

vessels, on advanced designs and on the newer materials for construction. The most fertile export markets are now able to produce mild steel vessels for themselves.

The committee gave special emphasis to pressure vessels made from steel plate by welding, chiefly because of their importance in the chemical, oil and other power producing industries. Its forecasts of future developments are by no means as confident as its analysis of the present situation. The total value of shop-built pressure vessels in the United Kingdom was as great as £58 million in 1966, however, while the total expenditure on plant, hardware and equipment for the industry in 1966 was £500 million. By this test, the pressure vessel industry represents an important fraction.

CRITICAL DATA

Storage by Computer

THE Queen's University, Belfast, has been awarded a grant of £11,700 by the Office of Scientific and Technical Information to carry out research into the establishment of a data bank for atomic and molecular physics. The research will be focused on finding and developing the most efficient methods of storing the mountains of data being thrown up by experiments in atomic and molecular physics. The problems of on-line retrieval and of communicating with the computer through the regular telephone network will be high on the list for study. The project is also intended to include the setting up of a file system which will rid experimenters of the perennial torment of what to do with data which are too bulky for publication but still of sufficient potential interest to warrant retention.

Dr F. J. Smith, who is in charge of the project, points out that research into this type of data storage is at present rather scarce, particularly in Europe, and he envisages a wide application for any viable technique which may emerge from his team's efforts. A typical service facility that could evolve from such a system might be a subroutine library from which any of the computer's subscribers could draw on the fund of previous experience.

There are, of course, problems in tapping data from a computer, as the National Bureau of Standards in Washington has found in its Standard Reference Data System (NSRDS). Is a computer program necessarily capable of defining what are "standard reference data" for the purpose of a given user? How is a critical evaluation of the data to be carried out?

The NBS admits that the green light which Congress gave to the NSRDS project last year by no means implies that these questions are solved, and it is likely that the research carried out by the Belfast team as well as by those in the US will take some years to bear any fruit. Atomic and molecular data are suitable for starting off such a system, however, as quantities like vibrational frequencies in molecules or NMR frequencies are very well defined and thus unlikely to lead to misunderstandings.

RADIOCHEMICALS

More, Hotter and Better

THE Radiochemical Centre at Amersham boasts that the new catalogue which it has just published offers a

more comprehensive range of radioactive chemicals than any of its competitors. With a total of 1,300 items, the new catalogue lists 140 new products or services, mostly biochemical tools—labelled amino-acids, carbohydrates and nucleic acids. Some of the familiar tritiated and carbon-14 labelled compounds have improved specific activities, and in a few cases the specific activities approach the theoretical maximum. But there are also new items of interest to industrial and clinical laboratories—a newly developed curium-244 alpha particle and neutron source and a newly developed cobalt-60 source, for example. As if that were not enough, the centre points out that, because of increased competition and increased sales, most of the items listed cost no more than in 1967, when the last catalogue was published. In the past two years, the international prices for radiochemicals have apparently stabilized and, if anything, there has been a slight downward movement. Reflecting this, the Amersham catalogue has the occasional marked down item.

Currently, the centre exports about 60 per cent of its production, chiefly to the United States, Western Europe and Japan. Its share of the United States market, by far the largest in the world, is a closely guarded secret but is coyly described as useful. The centre is no doubt looking for an increase now that it has its own marketing link in the United States—the company called Amersham-Searle set up last July on a fifty-fifty basis with the Chicago drug company, G. D. Searle.

Amersham, with an annual turnover of £3 million, is the junior partner of the Atomic Energy Authority's trading group, dominated by the fuel reprocessing division at Risley. Nonetheless, it makes a profit which ultimately gets ploughed back into development of the centre. Amersham has come a long way since 1940 when, as Thorium Ltd, it was chiefly concerned with making luminescent radium paint for aircraft control panels. With business booming as never before, an American subsidiary, and with plenty of overseas competitors breathing down its neck, Amersham's future seems rosy.

POLLUTION

Compromise Smog

"Not worth the paper it is written on" and "A useful report, worth reading despite its naivety" were the conflicting comments of the directors of two British environmental pollution laboratories on the World Health Organization's technical report *Research into Environmental Pollution*. The report (WHO Technical Report 407), just published, is based on the work of five WHO scientific groups convened at Geneva between 1963 and 1965 and is obviously a compromise document. But its well-wishers say that it is the best that could be hoped for, considering the politicking that goes on when the WHO considers such emotionally laden topics as pollution.

