Harvard finally backs off gene venture

Anxiety about conflict of interest wins

Harvard University's flirtation with the commercial exploitation of recombinant DNA research came to an end last week. After a period of agonizing and second thoughts by the faculty and administration (see *Nature* 20 November), the president of the university, Dr Derek Bok, put out a statement that the university would not after all participate in a company to exploit the work of Professor Mark Ptashne's laboratory.

What seems to have persuaded the university not to go ahead were the arguments of faculty members that a direct commercial interest by Harvard in the exploitation of ideas generated by one of its professors would create intolerable conflicts of interest. One argument was that the university would have found itself favouring the academics working for the commercial company in routine academic matters such as the appointment of staff, the allocation of laboratory space and even the provision of research funds.

It seems that the university administration has accepted these arguments only reluctantly. Mr Daniel Steiner, the university's Chief Counsel, said earlier this week that the university had approached Professor Ptashne as long ago as last February, suggesting the formation of a commercial company to exploit some of the research on which he was then engaged. It seems that until the faculty meeting in October, the university administration had not anticipated the strength of the reaction by some academics.

Other members of the faculty complain that the university administration was naive in its expectations of the commercial exploitation of recombinant DNA research. Under the proposed arrangements, the new company to be set up would have been financed by venture capital from commercial sources, would have had its own premises and its own managers and would not have been connected with Harvard by name. The university would have been given between 10 and 15 per cent of the equity without direct investment and there was also to have been a royalty on sales at a level not fixed.

In return, the university would have licensed the new company to use such patents as emerged only from Professor Ptashne's laboratory. Critics point out that the university would nevertheless have been a serious shareholder in the new company and that it could not have avoided committing resources of its own if,

for example, the new company ran into trouble.

Whether a commercial company based on Professor Ptashne's work will now be set up (without a shareholding by the university) remains to be seen. Professor Ptashne is thought to have been working since February this year, with the help of Professor T. Kanaguchi, on a novel method of making fibroblast interferon by cloning the gene at a more efficient expressing site in a plasmid in *Escherichia coli*. It is thought that the university has already committed some funds to this research.

Harvard's interest in the exploitation of patents arising from academic research dates back to 1975, when the university took advantage of a change in rules on patent law promulgated by the National Institutes of Health, and set up an office to encourage the patenting of inventions and the assignment of rights to the university.

Within the Harvard faculty, opinions remain divided. Some erstwhile supporters of the proposal regret the collapse of the administration's plan and hope that, in the

months ahead, less formal and perhaps more profitable ways of making progress may be possible.

Opponents, however, include some who argue that conflicts of interest are unavoidable if the university is to have a commercial interest in the exploitation of one professor's academic research. One irony that has emerged is that the university has indirectly acquired an interest in the recombinant DNA company Biogen, of which one of its professors, Dr W. A. Gilbert, is a prominent member. This interest has arisen independently, through a commercial investment in a venture capital company and in the normal process of university investment.

Among the critics, there are some who would use the events of the past few months as an occasion for a more general inquiry into the propriety of external entrepreneurial activities by any members of the faculty. One such critic said, earlier in the week, that Harvard was nevertheless comparatively "clean" — "You ought to look into what happens at MIT, down the river".

JET fusion experiment seeks growth

The case for making Europe's big fusion experiment, the joint European torus (JET), bigger and better — and twice as expensive — is now being argued by physicists connected with the project. They are arguing that the machine, now being built at Culham in Britain, should be equipped to allow full thermonuclear experiments using deuterium-tritium mixtures.

This proposal for "extended performance" is being discussed by the JET Council, the governing body for the project. It could be presented to energy ministers of the European Community in mid-1981, when the community's five-year fusion research programme is due for reappraisal.

"Extended performance" to reach ignition conditions was envisaged in the original JET design (completed in 1975) but was thought at the time to be financially too risky, for theorists had predicted that new high-temperature instabilities might set in before the plasma ignited. Since then, experiments in existing devices have led to much greater optimism. In particular, an experiment in the Princeton tokamak is taken to indicate that the feared instabilities do not exist.

This development makes the basic JET now look rather tame, and suggests that it should be possible to aim quite quickly at deuterium-tritium experiments. But this requires a greater power supply to increase the toroidal field power by 50 per cent and the heating power by 150 per cent, new diagnostic devices, remote handling

equipment and a degree of radiation protection (from neutrons emitted by the ignited plasma). There will also have to be facilities for storing and handling tritium (itself an expensive commodity).

The latest estimate for the cost of basic JET is 263 million European Units of Account (EUA) (£147 million), a figure largely explained by inflation since the original amount fixed in 1977 (185 million EUA). The cost of the extensions now proposed is not yet fixed, but is likely to double that amount.

Meanwhile, JET construction is going well, though building delays have made the mid-1983 physics target look tight. Twenty of the 36 toroidal coils have been delivered and tested successfully; and buildings are now either complete and occupied or well under way. The vacuum vessel is a little late — the first octant was due in October but is not now expected until January — but it is hoped to make up the time lost. Staffing is up to target: 300 out of 320 appointed.

Contracts have now been placed for almost all the major items for the basic machine but it will be necessary to place contracts soon for the sophisticated equipment needed for the extended version if the momentum is to be maintained. Under this programme, JET will be commissioned early in 1983, and will begin physics proper in the summer of that year. There would be two years of experiments with hydrogen, investigating scale effects, a year with deuterium, and then, if everything went smoothly, work with a deuterium-tritium mixture in late 1986. It

is not known how long JET could work with a radioactive plasma, until its materials become too active to handle efficiently.

