Bits and pieces of science policy

Robert Walgate

The European Scientific Community. By Ros Herman. Longman: 1986. Pp.201. £18.50. Longman appear not to know whether this book is available in the United States.

FROM 1550 to 1850, science was a European affair. Now, more or less, it is American. Why? Ros Herman, the senior writer on science policy for *New Scientist*, immediately places a simple, nagging question in the reader's mind with the first words of her book; but the question remains unanswered, though it hovers over every page.

Not that Ms Herman explicitly attempts to answer her question. Her book, as she writes later, aims to provide a backdrop, a catalogue and interpretation of the myriad national and international institutions which are involved in the government of European science. She looks at budgets, manpower, policy-making structures and policies throughout Europe, and sets them in a historical perspective. In the end, she succeeds in charting the maze of faint crossing and parallel tracks along which European science lost its pre-eminence.

Of course, European science is not dead; its decline is only relative, and there are isolated areas where Europe continues to lead (usually because of extraordinary drive on the part of an individual scientist). However, we need to explain why European papers now make up only a small part of the research published in leading journals. On p.13 of her book, Ms Herman quotes Vannevar Bush, speaking in the United States in 1945:

We can no longer count on a ravaged Europe as a source of fundamental knowledge. In the past we have devoted much of our best efforts to the application of such knowledge which has been discovered abroad. In the future we must pay increased attention to discovering this knowledge for ourselves.

Is the resolution implicit in this remark what led to American greatness in science, and relative European decline? (And, if so, what about the Japanese, who say much the same thing today?) It was not necessary for European science to decline *per se*: the great explosion of American science simply, bit by bit, began to shift the glory, the important discoveries, the prizes across the Atlantic.

There were — and are — special circumstances in the United States. By 1945 the American scientific community had been swelled by the wartime flood of European émigrés (not long ago, for example, it was possible to trace all the lead-

ing high-energy physics groups in the United States back to Fermi and his pupils). The open, meritocratic and competitive society encouraged science of the same character. With its own firm science base, leavened by the wisdom of the émigrés, with the determination of people like Mr Bush (and the money that followed) and with a mobile society of a couple of hundred million souls, America was set fair.

The European "answer", after a savage nationalistic war, was to set up multitudinous, national science planning and policy bodies, scattered over the continent (and Britain). Everyone knew that "science had won the war", that science was important. The trouble was that Europe was — and remains — in comparatively small pieces, with a British science policy, and a French science policy and so on down even to a Finnish science policy (in a country with half the population of Greater London, as Ms Herman points out). Europe still had (and has) the talent, but it lacked (and lacks) the structures through which to exploit that talent at anything like the same rate as America.

There have been exceptions. The European Organization for Nuclear Research (CERN), for example, and the European Space Agency (ESA), responsible for the recent Giotto-Halley encounter. CERN

began early in the 1950s as a theoretical group at the Niels Bohr Institute in Copenhagen. But even CERN took 30 years to win its first Nobel prizes, arguably because of a European disinclination to take risks. Moreover to take CERN as a model — for the European Molecular Biology Laboratory, for example — was a mistake, for high-energy physics is a very special case, in its need for enormous central machinery that simply had to be pooled to be built at all. ESA is a comparative upstart. Today it looks very healthy by comparison with the US National Aeronautics and Space Administration, but there have been many false dawns for European space industries since 1945.

It could just be that after 40 years European science is beginning to get moving. But while there is a new awareness of the need for a continental scale in science and technology, nothing will change very much until there is central European peer review and competition for funds, and total mobility of scientific labour. Until that happens, the United States and then, perhaps, Japan, will always have the edge over an old continent whose patchwork science policies Ms Herman has so ably documented. □

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Academic matters

Alec Merrison

Government and the Universities in Britain: Programme and Performance 1960–1980. By John Carswell. Cambridge University Press: 1986. Pp.181. £19.50, \$42.50.

THE subject of *Government and the Universities in Britain* could hardly be more important, even within the restricted canvas implied by John Carswell's subtitle. But the reader will look in vain to this slackly conceived and carelessly executed book for a serious analysis of what has happened over the past 20 years, or for guidance for the future.

Mr Carswell is, of course, unlucky in his timing, because he does not "attempt to describe events after 1978 when [his] direct experience of university-state relations came to an end"; so much of critical importance has happened since then that his book inevitably has a somewhat otherworldly air. Even so, it is an uneasy mixture of description and analysis of serious matters with personal reminiscence. I really do not think, for example, that the reader will be enlightened being told that Sir Maurice Dean, Joint Permanent Under-Secretary at the Department of Education and Science 1963–1964, was

fond of flashing his bright red braces.

So what would one look for in a book with this title? Without the subtitle — and even with it — certainly some discussion of what functions a university cannot cede to the state without losing its autonomy; indeed, discussion too of whether universities like those in Great Britain, with so much of their income coming directly from public funds, can genuinely claim to be autonomous at all. And, again, examination of the question whether universities should enjoy autonomy and self-government if they have already grabbed the Queen's shilling. Should they not be directed by democratically elected representatives and all that?

The argument for the universities' independence, as for all free institutions within the state, is the strength and flexibility this ultimately gives to the society in which they have their being. As it happens, we are, I think, particularly good in Britain at using this kind of freedom wisely, but the whole edifice depends upon convention. Universities do have their Royal Charters, but all that could be overturned in the twinkling of an eye.

