Letters

Grant Administration

William A. Calder (Letters, 14 Dec. 1973, p. 1085) implies that the indirect cost allowance taken by institutions administering government grants is to cover the expense of "the paperwork." However, it also covers the use of space and facilities of the institution not specifically provided for in the grant. This may include equipment ranging from high-energy accelerators, amino acid analyzers, electron microscopes, and ultracentrifuges to Xerox machines and pencil sharpeners. It also includes services, such as vacuum lines, gas, electricity, distilled water, and so forth. Even if Calder is engaged in research that does not require the physical facilities of a laboratory, he must require the usé of a research library, telephone equipment, and an office that is heated, lighted, and provided with janitorial services.

The burden of the institution for off-campus research is reduced, and the indirect cost rate is lower; but even for those projects, in addition to the paperwork, a good deal of administrative staff time usually goes into the discussion and preparation of the grant proposal. At my institution, many hours of my time and often the time of the president and the deans go into discussion, preparation, and negotiation with the granting agency before a grant is received. None of that cost is covered by the grant; such administrative functions are normally expected of the institution, and the indirect cost allowance is a mechanism for recovering at least a portion of this. The amounts recovered through the indirect cost allowance are often less than the cost to the institution for the service provided. If there are cases where the allowance amounts to more than the services provided, such excess recovery serves only to redress some of the losses in other cases. Institutions where grant research is carried on are much more likely to come out with less than full cost recovery, rather than more.

The implication in Calder's letter that the universities are ripping off the granting agencies is unfair and could be damaging to institutions where a heavy burden of sponsored research is being administered with diligence, competence, and honorable intent.

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Concerning Calder's comments on the administration of grant funds, my article "Government-university financial arrangements for research" (*1*), particularly in the section entitled "The problem of overhead," contains a fairly careful description of overhead, otherwise called indirect costs. The overhead associated with a research grant is not primarily, nor even predominantly, to cover the expense of "paperwork." Computation of overhead rates is a very complicated procedure. There are a whole host of expenditures involved, including those for operation and maintenance, departmental administration, and library and general administration, to name only a few. The differences in indirect cost rates among institutions result primarily from the fact that some institutions treat as indirect those costs which other institutions charge directly to the research grants; they are by no means an indication of relative efficiency.

For those who are interested in more information on this subject, the American Council on Education published in 1969 an excellent little brochure entitled "Direct and indirect costs of research at colleges and universities" (*2*).

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References

1. R. J. Woodrow, *Science* **176**, 885 (1972).
2. Commission on Federal Relations, *Direct and Indirect Costs of Research at Colleges and Universities* (American Council on Education, Washington, D.C., 1969).

Energy and the Environment

Luther Carter's report "Environment: A lesson for the people of plenty" (News and Comment, 28 Dec. 1973, p. 1323) illustrates an attitude toward the energy problem that should not go unchallenged. Carter writes that environmentalists are encouraged by the "wholesome changes in life-styles" that may result from persistent energy shortages. However, it does not appear that environmentalists are concerned about solving the energy problem.

In his energy message of 25 November, President Nixon said,

> As we look to the future, we can do so confident that the energy crisis will be resolved, not only for our time, but for all time. We will once again have those plentiful supplies of inexpensive energy which helped build the greatest industrial nation and one of the highest standards of living in the world. The capacity for self-sufficiency in energy is a great goal, and an essential goal. We are going to achieve it.

In contrast to this, Carter quotes John R. Quarles, deputy administrator of the Environmental Protection Agency, as saying:

> We can face up to the bitter tasks of reordering our national economy and imposing discipline over our patterns of personal consumption. Or we can maintain our pursuit of progress and, as in some wild form of pyramid game, continue with ever-more-frantic efforts to keep one jump ahead of the ultimate collapse.

Who is right, Nixon or Quarles? The pages of *Science* contain many articles proposing various means of solving the energy problem by getting a supply of energy sufficient to support several times our present rate of consumption for hundreds or thousands of years. The authors of these proposals differ about what is the best way, but agree that the problem can be solved. Most of them take it for granted that the problem should be solved.

My own taste differs from that of the environmentalists. I like cars, and I think the present comfort of American life is an advance from previous hardship. The advantages of this kind of life are wanted by even more people, and there are further advances to be made. Some of these will require additional use of energy. I think this energy can be obtained at an acceptable environmental cost.

It seems to me that the environmentalists have exaggerated environmental dangers and the difficulty of getting more energy, because they would like