EDITORIAL
627  Investing in Distant Rewards
    William H. Press

NEWS OF THE WEEK
632  A roundup of the week’s top stories

NEWS & ANALYSIS
635  Chu’s Legacy at DOE: Some Fields Gain, Others Falter
636  BP Research Dollars Yield Signs of Cautious Hope
638  Forecasting Regional Climate Change Flunks Its First Test
639  Supreme Court to Review the Scope of Monsanto’s Seed Patents

NEWS FOCUS
640  Giant Marine Reserves Pose Vast Challenges
642  Archaeologist Hammers Away at ‘Modern’ Behavior
644  Losing Arable Land, China Faces Stark Choice: Adapt or Go Hungry

LETTERS
646  Physical Laws Shape Biology
    K. Selvarajoo and M. Tomita

BOOKS ET AL.
648  The Annotated and Illustrated Double Helix
    J. D. Watson, A. Gann and J. Witkowski, Eds., reviewed by N. Comfort
649  A Cultural History of Heredity
    S. Müller-Wille and H.-J. Rheinberger, reviewed by H. Landecker

POLICY FORUM
650  Is Europe Evolving Toward an Integrated Research Area?
    A. Chessa et al.

PERSPECTIVES
652  Shielding Broken DNA for a Quick Fix
    J. Lukas and C. Lukas
    >> Reports pp. 700 and 711
653  Pollution, Politics, and Vultures
    A. Balmford
    >> Science Podcast
654  Metamaterials with Quantum Gain
    O. Hess and K. L. Tsakmakidis
655  Impact and Extinction
    H. Pälike
    >> Report p. 684
656  Fossils Versus Clocks
    A. D. Yoder
    >> Research Article p. 662
658  Copying Biology’s Ways with Hydrogen
    F. A. Armstrong
    >> Report p. 682
659  Jack of All Trades, Master of Flowering
    J. Å. H. Danielson and W. B. Frommer
    >> Report p. 704
661  Retrospective: Carl R. Woese (1928–2012)
    N. Goldenfeld and N. R. Pace

CONTENTS continued >>
684 Time Scales of Critical Events Around the Cretaceous-Paleogene Boundary
P. R. Renne et al.
Radiometric dating establishes the mass extinction that killed the dinosaurs as synchronous with a large asteroid impact.
>> Perspective p. 655

687 Stress State in the Largest Displacement Area of the 2011 Tohoku-Oki Earthquake
W. Lin et al.
Borehole stress measurements indicate a nearly total stress drop in the region of largest slip.

690 Paramyxovirus V Proteins Disrupt the Fold of the RNA Sensor MDA5 to Inhibit Antiviral Signaling
C. Motz et al.
The crystal structure of a viral protein core complex reveals how paramyxoviruses inhibit the innate immune response.

694 Structural Basis for Hijacking of Cellular LxxLL Motifs by Papillomavirus E6 Oncoproteins
K. Zanier et al.
Crystal structures show how a key oncoprotein in human papillomavirus binds host proteins.

698 A Histone Mutant Reproduces the Phenotype Caused by Loss of Histone-Modifying Factor Polycomb
A. R. Pengelly et al.
Histone genetics provides functional evidence for the importance of histone modifications in gene regulation.

700 53BP1 Regulates DSB Repair Using Rif1 to Control 5' End Resection
M. Zimmermann et al.
In mammalian cells, Rap1-interacting factor 1 protects DNA ends against resection.
>> Perspective p. 652; Report p. 711

704 Regulation of Flowering by Trehalose-6-Phosphate Signaling in Arabidopsis thaliana
V. Wahl et al.
Specific sugar signals integrate carbohydrate status with day length and developmental age to regulate flowering.
>> Perspective p. 659

708 Host-Derived Nitrate Boosts Growth of E. coli in the Inflamed Gut
S. E. Winter et al.
During inflammation, Escherichia coli uses nitrate respiration to gain a growth advantage over other gut bacteria.

711 Rif1 Prevents Resection of DNA Breaks and Promotes Immunoglobulin Class Switching
M. Di Virgilio et al.
In mammalian cells, Rap1-interacting factor 1 protects DNA ends against resection.
>> Perspective p. 652; Report p. 700