Letters

Importing Biological Materials

In the past few years it has become increasingly difficult to receive hybridomas, cell cultures, and, in general, reagents from foreign scientific colleagues. Frequently, samples have been quarantined for extended periods of time even after appropriate import permits have been issued. Many of the samples shipped have lost activity or have been destroyed by the time they reach their destination. Completing import permits for these materials is an extensive and time-consuming task and often delays their receipt by weeks to months.

I believe the U.S. Department of Agriculture (USDA) should provide an efficient system for obtaining these materials without delay. I propose that all reagents not containing or not exposed to fetal bovine serum or any animal serum be released immediately to the recipient. Furthermore, I propose that a new simplified form be developed by USDA that permits a convenient check-off list for the questions they deem significant. This could be supplied to the shipping laboratory for completion.

There is little risk in releasing these materials to laboratories where they are used under containment conditions for the protection of the investigators and the cells. In the current system, multiple shipments are often required to get one through intact. The inordinate procedures are forcing laboratories to develop reagents that are already available elsewhere. While this may not be a severe problem for private corporations, who often have their own import agents, for those at universities and other private institutions the procedures serve to increase the costs and the inconvenience of our research efforts and to cause enormous and unnecessary delays.

SIDNEY PESTKA
Department of Molecular Genetics and Microbiology, Robert Wood Johnson Medical School, University of Medicine & Dentistry of New Jersey, Piscataway, NJ 08854–5635

Global Change and Oceanography Programs

I would like to respond to the letter by Carl Wunsch (18 Oct., p. 357) and clarify a misunderstanding about my remarks to Richard A. Kerr (News & Comment, 23 Aug., p. 845) concerning my views on the World Ocean Circulation Experiment (WOCE). After we discussed my editorial "Honesty in global change" (*1*), which concerned the Joint Global Ocean Flux Study (JGOFS), Kerr asked me about the scientific health of the large oceanographic programs. I told him that WOCE was not doing as well in this regard as JGOFS. I did not indicate that I felt the objectives of the WOCE program were not meeting society's concern about global change. While I am well known as a critic of WOCE's scientific strategy, I have never questioned its relevance to global change.

I would also like to respond to the letter by James McCarthy (18 Oct., p. 357). I couldn't agree more with him about the importance of the biosphere to the fate of anthropogenic carbon dioxide. But the important part is terrestrial, not marine. My editorial was concerned with what I consider to be a misconception created in the minds of many science administrators and public policy-makers that the marine biosphere is playing a key role in the uptake from the atmosphere of anthropogenic carbon dioxide. My contention is that to date marine organisms have played no role whatsoever and that they are unlikely to become more than minor players in the future. While I am said to be one of the "fathers" of JGOFS, my view is that this program has deviated from the mission I originally had in mind, namely, to study particle fluxes within the sea. The program now has a heavy component of air-sea interaction. It is this new component which brought with it the connection to man-made carbon dioxide.

WALLACE S. BROECKER
Department of Geological Sciences, Lamont-Doherty Geological Observatory of Columbia University, Palisades, NY 10964

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1. W. S. Broecker, *Glob. Biogeochem. Cycles* **5**, 191 (1991).

DOE and the National Labs

The U.S. Department of Energy (DOE) has once again shown that it is willing to carry out its threat to blackball national laboratory scientists who participate without permission in international professional meetings dealing with issues of interest to DOE (ScienceScope, 8 Nov., p. 787). This policy has previously been applied in the case of a session at the 1991 annual meeting of the AAAS where alternative means of disposal of the fissile materials recovered from nuclear warheads were discussed and applies even when lab scientists participate in meetings on their own time and at no government expense. Some of our citizens who are most knowledgeable about nuclear weapons–related issues are thus selectively being deprived of their freedom of speech.

This situation is symptomatic of a larger problem in the management of the national laboratories. When these laboratories were established four decades ago, some of the scientists who had been in the Manhattan Project fought hard and successfully to prevent the perpetuation into the postwar era of military-style, hierarchical control of the nation's nuclear research and development. The Atomic Energy Commission, of which DOE is the successor, was established as a civilian agency, and most of the national research laboratories were put under the administration of universities in the hope that the universities would stand up for the academic freedom of the laboratory scientists. However, DOE officials in Washington now freely bypass both university and laboratory administrators and directly control the scientists they fund.

FRANK VON HIPPEL
Center for Energy and Environmental Studies, Princeton University, Princeton, NJ 08544

The ScienceScope item "DOE clings to cold war" (18 Oct., p. 365) does not mention that the Federation of American Scientists (FAS) and the National Resources Defense Council (NRDC), the two sponsors of the disarmament workshop that the Department of Energy (DOE) declined to support, are highly political and activist organizations. Support by DOE for attendance at meetings sponsored by these groups would be just as inappropriate as it would be for a workshop sponsored by the John Birch Society.

S. MATTHEW PRASTEIN
3 Martin's Square Lane, Rockville, MD 20850–1808

Negative Reinforcement

Those of us who teach introductory psychology go to great lengths to emphasize the difference between negative reinforcement and punishment. It is therefore disheartening to see the two confused in Myra H. Strober's review of *The Outer Circle: Women in the Scientific Community* (Book Reviews, 18 Oct., p. 445). Having a grant proposal or an article turned down is most certainly a "negative experience," but it is not "negative reinforcement," it is punishment, or at least nonreward. Negative reinforcement occurs when an aversive stimulus is removed con-