

NEWS AND VIEWS

More Brain Draining

THE immigration of trained scientists into the United States in the early sixties amounted to more than 5,000 people each year. According to statistics now published by the National Science Foundation (*Scientists and Engineers from Abroad*, NSF 67-3, 45 c.), a total of 16,000 natural scientists and engineers became permanent residents in the United States in the three years 1962-64. Although there is no way of knowing how many of these people have actually stayed in the United States, it seems as if immigration in the early sixties had recovered after the modest decline in immigration in 1958-60. Thus the scale of immigration into the United States has increased nearly three-fold in two decades. In the late forties, the annual immigration accounted for fewer than 2,000 scientists and engineers. The influx reached 3,000 people a year in the mid-fifties, and has by now nearly doubled. The National Science Foundation estimates that 63,500 scientists and engineers went to the United States as immigrants in the period 1949-64.

Although natural scientists have been a growing proportion of the total influx to the United States—30 per cent of the immigrants in 1964 compared with 22 per cent in 1957—engineers still account for nearly two-thirds of those who immigrate. The National Science Foundation has manfully tried to classify in detail the specialties of the immigrants, but this is necessarily a daunting enterprise. The only conspicuous feature of the statistics is that among the natural scientists, chemists account for nearly half of the 4,607 people who immigrated in 1963-64. In practice, it seems that scientists and engineers make up roughly 2 per cent of all immigrants to the United States, which suggests that technical people are not unexpectedly numerous among the annual entry to the United States—never less than 250,000. In 1962-64 the intake of scientists and engineers amounted to 3.1 per cent of the crop of American graduates in science and engineering, but engineers were once again a conspicuous part of the import of talent. In the period 1962-64 engineer immigrants made up 10.3 per cent of the domestic crop of graduates in engineering.

The United Kingdom remains the most prolific source of immigrants, and in 1962-64, 3,300 of the immigrants (or roughly 20 per cent of the total) had been born in the United Kingdom. Canadian-born scientists come next in order on the list, with 1,800 people. It is clear from the information collected by the United States immigration authorities that Canada serves as a staging post for many scientists and engineers immigrating to the United States. Europe as a

whole provides more than half the immigrants, with Germany next in rank to the United Kingdom (1,100 emigrants to the United States in 1962-64) and Switzerland surprisingly high on the list with nearly 400 scientists and engineers.

The same collection of statistics shows that the flow of permanent immigrants to the United States is small compared with the exchange of people for educational purposes. In the academic years beginning in 1963 and 1964, the numbers of foreign academics at universities and colleges in the United States were roughly 7,000, one-half of them from Europe. Although engineers are a large proportion of the permanent migration, they accounted for less than 10 per cent of those on academic visits. Graduate students from abroad at American universities are a still larger throng. In the academic years beginning in 1963 and 1964, the numbers of foreign graduate students increased from 23,000 to 26,000. More than a third of these people are working for a PhD degree. A quarter of them were social scientists.

No Bombs for Pugwash

THE Continuing Committee of the Pugwash Organization came out firmly in favour of the non-proliferation treaty at a meeting held last week at Mariánské Lázně, Czechoslovakia. In a statement issued after the meeting, the committee said that the treaty is a "necessary prerequisite for any further progress towards disarmament", and says that a treaty would only be effective if it included means of international control. In the committee's view, control measures need not impede industrial development nor permit industrial espionage. The committee also argues that a military programme is only a "moderate advantage" in the development of civil nuclear power. If nuclear explosions ever show promise for peaceful purposes, the International Atomic Energy Agency should carry them out.

On the political objections to the proposed non-proliferation treaty, the Pugwash committee says that the present distinction between nuclear and non-nuclear powers is a "simple matter of fact" to which the alternative is "a large number of nuclear powers". The statement goes on to acknowledge that the signature of a treaty would require a system of international agreements to guarantee the security of the non-nuclear countries. The statement also says that the nuclear powers, and particularly the Soviet Union and the United States, should take steps to "assume specific and meaningful commitments to halt the arms race", and mentions an extension of the test-ban, a cut-off of the production of nuclear explosives and a freeze on nuclear delivery systems. The committee considers that there would be a better chance of a non-proliferation agreement if they would submit more of their power reactors to IAEA control.

European Communications Satellites

A PROGRAMME of co-operation between Germany and France on the development of communications satellites has now been agreed. An experimental satellite will be launched in 1970.

Design will draw on the French plans for SAROS (a