COVER
Lake Boku at the Ounianga oasis in remote northeastern Chad, one of the few remaining bodies of water in the almost rainless Sahara. Still sustained by fossil groundwater dating from the humid past, it is doomed because of encroaching dunes. See page 765.
*Photo: S. Kröpelin*

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The Right and the Good: Distributive Justice and Neural Encoding of Equity and Efficiency
M. Hsu, C. Anen, S. R. Quartz
A brain region linked to emotion-processing systems is activated as humans weigh fairness to an individual against benefit for a group.
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Anticipatory Behavior Within Microbial Genetic Networks
I. Tagkopoulos, Y.-C. Liu, S. Tavazoie
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10.1126/science.1154456

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Climate-Driven Ecosystem Succession in the Sahara: The Past 6000 Years
S. Kröpelin et al.
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An in Vivo Map of the Yeast Protein Interactome
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10.1126/science.1153878

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A 47-year study of great tits in Britain shows that the ability of individual birds to shift their breeding date has enabled the species to thrive as climate has changed.

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Temperature Sensing by an Olfactory Neuron in a Circuit Controlling Behavior of C. elegans
A. Khara et al.
An olfactory neuron in Caenorhabditis elegans also senses the ambient temperature and is necessary for worms’ propensity to seek out the temperature at which they were raised.

CELL BIOLOGY
Discovery of a Cytokine and Its Receptor by Functional Screening of the Extracellular Proteome
H. Lin et al.
A systematic, functional screen of extracellular proteins in yeast identified a previously unknown receptor-ligand pair: the cytokine interleukin-34 and its receptor.

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Regulation of the Cellular Heat Shock Response in Caenorhabditis elegans by Thermosensory Neurons
V. Prahlad, T. Cornelius, R. I. Morimoto
Activation of a heat-sensitive sensory neuron in the worm Caenorhabditis elegans unexpectedly triggers a heat-shock response throughout the animal.

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Architecture of a Charge-Transfer State Regulating Light Harvesting in a Plant Antenna Protein
T. K. Ahn et al.
To protect itself from oxidative damage in bright light, photosystem II operates a tunable shunt that directs excess energy to a yellow accessory pigment that is abundant in corn.

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Phosphorylation of Retinoblastoma Protein by Viral Protein with Cyclin-Dependent Kinase Function
A. J. Hume et al.
A human cytomegalovirus protein takes control of the host cell cycle by mimicking a cell cycle kinase that phosphorylates and inactivates a tumor suppressor.

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Monte Verde: Seaweed, Food, Medicine, and the Peopling of South America
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Carbon-14 dates on seaweed brought to Monte Verde, Chile, show that the site was used 14,000 years ago and that the earliest New World people consumed marine resources. >> News story p. 729

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DNA from Pre-Clovis Human Coprolites in Oregon, North America
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Fossil human feces from an Oregon cave predate the Clovis culture by about 1000 years, and DNA from the feces marks the presence of Native Americans in North America.

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Spatial Regulators for Bacterial Cell Division Self-Organize into Surface Waves in Vitro
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A tubulin homolog from prokaryotes can, without other proteins, assemble into rings around liposomes and constrict, suggesting a primordial cell division mechanism. >> Perspective p. 755

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Multiple models compete to explain T cell receptor activation.

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