Letters

Space Shuttle Advanced Solid Rocket Motor Testing

The Briefing "Space Shuttle meets the wetlands" (8 Dec., p. 1253) contained misstatements about NASA's plans to test the Advanced Solid Rocket Motor (ASRM) at the John C. Stennis Space Center.

1) The Briefing stated that testing the shuttle's "noxious exhaust was not considered a problem at the old test site, deep in the Utah desert." Despite what the ASRM critics have stated, the Thiokol testing facility in Utah is not located deep in the desert. It is bordered by vegetation, farmlands, and wetlands. Cattle graze in fields adjacent to it, the agricultural community of Tremonton is 6 miles away from it, and a major migratory waterfowl refuge is located 11 miles away.

2) The Briefing stated that "[A]luminum compounds [released during test firing] can damage plants and the human nervous system," but the Environmental Protection Agency (EPA) has concluded that there is no evidence that nonfibrous forms of aluminum oxide cause adverse effects to human health or the environment (*1*, p. 16377). Research conducted by NASA's Langley Research Center during actual Space Shuttle launches shows that the aluminum oxide particulate released from the solid propellants that will be used in the ASRM is nonfibrous (*2*). And although aluminum, not aluminum oxide, has been implicated in Alzheimer's disease, the EPA states that aluminum has not been found to be a risk factor for the disease (*1*, p. 16378).

3) In response to the statement that the "Mississippi wetlands may not benefit from the massive infusion of hydrochloric acid they are likely to get," I point out that NASA is required to meet stringent federal and state laws and guidelines as provided in the permits. NASA is committed to ensuring that the area's environment is protected and is implementing extra measures over and above any legal or regulative requirement to ensure such protection.

4) The Briefing states that the Environmental Impact Statement for the test site "has been challenged by two ecologists at Mississippi State University." At a press conference at the Stennis Space Center on 2 November 1989 regarding the ASRM, Donald W. Zacharias, president of Mississippi State University, and Ralph Powe, vice president for research at MSU stated that the university is satisfied with the steps NASA has taken to make sure the tests are safe.

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REFERENCES

1. *Fed. Regist.* **54**, 16376 (24 April 1989).
2. W. R. Cofer III, NASA Langley Research Center, Hampton, VA, memo to R. McCaleb, Environmental Effects Officer, John C. Stennis Space Center.

Response: The main issue is not whether the old test site is in desert or dry scrubland, but whether exhaust fumes at the new site in Mississippi—a wet, vegetated, and heavily populated area—will create new ecological problems. For example, it may be worth considering the toxic effects of aluminum chloride pollution, which NASA has not studied.—ELIOT MARSHALL

Molecule of the Year

Annual recognition of one "discovery or technique . . . that is likely to have the greatest influence on history" (Editorial, 22 Dec., p. 1541) is a valuable addition to the already excellent research news reporting in *Science*. I find it disturbing, however, that this award is called the "Molecule of the Year," implying that the most important discovery each year will probably occur in chemistry or medicine rather than, for example, in elementary particle physics.

May I suggest that the title be as flexible as *Time* magazine's "Man of the Year," recipients of which need not be male, or even human?

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Response: Reader Covey's suggestion is exactly what we had in mind. Just as *Time* once chose the computer as "Man of the Year," *Science* expects to have physics discoveries qualify as "Molecule of the Year." In fact, we noted the Z particle and Voyager as close contenders for the 1989 award.
—DANIEL E. KOSHLAND, JR.

The idea of making an award to a discovery rather than to an individual is laudable, but there are certainly approaches to scientific questions other than the molecular in which discoveries can and do change the way we live. Molecular biology has proved itself to be a powerful approach. However, "molecular chauvinism" could lead us down

the path of scientific extinction as a result of exclusionary overspecialization.

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I was disturbed by Koshland's editorial accompanying the announcement of the "Molecule of the Year." He denigrates those who raise questions about what constitutes "progress" as people "who look into the mirror darkly." But his three examples of the imperfections his opponents see in the mirror are much more revealing of his mindset than they are a proof of the flaws in the arguments of those he takes as his opponents.

It is precisely because people *do* remember the romance of DDT, the romance of plastics, the romance of the auto and the open road, that they raise questions today about the equally romantic promotion of new technologies. Koshland's treatment of all such critics as if they wanted to freeze the status quo or return to some era in the past does not address the substantive questions that many such critics are attempting to raise.

In a democratic society, there should be room for open and honest debate about "progress." The readers of *Science* would be better served if the editor used the editorial resources at his disposal to better understand why millions of his fellow citizens "look into the mirror darkly."

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Poverty Among U.S. Children

In their study of poverty in America, Mary Jo Bane and David Ellwood (Articles, 8 Sept., p. 1047) lay much of the blame on prevailing socioeconomic trends. In so doing, however, they leave a more pressing question unanswered. Why should America fail its children in this way when the children of other much less wealthy nations fare so much better?

The reasons are undoubtedly complex, but a strong case can be made for the role of federal apathy. Housing is one example—in 1980, the Department of Housing and Urban Development was funded at $32 billion; today that figure stands at just over $7 billion (*1*). As a result there has been a dramatic decline in the construction of homes for low- and middle-income Americans. In the state of Massachusetts, the federal government financed the construction of 15,000 units of affordable housing in 1979, but of only 1932 units in 1987 (*2*). The fastest growing segment of the real estate market in Massachusetts during this period was state-funded shelters for the homeless (up from 2 in 1982 to 122 in 1989) (*3*).

Housing aside, federal assistance to the poor has also stalled. Even proven, cost-effective programs such as the Special Supplemental Food Program for Women, Infants and Children (WIC) remains disturbingly underfunded (WIC now serves only about 50% of those eligible) (*4*). It should be clear that concern alone will not prevent poverty. It will take federal action and a real commitment to the future of our nation's children.

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REFERENCES

1. Office of Management and Budget, *Budget of the United States Government, Fiscal Year 1990* (Government Printing Office, Washington, DC, 1989), historical tables.
2. M. S. Dukakis, "House number I: Governor's budget submission, FY 1989" (Commonwealth of Massachusetts, Boston, MA, 1988), vol. 1, narrative.
3. "FY 1989 budget narrative" (Department of Public Welfare, Commonwealth of Massachusetts, 1989).
4. U.S. House of Representatives, Select Committee on Children, Youth and Families, *U.S. Children and Their Families: Current Conditions and Recent Trends, 1989* (Government Printing Office, Washington, DC, 1989).

Shockley: A Scholar

It was disgraceful that *Science* gave publicity to the notion that the cause of William Shockley's views on race differences in cognitive performance was a car accident (Briefings, 5 Jan., p. 25). Irrespective of the source of the story, it was an ad hominem attack that should have had no place in the scientific enterprise. William Shockley was a serious scholar and deserved to be treated as such.

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Response: No criticism of Shockley was intended; the piece was a report of an unusual "defense" of Shockley by a prominent scientist.—CONSTANCE HOLDEN