The Princeton tokamak fusion test reactor (TFTR), which is of similar scale to JET, is already being installed in its buildings. According to JET officials, the TFTR will be running some six months before JET itself.

Robert Walgate

Telecommunications

Monopoly in doubt

Sir Keith Joseph, allegedly the British Cabinet's hard man on monetarism and other issues of grand policy, last week published a soft, even muddled, bill for the reorganization of the nationalized British telecommunications industry. The bill, which the government hopes will be law before the end of this session of parliament, would split the nationalized British Post Office into two parts, one (called the Post Office) concerned with mail and the other (British Telecommunications) with the development and operation of the telecommunications network.

The bill confirms British Telecommunications in its monopoly of the telecommunications services in Britain including — a minor surprise — the right to maintain all equipment connected to the network. But the bill provides for "approved" equipment to be attached to the network, for private organizations to use the network for selling what are called "value-added services" and even for letting the Secretary of State license private telecommunications networks if he thinks fit.

Although these developments were foreshadowed in Sir Keith Joseph's policy statement last July, the extent to which the bill leaves final decisions about the shading of the monopoly in the hands of the Department of Industry is surprising. Instead of attempting to define what technical criteria should be satisfied by privately supplied terminal equipment, for example, the bill gives the Secretary of State power to arrange for an approval procedure. Questions of when outsiders would be allowed to lease the telecommunications network (and at what cost) are being looked into by Professor Michael Beesley, but again it will be the Secretary of State who will decide what should be permitted.

British Telecommunications (which will not formally exist until the bill is law) is plainly unhappy with the extent to which the bill would give the Department of Industry a crucial and perhaps arbitrary say in its future business. Sir Keith's dilemma seems to be that, having shrunk from going the whole hog and defining British Telecommunications as a common carrier, he has had to fall back on ministerial direction as a way of nudging the corporation in his preferred direction.

The bill may thus be a recipe for constant wrangling between the communications network and the civil service (which, paradoxically, has been much involved with the affairs of all nationalized industries since the election of May 1979).

The new regime at British Telecommunications also promises continued uncertainty about the financing of the telecommunications network. The new corporation will be encouraged by the bill to set up new subsidiaries to compete with private manufacturers of terminal equipment, but will be required to finance these developments within the tight restrictions at present applied — and which, in effect, imply that most of the capital cost of renewing the British telecommunications network is paid for by current users of the network.

Last week, Sir Keith Joseph offered no escape from this corset except to the extent that British Telecommunications may be able to set up joint ventures with private industry which are financed privately and not under the corporation's financial control. Delphically, he declined last week to say what sorts of ventures he was thinking of, thus lending credence to the view at British Telecommunications that the proposed device will offer very little escape from the present squeeze.

Despite reports to the contrary, there appears to be no threat of interference with the programme of telecommunications research and development, based at the laboratories at Martlesham Heath in Suffolk. The government intends this bill to be law within a year. Its plan to sell off Cable and Wireless is the most likely snag.

Malaysian education

Pressures ease

Kuala Lumpur

Faced with internal racial pressures and a growing concern about academic quality, educational authorities in Malaya seem to be easing up slightly on the harshness of previous measures to reform the country's education system.

Two aspects of this policy have come under particular criticism. The first, known as restructuring, is the preference that has been given to Malay students and staff over those from Malaya's other two major ethnic groups, the Chinese and the Indians. The second, nationalization, has been the requirement that all school and university courses should eventually be taught in Malay rather than in English, both initially used as official languages after the country's independence from colonial rule in 1957.

Both goals are part of a new economic policy introduced by the Malay government in 1971. This followed widespread racial riots sparked off by Malay fears that their post-colonial political dominance was about to be challenged by the economically more powerful Chinese, who had voted

strongly for the main opposition party in the 1969 elections.

One result of the subsequent "reforms" is that, from 1985, all university courses will have to be taught in Malay, the culmination of a process which started in 1976 with the requirement that Malay be the language taught in primary schools, and which has been climbing the educational ladder one year at a time ever since.

The policy has been effective in increasing an awareness and use of Malay, now the official language in which all communications with civil servants, for example, must be carried out. But many university teachers now argue that an excessive concentration on Malay is already placing students at a disadvantage, particularly in science subjects where most textbooks and almost all scientific journals are written in English, and many scientific concepts have no Malay counterpart.

Partly in response to this criticism, the government is now boosting the teaching of English as a second language in Malaysian schools, arguing, for example, that English is necessary for graduates entering technical employment or intending to pursue postgraduate studies abroad.

A recent decline in the standard of English teaching in secondary schools was "alarming", said one education official last week, arguing that if it continued unchecked it would be a serious setback to the government's plans to increase the number of scientists and technologists on whom the country depended for its future.

A concern for educational standards has also prompted the government to relax slightly the constraints placed on foreign university staff — exceptions are now frequently made to the ruling that a non-Malaysian can only be given two consecutive three-year teaching appointments — as well as the strong preference given to Malays in awarding university places over Chinese and Indian students with equal academic achievement.

The latter relaxation has proved to be controversial, particularly as many Malays see positive discrimination in their favour as necessary to eliminate the dominance of the Chinese in many professional fields, including scientific research.

For example, opening a conference on the role of universities in the developing countries last week, the vice-chancellor of the University Kebangsaan Malaysia, Professor Datuk Awang Had Salleh, said that solutions based on groups rather than individuals remained an appropriate strategy for university entrance.

Erratum

The title of the article on the Indian environment, which appeared on page 207 of the 20 November issue of *Nature* should have been "Indian environment: Gandhi converted".