EDITORIAL
920 Globalizing Science Publishing
Wieland Gevers

NEWS OF THE WEEK
924 Draft Rule Threatens Fossil Excavations in China
925 New Strategy Promises Lasting Resistance to a Rice Plague
>> Report p. 998
926 U.S. Energy Agency Stumbles Out of the Blocks
927 Rejecting 'Big Science' Tag, Collins Sets Five Themes for NIH
928 Two Steps Forward for Synthetic Biology
>> Science Express Report by C. Lartigue et al.
929 From the Science Policy Blog

NEWS FOCUS
930 ARCHAEOLOGY IN CHINA
Beyond the Yellow River: How China Became China
Founding Dynasty or Myth?
936 Archaeologists Raise the Old With the New
Landing the Looters
Go East, Young Archaeologist
940 Bridging East and West
Millet on the Move
>> Science Podcast

LETTERS
944 Less-Toxic Cigarette Use May Backfire
M. E. Deutsch
NIH Needs a Makeover
S. K. Dey
Keeping Infection at Arm’s Length
V. Verhoeven et al.

PERSPECTIVES
951 Early Solar System Chronology
A. M. Davis
>> Report p. 985
952 Coastal Exploitation
T. C. Rick and J. M. Erlandson
953 The Yin and Yang of Follicular Helper T Cells
A. Awasthi and V. K. Kuchroo
>> Reports pp. 1001 and 1006
955 Risks of Climate Engineering
G. C. Hegel and S. Solomon
957 Is Gas Hydrate Energy Within Reach?
R. Boswell
958 More Than Just a Copy
H. Kaessmann
>> Report p. 995

REVIEW
960 Structural Plasticity in Actin and Tubulin Polymer Dynamics
H. Y. Kueh and T. J. Mitchison

COVER
This elegantly carved jade face from Liangzhu in southeastern China provides an intriguing glimpse into the beliefs of the people who lived there from 3400 B.C.E. to 2250 B.C.E. As described in a special News Focus section beginning on page 930, discoveries at Liangzhu and other regions far from the traditional heartland of Chinese civilization are revealing surprisingly complex ancient cultures that thrived in far-flung regions of China.

Photo: Liu Bin/Archaeological Institute of Zhejiang Province

CONTENTS continued >>

DEPARTMENTS
918 This Week in Science
921 Editors’ Choice
922 Science Staff
923 Random Samples
1021 New Products
1022 Science Careers
BREVIA

Deep-Sea, Swimming Worms with Luminescent "Bombs"
K. J. Osborn et al.
Several species of deep-sea polychaete worms have been discovered that have a bizarre predator distraction mechanism.

DICER1 Mutations in Familial Pleuropulmonary Blastoma
D. A. Hill et al.
A rare form of lung cancer in children is associated with mutational disruption of an enzyme that generates small noncoding RNAs.

FORMATION OF THE FIRST PEPTIDE BOND: The Structure of EF-P Bound to the 70S Ribosome
G. Blaha et al.
Elongation factor P binds to the ribosome so as to position the initiator transfer RNA for the first bond formation.

REPORTS

Exploring Dark Matter with Milky Way Substructure
M. Kuhlen et al.
Simulations reveal that dark matter in our Galaxy could be detected by the Fermi space telescope.

Light-Induced Spontaneous Magnetization in Doped Colloidal Quantum Dots
R. Beaulac et al.
Long-lifetime excited states created by quantum confinement effects enable the light-induced magnetization of a quantum dot.

Printed Assemblies of Inorganic Light-Emitting Diodes for Deformable and Semitransparent Displays
S.-I. Park et al.
Methods to fabricate and assemble inorganic light-emitting diodes provide a route toward transparent, flexible, or stretchable display devices.

Visualization of Fermi's Golden Rule Through Imaging of Light Emission from Atomic Silver Chains
C. Chen et al.
A correlation of photon emission and scanning tunneling microscopy images illustrates a fundamental quantum principle.

