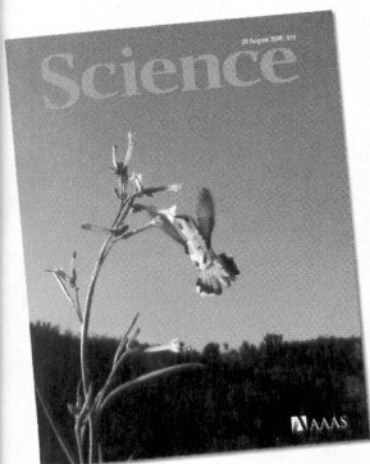




COVER

A black-chinned hummingbird (*Archilochus alexandri*) drinks nectar from a flower of wild tobacco (*Nicotiana attenuata*). Nicotine in the nectar moderates its consumption by the hummingbird and protects against predators; the flower lip produces benzyl acetone, which attracts pollinators. Together, the repellent and attractant maximize the plant's reproductive fitness. See page 1200.

Photo: Danny Kessler

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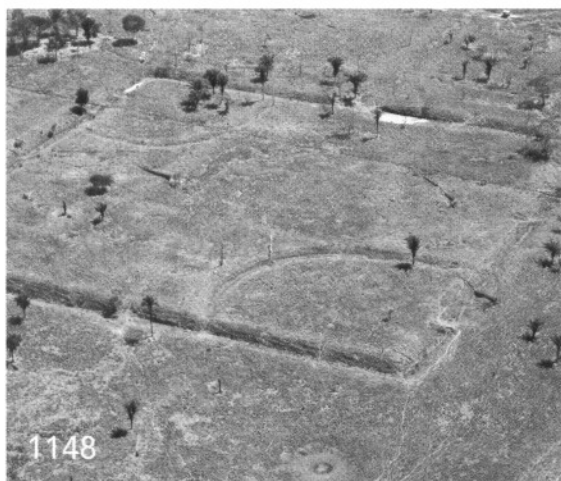
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SCIENCE EXPRESS

www.sciencexpress.org

MEDICINE

Seeding and Propagation of Untransformed Mouse Mammary Cells in the Lung

K. Podsypanina et al.

In mice, normal mammary cells can colonize the lung, suggesting that metastases might arise from displaced normal cells acquiring genetic changes that confer malignancy.

10.1126/science.1161621

APPLIED PHYSICS

Time Reversal and Negative Refraction

J. B. Pendry

Optically active materials with nonlinear optical properties are predicted to mimic negatively refractive materials but without losses associated with true negative refraction.

10.1126/science.1162087



EVOLUTION

Natural Selection on a Major Armor Gene in Threespine Stickleback

R. D. H. Barrett, S. M. Rogers, D. Schluter

In stickleback fish transferred to fresh water, selection against the allele for the costly armor plating only partly explains the changes in allele frequencies over generations.

10.1126/science.1159978

TECHNICAL COMMENT ABSTRACTS

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Comment on "Determining Chondritic Impactor Size from the Marine Osmium Isotope Record"

J. V. Morgan

full text at www.sciencemag.org/cgi/content/full/321/5893/1158a

Response to Comment on "Determining Chondritic Impactor Size from the Marine Osmium Isotope Record"

F. S. Paquay, G. E. Ravizza, T. K. Dalai, B. Peucker-Ehrenbrink

full text at www.sciencemag.org/cgi/content/full/321/5893/1158b

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Cavity Optomechanics: Back-Action at the Mesoscale

T. J. Kippenberg and K. J. Vahala

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Magmatically Triggered Slow Slip at Kilauea Volcano, Hawaii

B. A. Brooks et al.

Satellite radar and global positioning data show that intrusion of a dike into Kilauea volcano in June 2007 triggered slip but no earthquakes along a fault 15 to 20 hours later.

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Bang! Month-Scale Eruption Triggering at Santorini Volcano

V. M. Martin et al.

Modeling the diffusion of iron in crystals shows that the 1925 eruption of Santorini was triggered by intrusion of hotter magma just a few months earlier.

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STRUCTURAL BIOLOGY

The Structure of an Open Form of an *E. coli* Mechanosensitive Channel at 3.45 Å Resolution

W. Wang et al.

Circularly arrayed transmembrane helices in the bacterial mechanosensitive ion channel, MscS, expand like the iris of a camera to open the channel and allow ion efflux.

>> Perspective p. 1166; Report p. 1210

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Polarized Gamma-Ray Emission from the Crab

A. J. Dean et al.

Detection of polarized gamma rays from the Crab Pulsar implies that electrons must be accelerated to extreme energies to emit radiation near the rapidly rotating star.

>> Perspective p. 1164

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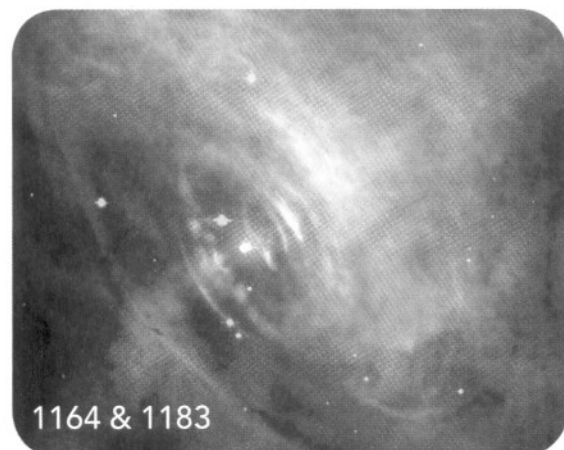
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The Metamorphosis of Supernova SN 2008D/XRF 080109: A Link Between Supernovae and GRBs/Hypernovae

P. A. Mazzali et al.

The spectra of a recent supernova evolved from that of a more energetic event to that of a less energetic one, providing a link between previous observations.

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A catalytic cycle using boron-carbon compounds efficiently converts C-F to C-H bonds and thus can destabilize environmentally persistent fluorocarbons. >> *Perspective p. 1168*

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D. Kessler, K. Gase, I. T. Baldwin

Genetic manipulation of wild tobacco plants balances the use of scent to attract pollinators and toxin to limit nectar consumption in order to optimize reproduction.

>> *Perspective p. 1163; Science Podcast*

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L. E. P. Dietrich, T. K. Teal, A. Price-Whelan, D. K. Newman

In addition to an antiseptic function, phenazines—pigmented antibiotics made by bacteria—organize colony structure by activating a superoxidative stress regulator.

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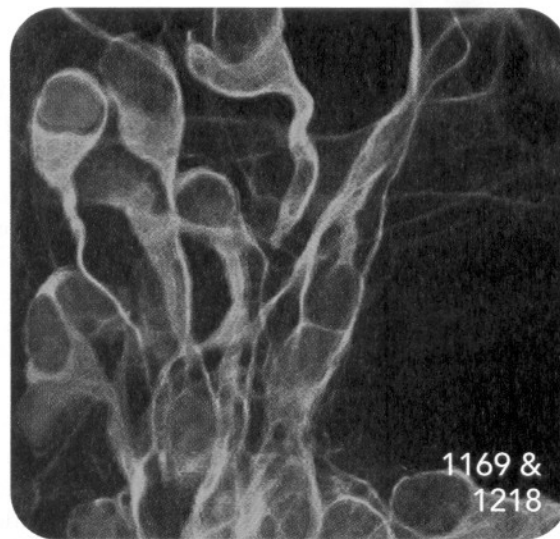
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