British universities

Champion springs to life

THE University Grants Committee (UGC) has told the British Government that, on present financial policies, it may be necessary for one or more universities to be closed. And UGC goes on to say, in its document *Strategy for Higher Education in the 1990s*, published last week, that it will leave to the government the invidious choice of institutions to be shut, on the grounds that it is not itself competent to assess non-academic considerations and that, in any case, its relationship with universities generally "would not survive" the act of pointing the fatal finger.

UGC's document, like the parallel document also published last week by the National Advisory Body (NAB, responsible for non-university higher education, especially the polytechnics), is formally a response to a government request for advice in advance of the reappraisal of higher education strategy, advertised for later in the year.

UGC's gloomy forecast arises from its calculation that published estimates of spending on higher education in the years to 1986-87 entail an annual reduction of 0.5 per cent, and from experience in recent years that university pay settlements have exceeded the amount allowed for to an extent that will impoverish the universities by a further 1 per cent a year. Tarty, UGC says that universities conformed more closely to the guidelines on public sector pay than government itself.

UGC's gloomy forecast stems partly from its view that the budget cuts of 1981 have already forced universities to mortgage their "freedom of manoeuvre", and that further cuts will require commensurate staff reductions. Faced with that need, UGC says, it would prefer to recommend contraction on a discriminatory basis rather than letting the cuts fall equally across universities. But that course could prove impossible, in which case it would be forced to recommend "with extreme reluctance" that some universities should be shut.

UGC adds that it cannot understand the implications of such a development, for the institutions closed would probably have "better" students, staff and facilities than "most institutions in the public sector", and says that closing a university would entail a waste of assets that "could not be defended".

For the years ahead, what UGC pleads for is "level funding" at the very least. As things are, its document argues, shrinking budgets will mean that fewer students can be taught. Stability, on the other hand, could mean that universities could provide more education for the same cost.

Even level funding will not, however, allow British universities to finance a substantial increase in the number of student places in science and technology,

an expansion of continuing education and the rejuvenation of university teaching staffs by the replacement of older people by newer recruits. And the strategy document makes a strong case for each objective, the first of which at least is that of the British Government as well.

Both UGC and NAB also quarrel with earlier government estimates of student demand over the remainder of the century. UGC argues for an increase (to 170,000 a year) in the number of British students entering full-time education, and for a total full-time student population of 600,000 by the end of the decade. UGC asks that, when the British Government finally picks a number, there should be consultation on the distribution of students between "private" and "public" sectors.

NAB is more bullish, largely on the basis of a redefinition of the criteria for access to higher education agreed with UGC, that higher education should be open to "those able to benefit" from it, and who wish to do so. As things are, the guiding principle, laid down in 1963, is that students should be "qualified by ability and attainment".

UGC includes a discussion of the statistical errors of earlier estimates of student demand, and asks that the basic data should be refined before estimates are calculated for the 1990s, saying that demand will not diminish "just because there are fewer 18 year olds". It fears that there will be shortages of graduates "across the board" as "the country moves out of recession".

On government pleas for a "switch" from the arts and humanities to science and technology, UGC argues that the pace of change will be determined by the "supply of good students", saying that the problem would be transformed if more "girls" (*sic*) could be persuaded to "develop an interest in mathematics and physical sciences". UGC says that extra funds would in any case be necessary, and that extra science places at universities should not be provided at the expense of the arts and humanities.

On research, UGC says that it proposes to accept the general university opinion that individual budgets should not deal separately with teaching and research, although it accepts that universities deserve a fuller account of how their budgets are determined. The document says UGC will be "more selective" in favour of strong research universities, but only after further consultation. UGC adds that its policy will succeed only if universities equip themselves to decide strategies on research.

By its tone and in what it says, the UGC document should help restore UGC's reputation among academics as their defence against the government. Whether the latest defence will prove sufficient remains to be seen. □

French research

Growth rate is checked

Paris

THE French research budget for 1985, published last week, is good. But not so good as last year, or the year before. Research spending in France, previously buoyant, is reaching the top of the S-curve. At the same time, some of the more ambitious ministerial efforts at linking French research with industry are now deemed failures. Science policy-makers should reflect on how best to continue the French experiment of "solving the economic crisis through science".

