LETTERS

edited by Jennifer Sills

Food Security: Farming Insects

G. VOGEL'S NEWS STORY "FOR MORE PROTEIN, FILET OF CRICKET" (12 FEBRUARY, SPECIAL section on Food Security, p. 811) draws attention to the potential role of insects in food security. Although insects such as mopane worms and termites are widely consumed by some societies, especially in Africa (*1*–*7*), globalization and creation of a food culture based largely on Western values has led to their marginalization (*1*, *5*, *6*). Unlike steak, such insects are easily accepted only where indigenous knowledge and willingness to consume them exists (*1*–*5*, *7*).

In addition to overcoming the cultural aversion to eating insects, it will be necessary to address ways to make them available throughout the year. Insects are seasonal, and there are technical difficulties in mass-rearing, processing, and storing them (*8*, *9*). Our experience (*8*, *9*) in Africa points to the need for greater public-private partnership in research and development. Governments could provide incentives to investors that come up with green business ideas on mass-production of edible insects. Currently, insects such as the mopane worm are treated as open-access resources, and their increasing commercialization is raising fears of extinction (*10*). Unsustainable wild harvesting could be reduced and conservation goals achieved with arrangements that encourage on-farm production of such insects.

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MRI Safety Not Scientifically Proven

WE APPRECIATE THE SIGNIFICANCE OF MAGnetic resonance imaging (MRI) for patients and research, but we are concerned by the tone of the News of the Week story "Fear of MRI scans trips up brain researchers" (L. Jiao, 19 February, p. 931), in which Arno Villringer (Max Planck Institute, Germany) says, "Millions of people have been examined with MRI so far; thus it seems now very unlikely that there would be a side effect." This statement cannot be advanced as a proof of MRI safety. Large patient groups have never been monitored longitudinally in a standardized FDA-approved study. A further argument for caution lies in the increasing evidence that MRI exposure can have biological effects (*1*, *2*).

The logical fallacy in this statement becomes apparent when we consider that this argument for MRI could also be applied to the risks of x-ray computed tomography (CT) exposure. In the case of x-rays, it may be factually correct to state that no study to date has shown that CT increases cancer risk, but it is incorrect to state that there are no cancer risks from the radiation exposure associated with CT. Absence of evidence is not proof of the absence of risk, and it is widely accepted that there are small but nonzero risks associated with CT (*3*).

Side effects of these procedures may take decades to detect. One example is the induction of severe side effects in a small fraction of the population years after administration of the MRI contrast agent gadolinium-DTPA (diethylenetriamine penta-acetic acid) (*4*). Now that this risk has been identified, benefit-risk ratio is known and thus manageable. In

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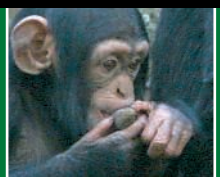

How chimps use tools

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the case of caregivers volunteering their healthy children, however, the risk is unknown and there is little if any benefit to them; this practice should be questioned.

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Fundamental Change in German Research Policy

UNTIL RECENTLY, AN ESSENTIAL INDICATOR in the evaluation of grant applicants by the Deutsche Forschungsgemeinschaft (DFG), Germany's leading research foundation, was the quantity and impact of the applicant's publications. This policy fit the increasing attention paid to Web of Science–listed publications, impact factors, and the h-index for competitive funding in science (*1*, *2*). The rationale is clear: On the basis of such variables, it is possible to compare performances and to provide a foundation for decisions. However, the process overlooks one fundamental point: the content of research.

The essence of the "Einsteins" of science history was surely not the quantity of their publications, but the quality of their research ideas. Ideas are hard to quantify—they are even harder to compare. But wise peer-referees can qualify them.

The DFG has recently taken an important step toward valuing content. The organization has changed its policy for evaluating research grants by restricting references in forthcoming applications to five of the authors' most important publications and limiting reports of finished projects to the two most important publications per year (*3*). This helps reviewers appreciate the quality and the innovativeness of research. Of course, not every paper can introduce a Theory of Relativity. But we must focus on quality rather than quantity if we are to advance the world's intellectual capital. **CLAUS-CHRISTIAN CARBON**

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Measuring Forest Changes

D. NEPSTAD *ET AL.* ("THE END OF DEFORESTATION in the Brazilian Amazon," Policy Forum, 4 December 2009, p. 1350) highlight promising efforts by Brazil to reduce Amazonian deforestation, in part by harnessing funds from international carbon payments—termed REDD (reducing emissions from deforestation and forest degradation). For a country to engage in REDD, reliable data on past and current changes in its forest carbon stocks are essential (*1*). Having established in 1989 a world-leading program to monitor its Amazonian deforestation using remotely sensed imagery, Brazil is in many ways uniquely poised for REDD (*2*).

Current efforts to promote REDD, including those with pilot funding from the World Bank, assume that each developing nation will develop its own estimates of changes in forest carbon stocks, as Brazil is doing. We believe that this approach is unrealistic and prone to conflicts of interest. First, even if standard monitoring tools are developed (*3*, *4*), the costs will be high if each country must independently develop the capacity to apply them. Second, when applying these tools, there will invariably be decisions—for example, about which remotely sensed images to use and how to interpret them—that offer opportunities to bias results. Such variability between nations has long plagued the U.N. Food and Agriculture Organization's efforts to estimate national changes in forest cover (*5*). Nations will have strong incentives to overestimate their past deforestation rates and underestimate their present rates in order to maximize their eligibility for REDD funds. This could create conflicts between those selling and buying forest-carbon credits that undermine REDD initiatives.

Rather than the current approach, we believe that an independent organization—such as the World Conservation Monitoring Centre of the United Nations Environment Programme—should be tasked and funded with determining historic and current rates of change in forest-carbon stocks, using cutting-edge approaches [e.g., (*4*)], in a consistent and unbiased manner across all developing nations. This will, we believe, be far more cost-effective and reliable than expecting each nation to develop its own estimates, even if these estimates are subject to third-party verification. Brazil's leading efforts to monitor its forests might provide useful lessons for scaling up to global monitoring.

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CORRECTIONS AND CLARIFICATIONS

Reports: "Decorrelated neuronal firing in cortical microcircuits" by A. S. Ecker *et al.* (29 January, p. 584). In Fig. 1E, the labels (r_{sc} values and colored dots) were accidentally applied in reverse order. The correct labels (color *x*/color *y*/r_{sc}) should read for the first row from left to right: green/light blue/–0.01; dark blue/light blue/0.02; dark blue/green/–0.14; for the second row from left to right: red/light blue/–0.01; red/green/0.21; red/dark blue/0.04.

Reports: "Metagenome of a versatile chemolithoautotroph from expanding oceanic dead zones" by D. A. Walsh *et al.* (23 October 2009, p. 578). There are two changes to the names of sequences within tree 1 in Fig. 1A. The first two Eastern South Pacific clones are ESP60-K23I-54 (DQ810449), not ESP200-K23I-54, and ESP60-Khe2-29 (DQ810511), not K23II-30 (DQ810478).

Reports: "Parasite treatment affects maternal investment in sons," by T. E. Reed *et al.* (19 September 2008, p. 1681). The sample size of the experimental group receiving sham treatment in 2006 should read $n = 20$ nests, not 22 nests (see "Experimental methods" in the corrected Supporting Online Material). Therefore, the total sample size quoted in the main text should be $n = 81$ nests, not 83.

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