

## EUROPEAN TECHNOLOGY

**Hanging Together or Separately**

A FULL-SCALE systems analysis for Europe was called for by Dr J. Defay of the Belgian Office for Science Policy Programming when he gave the opening address to a two-day conference on European Technological Collaboration in London last week. Piecemeal approaches to European collaboration had failed, he said, and the time had come to accept that Europe could only progress by creating a single customs union, single institutions for the technologies like aircraft, nuclear power and computers and, finally, a monetary union. Surprising as it is, he said, the successes of American technology were a direct result of central planning, with public debate almost totally bypassed. But there are still ten to fifteen years in which to set up an independent Europe that will not be merely a second-hand export market for American solutions, American hardware and American vocabulary.

Dr J. B. Adams, director of the CERN 300 GeV proton accelerator project, took the opportunity to chide the British Government for its decision to keep Britain out of the new accelerator project. "If we don't build this machine now," he said, "we shall be virtually opting out of this most basic field of research in which we have made so much progress in the sixties. What we shall lose will not be the research results—these will be published in the United States and the Soviet Union—it will be the adverse affect on teaching and education that will be most serious." He added that the spirit of collaboration in CERN has already been shaken by the British decision. The real nub of the problem was whether each government would select projects solely according to its own interests.

Professor B. Flowers, chairman of the Science Research Council, pointed out that it was still not too late to go ahead with the project, which now hangs delicately poised for a decision by the CERN council at the end of this year. Professor Flowers conceded, however, that some of the advocates of the 300 GeV machine may have played their hands rather untidily early on. They now realized that the pyramid of high energy research could contain a smaller angle than had originally been suggested.

Dr Raymond Appleyard, executive secretary of the European Molecular Biology Organization, was keen that the plans for a large EMBO laboratory did not also fall on the scrap heap. It was important, he said, that the training and group advantages of a large European laboratory should not be sacrificed for the more politically inviting solution of several small laboratories situated in different countries. At present, many European laboratories had closer associations with American than with European laboratories, and he thought a large EMBO laboratory would act as a focus in Europe. He saw no point in trying to compete with the United States in the hardware field, but in software there was a great opportunity. Looking to the future, he thought that the present preoccupation with basic molecular biology would soon give way to more technologically oriented research. The study of the mammalian cell was the next step, he said, and from there research would gain an increasingly technological slant. He cited some likely fruits of present research as the production of highly specific drug types, control of malignant cells and a solution of the

competition between regeneration, transplant and substitution therapies.

## CANADIAN SCIENCE

**Towards a Science Policy**

SOMETHING of a hornet's nest has been stirred up by the Canadian Senate Committee on Science Policy which is nearing the end of a marathon investigation begun in March last year. Roughly equivalent, if there were such a thing, to a British Select Committee on Science and Technology appointed by the House of Lords, the Senate Committee is expected to report before the end of the year. By then it will have sifted through 9,000 pages of evidence and the chairman, Senator Maurice Lamontagne, believes that there has never before been such a detailed review of any country's science effort. Last week members of the committee and Senator Lamontagne were in London for the final phase of the investigation of how other countries manage their scientific and technological resources. During the previous three weeks, the committee had visited seven European countries, meeting representatives from ninety-five organizations.

Hearings in Canada ended in June, and the indications are that the committee has found the control of Canadian science to be in as many hands as it is elsewhere. The committee received fifty-five briefs from Canadian government agencies, and Senator Lamontagne said that this indicated how diffuse the Canadian science effort is. It is no secret that the senator would like to see a streamlining of management of Canadian science, and one idea which has been put forward is for a Ministry of Science in overall control. But Canadian industry is also likely to come in for a good deal of criticism in the forthcoming report as the weakest sector of the Canadian scientific community. In the effort to increase Canadian expenditure on research and development from its current level of about 1.5 per cent of the GNP up to a target 2 per cent by 1972, it is industrial research and development which is hoped to show the greatest expansion (see *Nature*, 233, 766; 1969). To this end, the federal government has initiated seven major projects as a means of increasing the amount of research and development, and much discussion has centred around what kind of incentives would best stimulate industry. One problem is that much of Canadian industry is financed from the United States, and the crucial research tends to be kept in American laboratories. And Canada also has a unique problem in the need to develop the natural resources of its northern regions. It will be interesting to see what recommendations Senator Lamontagne's committee has to make.

## ENGLISH CHANNEL

**End of Tunnel in Sight ?**

TUNNEL, bridge, or even dam? The debate continues over the best way of building a link across the English Channel, even though the Ministry of Transport says that any link consisting in whole or in part of a bridge has been ruled out. Later this year, the British and French Governments are expected to decide between the three international groups of companies competing