

OLD WORLD

FRANCE

Modest Ambitions

Paris, April

Now that the dust has settled on the programme for the VIth quinquennial research and development plan, it is clear from the forecast of the money to be spent between now and 1975 that moderation must be the order of the day. The planners may have come a long way since the first guidelines were laid down in 1968, but they seem to have finished the journey in reverse gear.

Two years ago, the Consultative Commission for the plan decided that by 1975, 3 per cent of French resources should be spent on research and development, a figure based on the economic concept of total *production intérieure brute*, a sum which is about 10 per cent less than the more familiar GNP. Towards the end of 1969, M Jacques Chaban-Delmas, the prime minister, accepted the 3 per cent objective, but by last autumn this had begun to hover between the 2.55 per cent and 2.70 per cent marks. At present, the figure is holding firm at 2.50 per cent, a goal identical with that projected under the Vth plan and which, ominously, was not attained. To reach the 2.50 per cent target, the growth rate of investment in research and development was estimated only a few months ago to be 13 per cent, with 11.70 per cent as a lower limit: now it seems that the figure will be a trifle under 11 per cent.

What will the modesty of these prospects mean for French science? Clearly, major programmes of research in science and technology are a thing of the past, and it seems likely that current large scale enterprises may be pared down. Nevertheless, 4,000 million francs (£299,500,000) have been earmarked over the next five years for electricity produced from nuclear energy, and the same amount for the space programme. Research activity destined for industrial application will be augmented by a minimum of 10,980 million francs, reaching as much as 11,230 million francs (£841,000,000) over the amount spent during the period 1966-70.

Whereas there had been some talk of increasing the total number of jobs in the scientific civil service, any growth will now be at a modest rate. "The large expansion foreseen in industrial research," on the other hand, "should mean considerably more openings" in private enterprise. A "sub-

stantial" effort will be made in the category called *l'aide au développement*, a strings-attached arrangement whereby state loans proffered for industrial development must be repaid if the project proves successful and profitable. This aid will amount to 2,000 million francs, or about 9 per cent of the gross French outlay of more than £1,600 million during the coming five years.

Grants for research and development which will be conducted strictly within the confines of private industry will total 3,300 million francs, about 15 per cent of the scheduled vote, and certain tax incentives will be offered to those forms clearly involved in research activities. Life sciences and the socio-economic sciences (city planning, housing and transport) should enjoy a considerable boom, however, for they have been awarded some 10 per cent of the research and development budget, a total of between 2,195 and 2,235 million francs (roughly £165,917,000). On the other hand, research devoted to conservation and improvement of the environment will amount to 600 million francs (more than £44,100,000).

The precise manner in which the financial cake will be cut up between the various sectors of pure and applied research remains to be decided, and, of course, the entire plan awaits the final approval of the Minister of Finance and Economic Affairs, M Valéry Giscard d'Estaing, and the French Parliament towards the end of the current parliamentary session.

UNIVERSITIES

Dainton Swing Slows

THE most recent volume of educational statistics published by the University Grants Committee does nothing to quiet the anxiety which has troubled the scientific community ever since the Dainton report of three years ago underlined the full extent of the swing away from science in the sixth forms. Comparative figures from the report (*Statistics of Education*, 1969, Vol. 6: Universities, HMSO, £2.70) indicate the inexorable progress of that trend. In 1965-66, 58.1 per cent of the student population of British universities were engaged in studies which the UGC describes as science based (meaning all those topics which cannot be included under the headings of education, social, administrative and business studies, or language, literature and arts other than languages). By 1969-70, this proportion had fallen to 54.7 per cent, and during this period the percentage of students studying pure science was within a few per cent of the number engaged in social, administrative and business studies.

Nevertheless, Mrs Margaret Thatcher, Secretary of State for Education and Science, was characteristically optimistic when she suggested recently that there were signs that the swing away from science in the schools had been slowed and perhaps even halted. Speaking on the first day of a conference to celebrate the centenary of the Mathematical Association, Mrs Thatcher observed that the numbers of students electing to study mathematics in the sixth form were increasing, not only in terms of actual figures, but as a percentage of the entire student population. This trend had, she felt, important implications both for the teaching and practice of mathematics in Britain and for the future of science as a whole.

Predictably enough, the number of students in full-time university education in Britain rose to a new record high in 1969-70, with a total of 219,506, compared with 211,485 the previous year. Of this number, 28.1 per cent were women, thus continuing the slow upward trend; in 1959-60 only 24 per cent of the student population were women. No strong upward trend could be seen in the number of teaching and research staff. The total was 26,067 in 1968-69, but rose to only 26,904 in 1969-70. Of this number, some 11 per cent were of professorial status, 19.5 per cent readers and senior lecturers and 65.4 per cent lecturers and assistant lecturers.

The total income for the universities in the year 1968-69 was £236,283,095, of which 71 per cent was accounted for by Exchequer grants, the bulk of the remainder coming from fees (7 per cent) and governmental payments for research (7 per cent). Some £8 million, or about 3 per cent of the total income, was derived from repayment of Selective Employment Tax.

FURTHER EDUCATION

Planning in Chaos

by our Education Correspondent

AN attempt to provide higher education on the cheap lies behind the abrupt dismissal last December of two part-time lecturers at the Bolton Institute of Technology and the reduction in the teaching hours of at least eight others. That is the opinion of a team of investigators from the Council for Academic Freedom and Democracy, which has recently published a report on the dismissals (*The Bolton Dismissals*, available from the National Council for Civil Liberties, 12p). But the root cause of the problem goes much deeper than the events themselves suggest—it is firmly embedded in the chaotic method of academic planning in the further education sector and the system by which many colleges are chasing