Charles Darwin’s abiding interest in the classification of barnacles, illustrated here, was one of the inspirations for his investigations into the origins and diversification of species. *Science* marks Darwin’s 200th birthday with a special section on speciation beginning on page 727.

Image: Illustrations by George Sowerby, reproduced with permission from The Complete Work of Charles Darwin Online, John van Wyhe, Ed. (http://darwin-online.org.uk); background: iStockphoto.com
BREVIA

753  The Sea-Level Fingerprint of West Antarctic Collapse  
J. X. Mitrovica et al.  
An uneven pattern of local sea-level rise would result from the collapse of the West Antarctic Ice Sheet.

REPORTS

754  The Formation of Massive Star Systems by Accretion  
M. R. Krumholz et al.  
Numerical simulations show that instabilities can channel gas into growing massive stars despite their high radiation pressure.  
>> Perspective p. 719

757  Confined Crystallization of Polyethylene Oxide in Nanolayer Assemblies  
H. Wang et al.  
Squeezing ultrathin polymer layers can induce crystallization and decrease their gas permeability.  
>> Perspective p. 725

760  Nitrogen-Doped Carbon Nanotube Arrays with High Electrocatalytic Activity for Oxygen Reduction  
K. Gong et al.  
Carbon atoms in nanotubes are activated by nitrogen doping and catalyze oxygen reduction at high pH.

764  Anomalously Metal-Rich Fluids Form Hydrothermal Ore Deposits  
J. J. Wilkinson et al.  
The metal contents of the fluid inclusions that create lead-zinc ores have been drastically underestimated.  
>> Perspective p. 724

767  Signature of the End-Cretaceous Mass Extinction in the Modern Biota  
A. Z. Krug et al.  
Increased rates of marine bivalve speciation after the Cretaceous-Tertiary extinction were most marked in the tropics.  
>> Perspective p. 720

771  A Great-Appendage Arthropod with a Radial Mouth from the Lower Devonian Hunsrück Slate, Germany  
G. Kühl et al.  
Fossil evidence for the great-appendage arthropods extends to more recent periods by about 100 million years.

773  Two Thresholds, Three Male Forms Result in Facultative Male Trimorphism in Beetles  
J. M. Rowland and D. J. Emlen  
A clade of dung beetles can alter their reproductive tactics by switching between three male forms.

776  Sequential Sympatric Speciation Across Trophic Levels  
A. A. Forbes et al.  
A host shift by a fly is causing its wasp parasite to undergo changes leading to speciation.

779  Evolution of the Drosophila Nuclear Pore Complex Results in Multiple Hybrid Incompatibilities  
S. Tang and D. C. Presgraves  
Nuclear pore complex proteins are involved in lethal gene interactions in Drosophila melanogaster–Q. simulans species hybrids.

782  Queen Ants Make Distinctive Sounds That Are Mimicked by a Butterfly Social Parasite  
F. Barbero et al.  
Sounds made by queen ants denoting rank are copied by the larvae and pupae of a parasitic butterfly, facilitating their infiltration into ant colonies.

785  Stability Predicts Genetic Diversity in the Brazilian Atlantic Forest Hotspot  
A. C. Carnaval et al.  
Modeling ecological niches under past climates establishes a method to improve prediction and protection of tropical biodiversity hotspots.

789  Orc1 Controls Centriole and Centrosome Copy Number in Human Cells  
A. S. Hemerly et al.  
A DNA replication factor ensures that only two centrioles are formed during cell division in animal cells.

793  Function of Mitochondrial Stat3 in Cellular Respiration  
J. Wegrzyn et al.  
A protein that has a nuclear function as a transcription factor also functions to support respiration in the mitochondria.  
>> Perspective p. 723

797  Platelets Kill Intraerythrocytic Malarial Parasites and Mediate Survival to Infection  
B. J. McMorran et al.  
Mouse and human platelets bind malarial-infected red cells and kill the parasite within.

800  Changes in Cortical Dopamine D1 Receptor Binding Associated with Cognitive Training  
F. McNab et al.  
Training of working memory alters brain biochemistry by changing the density of cortical dopamine receptors.  
>> Science Podcast

802  Axon Regeneration Requires a Conserved MAP Kinase Pathway  
M. Hammarlund et al.  
Axon regeneration in adult nematode worms has distinct signals that are independent of earlier developmental programs.

