Letters

"Public" Input in Research

I reacted with only partial enthusiasm to Senator Edward M. Kennedy's views regarding "more public input in research" (News and Comment, 20 June, p. 1187). Apparently the Senator considers it elitist for scientists to seek to control the actual disposition of funds, with public authorities simply determining the global amounts. Moreover, there is some thought that he would like to have a commission rather like the one he sponsored for the protection of human subjects, but this time to consider scientific research generally.

Who could quarrel with the proposition that the public should scrutinize and control the way its money is spent or with the proposition that the public should have a say in controlling research with potentially harmful, not to say disastrous, results? But what might be the actual result of this kind of "public" oversight and control? Inevitably we will need at least one national commission and probably a whole bureau in one or more federal departments; each commission and bureau must have a staff reporting to the federal departments; research institutions may have to have their own oversight commissions and committees, each with staff; and, of course, since the staffs of these bureaus and committees will have plenty to do with day-to-day administration, special studies and the like will have to be contracted out to the usual gaggle of "soft-money" research organizations. Is it not a fair question to ask whether all of these people are indeed "the public" and whether they are more disinterested and responsible than the scientists who would actually be doing the research? How disinterested are they, when one considers that such bureaucracies and their contractors, once having been called into existence, will probably want to continue to exist? We must be careful to guard against the instinct to create a vast bureaucracy whenever a problem appears. We must be careful that people who want to do useful, interesting, or creative things are not put in the position where whatever they want to do can only be done after it has been cleared (following endless delays) by layers and layers of people, many of whom may not understand nor be able to do the work the creative person is seeking to do.

Of course the problems Senator Kennedy adverts to exist and must be dealt with. It might be said that I have not given an alternative to Senator Kennedy's proposal. But then the Senator has not given a proposal. All we have are slogans and rhetoric, together with a great deal of experience to show what these slogans and rhetoric end up meaning in practice. I would wash these slogans and rhetoric in a very strong bath of what Oliver Wendell Holmes called "cynical acid."

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Control of Infectious Diseases among Rodent Stocks

Within the past year, each of us has been personally involved in an institutional outbreak of ectromelia (mousepox). The cost to investigators whose research required use of mice and the cost to each of the institutions in added personnel expenses for destruction of infected mice, for disinfection of equipment and premises, and for vaccination of remaining mouse stocks was very high. In each of these instances, the infection was introduced by shipment of mice either directly from a European laboratory or by a secondary shipment of mice recently received from Europe. Most important, in each instance the shipment was received without the knowledge of any central authority within the receiving institution.

Currently all major commercial North American mouse-breeding establishments monitor their stocks for ectromelia with the hemagglutination-inhibition test. All commercial institutions breeding mice under contract with the National Cancer Institute are required to vaccinate their breeding stocks with IHD-T strain of vaccinia virus to protect them from ectromelia infection. Serums of mice immunized with IHD-T strain do not react in the hemagglutination-inhibition test for ectromelia.

The probability of acquiring ectromelia infection is thus much greater from shipments of mice received from noncommercial breeders, especially if the shipment is requested and received without passing through adequate quarantine channels. The recommendations of Whitney (*1*) reflect the considered views of microbiologists who have had personal experience with ectromelia infections, although many feel that there is a sharp limit to the confidence one should place in an accompanying health certificate. More specific and detailed recommendations concerning disease control in rodent stocks appear in the report (*2*) of a committee commissioned by the Institute of Laboratory Animal Resources, National Academy of Sciences–National Research Council. This report fully describes application of adequate quarantine measures and provides details of serologic and microbiological monitoring of animals during quarantine.

Other important infections conveyed from one institution to another by shipment of undefined animals include lymphocytic choriomeningitis (*3*), the mycoplasmal infections, and ecto- and endoparasitic infections.

This is an appeal to each investigator employing laboratory rodents to consider the possible consequences to his own research and to that of his associates when he unilaterally introduces undefined rodents to a shared animal facility. This communication is also intended to endorse stronger administrative control within biomedical institutions to prevent unauthorized introduction of undefined rodents.

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1. R. A. Whitney, *Science* **184**, 609 (1974).
2. Institute of Laboratory Animal Resources, Subcommittee on Procurement Standards for Defined Laboratory Rodents and Rabbits, *Procurement Specification (Contract Clause) IX. Defined Laboratory Rodents and Rabbits* (National Academy of Sciences–National Research Council, Washington, D.C., 1973).
3. J. Hotchin, E. Sikora, W. Kinch, A. Hinman, J. Woodall, *Science* **185**, 1173 (1974).

