scientist of Sir Douglas Black, professor of medicine at Manchester and chairman of MRC's clinical research panel. And the government has guaranteed that transfers of applied research funds will not be made from any of the councils until chief scientists' organizations are adequate to handle them. But there is no doubt that the government intends to keep the pressure on for the departments to assure steadily greater influence over applied research activities and also that practical results are expected.

The MRC and other research councils will retain their "independence" and are free, in fact they are encouraged, to obtain research support through other customers. As one research council official put it, "We expect the government to be tough on DES [basic research] grants and relaxed on the customer side."

As in the United States, funds for university research have plateaued after a decade of steady increases. As Sir Brian Flowers, chairman of the Science Research Council, acknowledges, this pattern, combined with the new policies, will probably mean that more university researchers will be applying to the SRC for support and that a tighter squeeze appears inevitable.

Another effect of the reorganization is to give de facto recognition of the limits on the role of scientists in the making of science policy. Decisions on certain sectors of the science budget, particularly those affecting basic research and manpower training, are still mainly in the hands of scientists and their allies. But that sector of the budget is hardly growing and, in fact, is being eroded by inflation. In other sectors involving major commitments in such fields as weapons, nuclear energy, and civil aviation, political and economic considerations often prevail over purely technical judgments. (A similar generalization would apply in the United States.) In Britain, the recent reorganization amounts to a strengthening of departmental powers and a further decentralization of decision-making in science.

Decentralization is certainly not without its critics in Britain. The House of Commons Select Committee on Science and Technology has borne down hard on the government's lack of a central capability for science advice. (Partisans argue that the need for centralization has increased with Britain's entry into the European Community and the start of talks on a common science policy for the community.) This was a main theme of a debate in the Commons in January. The point was succinctly made by Arthur Palmer, a Labour M.P. who was chairman of the select committee under the Labour government, in remarks from which the following is excerpted:

> My first contention in an attempt to influence the Government a little towards diluting neat Rothschild is that basically the Select Committee is right in asking for a national research and development programme with ultimate centralised responsibility. I am sure that we are right about that. I am sure, too, that the Select Committee is right in saying that research councils, and not Government Departments, are the best agencies for research and development in the various broad fields that we recognise. I am not sure that it is absolutely essential—and here I am a little more moderate than some of my colleagues—to have a Minister for Research and Development—although I believe that there is an arguable case for one—but it is essential that there should be ultimate centralised responsibility.
>
> My second contention is that the Government are wrong in proposing to cram down the narrow administrative channels of individual Government Departments research and development decisions which must be taken either centrally or by those most closely in touch with opinion, advances and knowledge outside. Key decisions of scientific importance cannot always be crammed into the narrow departmental channel. If we are not careful, if that kind of method is followed too slavishly, we shall soon find ourselves back into the 1960 situation. That is more or less where we came in on this business, when all the emphasis was on means and not much emphasis was given to ends.

The idea of a minister for science and technology seems to appeal to legislators. Creation of a cabinet-level office to deal with science and technology has had strong proponents in Congress in the United States. The idea may well appeal because even legislators have difficulty in discerning how major science policy decisions are made. Britain does have a science adviser at cabinet level in the Chief Scientific Advisor to the Government. The post was first occupied by Sir Solly Zuckerman, now Lord Zuckerman; the present incumbent is Sir Alan Cottrell. The limited staff assigned, however, makes it impossible for the adviser to deal with the whole sweep of science problems. Then there is Lord Rothschild's think tank—Rothschild reportedly played a key role in the British decision to carry on with Concorde—but that too has limited manpower and must also deal with economic and social problems. Big decisions involving science in Britain seem to be made like other big decisions in Britain. That is, by the cabinet and Prime Minister through a rather ad hoc process. Individual ministers figure in this, and a strong part is apparently played by shifting committees of permanent secretaries, the top level civil servants, who, it is said, often prevail through personal influence and the persuasiveness of their position papers.

While circumstances differ in Britain and the United States, the recent reorganizations in science policy represent attempts to deal with similar problems. Neither country has found a surefire way to increase the yield from R & D. And on major decisions on technological projects, politicians still tend to be deficient in science and scientists poor at politics. After more than a decade of trying to achieve the delicate balance desirable through centralizing their science policy efforts, both countries seem to be moving the other way.

—JOHN WALSH

RECENT DEATHS

Mark M. Atkinson, 52; chairman, education department, Shaw University; 2 January.

Harold H. Boyers, 60; former professor of operative dentistry and dental anatomy, West Virginia University; 7 January.

Kalman J. DeJuhasz, 79; retired professor of engineering research, Pennsylvania State University; 2 January.

Nelson H. Eisenhardt, 48; research chemical engineer, Eastern Regional Research Laboratory, U.S. Department of Agriculture; 1 January.

Bennington P. Gill, 74; professor emeritus of mathematics, City College, City University of New York; 17 January.

Roy F. Nichols, 76; retired dean, Graduate School of Arts and Sciences, University of Pennsylvania; 11 January.

Siegfried H. Nothman, 53; professor of psychology, American University; 30 December.

John W. Nuttycombe, 72; professor emeritus of zoology, University of Georgia; 6 December.

Harry S. Vandiver, 90; emeritus professor of mathematics. University of Texas, Austin; 4 January.