NEWS OF THE WEEK

Early Stonehenge Pilgrims Came From Afar, With Cattle in Tow 1704
Despite Protest, CNRS Moves Toward Major Shakeup 1705
>> Editorial p. 1695
Proposed Rule Would Limit Fish Catch but Faces Data Gaps 1706
House Gives $400 Million to Four Science Agencies 1706
ITER Costs Give Partners Pause 1707
SCIENCESCOPE 1707
Senate Inquiry on Research Conflicts Shifts to Grantees 1708
‘Biased’ Viruses Suggest New Vaccine Strategy for Polio and Other Diseases 1709
>> Report p. 1784

NEWS FOCUS

An Ill Wind, Bringing Meningitis 1710
Costs of Meningitis Outbreaks Are Crippling, Too
Clinical Trials: Dispelling Suspicions, Building Trust in Mali
Building the Tree of Life, Genome by Genome 1716
>> Report p. 1763

LETTERS

The Verbosity Epidemic R. F. Grais et al. 1718
The Future of the CMJ M. Maruˇci c and A. Maruˇci c
The Case Against the CMJ’s Editors N. Čikeš
Making Memories, Again N. Lasry, E. Levy, J. Tremblay
Don’t Forget the Fungi S. Goldhor

CORRECTIONS AND CLARIFICATIONS 1720

BOOKS ET AL.

The Oxford Book of Modern Science Writing R. Dawkins, Ed., reviewed by H. Andersen 1721
Forensics Under Fire Are Bad Science and Dueling Experts Corrupting Criminal Justice? J. Fisher, reviewed by C. M. Bowers 1722

EDUCATION FORUM


PERSPECTIVES

Metamorphic Proteins A. G. Murzin 1725
Arrestin’ Movement in Cilia R. Rohatgi and M. P. Scott
>> Report p. 1777
Himalaya—Carbon Sink or Source? J. Gaillardet and A. Galy 1727
The Statistical Mechanics of Strain-Hardened Metals A. El-Azab
>> Report p. 1745
>> Report p. 1760
BIOCHEMISTRY
Crystal Structure of the Termination Module of a Nonribosomal Peptide Synthetase
A. Tanovic, S. A. Samel, L.-O. Essen, M. A. Marahiel
A large enzyme complex assembles peptide natural products without ribosomal participation by successive catalytic steps at the end of a flexible, substrate-loaded arm.
10.1126/science.1159850

CHEMISTRY
Measurement of the Distribution of Site Enhancements in Surface-Enhanced Raman Scattering
Y. Fang, N.-H. Seong, D. D. Dlott
The distribution of electric field–enhancing sites on a nanostructured substrate is measured by using the enhanced field to damage those sites.
10.1126/science.1159499

ASTRONOMY
Properties of Gamma-Ray Burst Progenitor Stars
P. Kumar, R. Narayan, J. L. Johnson
Analysis of the x-ray afterglow of intense gamma-ray bursts shows that the bursts result from consumption of the outer part of a dense star and define the star’s rotation rate.
10.1126/science.1159003

RESEARCH ARTICLE
GEOLOGY
Deep Drilling into the Chesapeake Bay Impact Structure
G. S. Gohn et al.
Drill cores from the Chesapeake Bay impact crater reveal that the impact moved huge blocks of country rock, trapped salty pore water, and still affects microbial communities.

MATERIALS SCIENCE
Ordered Mesoporous Materials from Metal Nanoparticle–Block Copolymer Self-Assembly
S. C. Warren et al.
A polymer and platinum nanoparticles stabilized with a ligand form large lamellar or inverse hexagonal structures that can be fused to create porous platinum-carbon composites.

ASTRONOMY
Very-High-Energy Gamma Rays from a Distant Quasar: How Transparent Is the Universe?
The MAGIC Collaboration
Observation of gamma rays from a quasar 5 billion light-years away implies that the background light in the universe is consistent with surveys of stars and galaxies.

CHEMISTRY
The Role of Interstitial Sites in the Ti3d Defect State in the Band Gap of Titania
S. Wendt et al.
Scanning tunneling microscope data and calculations show that near-surface titanium sites, not bridging oxygen vacancies, determine the useful electronic properties of TiO₂.
REPORTS CONTINUED...

