



parameters to measure the output, efficiency and innovative capacity of the pharmaceutical industry; these problems are compounded by the differing national laws regulating patenting, testing and authorization of new drugs and the international character of many of the leading drug companies. Nevertheless it concludes that there is a gap between the American companies and most European companies, at least as far as the discovery and development of new drugs are concerned. The graph shows the dominant position in the European market which the US industry has won for itself, in many cases in the face of protectionist measures. In all the European countries covered by the report, the United States was the chief supplier of important new drugs, with Switzerland next. Out of the 138 new drugs marketed since 1950, 67 originated in the United States, 20 in Switzerland and 15 in Germany.

The US companies employ fewer research workers than all the European companies put together, but US expenditure is, of course, substantially higher than all the other OECD countries except Switzerland. In 1965 the United States spent \$365 million, or \$1.87 per head, on pharmaceutical research, for example, while Britain spent \$32.5 million, or \$0.59 per head. Switzerland, however, spent about \$20 million at home and reputedly twice that sum abroad (the report classifies expenditure by location, not by ownership of individual companies), which indicates a real expenditure in 1967 of about \$5 per capita.

If the gaps between the United States and Swiss industries and the rest are not to widen, the European nations will have to go much further towards harmonizing their drug laws. According to the report, until this is done the European market will remain a series of small idiosyncratic markets instead of becoming a single home market comparable in size and importance with that enjoyed by the American companies. Differences in registration of drugs for marketing, labelling, publicity laws, failure to recognize foreign professional qualifications and different methods of paying for drugs in the various European social security systems are all crippling handicaps for the European industry. Moreover, they encourage European companies to remain inside national boundaries and thus never reach the critical size at which research and development begins to pay off. No less than 4,000 companies are at present competing for the \$10 million drug market of the

OECD area, but of these only 100 do substantial business and have substantial production in several countries, and only 20, mostly American and Swiss, can be regarded as truly supranational. Unless the European companies merge, most of the 4,000 are doomed.

## SHIPPING

### Time for Assessment

CONTAINER ships and the expanding Liberian flag-of-convenience merchant fleet as well as recording losses at sea, which in 1967 accounted for 0.46 per cent of the world merchant fleet and in 1968 even more, continue to preoccupy the shipping world, according to a recent OECD report, *Maritime Transport* (OECD, Paris, 22s 6d). The Liberian fleet expanded at a faster rate in 1967-68 than in the previous year, increasing its lead as the world's largest merchant fleet with 25.72 million gross registered tonnage. Liberia's two distant flag-of-convenience competitors, Panama and Lebanon, fell further behind, and all the other countries offering flag-of-convenience facilities failed to get a look in. Maritime nations have, of course, learnt to live with flags of convenience and the seemingly inexorable increases in the proportion of world shipping lost in spite of improved navigational aids, but the container ship is only now making its presence felt.

During 1968, the number of full container services on the North Atlantic route doubled from four to eight, and four more operators announced that they will be competing by the early seventies. In the Far East, four new services between the US and Japan, four between Japan and Australia, three between Japan and Europe and three between Australia and Europe were either started or announced last year. By the end of 1969, the OECD estimates, the world container fleet will have increased by 40 per cent, chiefly through the introduction of new purpose built ships rather than as a result of conversion of conventional vessels, to a total capacity of 100,000 standard 20 foot container units. Container ships currently account for about 5-6 per cent of the total tonnage on shipbuilders' order books for delivery in 1969-70; this more or less equals the total tonnage of all other dry cargo vessels on order. But the order books also indicate that once this batch of container ships is in service, ship owners are going to need two or three years to assess future developments and world demand; only 1.2 and 1.7 per cent of tonnage on order for delivery in 1971-72 is container shipping. By the mid-seventies, however, the labour problems and difficulties over insurance and liabilities that have followed the introduction of containers should have been ironed out. Already, a new clause has been added to the Hague Protocol Rules defining the limit of liability of ship owners for container cargo.

## AIRPORTS

### Computerized Heathrow

THE Post Office National Data Processing Service (NDPS) is to place an order worth £3 million with International Computers, Ltd (ICL), to provide customs, airlines and agents at Heathrow Airport with the world's first computerized system to control imported cargo. The system, which will be ready by the middle of 1971, will be System 4-72, an enhanced