In a book of this kind one would also look for an extensive and thorough account of the means of government funding other than that of the University Grants Committee (UGC), in particular that of the Research Councils. A "contrast and compare" of the block grant, blanket-style

of funding and the more specific funding of the research grant surely should have been an essential part of the book, but it seems that Mr Carswell does not think so. Since he was placed so well as an observer — first as an official at the Treasury, and at the Department of Education and Science, and, subsequently, as Secretary to the UGC — this seems a particular pity.

Then it is illuminating to view the British universities as part of an international scene. Mr Carswell makes little attempt to do so. As an example, when I was a Vice-Chancellor I learned from my American counterparts, the Presidents of the "research" universities, that the diverse funding which they enjoyed was no sure safeguard against the economic ill-wind. When such a wind blows on a national scale then there are few, if any, funding sources that are immune to it.

It would, too, have been useful to have had from someone with Mr Carswell's experience a rather more critical discussion of how well-suited the UGC is to its present tasks, particularly with Lord Croham about to report on this matter. Though, like most academics, I am a great admirer of the UGC system and those who have operated it over the years, my own view is that it is quite *unsuited* to its main responsibilities; namely, the getting and the planning of the spending of over £1,000 million a year. To start with it is grossly understaffed, both in terms of quality and quantity, to carry out such work.

The principal event of the two decades Mr Carswell is concerned with was, of course, the post-war "bulge" reaching the universities and the consequent Robbins Report and general expansion of the higher education system. Mr Carswell pays tribute to the Robbins Report as "one of the great state papers of this century", and rightly so; one of its many virtues was that it contained so much information that if you did not like its analysis or its conclusions then you could invent your own.

Mr Carswell has a weakness for the purple — well, lavender — passage. His concluding paragraph is:

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The state and the universities are like a discontented couple who cannot live without each other: he rich, busy, self-important, preoccupied with the office; she proud, independent and in her own opinion beautiful. The state-husband will always complain about her extravagance and inconstancy, and the university-wife will endlessly denounce his stinginess, jealousy and philistinism. Her parting words in the endlessly renewed argument will be that she knows he has a mistress — 'and very common she is'. But they would not dream of parting: because of the children.

I think it quite wrong to interpret the relationship of the government and the universities as one of conflict. Even at the present troubled moment, as troubled as any moment in the past 30 years, I do not see the damage which is unquestionably being done to the universities by government cuts as a considered attack on the academic world. All that has happened, surely, is that we have a government committed to reducing public expenditure which has misjudged the serious long-term consequence of damage to the universities, and which believes, correctly if sadly, that the universities will not have wide public support. This last is due in part to the relatively small scale of the British university system with, in turn, so few graduates in the community; but it is due much more to the damaging antics of students in the period Mr Carswell describes, and also to the absurd misconception of university as ivory tower.

A university's first duty is indeed to preserve, create and transmit scholarship, but the modern university has little or no problem in reconciling this to its more immediate responsibilities to the community. One of my Canadian vice-cancellarial colleagues exaggerated when he said that "a university today does not know whether it is an ivory tower, a frontier post or a service station". The fact is that it has to manage to be all three; but that, again, is not a problem discussed in this book. □

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Cutting changes in the mind

Stuart Sutherland

Great and Desperate Cures: The Rise and Decline of Psychosurgery and Other Radical Treatments for Mental Illness. By Elliot S. Valenstein. *Basic Books: 1986. Pp.338. \$19.95.*

THE mentally ill have always been treated with a savagery normally reserved for alien races. The chains that Pinel struck from his patients in the Salpêtrière were soon replaced by more insidious assaults devised by the medical profession. Within the past hundred years, mental patients have been subject to prolonged cold douches and other forms of hypothermia; they have been deliberately infected with malaria; they have been plastered with ointments to produce fevers and pustules of pus; they have had large quantities of horse serum injected into their spinal cord in order to cause meningitis; their endocrine glands have been removed; their teeth and tonsils have been taken out on the grounds that they might be harbouring infections; and female patients have had their cervixes excised. More recently, mental patients have been subjected to insulin and metrazol therapies which produce convulsions and coma, and, as a side-effect, fractured and dislocated bones. None of these treatments is known to have brought any benefit nor did they have any scientific justification, though their proponents were not slow to support them with naive and unsubstantiated theories of the nature of mental illness.

Great and Desperate Cures raises the question of how far the mutilation of the mentally ill in the name of medicine has continued into recent years. Most of the book is a history of psychosurgery, that is surgery undertaken on parts of the brain not known to be diseased or damaged with the intention of changing the patient's psychological state.

The first to undertake such surgery was Egas Moniz, a Portuguese neurologist whose ambition exceeded his talent. He invented prefrontal lobotomy, an operation in which the nerve fibres between the prefrontal lobes and the remainder of the brain are severed. It is now known that these fibres connect the prefrontal cortex to the limbic system, which is implicated in the control of emotion, but Moniz was inspired to undertake the operation by witnessing two monkeys which, it was claimed, had been made placid by lesions to their frontal lobes. Even this justification turns out to have been erroneous, since in fact one of the monkeys became more irascible after the operation. This fact was conveniently forgotten by one of

Steve Blogg

"Britain needs its universities" — but can academics expect the public to take the same view?