In 1983, the first big year for science in the Mitterrand presidency, the budget for fundamental research leapt by nearly 25 per cent in current francs, and applied research by 18 per cent, compared with a net government budget increase of 13 per cent. In 1984, as the recession began to bite, growth slowed to 12 per cent in fundamental research and the same in applied research, against a net government budget increase of 4 per cent (and 7 per cent inflation). This was not enough, researchers began to complain, to cope with the franc falling rapidly against the dollar and other currencies in which materials and equipment are usually purchased. (The franc has fallen 25 per cent even against the pound since 1982.)

This year, increases will be less again (but at least they are increases). Fundamental and applied research should each grow by 10 per cent against the net budget growth of 3 per cent and projected inflation of 4.5 per cent in 1985, research minister Hubert Curien announced last week.

CNRS, the principal research council for basic science in France, will see an increase of nearly 8 per cent in its operating budget next year. This, however, will be fully taken up, says director Pierre Papon, by existing CNRS expansion programmes in microelectronics — a new major laboratory is planned at Bajneux to the south of Paris — and other areas.

Yet Papon is pleased by the new posts offered by Curien. The minister will create 536 new posts for fundamental researchers, of which 300 will go to CNRS. Combined with vacancies arising from departures and retirements, CNRS will have 500 posts, around 5 per cent of its total research staff, to play with this year. This gives some real room for policy-making, Papon says, allowing for expansion in priority areas (life science, engineering and social science) and even in some "second order" priorities (such as high-energy physics, which will be favoured over low-energy nuclear physics next year).

Linking researchers with French industry remains one of Curien's highest priorities, but the more centralist exercises of the ex-research minister Jean-Pierre

Chevenement are now being described by policy-makers as "70 per cent failures". These were "*programmes mobilisateurs*" designed to stimulate action in fields like bio-technology and information technology. The problem: the French penchant for autocracy. The *programmes mobilisateurs* were to be run at arm's length by small groups at the Ministry of Research (responsive to the needs of industry and research). But these small groups grew too large, and developed ideas and programmes of their own. Industry saw them as socialist interventionism. Papon himself admits he is anxious.

Meanwhile, Curien hopes to respond next year with a new and somewhat wiser "law for research" — wiser indeed than the Chevenement version of 1982, which aimed at an increase in French national research and development spending from 1.8 per cent of gross national product in 1981 to 2.5 per cent by 1985. That will not be reached, but the ratio will be 2.8 per cent. Now France is waiting for industry to respond.

Robert Walgate

Merger resisted

Düsseldorf

THE Social-Democratic (SPD) Government of Nordrhein-Westfalen in Düsseldorf has protested vigorously against the plans of the federal Minister for Research and Technology, the Christian Democratic (CDU) Dr Heinz Riesenhuber, who has proposed that the main thrust of biotechnology research in West Germany should be concentrated in future in one, rather than two, research centres.

Last year (see *Nature* 106, 305; 1983), an investigating committee suggested that the two major centres at Jülich (Nordrhein-Westfalen) and Braunschweig-Stöckheim (Niedersachsen, CDU government) would be better amalgamated into one, thus improving the efficiency of research and reducing its cost. The new committee recommended that the new centre should be based in Braunschweig despite the committee's poor opinion of the standard of the work of the 350 research workers at Braunschweig, and its praise for the work of the 100 researchers at Jülich.

Rolf Krumsiek, Minister for Research in Nordrhein-Westfalen, has now promised to retain the Jülich institute at its present size, and in this he has the full support of the two directors of this research centre, Professor Hermann Sahm and Professor Christian Wandrey, both of whom wish to stay in Nordrhein-Westfalen. This difference of opinion between the central government and that of Nordrhein-Westfalen may bring difficulties should the central government decide to withdraw its financial support for Jülich, at present 90 per cent of the total cost. Retention of an interest in this promising research sector would then require an enormous financial intervention from the *Land* government.