The Federal Purse

The editorial by Kingman Brewster (11 Apr., p. 105) on the "Coercive power of the federal purse" raises several questions but answers very few of them. There have no doubt been instances where government dollars have been used for vindictive or po-

litical purposes in our institutions of higher education, but it is these same institutions that are unable to come up with solutions to the problems of sex discrimination, inept handling of student files, and the dearth of physicians in rural areas. As Anthony Lewis pointed out in his article "Liberals now worry about federal power" (*1*), the federal government acted because no one else would. Of course it is distasteful to those who value academic freedom to feel that they are subject to "disciplinary action" by the federal government because of their views on such controversial subjects as the antiballistic missile and ROTC programs, but to date no one except the federal government has attempted to solve the problems of unfair treatment of women academics or the lack of adequate medical personnel in remote areas of the country. The government's methods of solving these problems may be open to question, but until alternative solutions are forthcoming from the academic community itself, the coercive power of the federal purse seems to be a successful way of righting the wrongs of the past. Perhaps the questions we should be asking are not Is your objective worthy? or Are the means you would use consistent with the values of the Constitution? but rather, What are the alternative solutions to these problems? and How can we remedy them without government intervention? It is the presidents of our universities who should be finding solutions to the problems of academia and not Washington. There is no doubt that the coercive power of the federal purse should be made subject to a rule of law, both in terms of limits on authority and redress against its abuse, but that too will require some action, if not by the legal profession, probably by the federal government.

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1. A. Lewis, *New York Times*, 13 April 1975, sect. 4, p. 18.

Brewster states that "use of the leverage of the government dollar to accomplish objectives which have nothing to do with the purposes for which the dollar is given has become dangerously fashionable." He does not discuss the other side of the issue, namely, the use of government dollars *by the recipient* for purposes which have little or no relationship to the purposes for which the dollars were awarded. This, I suspect, is an equally important part of the problem. Congress and the President are elected by the people and they have an obligation to enact legislation to cope with problems and in general meet the needs of the populace.

An example cited by Brewster is that of the general lack of quality health care at a cost people can afford. Congress attempted to cope with this problem by legislation such as the so-called capitation grants to medical schools. However, there is still a shortage of primary care physicians, an uneven distribution of health care throughout the country, and medical costs continue to soar. Clearly, the legislation and appropriations have not achieved the goals intended by Congress. A lack of leadership from the American Medical Association and the nation's medical schools has significantly contributed to the development and continuation of these problems. The "coercive power of the federal purse" therefore appears to be (at least in part) a reaction to the failure of leadership in health education and the medical profession. The proposed health manpower legislation would provide funding only to those medical schools which increase the number of general practitioners and which place their graduates in areas of greatest need; these are, in fact, the unrealized goals of the earlier legislation.

Affirmative action is another example used by Brewster. There is a good deal of evidence that higher education has not provided leadership and has opposed changes required for affirmative action. It is very disappointing that the institutions with the greatest commitment to maximum development of the human potential should oppose affirmative action. The federal coercion in this area, including any shortcomings in the affirmative action programs, can be directly traced to the weak responses from educational institutions.

Federal legislation and funding is always directed toward some goal(s). From this point of view it is supposed to be coercive. If we don't agree with the goals, we shouldn't take the money. Because of the democratic process, I believe the goals are generally good and we can be supportive of them. The higher education community has become another pressure group seeking funding for its own interests. I suggest that we need to exercise broader and stronger leadership. Make more use of our academic freedom, so hard-won and treasured. Look to long-range national interests and the public good. Decline federal funds awarded or administered in ways which conflict with our values. Cooperate with legislators and federal administrators in the design and administration of pro-

grams to meet the needs of the people. Brewster has focused attention on an important problem. The answers, I believe, will be found in examining our values, rising above selfish interests, and bringing our actions (policies, practices) into agreement with our beliefs. It won't solve the problem to blame it on the Feds.

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Uranium Enrichment

I read with great interest the articles by Robert Gillette on the coming of age of the German "separation nozzle" process (News and Comment, 30 May, p. 911) and the related South African "helikon" technique (News and Comment, 13 June, p. 1090) for the enrichment of uranium-235. Gillette states that the man credited with inventing the nozzle process is E.-W. Becker of the Karlsruhe Nuclear Research Center. The possibility of separating gas mixtures in high-velocity jets appears to have been suggested first by Dirac during World War II, and demonstrated experimentally by P. A. I. Tahourdin (*1*) at Oxford University. Dirac suggested that the separative action of a gas centrifuge could be reproduced without any moving parts in a high-velocity jet having curved lines of flow. The centrifugal field established across such a jet would then affect the distribution of atoms and molecules differing in mass in a manner similar to that achieved in a gas centrifuge. Tahourdin, using mixtures of carbon dioxide with either hydrogen or nitrogen, confirmed that this method was able to produce separations of considerable magnitude under certain conditions. Light and heavy fractions of these mixtures were extracted through appropriate slits. A curved-path slit system investigated by Tahourdin bears a close resemblance to that employed in a separation element in the Becker nozzle process, as depicted in one of Gillette's articles (30 May, p. 912). This does not detract in any way from the achievements of E.-W. Becker and his associates at Marburg and Karlsruhe, who have studied the nozzle technique in depth and have moved it from the laboratory to the pilot plant.

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Reference

1. P. A. I. Tahourdin, "Final report on the jet separation method" (Oxford Report No. 36, Br. 694, Clarendon Laboratory, Oxford, England, 1946).