strange dream, in which I was a student at Aldebaran University in 2986 A.D. Our science professor, Dr. Megistus Pansophus, assigned to us a book entitled *History of Science Journals*, where I read the following: "The greatest scientific journal of all time, *Science*, altered its format in 1986. However, it was only recently that historians of science, assisted by spectacular scientific discoveries that this journal inspired, at last understood the startling symbolism of the dot over the I—which is meaningfully adjacent to the letters c and e. As is well known, around 1000 B.C., the Phoenicians and other Semites introduced the letters c, i, and e, which mean camel, hand, and window, respectively. One can easily visualize, then, the phantom of a medieval Arab astronomer, riding 'the ship of the desert,' holding a thaumaturgic round glass, and prophetically peering through a new cosmic window that has finally uncovered countless mysteries of the universe."

Professor Pansophus closed his relevant lecture with the following poem:

DOT OVER I
(A Pandebar)

Draco's delta, dazzling *dot!*

* * *

Arab sage, his *camel* riding,
Glass in *hand*, with light colliding,
Found a *window* in the sky—
Magic window, Truth's ally.

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The "new look" has one old look about it that I wish were not there. The address label still comes on top of the wonderful cover illustration. Can the addressing machinery be programmed to put the label somewhere else? Even across the word "*Science*" if necessary?

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I would like to protest in the strongest possible terms the changes in the format of *Science*. I find the new typeface much more difficult to read than the old style. Also, I find the new column width distracting and the entire format a great leap backward, comments in Koshland's editorial notwithstanding. Please bring back at least the old typeface.

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I must admit that the sight of the new *Science* set me back a bit. But I am sure that, with time, it will grow on me. I have one question, though. Will your readership be faced with the choice between the new *Science* and the old "Classic" *Science* several weeks from now? I understand it is all the rage in advertising circles.

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Ice-Nucleating Bacteria

Eugene P. Odum (Letters, 27 Sept., p. 1338) implies that there is proof of the necessity for bacterial ice nuclei to initiate precipitation processes. However, this theory has not been tested because of the difficulty of tracing the origin of ice nuclei in nonviable particles and detecting low concentrations of viable cells containing ice nuclei in the atmosphere. It is known that living plants, plant debris, and soil are sources of ice nucleation–active (INA) bacteria (*1*) and that these INA bacteria become airborne in small numbers under natural conditions (*2*). But there are no published data on the concentration or activity of bacterial or bacterially derived ice nuclei in clouds.

In spite of this, the possibility that INA bacteria may be involved in precipitation processes has been considered by scientists advocating the release of genetically engineered INA^- bacteria and by the National Institutes of Health Recombinant DNA Advisory Committee and the Environmental Protection Agency during their evaluations of the proposed experiments. The important question to ask in relation to the risks of releasing INA^- bacteria is not whether INA bacteria influence precipitation (since that question cannot easily be resolved) but whether the release of INA^- bacteria could have a significant impact on the number of INA bacteria available for such natural "cloud seeding." The available data indicate that the experiment we have proposed (*3*) and even the widespread use of INA^- bacteria on the low acreage specialty crops for which they are designed, will have essentially no impact on available INA. The only instance in which release would have a significant impact on the number of INA bacteria available for transport into the atmosphere would be if the released organism monopolized the surfaces of many plant species in a large geographical area and stopped the growth of resident INA bacteria. The INA^- deletion mutants to be released in our proposed field trial have been extensively characterized with this in mind, and they lack the capability to establish epiphytic dominance on many plant species or to reduce existing populations of INA bacteria. Without a large population density advantage (which the strains will be given by direct spray application, but will not have during subsequent transport away from the experimental area), these INA^- strains have no preemptive competitive advantage over INA bacteria.

Another way of assessing the risk of the proposed experiment is to compare the expected INA reduction with the INA reduction that already occurs due to unregulated practices such as the use of bactericides and copper-containing fungicides, the planting of crop varieties that are resistant to *Pseudomonas syringae* colonization, and crop species selection. Experimental releases of unregistered pesticides containing naturally occurring bacteria on areas less than 10 acres are not restricted in spite of the fact that populations of INA bacteria may be reduced in these tests.

We applaud Odum's concern for sound management of the ecosystem, but feel that concentrating on irrelevant issues will hinder such management. In the case of ice-nucleating bacteria, the effect of crop selection on bacterial populations should be considered. INA bacteria are not found in equal numbers on all plant species: wheat, almonds, and snap beans may harbor very high populations (greater than 10^5 colony-forming units per gram of leaf tissue), whereas corn and citrus usually have much lower populations, and conifers harbor few if any INA bacteria. The continent-wide effects on INA populations from changing land use are enormous. Surely the whole picture must be considered.

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2. J. Lindemann, H. A. Constantinidou, W. R. Barchet, C. D. Upper, *Appl. Environ. Microbiol.* **44**, 1059 (1982).
3. *Fed. Reg.* 50, 33841 (21 August 1985).

Erratum: In the article "Americans scarce in math grad schools" by Gina Kolata (News and Comment, 15 Nov., p. 787), the fifth sentence of the second paragraph should have read, "New York University's Courant Institute has five Americans among its 25 first-year graduate students with financial support."