Homogeneous Distribution of $^{26}$Al in the Solar System from the Mg Isotopic Composition of Chondrules
J. Villeneuve et al.
High-precision isotopic analyses in chondrule minerals validate the use of $^{26}$Al as an early solar system chronometer.

Adjoint Tomography of the Southern California Crust
C. Tote et al.
Analysis of seismic data using a more realistic crustal model reveals detailed variations in density beneath southern California.

Bacteriophages Encode Factors Required for Protection in a Symbiotic Mutualism
K. M. Oliver et al.
A virus endows a bacterial symbiont of an aphid with virulence factors that kill parasitoid wasps.

An Expressed Fgf4 Retrogene Is Associated with Breed-Defining Chondrodysplasia in Domestic Dogs
H. G. Parker et al.
The short legs that characterize certain dog breeds are associated with a gene that arose recently by RNA-based gene duplication.

Loss of Function of a Proline-Containing Protein Confers Durable Disease Resistance in Rice
S. Fukuoka et al.
Quantitative trait loci may offer a particularly durable strategy for disease resistance.

Bcl6 Mediates the Development of T Follicular Helper Cells
R. I. Nurieva et al.

Bcl6 and Blimp-1 Are Reciprocal and Antagonistic Regulators of T Follicular Helper Cell Differentiation
R. J. Johnston et al.
The transcription factors that regulate follicular T helper cell differentiation are identified.

Structure and Mechanism of a Na⁺-Independent Amino Acid Transporter
P. L. Shaffer et al.
The structure of the transporter ApcT reveals common architectural principles between proton- and sodium-coupled transporters.

Structures of the Ribosome in Intermediate States of Ratcheting
W. Zhang et al.
Structures of the Escherichia coli 70S ribosome show how the large and small subunits rotate to facilitate protein synthesis.

Dopamine Controls Persistence of Long-Term Memory Storage
J. I. Rossato et al.
Pharmacological and biochemical analyses reveal that dopamine determines the duration of fear memory storage.

CONTENTS continued >>
RESEARCH ARTICLE: The Plant NADPH Oxidase RBOHD Mediates Rapid Systemic Signaling in Response to Diverse Stimuli
G. Miller et al.
Reactive oxygen species produced by RBOHD mediate rapid, long-distance stress signals in plants.

RESEARCH ARTICLE: Quantitative Phosphoproteomic Analysis of T Cell Receptor Signaling Reveals System-Wide Modulation of Protein-Protein Interactions
V. Mayya et al.
Serine-threonine phosphorylation plays a role in regulating the interactions among proteins involved in T cell responses.

RESEARCH ARTICLE: Mitofusin 2 Inhibits Mitochondrial Antiviral Signaling
K. Yasukawa et al.
A protein that mediates mitochondrial fusion also suppresses innate immune responses to viral infection.

PERSPECTIVE: mTORC1 Phosphorylates the ULK1-mAtg13-FIP200 Autophagy Regulatory Complex
E. Y. Chan
The kinase complex mTORC1 links nutrient availability to autophagy.

PERSPECTIVE: miRNA Regulation Through Ligand Occupancy of a Nuclear Hormone Receptor
A. E. Rougvie
Ligand occupancy of DAF-12 determines whether transcription of let-7 family miRNAs occurs during C. elegans development.

PODCAST
D. K. Han and A. M. VanHook
D. K. Han discusses roles for serine-threonine phosphorylation in T cell signaling.

SCIENCECAREERS
The real story about jobs in industry.

SCIENCEPODCAST
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Download the 21 August Science Podcast to hear about optimizing the distribution of influenza vaccines, archaeology in China, bioluminescent deep-sea worms, and more.

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Science Policy News and Analysis

RESEARCH ARTICLE: Differential p53-Independent Outcomes of p19ARF Loss in Oncogenesis
Z. Chen et al.
p19ARF signals independently of p53 in prostate cancer associated with the loss of Pten.

Friends or Acquaintances? Ask Your Cell Phone
Fido can’t figure out what you’re thinking, according to a new study.

Weight Loss for Batteries
Carbon nanofibers wrapped in a silicon shell make for lighter and more powerful rechargeables.

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