By all accounts, each of the five scientific groups spent its week in Geneva sifting through several kilos of specialist papers, trying to hammer out a final statement which would offend no one. One of their difficulties was that pollution research is very much a matter of national sensitivity. The Americans, for example, tend to be preoccupied with photochemical smogs—the Los Angeles syndrome—whereas the Russians are wedded to studies of the effect of low concentrations

of pollutants on the Pavlovian behaviour of dogs. Since the working groups completed their separate reports, the WHO secretariat has spent three years watering them down still further to produce the final version, now published. It is small wonder that it falls between all stools. It turns out to be a trite comment on the problem of pollution, which is in any case chiefly a national and engineering rather than an international and biological problem. Most of it is concerned with the basic principles of evaluating pollution and there are three sections on air, soil and water pollution.

The trouble is that, after so much compromise, the report reads like a simple minded textbook.

If pollution of the air is to be avoided rather than abated, plans must be made so that power stations, industrial plants and domestic sources of pollution do not "overload" the air. In many parts of the world, careful surveys of concentrations of pollutants are made before places are developed for industrial use or as areas of high population density. This practice has much to commend it, and the development of many pollution problems is avoided by the recognition of the importance of air pollution in town planning.

This is almost a random example of what the report has to say about the use of measurements of pollution for planning and economic development. Most of it is written in the same strain.

The working groups and the WHO secretariat have certainly produced a document that offends no one, but that is chiefly because it says nothing new and makes no specific criticisms or suggestions. It can always be argued by enthusiasts that the final report is not what counts. The really significant work takes place in the working groups, where experts are forced to rub shoulders, thrash out their common problems and go home the better for the meeting. That is the familiar justification of many international meetings of this kind from which platitudinous communiqués emerge.

Parliament in Britain

from our Parliamentary Correspondent

Smelters

MR ROY MASON, Minister of Power, confirmed that the difficulties in the construction of Dungeness B power station will not affect the price to be paid for electricity for the aluminium smelter being built in Anglesey. The electricity price was negotiated on the basis of Dungeness B costs, which have now increased; but Mr Mason said that the chairman of the CEGB had assured him that this will not prejudice the contracts, which include allowances for contingencies. (Written answer, January 20.)

Tonga

THE Ministry of Overseas Development, Mr Reginald Prentice reported, is giving advice to Tonga about negotiations with petroleum companies. Several seepages of oil have been seen in Tonga since last September; but, Mr Prentice said, it was not yet clear whether the oil is present in commercial quantities. (Oral answer, January 21.)

Steel Industry

MR ROY MASON made some remarks about the contracts recently signed by the British Steel Corporation for the

supply of fuel oil up to 1972, to a value of £120 million. He would not ask the BSC to rescind the contracts; they did not represent a new departure for the steel industry, and coal was not a practical alternative. Suitable distribution facilities for natural gas did not exist; in any case, there was every prospect that all the natural gas available until 1972 would be absorbed into uses which would displace oil, and very often oil of higher value than that used by the steel industry. (Written answers, January 21.)

Technology

THE Prime Minister announced that the Government accepts the objectives of the report on technological innovation produced by the Central Advisory Council for Science and Technology. The specific measures the report recommends for innovation in small firms were being pursued, Mr Wilson said, through the Industrial Liaison Service and the pilot schemes to help small firms in Glasgow and Bristol. Substantial assistance was being given to the work of the British Productivity Council, the British Institute of Management and the Centre for Interfirm Comparison. Innovation was being supported through the use of Government purchasing power. In Government establishments, future contraction would depend on an assessment of the need to maintain adequate levels of work of good quality. (Written answers, January 21.)

Forestry

MR MARCUS KIMBALL had some strong words to say about the support of forestry research in Britain. There appears, he said, to be "absolutely no control at present over research projects". The Natural Environment Research Council was expanding its forestry institute, the Nature Conservancy was expanding its forestry research, and now the Forestry Commission was building a new research unit at Edinburgh. This was empire building of the worst sort, and a waste of taxpayers' money, he said. Mr John Mackie, for the Ministry of Agriculture, Fisheries and Food, promised to look into the situation. (Oral answer, January 22.)

Concorde

MR WEDGWOOD BENN said that the cost of developing the Concorde supersonic airliner had risen substantially, and could rise further. On November 29, 1962, the estimate for the British share of the development of Concorde had been between £75 and £85 million; but £155 million of British money had already been spent, at the prices prevailing when the original estimates were made. (Written answers, January 22.)

Supply of Drugs

MR DAVID ENNALS, Parliamentary Secretary at the Home Office, explained that there are no means by which the Government can prohibit the import of pharmaceutical products from abroad. He was dealing with a demand for information about the operations of the Inter-Continental Pharmaceuticals group of companies, of which Mr Eric Ogden wanted to know whether the Government had taken steps to see that the drugs imported were at once effective and safe, whether it could prevent doctors from buying drugs at low prices and selling them to hospitals at a profit, and whether he would prohibit some of the company's activities. Mr Ennals explained that there seemed to be no evidence of some of the abuses complained of. (Question, January 28.)