

SCIENCE'S COMPASS

2. Intergovernmental Panel on Climate Change, *Revised 1996 Guidelines for National Greenhouse Gas Inventories, Reference Manual* (Organization for Economic Cooperation and Development, Washington, DC, 1996).
3. M. G. Bhat, B. B. English, A. F. Thurlow, H. O. Nyangito, *Tech. Rep. ORNL/Sub/90-99732/2* (Oak Ridge National Laboratory, Oak Ridge, TN 1994).
4. R. C. Izaurralde *et al.*, in *Management of Carbon Sequestration in Soil*, R. Lal *et al.*, Eds. (CRC Press, Boca Raton, FL, 1998), pp. 433-446.
5. The United States Department of Agriculture-Economic Research Service national average of N application on corn for the period 1982-1991 is 150 kg N ha⁻¹ year⁻¹.
6. Work prepared under contract number DE-AC06-76RLO 1830, U.S. Department of Energy/Office of Science.

Response

In the face of increasing environmental problems associated with excessive additions of reactive nitrogen to the environment (1), one must be careful to evaluate all policies that would further the use of inorganic N fertilizers in agriculture. It is noteworthy, for example, that the mean use of N fertilizer on corn in the United States [150 kg ha⁻¹ year⁻¹ (2)] is already greater than the economic optimum level calculated by Izaurralde *et al.* for cornfields in Kentucky. Although the carbon costs of N fertilizer discount only 66% of the mean carbon sequestration in the cornfields of Kentucky, other studies, edited for space from my original

Policy Forum, have discounts greater than 100% (3). In all cases, the marginal CO₂ cost of increasing N fertilizer use exceeds the marginal gain of carbon sequestration in soils, especially those under no-till management. Thus, recommendations for a greater use of N fertilizer (4), above 1990 baseline activity, are unlikely to contribute significantly to Kyoto credits through enhanced carbon sequestration in agricultural soils and are very likely to contribute to excessive losses of N to surface- and groundwaters (1).

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References and Notes

1. P. Vitousek *et al.*, *Ecol. Applic.* 7, 737 (1997).
2. The United States Department of Agriculture-Economic Research Service national average of N application on corn for the period 1982-1991.
3. W. H. Schlesinger, *Agric. Ecosystem. Environ.*, in press.
4. R. Lal *et al.*, *J. Soil Water Conserv.* 54, 374 (1999).

CORRECTIONS AND CLARIFICATIONS

Pathways of Discovery timeline: (11 Feb, p. 997). In the timeline accompanying David Stevenson's *Pathways of Discovery* essay, the main charge leading to the burning of Giordano Bruno was his denial of the divinity of Christ; his scientific views, however,

didn't help. The timeline was prepared by the editors, not the essay's author.

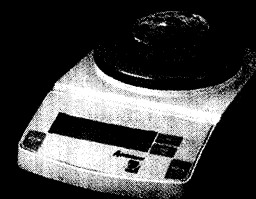
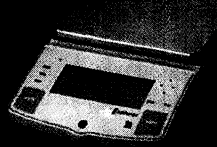
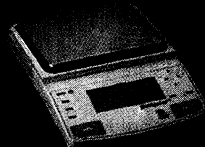
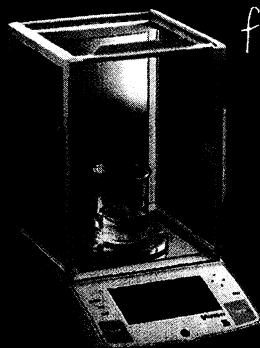
Report: "Rapid evolution of a geographic cline in size in an introduced fly" by R. B. Huey *et al.* (14 Jan., p. 308). An arithmetical error was made in the computation of the divergence rate of North American *Drosophila*. The rate given in darwins was correct; however, the rate reported in haldanes was wrong. The correct values are 0.011 haldanes for females (penultimate paragraph of the text) and 0.004 haldanes for males (in reference 24). This error does not affect any major conclusion of the paper.

News Focus: "Baedeker's guide, or just plain 'trouble'?" by Michael Balter (7 Jan., p. 29). The caption accompanying the photo misidentified the actor in the role of King Solomon. The actor was Tyrone Power, not Yul Brynner. Power died during the shooting of the movie *Solomon and Sheba* in 1958 and was replaced by Brynner.

Editorial: "Avoiding an oil crunch" by Philip H. Abelson (1 Oct. 1999, p. 47). The reference to *Oil & Gas Journal* was incomplete. The reference should have been *Oil Gas J.* 97, 26 (21 June 1999).

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