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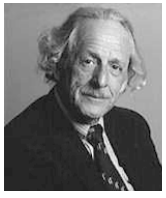

Shame on You, Mrs. Thatcher "Level Funding" for British Science Is Underfunding

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The Conservative government of British Prime Minister Margaret Thatcher claims it provides "level funding" in its current support of scientific research. But, with sharply rising cost, level funding really amounts to underfunding, which can only hasten the decline of British science. Although that decline began at least a few years before Mrs. Thatcher assumed leadership in 1979, her government has done nothing of substance to reverse the trend. I say, shame on you, Mrs. Thatcher. Your budget policy is shortsighted. It can only lower the cultural and economic standard of living of your nation. And what an ungrateful response it is both to Britain's noble record of achievement in science and to its current legions of world-class researchers.

Is it any wonder that years of undernourishment have stunted the growth and reduced the role of British science? A study commissioned by the Advisory Board for the Research Councils (ABRC), released last October, painstakingly evaluated U.K. performance, measured in terms of papers published and citations received, against those of France, West Germany, Japan and the United States. The results were sobering, to say the least. From 1973 to 1982, the United Kingdom slipped in its share of papers, from 9.2 to 8.3 percent. Its share of citations declined from 10.9 percent in 1976 to 8.9 in 1982. On a citations-per-paper basis, the drop for the United Kingdom was even greater, which hints at an erosion in the world's appreciation for science with an English accent. The other side of the coin is Japan, whose share in papers and citations increased dramatically over these periods. (See D.C. Smith, P.M.D. Collins, D.M. Hicks & S. Wyatt, "National Performance in Basic Research," *Nature*, October 23, 1986, pp. 681-4.)

Complementing this study of U.K. science output is a second commissioned by the ABRC, focusing on government expenditures or inputs for British science, which was also released last October. The authors concluded, "from the point of view of the United Kingdom, it is clear that overall government funding of academic and related research is falling increasingly behind that of our nearest European competitors. . . . Furthermore, the gap is especially large in certain fields with considerable technological potential such as physics, computer sciences and biology." (J. Irvine & B.R. Martin, "Is Britain Spending Enough on Science?" *Nature*, October 16, 1986, p. 594.)

Inadequate funding coupled with intolerably inadequate salaries (typically one-half to one-third of those offered in the United States) fuels the infamous brain drain. British researchers are settling permanently in the United States at the rate of about 1,000 per year, according to the National Science Foundation. These are not only young people; many are well established researchers who represent the elite of British science. Sir George Porter, president of the Royal Society, recently voiced his concern over this situation, observing "as many as a quarter of new Fellows elected to the Royal Society this year live overseas, more than half of these in the United States." (*The Scientist*, January 12, 1986, p. 17.) About one in 12 Fellows of the Royal Society now live and work in the United States, but only two members of the U.S. National Academy of Sciences have gone to the United Kingdom. The export of its best minds is clearly one Britain does not need.

Many of those who have left complain not only about low salaries and limited funds for university science, but also about the surprising failure of a government wholly committed to free enterprise and the market economy to create an environment within which industrial companies feel able to take risks. It is ironic indeed that the Thatcher government speaks of economic revitalization but hardly encourages scientist-entrepreneurs. At the root of all these problems is the absence of a national science policy, which Britain needs to ensure a prosperous future.

Unfortunately, industry also appears generally unwilling to take the lead. British companies are not spending nearly enough on R&D, although such investment is vital to their ability to compete over the long term. And their reluctance to disclose the amount that they do spend betrays its insufficiency.

With this as backdrop, it is heartening to note the support for research coming from British charitable associations. Each year since 1979, the Association of Medical Research Charities has increased its contributions, often substantially. In doing so, the voluntary sector has taken up some of the slack left by government. But the charities cannot be expected to continue in this role. They simply do not have the resources of the government.

The charities' example, nevertheless, prompts me to suggest that international and even U.S. agencies should consider increased funding for U.K. research during this difficult time. UNESCO and the World Health Organization have specific agendas targeted to the developing countries, and the U.S. Agency for International Development, the National Science Foundation, and the National Institutes of Health are restricted by their charters in the funding of non-U.S. science research; but I have no doubt that joint programs could be fashioned that would benefit the world science community and help maintain British science as well.

A more radical proposal would be to change the charters of these agencies to permit researchers abroad equal footing with scientists working in this country in applying for grants. The international science community has a real stake in the British problem, which from certain perspectives looks almost like an anti-science movement. I strongly subscribe to the view that community interest is self-interest. If the science enterprise is explicitly devalued in one country, it is implicitly devalued in others.

But increased support from British charities, international organizations, and, if possible, U.S. agencies is only a stopgap measure. Ultimately, the British government must address its own problems, which in part, it seems to me, would demand a reexamination of the proportion of resources allocated to civilian and to military R&D. As I write this, the recently published report of the House of Lords, *Civil Research and Development*, is being debated in the British Upper Chamber. Let us hope that the government, prompted by these deliberations, will recognize that strong support for scientific research is vital to the future of the nation. Britain knows past golden ages in science; it can know yet more. ■