CONTENTS continued >>
Scientists suspect liquid hydrocarbon reservoirs lurk Titan’s Methane Mystery

Widespread volcanism and tropical temperatures provide clues to origins of antisocial behavior.

Children born to genetically unrelated mothers provide clues to origins of antisocial behavior.

Black coat color in wolves derives from a mutation that originated in domestic dogs.

Blue favors creativity in humans, whereas red improves attention to detail.

Blue or Red? Exploring the Effect of Color on Cognitive Task Performances

Dynamic Order-Disorder in Atomistic Models of Structural Glass Formers

The liquid-to-glass transition of a simple mixture is controlled by parameters that drive the system away from equilibrium.

Implications of a VLBI Distance to the Double Pulsar J0737-3039A/B

Tests of gravity theories that use this double pulsar, now recognized as being more distant, will be more precise.

SCIENCE CAREERS

Free Career Resources for Scientists

February 2009 Funding News

Learn about the latest in research funding, scholarships, fellowships, and internships.

Darwin’s Legacy 1: Rich Collections, Deep Expertise

Natural history museums have reasserted their scientific relevance in recent years.

Darwin’s Legacy 2: Keeping Order

London entomology curator Erica McAlister is responsible for everything from museum collections to fieldwork.

Darwin’s Legacy: Resources

Science Careers Staff

Here is a collection of resources related to careers in the H.M.S. Beagle’s wake.

Download the 6 February Science Podcast to hear about the biochemistry behind better short-term memory, the genetics of wolf coat color, the origin of art, and more.

SCIENCEPODCAST

Free Weekly Show

Download the 6 February Science Podcast to hear about the biochemistry behind better short-term memory, the genetics of wolf coat color, the origin of art, and more.

SCIENCE Dialogue: William Wulf on the Future of Science Education

William J. Wulf, former president of the U.S. National Academy of Engineering, is a distinguished authority on the future of science education.

SCIENCEexpress

www.scienceexpress.org

Molecular and Evolutionary History of Melanism in North American Gray Wolves

T. M. Anderson et al.

Black coat color in wolves derives from a mutation that originated in domestic dogs.

10.1126/science.1165448

>> Science Podcast

Blue or Red? Exploring the Effect of Color on Cognitive Task Performances

R. Mehta and R. Zhu

Blue favors creativity in humans, whereas red improves attention to detail.

10.1126/science.1169144

Dynamic Order-Disorder in Atomistic Models of Structural Glass Formers

L. O. Hedges et al.

The liquid-to-glass transition of a simple mixture is controlled by parameters that drive the system away from equilibrium.

10.1126/science.1166665

Mutations in the human gene encoding the polarity proteins PAR3 and PAR6 cause lissencephaly and cleft lip and palate.

H. J. Willemsen et al.

984/714c

Full text at www.sciencemag.org/cgi/content/full/323/984/714d

SCIENCE SIGNALING

www.sciencesignaling.org

The Signal Transduction Knowledge Environment

PERSPECTIVE: Extracellular ATP in the Immune System—More Than Just a “Danger Signal”

A. Trautmann

Extracellular ATP is an important modulator of immune responses.

PERSPECTIVE: Bistable Switches for Synaptic Plasticity

H. Ogasawara and M. Kawato

Nearly a decade intervened between theoretical predictions and experimental verification of the mechanisms underlying synaptic plasticity.

PODCAST

P. P. Pandolfi and A. M. VanHooft

Inactivating mTOR signaling in the adult mouse prostate decreases the incidence of cancer.

E-LETTER: Microarrays Need Phylogenetics

M. Abu-Abab

Interpreting microarray experiments might benefit from evolution-compatible analytical tools.

SCIENCE CAREERS

www.sciencecareers.org/career_magazine

Free Career Resources for Scientists

February 2009 Funding News

Learn about the latest in research funding, scholarships, fellowships, and internships.

Darwin’s Legacy 1: Rich Collections, Deep Expertise

Natural history museums have reasserted their scientific relevance in recent years.

Darwin’s Legacy 2: Keeping Order

London entomology curator Erica McAlister is responsible for everything from museum collections to fieldwork.

Darwin’s Legacy: Resources

Science Careers Staff

Here is a collection of resources related to careers in the H.M.S. Beagle’s wake.

>> Speciation section p. 727; www.sciencemag.org/darwin/
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/323/5915

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