

## PALEONTOLOGY

# China Clamps Down on Illegal Fossil Trading

**BEIJING**—China's powerful State Council issued a regulation last week designed to rein in rampant pillaging of the country's magnificent fossil beds, which have yielded the first feathered dinosaurs and other blockbuster finds. The new rules will change the way excavation permits are issued and impose hefty fines for infractions. Paleontologists are generally pleased, but they will pay a price for the stepped-up protection: potential loss of sovereignty over important fossils they unearth.

By law, all fossils are state property. In practice, farmers scour known sites and sell their finds to dealers, some of whom alert paleontologists to fossils of potential scientific value. However, many dealers are not so conscientious, and premier specimens end up in private collections. With so much money sloshing around the fossil trade, venal officials are known to turn a blind eye to illegal fossil collection while withholding permission for scientific digs.

The regulation is meant to tackle this systemic rot, but when a draft emerged last year, scientists cried foul: It would have given local authorities even more say in issuing excavation permits (*Science*, 21 August 2009, p. 924). To researchers' relief, the much-anticipated final rule, set to go into effect on 1 January, should wrest control of important dig sites from local officials and put it in the hands of the central government. And paleontologists will no longer need permits for small-scale fossil collecting for teaching and research—defined as using hand tools and no heavy equipment—as long as they file a plan beforehand. “This is major progress,” says Zhou Zhonghe, director of the Institute of Vertebrate Paleontology and Paleoanthropology in Beijing.

Also reassuring to researchers, the regulation casts a protective net over fossil beds bearing the most valuable specimens: holotypes, for which a species is named; com-

plete vertebrate fossils; aggregates of invertebrates or plants; and imprints like dinosaur tracks. The Ministry of Land and Resources will now have sole authority to issue permits for excavating high-priority fossils. Scientists will provide critical input: The State Council will forward excavation applications to a national paleontological committee for review. Provincial authorities will continue to oversee excavation of low-priority fossils, such as single specimens of invertebrates or plants. (Early human remains and Ice Age

fossils are protected by other statutes.) Adding an element of uncertainty, the regulation states that excavations must be “supervised” by the land ministry's county offices. “If they have basic scientific knowledge and know what a fossil is and understand this regulation, then our work can go well. Otherwise, they can stop us at any time,” says Jiang

Da-yong, an expert on marine reptiles at Peking University.

The regulation contains one bitter pill for researchers. The land ministry will be the sole arbiter of where high-

priority fossils should be deposited: in the institution that collects them, or, for example, in a museum. This means researchers could lose control of the most important fossils they unearth, says Zhou. Overseas collaborations could suffer too: Only the ministry may decide which specimens can be sent abroad for research, and for how long—stripping authority from institutions.

The regulation sidesteps one key issue: the legality of existing private fossil collections. But it sets substantial fines for infractions—up to \$1.5 million for excavating high-priority fossils without the land ministry's permission—that may deter illicit activity in the future. Still, it's far from certain that the regulation will end up improving the protection of China's magnificent fossils. “We will see,” says Zhou. He and others don't underestimate the will of shadier dealers to stay in business.

—RICHARD STONE



**Site visit.** Zhou Zhonghe examines a Cretaceous-era fish.

## ScienceInsider

### From the *Science* Policy Blog



A new report from the Massachusetts Institute of Technology lays out steps to triple the world's **nuclear energy** output by 2050, to more than a terawatt. Funding loan guarantees to bring on the latest generation of reactors is a priority, the report says, as is increasing yearly U.S. federal R&D spending to roughly \$1 billion. The key step, the report says, is to “preserve our options” through research aimed at determining whether spent fuel rods can be used as a fuel source rather than constituting waste that needs to be buried. [http://bit.ly/nuke\\_report](http://bit.ly/nuke_report)

NASA has failed to tamp down media coverage of a reanalysis of data on **soil samples from Mars**. Despite heavy caveats in a NASA press release put out just before the long Labor Day weekend, media outlets heralded the possibility of finding organic compounds—and the faint chance of life itself—on Mars in the future. But those reports failed to make clear that any organics that may someday be found on the planet could have arrived there by asteroid. [http://bit.ly/mars\\_life](http://bit.ly/mars_life)

The **imperiled Russian seed bank at Pavlovsk Experimental Station** outside St. Petersburg may have been issued a reprieve. In August, a Russian court approved the transfer of 29 hectares of fields to the Russian Housing Development Foundation. Now the foundation will postpone selling the plots and appoint a commission to assess their scientific value. [http://bit.ly/plants\\_reprieve](http://bit.ly/plants_reprieve)

The European Parliament has approved regulations to limit some **animal research**. They allow experiments on macaques and other monkeys but prohibit research on great apes. [http://bit.ly/animal\\_studies](http://bit.ly/animal_studies)

Biologist Elizabeth Goodwin, who **pleaded guilty to making false statements** on a federal grant report, has been ordered by a judge to pay a \$500 fine and \$50,000 in restitution to the U.S. government and \$50,000 to the University of Wisconsin, where she used to work. [http://bit.ly/goodwin\\_sentenced](http://bit.ly/goodwin_sentenced)

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