CHEMISTRY
Tryptophan-Accelerated Electron Flow Through Proteins 1760
C. Shih et al.
A tryptophan residue placed between a donor and acceptor in a protein acts as a relay and accelerates long-distance electron transfer by more than a factor of 100.
>> Perspective p. 1730

EVOLUTION
A Phylogenetic Study of Birds Reveals Their Evolutionary History 1763
S. J. Hackett et al.
Nuclear DNA sequences of 19 loci from 169 bird species lead to a revised phylogenetic tree of avian evolution, in which several well-accepted orders are not monophyletic.
>> News story p. 1716; Science Podcast

ECOLOGY
A Significant Upward Shift in Plant Species Optimum Elevation During the 20th Century 1768
J. Lenoir, J. C. Gégout, P. A. Marquet, P. de Ruffray, H. Brisse
A 100-year survey shows that the optimal elevations for growth of plant species in European temperate forests have shifted upward by about 30 meters per decade. >> Science Podcast

DEVELOPMENTAL BIOLOGY
Polarization of the C. elegans Embryo by RhoGAP-Mediated Exclusion of PAR-6 from Cell Contacts 1771
D. C. Anderson, J. S. Gill, R. M. Cinalli, J. Nance
Exclusion of a regulatory protein from cell-cell contacts in the developing worm allows it to direct the assembly of an asymmetrical cytoskeleton in preparation for gastrulation.

DEVELOPMENTAL BIOLOGY
FGF-Dependent Mechano-sensory Organ Patterning in Zebrafish 1774
A. Nechiporuk and D. W. Raible
A fish sensory organ develops when a wave of migrating primordial cells cyclically deposits rosettes of differentiated cells under the influence of fibroblast growth factor.

CELL BIOLOGY
β-Arrestin–Mediated Localization of Smoothened to the Primary Cilium 1777
J. J. Kovacs et al.
β-arrestin, which has several known roles in signaling systems, also links a key receptor to a motor protein so that the receptor can be transported to cilia for sensing environmental cues.
>> Perspective p. 1726

MOLECULAR BIOLOGY
Both Catalytic Steps of Nuclear Pre-mRNA Splicing Are Reversible 1782
C.-K. Tseng and S.-C. Cheng
The transesterification splicing reactions performed on RNA by the spliceosome protein complex in eukaryotic cells are reversible.

Virology
Virus Attenuation by Genome-Scale Changes in Codon Pair Bias 1784
J. R. Coleman et al.
Altering the frequency of the adjacent codons in the poliovirus genome results in an attenuated virus that could form the basis of a vaccine. >> News story p. 1709

GENETICS
Paleo-Eskimo mtDNA Genome Reveals Matrilineal Discontinuity in Greenland 1787
M. T. P. Gilbert et al.
Ancient human DNA sequences from Greenland suggest that the earliest inhabitants of the far north were from a lineage distinct from extant Native Americans and Eskimos.
SPECIFYING DIGITS.

**SCIENCE NOW**
www.sciencenow.org
HIGHLIGHTS FROM OUR DAILY NEWS COVERAGE

**Smart Girls Eat Fish**
Choice of dietary fat affects intelligence.

**It’s a Dog’s (Genetic) Life**
Pointing, herding, and life span of dogs linked to specific stretches of DNA.

**Down Under, Fish Numbers Climb Up**
Rapid recovery of a key species in Australia points to efficacy of fishing bans.

**SCIENCE SIGNALING**
www.sciencesignaling.org
THE SIGNAL TRANSDUCTION KNOWLEDGE ENVIRONMENT

**PERSPECTIVE: Uncoupling the Role of Sonic Hedgehog in Limb Development—Growth and Specification**
P. Francis-West and R. Hill
Sonic hedgehog (Shh) is required for both proliferation and specification of cells in the developing limb bud.

**PERSPECTIVE: p53 Brings a New Twist to the Smad Signaling Network**
A. Atfi and R. Baron
Interactions between p53 and Smad proteins influence the responses to the TGF-β pathway, which may be important for progression of some types of cancer.

**SCIENCE CAREERS**
www.sciencecareers.org/career_development
FREE CAREER RESOURCES FOR SCIENTISTS

**Mastering Your Ph.D.: Better Communication With Your Supervisor**
P. Gosling and B. Noordam
When was the last structured conversation you had with your supervisor?

**Liberal Arts College Faculty: Finding the Sweet Spot**
S. Webb
You need to find the elusive balance between teaching and research.

**Creativity and Persistence Overcome Failure**
L. Laursen
A senior scientist shares how he got past some early challenges.

**Science Careers Blog**
Science Careers Staff
Find interesting information related to scientific careers, updated often.

**SCIENCE PODCAST**
www.sciencemag.org/multimedia/podcast
FREE WEEKLY SHOW

Download the 27 June Science Podcast to hear about an upward shift in plant species’ optimum elevation, the evolutionary history of birds, recent letters to Science, and more.

*Separate individual or institutional subscriptions to these products may be required for full-text access.*
Editor's Summary

This copy is for your personal, non-commercial use only.

**Article Tools**  Visit the online version of this article to access the personalization and article tools:
http://science.sciencemag.org/content/320/5884

**Permissions**  Obtain information about reproducing this article:
http://www.sciencemag.org/about/permissions.dtl