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Genetic Engineering

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Letters

The National Science Board

The National Science Board, with an authorized complement of 25 members, now has eight members from the one state of California. A ninth member from that state has just been nominated to the Board.

The following comment on the situation has been provided by my good friend Ralph Waldo Longfellow.

Science Boards need many talents
To preserve a proper balance
In distributing the monies from the tills:

Scientists who come from benches
Engineers who turn the wrenches
And some people with administrative skills

Astrophysicists and scholars
Who can total up the dollars
Biologists and chemistry to boot

Those who know tectonic science
Mathematics, plus some clients
Of the theories that should be built to suit

Scientists on either ocean
Have a very different notion
As to what new institutions must be grown

Engineers from the interior
Need no longer feel inferior
In serving or advising on their own

But an imbalance terrific
Now sweeps in from the Pacific
With new nominations we can scarce afford

So this ditty's here to warn ya
That the state of California
Has far too many members on the board.

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*Member, National Science Board, 1974-1980.

Genetic Engineering

Why do so many biologists express so little concern for biology as a whole and such contempt for fields other than their own? The current debate on release of genetically engineered organisms into the environment, specifically, J. E. Fox's recent reply (Letters, 18 Oct., p. 237) to an earlier letter by R. K. Colwell *et al.* (12 July, p. 111), offers a case in point. Clearly, the ecologist's concern over the effects of organisms with genes from disparate species differs quantitatively and qualitatively from Fox's mock concern over the genetic uniqueness of newborn human babies and hybrids produced by classical agricultural breeding programs. One presumes Fox's

statement—"that new variety of carrot might take over the planet"—was intended as sarcasm. Ironically, the situation he parodies has already happened. It is well known to field biologists that wild carrot (*Daucus carota*), a native of Eurasia, has already spread through most of North America, where it is classified as a pernicious weed (1, 2). Indeed, of the spontaneously reproducing angiosperms in northeast North America, 26 percent of the genera and 20 percent of the species are introduced from elsewhere (1). The pervasiveness of naturally evolved species should justify the ecologist's concern over release of genetically engineered entities. Given the potential benefits of genetically engineered organisms, the issue is not whether these entities should be released into the environment, but how it can be done safely. Yes, Fox may indeed detect the Luddites hovering over the issue, but others can detect only arrogance from the other side. Who will clear the air?

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REFERENCES

1. M. L. Fernald, *Gray's Manual of Botany* [Van Nostrand Reinhold, New York, ed. 8, 1970 (corrected printing)], pp. lxiv, 1104-1105.
2. *Selected Weeds of the United States* (Agriculture Handbook No. 366, U.S. Department of Agriculture, Washington, DC, 1970), pp. 282-283.

SSC Design

M. Mitchell Waldrop's timely briefing "Magnets chosen for supercollider" (News and Comment, 4 Oct., p. 50) gives an accurate account of a major milestone in the progress toward the Superconducting Super Collider (SSC). He properly points out that the current federal deficit problems make early construction funding problematical. However, his report that "some physicists in the project have begun to resign themselves to a delay of several years" runs counter to the attitudes and activities that I have encountered during a sabbatical leave with the SSC Central Design Group (CDG).

The CDG's goal is to produce a reliable and cost-effective design for a 40-trillion-electron-volt proton-proton high-luminosity collider ready for construction start-up during fiscal year 1988. While aware of the current fiscal problems and of the difficulty in approval of construction funding on that time scale, physicists in the project have not slackened their enthusiastic effort, nor has there been a relaxation of the major milestones. On the contrary, the successful conclusion of the critical selection of magnet

type has demonstrated that a truly national R&D effort joining the Lawrence Berkeley Laboratory, Fermi National Accelerator Laboratory, Brookhaven National Laboratory, the Texas Accelerator Center, universities, and private industry can work and has stimulated a continuing full-scale attack on the remaining major milestones.

Recent discoveries suggest the possibility for a deep understanding of all fundamental forces in nature. Remaining questions are sharpened and high energy physicists continue, with unusual unanimity, to support the SSC as the necessary next step. Federal support will require more than technical justification, but progress in the 1990's and into the next century depends upon SSC success. Not a few high energy physicists are fully committed to opening this new window on our physical universe.

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Gastronomic Variety

Saturn's satellite Hyperion is described in the 29 November issue of *Science* in two gastronomically, if not astronomically, different ways.

"Saturn's potato-shaped satellite Hyperion is tumbling wildly. . ." says the first sentence of Richard A. Kerr's Research News article on page 1027. The picture caption, on the other hand, refers to Hyperion as a "hamburger-shaped satellite." Just because this satellite lacks the stable periodicity we find so comforting among celestial bodies is no reason to trifle with a description of its shape.

The article concludes that Hyperion will have to be observed nightly for many weeks in order to determine the period of its rotation. Can we expect a broader menu of descriptions from *Science* if results from these proposed observations are ever published?

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Erratum: In A. J. Dessler's editorial "1986: A vintage year for space science" (20 Dec., p. 1327), the seventh sentence of the third paragraph should have read, "Then, on Thursday, 13 March, the European probe Giotto will make a daring attempt to pass close to Halley's nucleus."

Erratum: In R. Jeffrey Smith's article "Beggs takes a leave of absence at NASA" (News and Comment, 20 Dec., p. 1363), NASA acting administrator William R. Graham was incorrectly identified as "Thomas Graham."