

SURVEY OF SCIENCE IN EUROPE**Uneasy Decade for Europe**

THE seventies are likely to create as many problems for European science as will disappear either of their own accord or by good design. So much is clear from the way in which the European Economic Community is serving as a focus for reorganization, both within the territories of its six founder members and beyond, where countries such as Britain are anticipating, not always with pleasure, the consequences of possible membership. By themselves, these developments are enough to keep science and technology in turmoil for many years to come. The development of the EEC into a scientific and technical community as well is only a catalyst, not a prime mover. Moreover, many of the changes already under way extend well beyond the geographical boundaries of the EEC.

Many of the universities of Europe, for example, are badly organized for modern circumstances and many of them, often the same ones, are badly provided for. It is unthinkable that the grand objectives of a strong European scientific community, to be heard in every other speech at Brussels, can be realized if there is not a radical reform of the European universities intended to make learning more accessible and scholarship more capable of sustaining its own development.

There is also room in Europe for constructive work on the definition and development of common research programmes. As things are, the grant giving bodies which sponsor research in European countries tend to stop short at the frontiers. Only a few charitable foundations, the Volkswagen Foundation chief among them, have been able to operate on a multinational basis (and EMBO has been one of the principal beneficiaries). It is true that the scientific academies in Europe have been able to do useful good works by sponsoring the exchange of people between European countries (and the Royal Society is to be congratulated for its zeal in fostering these activities), yet these exchanges still take place underneath the umbrella of complicated bilateral agreements. Is there not now a case for some common pool, to which all European nations would contribute, for financing the movement of skilled research people from one place to another? And at some point in the seventies, it would obviously be sensible that there should be some freedom for grant giving bodies directly supported by governments to make grants outside the geographical areas in which their taxes are raised. The obvious way to start would be a European research council financed by non-earmarked donations from the member states, preferably through their own grant giving bodies. Is this not also a tangible objective for the seventies?

The development of common institutions is a more complicated problem. The success of CERN has in the past fifteen years blinded a great many would-be

Europeans to the inherent difficulties of making successes of cooperative ventures. ESRO may be a more typical example than CERN of the need to ensure that each participant in the common programme gets his fair share of the results. (It remains an unpleasant feature of ventures like these that member countries tend to feel cheated if they are awarded less in the form of contracts than their contribution.) The experience of the past few years suggests that such common ventures as may in future seem desirable should be founded only on intellectual bedrock. There may, for example, be a strong case for a sensibly run programme of observational astronomy in Europe. There may be a case for the cooperative use of a great many kinds of service laboratories—facilities for testing hydraulic models for ship designs, for example. Whether common use can be made of more elaborate research facilities such as wind tunnels or nuclear testing reactors remains to be seen, but on the whole the best prospects are at the humdrum end of the scale. In the nature of things, Brussels is not the place to which to look for an initiative. Moreover, there is no reason why organizations like these should not be independent of the EEC as such. If governments wish to do something useful for the development of European science and technology, this is the place to start.

Unfortunately the attempts which have so far been made to bring about collaboration between European nations in technology have been centred round problems which are inherently more difficult. For one thing, the fear of American dominance in European technology has led to a search for ways of building up from scratch domestic industries which may be strong enough to take the strain—computers, for example. This seems to be the objective of much of the planning of the Aigrain group reporting to the commission of the EEC in Brussels. A better solution for many of these problems, of course, would be to make it easier for European companies to capture a thoroughly European market untrammelled by the national preferences which still persist within the EEC. To pretend that spending money on development will make it possible to postpone unpalatable courses such as the purchase of German computers by French public authorities is almost the same as to pretend that it is possible to improve the climate by spending money on umbrellas. To be fair, the past few years have seen some welcome developments—European companies have been formed by the merging of national interests or have sometimes even been allowed to grow across frontiers. But there is a long way to go and it is insincere of governments inside and outside the EEC to ask for the credit of encouraging European technology while being unwilling to accept all the consequences of it.