

## Bringing Back the Brains

WHEN the North American Joint Selection Board started recruiting in the United States and Canada ten years ago, it was well ahead of the fashion. Since then, the board has brought back more than 500 British scientists, the most effective effort to reverse the brain drain yet made, despite the arrival of other agencies in the field. The cost of the operation—about £500 per man recruited—is little more than it costs to recruit inside Britain.

The chairman of the board, Mr H. S. Hoff, is an unexpected man to find in charge. Some of the scientists he has recruited have been surprised to be interviewed by a novelist (better known as William Cooper); others have been irritated at being interviewed at all. The Ministry of Technology's efforts to publicize the brain drain have created the impression that British scientists abroad have only to ask in order to be welcomed back; in fact, the number of jobs available is always likely to limit the process.

The board is responsible for recruiting for the Scientific Civil Service, the Atomic Energy Authority and the Central Electricity Generating Board. This is done by a combination of advertisements (in such publications as *Nature*, the *Guardian Weekly* and the *Observer*) and letters from the chairman, followed up by a series of personal interviews. These are intensive and demanding, carried out by a board of four or five chaired by Mr Hoff, and scientists with several publications to their credit sometimes find them rather an affront to their dignity. But the board is looking for the sort of people who can generate ideas, who are more than mere technicians with a facility for doing experiments. The board recruits at the level of scientific officer, senior scientific officer and sometimes recommends appointments as research fellows. The board's reports, ruthlessly honest documents which assess candidates on an alpha, beta, gamma scale, are sent to possible research establishments with the other documentation—enquiry form, list of publications, and professional references. For a recommendation as scientific officer or senior scientific officer, the candidate must score beta plus; for a research fellowship, alpha.

Over the years, the board has gathered a certain amount of folklore around it. One of the rumours in North America is that the board turns down 90 per cent of those who apply—quite untrue, as last year 58 per cent were approved for the scientific officer or research fellowship classes. Something like one third of the total number recommended actually

accepted appointments in Britain. Although the numbers are small, they make up a major part of the annual recruitment in these classes for all three participants in the scheme. Unsuccessful candidates or those who are successful in the interviews but cannot be fitted into any of the establishments can, if they wish, have their application form (but not the confidential report) sent to Management Selection Ltd, which is employed by the Ministry of Technology to bring back scientists to Britain.

Such evidence as there is suggests that people recruited by the board tend to stay in Britain once they get back. A survey of research fellows appointed at Harwell showed that the turnover of those recruited in the United States was lower than those recruited locally. Mr Hoff is not surprised by this—people who go to the trouble of getting in touch with the board are probably serious in their intentions. Naturally, the odd one or two who do decide to go back to the US get very much more publicity than the hundreds who decide to stay.

The numbers wanting to come back have been growing during the past few years. In 1966, 188 presented themselves for interview; last year it was 215, this year 249. Mr Hoff is wary of generalizing from this; it might simply be a reflexion of the rate at which traffic in the other direction has been growing. Candidates themselves usually say that there is "no single reason" for their wanting to come back. "It's a lot of intangibles." In any case, as Mr Hoff points out, scientists trained to be analytical "are not given to analysing their own motives". But there is evidence that political developments in the United States have begun to worry some immigrant scientists. "They're dismayed by the general climate", Mr Hoff says. The Vietnam war and violence in the streets have now been added to the standard clichés about materialism, the absence of culture and the pressure to publish. Domestic reasons like aged parents or children's education still count for a lot, of course. Britain's economic problems do not seem to put people off.

The operation, of course, is on a very small scale compared with the problem. In 1966, when the Hoff mission brought back about 50 people, nearly 2,000 scientists emigrated (though the quality of the returning group was higher). The chances are that the work of the board could not easily be extended and its results made available to industry—this would mean, Mr Hoff believes, that the mission would lose "the personal touch" on which it prides itself.

## Slower Pace of Growth in France

from our Paris Correspondent

Paris, November

THE new Research Minister, M. Robert Galley, is to outline his policy and defend his budget before the House of Deputies on November 18. Nobody expects

fiery exchanges of oratory. Out of 500 deputies, only 15 or 20 at the most are usually present during this kind of debate. A few opposition members will each year offer some criticism, but their lack of knowledge

of the subject is usually such that the Government is never seriously embarrassed. Of course, a few members of parliament have tried, with greater or lesser conviction, to specialize in scientific policy. But the interest of the electorate in these matters remains, it seems, too unimportant to stimulate any real application on the part of the politicians. Moreover, there is no special commission in the House. (The Constitution restricts the number of commissions to six, so that scientific matters are the province of the "Commission for cultural, domestic and social affairs".)

