

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".

However, Malaya's Education Minister, Datuk Musa Hitam, is currently tightening up on the ease with which Malay students can at present enter university. In particular, he is reducing the proportion of Malay to Chinese and Indian students by 2 per cent a year until a final figure of 55 per cent *bumiputra* — literally "sons of the soil" — and 45 per cent non-*bumiputra* is achieved in the country's five universities. This is roughly equivalent to the racial balance in the country, but between 1970 and 1975, for example, the preference given to Malays increased their size as a proportion of student intake from 50 to 65 per cent.

Speaking at the opening of an educational building in Kuala Lumpur, Mr Datuk Musa was quoted as saying that this development should be taken as a "warning signal" to both *bumiputra* students and their parents that entrance to universities would in future depend less on their racial status and more on their academic achievement.

There is less political pressure to change the impact of present policies on the make-up of university staff. Part of the restructuring policy has been to increase considerably the number of Malay teachers and administrators in both schools and universities, again with the intention of redressing previous imbalances.

Chinese and Indian teachers accept both the logic of this policy and the political needs on which it is based. But in private, many express unhappiness that appointments, even at relatively senior administrative levels, are sometimes made with little respect for academic merit, and that in the process their own promotion prospects have been significantly reduced.

University staff in Malaya, however, are forbidden as government employees from taking part in any attempt to change policy. Lacking significant political power, their only options are frequently either to accept their reduced prospects or to seek teaching or research appointments abroad.

David Dickson

## Antarctic research

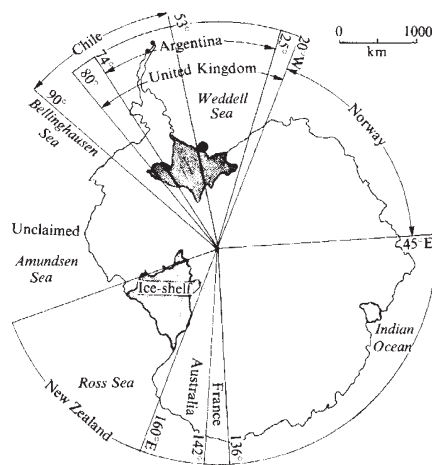
### Germany joins in

A bid for a voice in the future development of the Antarctic may be behind West Germany's massive new research programme in the area. Details published recently\* show that West Germany will become second only to the United States in the size of its investment in Antarctic research.

Although West Germany acceded to the Antarctic Treaty in 1979, it is still not admitted to the inner consultative group of countries which discuss matters beyond research, such as the exploitation of krill,

\**Antarktisforschungsprogramm der Bundesrepublik Deutschland*, Bundesministerium für Forschung und Technologie, Bonn. An English summary is available.

one of the last great untapped food resources of the sea, and the development of possible offshore oil supplies. In the wording of the treaty, admission to the consultative group is reserved for the original 12 signatories (which did not include West Germany) and for any later signatory demonstrating its interest in Antarctica either by conducting substantial scientific research activity there — such as the establishment of a scientific station — or by the despatch of a scientific expedition.



Germany for blob in Weddell Sea

West Germany is doing both. It is creating a new 20-man research and training institute at Bremerhaven to direct its Antarctic programme, building a supply and research ship and purchasing one or two Lockheed C130 transport aircraft (the largest planes on skis). Its commitment will cost DM 385 million (£85 million) to the end of 1983, with a large fraction going on capital equipment and buildings.

The Bremerhaven centre will be called the "Alfred Wegener Institut für Polarforschung" after the originator of the concept of continental drift, who died on an expedition to Greenland in 1930. The institute will open in January 1981 under the directorship of Dr Gotthilf Hempel, a marine biologist now at the University of Kiel, while the research ship, which has been placed on order at a German shipyard, will be launched in 1982.

Officials at the federal research ministry were at pains last week to demonstrate West Germany's long research interest in Antarctica. Germans were among the first explorers of the polar continent, with expeditions in 1873, 1901, 1911 and 1938. The last expedition, according to some commentators, was not research but an effort by Hitler to establish a territorial claim and was overtaken by the events of the Second World War. The region explored at that time (called New Schwabenland and Queen Maud Land) is now claimed by Norway. After the war, West Germany was too preoccupied with economic reconstruction to bother with the Antarctic. Interest revived in 1975 when a research ship was sent to investigate krill.

## Antarctic politics

Antarctic politics are tortuous, a product of random historical and geographical factors and the current interest in food and oil resources. The Antarctic Treaty was set up after the International Geophysical Year of 1957-58, and ratified in 1961 by twelve nations: Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the United Kingdom, the United States and USSR. Since then Bulgaria, Brazil, Czechoslovakia, Denmark, East Germany, West Germany, the Netherlands, Poland and Romania have acceded to the treaty, but of these only Poland has so far joined the all-important "consultative group" (which otherwise consists of the first 12 signatories). West Germany has applied to do so and is awaiting admittance.

The treaty forbids new territorial claims on Antarctica, but has no effect on previously asserted rights or claims. Before the treaty, Argentina, Australia, Chile, France, New Zealand, Norway and the United Kingdom had claimed sectors of the continent centred on the South Pole. These states recognize each other's claims, except Chile, Argentina and the United Kingdom, which have largely overlapping claims. The claims do not affect the placing of research stations: West Germany's proposed station will be on the edge of the Ronne ice shelf, near Berkener Island in the krill-rich Weddell Sea, on territory disputed between Argentina and the United Kingdom. The Antarctic Treaty confirms free access to all areas of Antarctica to all signatories. The legal status of the territorial claims, relevant only to resource development, is untested.

Surveys for an Antarctic research station began in 1979. The chosen site near Berkener Island is on the edge of the Ronne ice shelf, an extension of the Antarctic ice sheet over the shallows of the Weddell Sea. The station is now under construction and by late 1981 it will begin to serve as a scientific observatory for 45 scientists and technicians and a supply base for expeditions within a 1,000 km radius, wide enough to include the geologically interesting Palmer, Ellsworth, Pensacola and Shackleton mountain ranges.

Two other nations are also increasing their efforts in Antarctica — Australia and Argentina. Australia announced recently that it would completely re-equip its existing stations in Antarctica, at a cost of £20 million. Argentina is planning to construct the first all-weather, hard-surface landing strip as a potential refuelling base for commercial transpolar flights. Argentina is also constructing a new icebreaker for Antarctic work.

Robert Walgate