Britain Studies Withdrawal from CERN

The timing was ironic. On Monday, 9 April, as Britain was hosting a ceremony to mark one of Europe's most successful collaborative projects in technological research—the opening in Oxfordshire of the Joint European Torus, a test facility for nuclear fusion—the correspondence column of the *Times* was filled with heated debate over Britain's possible withdrawal from what is often quoted as a model for international cooperation in science, the European Laboratory for Particle Physics (CERN) in Geneva.

The correspondence follows the announcement to the House of Commons by the Minister of Education and Science, Keith Joseph, that he has set up a committee to review Britain's current membership of CERN. The committee will be chaired by Sir John Kendrew, the first director of the European Molecular Biology Laboratory. It has been partly prompted by the growing burden that international subscriptions have placed on Britain's total science budget. This burden has increased as the value of the pound has declined against the Swiss franc, in which CERN contributions are calculated. Last year, for example, the Treasury agreed as an emergency measure to provide the Science and Engineering Research Council (SERC) with an extra $30 million over the next 3 years to cover the increased costs of its CERN subscription, which comes from the same budget as funding for domestic research programs.

But the CERN inquiry has a deeper significance, for it also follows a suggestion from the Advisory Board for the Research Council (ABRC)—the body which advises the government on how the science budget should be divided—that the funding problems facing British science are now so dire that serious consideration should be given to withdrawing completely from one field of basic science; high energy physics is the principal candidate.

The ABRC's recommendation is contained in comments made to Joseph at the end of last year and published in London last month, following the government's rejection of earlier pleas for increased funding for basic science. The board had proposed that the government should allocate an extra $142 million to the nation's five research councils over the next 3 years (on top of the $2.48 billion currently scheduled) to support research in fields ranging from satellite technology to the applications of biotechnology in agriculture.

The board supports its case by pointing out that, under present government policy, Britain's spending on basic research is being held constant in real terms at a time when that of virtually all its main competitors is being increased. However, it concludes its recommendation by stating that "The problems which now face the research council are so grave that it would be wrong of us not to consider the possibility of creating greater scope for responding to the many challenges of science by withdrawing completely from a major area of scientific activity."

At present, high energy physics (including the $51-million CERN subscription) costs Britain $75 million a year—20 percent of the total budget of the SERC and a significantly higher proportion of its spending on basic science. The ABRC affirms its belief in the importance of particle physics, pointing, for example, to CERN's recent successes in discovering the W and Z vector bosons. But it adds that, while it would be "rash" to state that no application would be found in the future, "we recognize that little application can be seen for the work at present . . . while the resources devoted to this field are high in relation to the size of the scientific communities served."

Not surprisingly, the decision to examine the consequences of forgoing significant future involvement in particle physics has provoked strong objections from the physics community. Irwin Gabathuler, for example, of the physics department of Liverpool University, pointed out in a letter to the *Times* that it is only a few years since Britain decided to close its own accelerator facilities in order to concentrate its activities on CERN.

Others have suggested that for political reasons it would be virtually impossible for Britain to withdraw from CERN before 1987 or the completion of the 51-Gev electron/positron collider currently under construction; such a decision would not therefore have any immediate effect on the science budget. "Furthermore, it might not really solve anything for other scientists in the long run, since it could merely take any pressure off demand for an overall increase in the vote for several years," says Tom Kibble, professor of physics at Imperial College in London.

Some argue that the threat of withdrawal from the organization might be used as a lever to encourage an expansion of CERN's membership, perhaps to include both Japan and the United States. At the same time, however, there seems a general feeling in Britain that, given the overall budget prospects for science, withdrawal from CERN in particular, and particle physics in general, is not as unimaginable as it might have been a few years ago. "It is wrong to see particle physics as having been singled out *because* of the costs of international cooperation," says Peter Warren, deputy executive secretary of Britain's Royal Society. "It is only one of many areas of basic science under considerable pressure; and people are only just beginning to wake up to the fact that, at the end of the day, you are faced with having to make this type of choice," he says. Warren adds that the ABRC has also identified satellite-based astronomy for potential major cuts.

Others emphasize that there are many strong demands for the money that would be freed up by eliminating support for particle physics. "In a sense the rest of the scientific community is being offered a bribe, since it would stand to gain substantially from a decision to withdraw," says Warren. Several physicists have privately expressed concern that none of their experimentalist colleagues are members of Kendrew's review committee.

Minister Joseph has not made any public statements so far on the government's thinking. However, he is said to have told the committee that its conclusion will be taken more seriously than those of some advisory committees in the past—which could be taken to mean that, if the committee does endorse a withdrawal in some form, the government is not likely to back away from the awkward diplomatic problems that this would inevitably raise.

—DAVID DICKSON