

international news

OPENING this year's British Association conference at Stirling, the President, Sir John Kendrew, called for changing attitudes amongst scientists to counteract the growing indifference and even hostility towards science shown by the non-scientific public.

A note of gloom pervaded the first few minutes of the address, as Sir John outlined the problems facing the practice of science today. The relationship of science with society has become slightly defensive on the part of the scientists. Increasing financial restraint on scientific research and the downgrading of scientific adviser posts both in Britain and the United States have not helped matters.

The hostility towards science arose because people saw it as the handmaiden of economic growth, as the creator of pollution, as a support for the military and as a source of little understood dangers such as genetic engineering and computer data banks, or even as a negation of humanity itself.

But, said Sir John, changing to a more optimistic note, the scientists' feelings of pessimism and guilt are unjustified. Science has proved itself in the past and there will be an absolute need for science in the future. But hostile critics will only be converted by a change in scientists' attitudes. Scientists must focus on the challenges which will face us in the future and be less despondent about some of the immediate practical difficulties.

The main challenge was to decrease the widening gap between our standards of living and those of the poorer peoples. Whether we favour a "growth" or a "no-growth" society said Sir John, we could not be content that a no-growth society should involve most of the world's population living in undernourishment, squalor and disease.

The concept that the pursuit of knowledge as an absolute good in itself was the prime motive of scientific research needed to be re-examined, said Sir John. Although a good motive, it had not been, nor ever could be the only one. After the War, in which many scientists had applied their skills, there had been a reaction towards pure research for its own sake, he said. But the world had changed since the 1950s and the challenges had changed, too. "In my view," said Sir John, "it is neither socially productive nor intel-

B.A.—first the bad news

lectually satisfying to refuse to modify the old attitudes or to respond to the new challenges." Much contemporary research might seem to future historians like the minute and pettifogging scholasticism of mediaeval times.

Even the increasingly tight research budgets might compel scientists to direct research into fields that may actually turn out to be more productive than those that could be afforded in times of plenty. Limited budgets could also be optimised through international cooperation, despite the pitfalls of bureaucracy, politics and commercial restraint.

Sir John went on to discuss specifically the problems arising from the genetic manipulation of bacteria, an example of a scientific advance which could hold dangers for the human race and which has recently been much debated in public.

In these experiments, pieces from animals or viruses can be linked with bacterial DNA in such a way that the complete DNA molecule can replicate inside a bacterium. It was feared that the deliberate or accidental introduction of cancer-causing genes into bacteria for further study—an admirable end in itself—could lead to these genes becoming widely disseminated in the human and animal population, since the organism most widely used for this type of work was the common gut bacterium, *Escherichia coli*. But the incorporation of certain animal genes making useful products could be of great benefit. No-one yet knew or could foresee, all the possible dangers as these techniques were still relatively untried.

Sir John drew an analogy with the state of nuclear physics at the beginning of the last War, when it became clear that nuclear fission could make possible the development of new power sources but could also be used to construct an atomic bomb.

He approved the action of some American scientists and the British Medical Research Council in calling for a voluntary moratorium until the dangers of this work had been evaluated. A permanent international body made up of molecular biologists them-

selves, should recommend what types of experiments should or should not be carried out and under what conditions of security. Also a fact-finding programme of research in this area should be conducted under conditions of high security and the results published fully in the open scientific literature.

This was a case, he said, where scientists must be seen to put their own house in order, or else others would step in and do it for them perhaps in ways which would lead to quite undesirable restrictions on what they do.

Even when decisions passed to the social or political forum, it was absolutely necessary that there should be effective communication of scientific knowledge upon which decisions could be based. Communication of science to the general public seemed to be failing at present and scientists should take trouble to translate their ideas and discoveries into language which anyone could understand. □

Science is fun

ON Saturday, August 31, Westfield College of the University of London held a carnival of science which it dubbed 'WES-POP'. The idea for this feast of fun grew out of a similar but larger event held at Aix-en-Provence last year. That event—AIX-POP—was arranged to coincide with a gathering of scientists from many nations for a conference on elementary particles. In spite of some initial scepticism among the physicists cajoled into cooperating, AIX-POP proved a roaring success, in that hundreds of ordinary citizens were brought into contact with the scientists in small groups, where the scientists were forced to communicate intelligibly at a personal level.

Professor Elliot Leader, of Westfield College, was one of the participants in the Aix event, and was sufficiently enthusiastic about the idea to organise something along the same lines in north-west London. The event was widely publicised locally by means of posters in fairground style offering such treats as "See your friends bombarded by cosmic rays!" and "Watch the amazing lasers in action". And further publicity was lavishly provided by the local newspaper, which allowed Professor Leader space for three feature articles about physics and the festival—that in itself is remarkable enough for any British newspaper. □