individual atoms. See page 82.

Image: F. Meier et al.
(illustration: F. Marczinowski)

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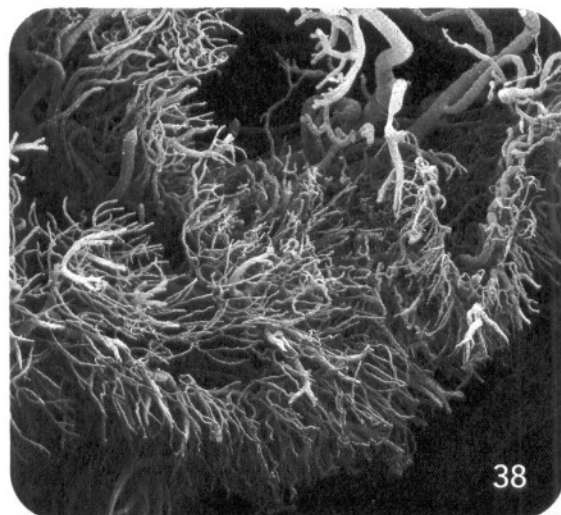
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www.sciencexpress.org

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DNA from Pre-Clovis Human Coprolites in Oregon, North America

M. T. P. Gilbert et al.

Fossil human feces from an Oregon cave predate the Clovis culture by about 1000 years, and DNA from the feces marks the presence of Native Americans in North America.

>> News story p. 37

10.1126/science.1154116

PHYSICS

BREVIA: Fine Structure Constant Defines Visual Transparency of Graphene

R. R. Nair et al.

The transparency of sheets of graphene is quantized in a way that allows a simple determination of the fine structure constant, which relates light and relativistic electrons.

10.1126/science.1156965



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Bats Limit Insects in a Neotropical Agroforestry System

K. Williams-Guillén, I. Perfecto, J. Vandermeer

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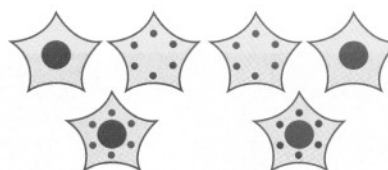
ECOLOGY

Bats Limit Arthropods and Herbivory in a Tropical Forest

M. B. Kalka, A. R. Smith, E. K. V. Kalko

In a lowland tropical forest, bats consume insect herbivores on understory plants at least as much as birds do, thereby also indirectly limiting damage to the plants.

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ROS-Generating Mitochondrial DNA Mutations Can Regulate Tumor Cell Metastasis

K. Ishikawa et al.

Mutations in mitochondrial DNA that cause enhanced production of reactive oxygen species can increase the propensity of tumor cells to metastasize.

10.1126/science.1156906

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F. Meier, L. Zhou, J. Wiebe, R. Wiesendanger

A scanning tunneling microscope with a spin-polarized tip can characterize the magnetic properties of single atoms on a nonmagnetic surface.

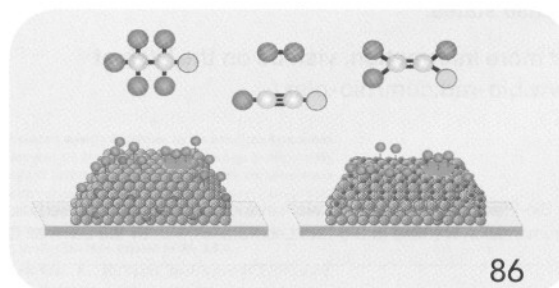
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