

## LETTERS

edited by Jennifer Sills

Asian Medicine:  
Exploitation of Wildlife

TRADITIONAL ASIAN MEDICINE'S EFFECTS ON WILDLIFE CONSERVATION cannot be ignored. The endangered musk deer (*Moschus* spp.) provides a typical example.

The adult male musk deer secretes musk, which is one of the world's most expensive natural medical resources (1 gram is worth US\$250). Musk is used broadly in traditional Asian medicine. There are at least 884 traditional Chinese medicine prescriptions and 347 products that use musk in China (1). Nearly 1000 kg of musk are consumed per year in traditional Chinese medicine alone (2).

Because the musk deer has been deemed endangered by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (3), musk extraction from wild musk deer has been forbidden since the 1980s in China. In response, musk deer farming was initiated in the 1950s in China, as well as India, Nepal, and Russia (4). Today, more than 95% of the world's population of captive musk deer (about 6000 deer) is kept in about 30 musk deer farms in China (5). Sustainable musk extraction has been achieved in these farms, but only 20 kg of musk can be produced from musk deer farming per year (6), falling far short of the

demand in China, not to mention the even greater demand in global traditional Asian medicine.

Given that even sustainable musk deer farms cannot produce enough musk to meet global demand, we should scientifically assess whether the musk used in traditional Asian medicine is effective. If not, musk deer farming should be phased out, and the captive musk deer should be reintegrated into natural habitats according to a scientifically supported plan. If the musk is shown to be medically effective, we should develop a synthetic alternative to natural musk that can both replace natural musk in traditional Asian medicine and protect natural populations of musk deer.

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Asian Medicine:  
Exploitation of Plants

AS THE MARKET DEMAND FOR WILD CHINESE herbs has grown, the production scale of the Chinese herb industry has expanded dramatically. However, concealed by the prosperity of the Chinese medicinal herb industry is a huge ecological problem. In recent years, intensive and unrestrained exploitation of wild Chinese herbs has damaged natural resources. An estimated 2000 wild Chinese herbs are at risk of extinction (1).

Severe ecological deterioration and soil erosion seriously threaten the habitats of many wild Chinese herbs, especially in fragile ecological environments such as high-altitude areas or arid regions. For example, a

recent media report (2) suggested that intensive and unrestrained gathering of the edible cyanobacterium *Nostoc commune* var. *flagelliforme* has led to the degradation of almost 150,000 km<sup>2</sup> of grassland in Inner Mongolia (about 18% of the total grassland in the region) (1, 3).

If China continues its current pattern of natural resource exploitation, the biodiversity losses and environmental deterioration will severely jeopardize China's road to sustainability. Moreover, many wild Chinese herbs and other species that share their habitat are likely to be lost, as has happened to the Southern Chinese Tiger (*Panthera tigris amoyensis*) (3). Many of these species have not yet been adequately studied, so their true benefits to mankind and the environment are not yet known.

To improve governance and the ability to meet both socioeconomic and environmental goals, governments at all levels must understand the problem created by the competition between socioeconomic and environmental goals. Solving this requires stronger coordination between national policies and local needs, which will lead to production and conservation efforts based on approaches that encourage sustainability by balancing economic growth with environmental needs.

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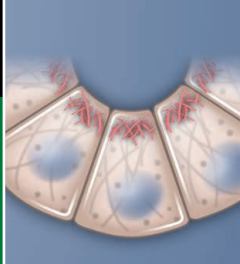
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Explaining political behaviors

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## Business Journals Combat Coercive Citation

A. W. WILHITE AND E. A. FONG ("COERCIVE citation in academic publishing," Policy Forum, 3 February, p. 542) perform a valuable service in exposing the practice by some journal editors to increase their journals' impact factors by coercing authors to add frivolous citations to recent works in their journals. Wilhite and Fong point to a handful of business journals as being among the worst offenders. They name names in table S12.

