

## LETTERS

Edited by Jennifer Sills

### Premature downgrade of panda's status

ACCORDING TO CHINA'S fourth giant panda survey, 1864 wild giant pandas now live in a habitat spanning 2,580,000 ha (1). As a result of the survey findings, the International Union for Conservation of Nature (IUCN) changed the classification of the giant panda from "endangered" to "vulnerable" (2). This downgrade was premature.

The Chinese government's protection efforts and the public's enthusiasm for the giant panda are directly related to the appeals of international organizations and conservation campaigns. The downgrade will likely reduce the public's enthusiasm for panda protection and may affect the government's protection policies and decision-making.

Furthermore, the IUCN's decision was based on the current number of giant pandas. However, the survey's conclusions were based on evidence of feces and bamboo stem fragments rather than direct encounters, which have been used in past surveys. For example, 30 giant pandas were encountered during the field survey in Wanglang Nature Reserve (one of the earliest giant panda nature reserves) in 1960s (3) and 13 dead individuals were found in a survey conducted during the large-scale bamboo flowering event that occurred in 1970s (4). It is possible that the methods used by the recent survey led to overestimated population numbers.

Habitat fragmentation is the most important threat to the sustainable survival of the giant panda. Today, giant panda populations are divided into 33 local populations (1), whereas in the 1990s, the number was about 24 (5). Habitat fragmentation is indisputably increasing. Even worse, there are currently no corridors between the fragmented habitat areas (6). Isolating the separated populations not only hinders gene exchange but also greatly increases the extinction risk of small populations. Of the current 33 local populations, 24 are at increased risk of extinction, which accounts for 12% (223 of 1864) of the panda population (1). The giant panda population increase, given such extreme habitat fragmentation, has a high genetic homogeneity, putting the species at higher risk.



The giant panda is now classified as "vulnerable" instead of "endangered," but the species remains at risk.

Given the continued threats to the giant panda population and its habitat, we cannot risk becoming complacent. The IUCN should reclassify the giant panda at the endangered level.

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### Stop Pakistan's polio vaccination tax

PAKISTAN IS ONE of three countries in the world where polio remains endemic (1). The country recorded more than 300 polio cases in 2014, the highest number since 1999 (2). In 2016, 14 cases have been reported (3). Although vaccinations could mitigate the spread of infection, many people in Pakistan are very suspicious of vaccines and those delivering them (2, 4). Attempts

by the government to overcome the stigma of vaccines have not been effective (5). The Pakistani public highly regards the advice of Islamic scholars. Although some scholars have misconceptions about polio campaigns, many are becoming more open to vaccination and its role in preventive medicine (5). This cultural shift has great potential. However, a new tax is stifling progress.

On 9 September, the government of Punjab, the most populated province of Pakistan, implemented a 0.9% infrastructure development tax on the polio vaccine (6). The tax does not affect international organizations such as UNICEF, who provide polio vaccines to Pakistani children for free (7), but it will hamper national anti-polio campaign efforts.

The Pakistan Armed Forces have recently flushed out militant groups from areas where vaccine programs have been unable to go in the past (8), and where polio cases have arisen as a result. Now is the time to mobilize polio teams and to capitalize on the support of clerics to educate local populations. The government should focus on making Pakistan polio free by immediately withdrawing the tax on the polio vaccination.

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## Creating a culture of ethics in Iran

IN HIS IN Depth News story "In Iran, a shady market for papers flourishes" (16 September, p. 1197), R. Stone reports that an estimated 10% of all graduate theses are bought from dealers and then presented by students as their own work. A proposed law will make ghost authorship a crime for both the buyer and the seller. However, the legislation alone will not solve the problem of plagiarized work in Iran.

The number of Iranian universities, students, and scientific papers has grown quickly in recent years (1), with Iran achieving a global rank of 22 for the number of papers produced. However, Iran's rank for citations per paper is only 161 (2), and the country ranks second worldwide for the number of retracted papers (2). These data indicate that despite prolific publications, the quality of papers is lacking.

One explanation for this discrepancy

could be the pressure placed on Iranian faculty members and their students to publish more papers to advance their careers (3, 4). Desperation leads some of these students to turn to paper- and thesis-selling agencies. This problem can only be fully addressed by amending inappropriate metric tools used by universities and better preparing both professors and students to successfully complete their research projects and theses.

Iran's research institutions also need better policies for promoting academic ethics (5). Training in research ethics should be required in every Masters and Ph.D. program (6). Whereas most top universities have well-developed ethical codes for authorship, the first research ethical charter written by the Ministry of Science, Research, and Technology of Iran was issued in 2011 (3). Iranian students will not forgo thesis-selling agencies if research ethics are not integrated into the scientific culture through extensive training and modeling.

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### TECHNICAL COMMENT ABSTRACTS

#### Comment on "Reconciliation of the Devils Hole climate record with orbital forcing"

**Isaac J. Winograd**

Moseley *et al.* (Reports, 8 January 2016, p. 165) postulate an increase in dissolved thorium isotope <sup>230</sup>Th with depth below the water table as the explanation for the differing ages of Termination II. Flow of geothermal water through the Devils Hole caverns precludes this explanation. Deposition of younger secondary calcite into the initial porosity of the calcite comprising their cores is a plausible alternate explanation.

Full text at <http://dx.doi.org/10.1126/science.aaf7718>

#### Comment on "Reconciliation of the Devils Hole climate record with orbital forcing"

**Tyler B. Coplen**

Moseley *et al.*'s (Reports, 8 January 2016, p. 165) preferred-Termination-II age is subjective, as evidenced by variation in their Termination-II ages of 2500 years per meter. Termination-II-age bias decreases to zero at ~1.5 meters below the present-day water table, if one assumes linear variation with core-sample height. Maintaining the required gradient of thorium isotope <sup>230</sup>Th over 3.6 meters for 1000 years, much less 10,000 years, seems exceedingly unlikely.

Full text at <http://dx.doi.org/10.1126/science.aaf8074>

#### Response to Comments on "Reconciliation of the Devils Hole climate record with orbital forcing"

**Gina E. Moseley, Yuri V. Dublyansky, R. Lawrence Edwards, Kathleen A. Wendt, Mathieu Pythoud, Pu Zhang, Hai Cheng, Yanbin Lu, Ronny Boch, Christoph Spötl**

Winograd and Coplen question the thorium-230 distribution model proposed to explain the age bias observed with increasing depth during Termination II. We have evaluated both criticisms and find that all samples display virtually identical fabrics, argue that the modern setting is not analogous to the conditions during Termination II, and reiterate the robustness of our age models. Our conclusions remain unchanged.

Full text at <http://dx.doi.org/10.1126/science.aaf8679>

### NEXTGEN VOICES: SUBMIT NOW DIVERSE EXPERIENCE

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Have you ever been prejudged based on your appearance or background? What advice would you give to a scientist who had the same experience? What can institutions, professional societies, or individuals do to prevent such experiences in the science community?

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### Creating a culture of ethics in Iran

Mohammad Saeid Rezaee-Zavareh, Zohrehsadat Naji and Payman

Salamati (October 20, 2016)

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Editor's Summary

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