Research and development in France does, however, deserve close scrutiny. M. Robert Galley has, admittedly, inherited some tricky problems. In nuclear energy, for example, the stubbornness of his predecessors, under the influence of powerful lobbies, has so far channelled French resources into a "national union" of graphite-plus-gas despite pressing economic pointers to the contrary. The new minister, who for some time belonged to the French Atomic Energy Commission and supervised the construction of the isotopic separation plant at Pierrelatte, says he has decided to adopt a more realistic attitude and to work out a radical change of policy which will involve building water moderated plants under American licence and studying heavy water plants on the Canadian pattern. Thus the plan for a European isotope separation factory will effectively be re-launched. The French Government, one suspects, has no intention of being at the whim of the United States for the provision of enriched uranium, and the Pierrelatte complex could not, even if enlarged, assure sufficient production.

Another project of considerable importance is the manufacture of colour television tubes. The delivery dates promised to the Russians when they decided to adopt the French SECAM process were, unwisely, a little optimistic, and for some time there had been expected a Russian delegation to Paris to demand explanations. When the emissaries came, however, the French were allowed a brief respite. The Russians received an assurance that the technical problems had been at last resolved and that manufacture would be put in hand. But it is said that things are not going as smoothly as they might and the Government is imposing stringent financial conditions on the operation. No doubt we shall be seeing other, less patient, Soviet delegations in Paris.

Apart from its technical quality, SECAM is commercially a disappointment. But is the Opposition sufficiently well informed on this complex matter to be able rigorously to criticize the Government's conduct over the past few years? Probably not. On the other hand, it is probable that the *Plan Calcul*, the execution of which M. Galley had supervised for two years until his appointment, will be the target for lively discussion. Since the opening of Parliament, many newspapers have severely criticized it. C21, the company formed specifically to be the driving force for the French computer industry, has not yet had time to prove itself and it would be unfair to judge it on its first meagre results. Even now, however, there is cause for alarm over the variety of machines the company is planning. These ambitious projects bear little relation to the resources available. Only cooperation on a European scale would have allowed the battle to be fought on more or less all fronts against the might of the American computer industry. Whatever happens, many equipment users (including public services) quite

openly prefer foreign products whose viability and delivery dates have already been tried and tested.

As for the "Software Plan" which, even if it is not officially stated, completes the *Plan Calcul*, there is here a thorny problem of monopoly. The beneficiaries will probably be SEMA (the Research and Applied Mathematics Company), a firm whose power and influence are worrying the champions of free competition as well as those who support nationalization of key sectors.

The plans of CNEOX (the National Centre for Exploitation of Oceans) have recently been published. M. Galley considers them particularly important and intends to provide this organization, which coordinates French oceanographical work, with some 100 million francs in five years. This will give considerable stimulus to a field of research which in the past has often been badly coordinated and inadequately supported financially. It is, however, military preoccupations which largely explain this unexpected generosity, and the support given to research workers will be unequally shared out according to whether or not their work is related to the French Navy's needs or according to certain economic requirements which, rightly or wrongly, have been adjudged to have priority (such as the use of protein derivatives for food-stuffs and the like). This policy of utilitarianism, while certainly based on solid arguments, sacrifices long-term progress for the short term and, moreover, looks like being applied in such a way as to provoke lively reactions in scientific circles. The minister hardly makes a secret of the fact that he has no particular fondness for fundamental research and he is determined to "get it into line". It is doubtless a good thing to instil a sense of practicality into certain French universities, but there is also a danger of throwing the baby away with the bath water.

A little diplomacy would be all the more desirable since, in many sections, the 1969 budget will be one of austerity, and those affected by it will by no means receive it with open arms. The steady rise of research development expenditure in recent years will clearly be slowed down. For example, the availability of new jobs will be cut by half (1,068 new posts as opposed to 2,061 in 1968). This cut-back is even greater for research posts in the strict sense of the word, of which there are 175 in 1969 against 773 in 1968. This touch on the economic brake is a consequence of the events in May, which would have been difficult to avoid. The general increases in wages and the priority given to expenditure in the teaching world involved some cuts from which even the armed services are not exempt. Thus it is more a matter of how reduced budgetary allowances are shared out than the fact that these reductions exist which is creating controversy among research workers. The latter are well placed to contend that they are not only championing their own narrow professional interests. Effectively it is French research and development policy itself which is under fire as a result of current events. One can already foresee that the level of return on investment of the Fifth Plan will, at the end of 1969, be 15 per cent below the forecast (calculated with the franc as constant). Now, the protagonists of research and development will not hesitate to point out, armed with statistics, that the plan did not aim to break any records but only to affirm the place of research and development in the eyes of France as a whole.