As a former head of the Policy Board of the Journal of Consumer Research, I can attest that business journal editors have a strong self-interest in stamping out coercive citation, and they have taken concrete steps to do so over the past 2 years. In August 2010, 15 marketing journal editors met specifically to discuss and root out the practice. On 15 November 2010, 26 editors of some of the most prestigious journals in business wrote a letter to more than 600 business school deans decrying coercive citation (1). They argued that journal editors would have little incentive to engage in coercive citation if deans and business school faculties judged articles on their own merits rather than based on impact factors of the journals in which they

were published. The 26 editors recommended vigilance in identifying spikes in the ratio of citations coming from their own journals relative to others, which might signal editorial manipulation by a new editorial team.

Those efforts have borne fruit; the journals in my own field have taken the pledge. I hope that Wilhite and Fong's Policy Forum will produce a much broader impact across the sciences.

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## Chimp Research Policy: Think Global

IN THEIR POLICY FORUM "GUIDING LIMITED use of chimpanzees in research" (6 January, p. 41), B. M. Altevogt *et al.* note that breeding existing U.S. chimpanzee captives would likely be too slow to meet the demands of "a public health emergency." This is true, but echoes the peculiar (although administratively understandable) approach of the Institute of Medicine's report, which considers only chimpanzees currently captive in the United States. There are more than 800 chimpanzees held in sanctuaries in Africa, mostly young victims of the bushmeat trade (1). When possible, these orphans are returned to the wild, but between individuals who cannot be reintroduced and the arrival of new orphans, the supply seems likely to remain high indefinitely.

Investment in African sanctuaries would ensure the well-being of these chimpanzees, as well as the availability of chimpanzees in case of a genuine global public health emergency. This suggestion is predicated on an agreement as to what constitutes an "emergency"; the litmus test would be an international acceptance of the need to transport and use sanctuary individuals. Such transport is currently excluded by the Pan African Sanctuary Alliance policy, and chimpanzees are regulated by the Convention on International Trade in Endangered Species of Wild Fauna

and Flora (CITES), so the bar would be very high but presumably not insurmountable. If global chimpanzees are taken into account, there is no need to continue captive breeding for purposes of maintaining a large subject pool. Much research in comparative genomics and behavior can be conducted at African sanctuaries as well as at U.S. research centers. In fact, migration of such projects to Africa would not only help build academic infrastructure there but save money; maintenance costs are less than 1/10th of the \$44 per day per individual cited for U.S. facilities (2).

Neither health nor chimpanzees are exclusively North American issues, and our approach to both should be global, not local.

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### TECHNICAL COMMENT ABSTRACTS

## Comment on "Fossilized Nuclei and Germination Structures Identify Ediacaran 'Animal Embryos' as Encysting Protists"

Shuhai Xiao, Andrew H. Knoll, James D. Schiffbauer, Chuanming Zhou, Xunlai Yuan

On the basis of putative nuclei and endospores, Hultgren *et al.* (Reports, 23 December 2011, p. 1696) propose that embryo-like Doushantuo microfossils are nonmetazoan holozoans akin to mesomycetozoeans. However, both size and preservation preclude interpretation of internal structures as nuclei. Moreover, the authors may have conflated two different populations; some specimens display a pseudoparenchymatous organization incompatible with a mesomycetozoean comparison.

Full text at [www.sciencemag.org/cgi/content/full/335/6073/1169-c](http://www.sciencemag.org/cgi/content/full/335/6073/1169-c)

## Response to Comment on "Fossilized Nuclei and Germination Structures Identify Ediacaran 'Animal Embryos' as Encysting Protists"

Therese Hultgren, John A. Cunningham, Chongyu Yin, Marco Stampanoni, Federica Marone, Philip C. J. Donoghue, Stefan Bengtson

The objections of Xiao *et al.* to our reinterpretation are based on incorrect assumptions. The lack of nanocrystals lining the nuclear membrane is consistent with membrane fossilization, and nucleus volume through development is correlated to cytoplasm volume and fully consistent with sizes of eukaryote nuclei. Identical envelope structure unites the developmental stages of the fossils, and 2° cleavage and Y-shaped junctions are holozoan symplectomorphies.

Full text at [www.sciencemag.org/cgi/content/full/335/6073/1169-d](http://www.sciencemag.org/cgi/content/full/335/6073/1169-d)

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