Jürgen Neffe

European science

Forging stronger research links

Paris

THE European Science Foundation (ESF), a cooperative focus for over 50 national science funding agencies in Europe, has received broad political backing for a \$1 million increase in its \$2½ million budget — to help European researchers to keep in touch with one another.

This was one of the more concrete results of a unique meeting in Paris on Monday of 21 European research ministers under the auspices of the Council of Europe. The meeting, which had taken nearly a year of preparation, aimed at creating a "fresh political impetus" to European scientific co-operation, and this it has clearly done. However, although it recommended \$1 million for ESF, the meeting had no power actually to define a budget. ESF must wait to see if its member agencies can find the cash.

Certainly, better cooperation as would be developed by ESF in a number of specified research areas is necessary, if any real life is to be given to the concept of "European research". The French Centre National de la Recherche Scientifique (CNRS), for example, annually sends more scientists to California than it does to the whole of Europe put together. And CNRS is not alone, either in its Atlanticism or in the need it feels to balance this by increasing cooperation within Europe.

In Paris on Monday, ESF was recommended to create "networks" of exchange in, for example, oceanography, Earth sciences, materials sciences, epidemiology and, altogether, 18 other fields of research. Although the money required would be a considerable sum for ESF, it would be small in relation to total European research budgets (a "per cent of a per cent", says ESF).

Now, ESF will make a detailed study of the 18 network proposals, themselves already filtered by ESF from around 200 originally received from national bodies before the conference. ESF will make specific recommendations for action within five months. The networks would differ from the superficially similar stimulation programme of the European Economic Community in one important respect, said ESF vice-president Professor Roger van Lieshout: they would be aimed at individual scientists, offering them mobility and choice, rather than at specific institutions. "If you create a centre of excellence, it will always remain a centre but not always remain excellent", said van Lieshout.

Also on Monday, the Council of Europe was instructed to consider the introduction of a "researcher's card". The card would be a kind of passport to Europe allowing accredited researchers certain privileges (such as help in getting electronic equipment past inquisitive customs officers). The Council of Europe should also

consider, said the ministers, other moves to improve mobility by removing certain trivial but cumulatively important obstacles to free exchange — such as freedom to open a bank account.

Peter Brooke, the British research minister, also made a surprising and last minute proposal: to create a prestigious European academy like, for example, the Royal Society and the US National Academy of Sciences. This would foster a sense of identity among European scientists, said Brooke. Conference president, Frenchman Hubert Curien, described the proposal as "very interesting", but it was not among the official recommendations of the meeting. Britain may take the proposal further on its own initiative, said Brooke after the meeting.

Robert Walgate

Amazon to yield more secrets?

THE government of Brazil has invited a team of Soviet oceanologists to carry out a survey of the Amazon and its estuary. This is a follow-up to last year's expedition aboard the Soviet oceanological research vessel, *Professor Shtokman*, in February–April 1983, in which a joint Soviet–Brazilian scientific team took part and which penetrated far up the Amazon as well as surveying the ocean around its outfall.

The 1983 expedition concentrated on the geological sampling of the bed, ichthyological studies, and also some hydrographic work. The exceptional depth of the Amazon (as much as 100 m in places) — a consequence of the river lying on the boundary of two geological plates — made it necessary to use an ocean-going vessel. Much of the data from the 1983 expedition remains to be fully worked out. Nevertheless, according to Academician Aleksandr Yanshin, a vice-president of the Soviet Academy of Sciences, much has already been discovered.

Numerical data from the 1983 expedition include figures for the annual outflow of the Amazon (6,000 km³, some 50 per cent more than the total of all Soviet rivers apparently) and the annual sediment burden (300 million tonnes). Theories have been developed to explain how the sediments became spread out all along the coast of South America rather than forming a delta as with most major rivers.

One notable discovery, the Soviet hydrobiologists claim, was that the Amazonian river water retains its brown colour even after the precipitation of all sediments. This, it is thought, is due to the presence of dissolved organic compounds, reminiscent of swamp water.

Vera Rich