Big science

German doubts

WEST Germany is in the process of reviewing ten major scientific projects which would cost more than £500 million if all were funded now. They range from a continental deep drilling project which would reach the Mohorovic discontinuity at a cost of £30-75 million per hole to the possible commitment to the European proposal to build a large electron-positron ring (LEP) at CERN, Geneva at an estimated cost to Germany of £90 million.

The German research ministry, the BMFT, has set up an *ad hoc* committee of seven distinguished scientists and one journalist (to give "the people's view") which has already begun taking evidence. The cases have been heard for LEP, HERA (an electron-proton ring proposed for the DESY laboratory near Hamburg) and a relativistic heavy ion accelerator (10 GeV per nucleon) for the nuclear laboratory GSI at Darmstadt.

The chairman of the committee, Professor Klaus Pinkau of the Max-Planck-Institute für Physik und Astrophysik, Munich, said last week that he would make "a brave attempt" to finish all the hearings before August; the committee's views are not requested before mid-1981, but the sooner they are received by the new government after the October 1980 general elections, the more likely they are to affect policy, Pinkau believes.

It is not possible, says Pinkau, to make a linear list of priorities through the projects; rather the committee must "model a research landscape". The committee has been given no financial guidelines, so that it will be "a piece of artistry" to work out what the government can afford. Pinkau sees the committee as one lying between scientists and government rather than a part of government: it will make judge-

ments among the projects on their merits, and then turn around and plead with government on behalf of those it supports.

Despite the strength of the German economy and the scale of the package of proposals now being reviewed, financial pressures are now making themselves felt. Recently, the minister for universities, Dr J Schmude, said in a speech at the Deutsches Forschungs Gemeinschaft (which funds most German university research) that scientists would have to be prepared to spend less. The national budget is being pressed by the world recession, the increasing defence budget and an increased contribution to the European Community budget to offset Britain's soon-to-be-reduced subscription as negotiated by Mrs Margaret Thatcher. "Research won't be exempted" from the cuts to come, said Pinkau.

One result will probably be that the biggest projects on the list will not be funded simultaneously. And the most direct conflict now seems to be between HERA (for Hamburg) and the relativistic heavy ion accelerator (for Darmstadt). LEP is an international project which would be paid for if the current budget for CERN at Geneva can be maintained at something like its present level. Germany has said that, on terms like these, it will not object.

HERA (electron-proton) and GSI (relativistic nuclei) are, however, both national projects in closely adjacent fields. HERA would probe the structure of the proton and the quark, and the GSI device would create, for example, regions of extreme nuclear density which in principle could simulate neutron star conditions (although it would be difficult to extract the relevant information from the experiments). And, said Pinkau cryptically, "one should be aware that DESY", where HERA would go "is an internationally important laboratory". **Robert Walgate**

Genetic manipulation

Soviet claims

On at least two occasions in the past month, the foreign services of Moscow Radio have put forward the startling claim that a team of geneticists at the Institute of Genetics and Cytology of the Byelorussian Academy of Sciences in Minsk have succeeded in manipulating the symbiotic bacteria of cereals to yield nitrogen-fixing properties.

The claimed success is surprising, especially because Minsk has no particular renown as a centre for genetic engineering, and even the most prestigious of the Comecon molecular biological establishments — Szeged — admits that its own work in this field still has a very long way to go. There is, however, a possibility that the reported discovery was not made at Minsk at all.

Indeed, the claim seems to be based on a paper by a team headed by M.A. Troicki entitled "Nitrogen fixing activity of hybrids between *Bacillus oligonitrophilus* and *E. coli*" (*Viesci Akademii Navuk BSSR, Serija Bijalahichnych navuk*, 3, 1980). This describes a fairly routine procedure — nitrogen-fixing hybrids of *E. coli* with soil bacteria were produced at the University of Sussex nitrogen fixation unit as early as 1972, and the only novelty seems to be the use of *B. oligonitrophilus*, a name unknown to Western taxonomy, but which Troicki *et al.* state that they themselves isolated from the soil.

The authors themselves claim merely to have demonstrated the possibility of transferring nitrogen fixation genes from *B. oligonitrophilus* to *E. coli*, although the fact that their paper was published in Russian, whereas previous papers had appeared in Byelorussian, may suggest that they felt it merited All-Union rather than local attention.

Why, then, did TASS make such inflated claims? It is possible that the TASS science commentators simply misunderstood the paper, though it is difficult to see how they could do so, since Troicki's team does not mention cereal crops at all — the work reported relates to nitrogen fixation *in vitro*. It is not impossible, however, that the claim, coming at this particular time, has political overtones.

The first announcement was made on 25 May. The following day, *Pravda* published a major article on the Warsaw conference of the Warsaw Pact states entitled "Disarmament: Real Measures are Possible". Ostensibly an appeal for military detente, it contained claims that the United Kingdom and the United States are stepping up work on bacteriological weapons. In particular, said *Pravda*, the United States is working on "ethnic viruses" — bacteriological weapons which would selectively attack members of particular races or ethnic groups.

The case is cited of a black American, Eli

Major projects under review

	Cost (million DM)*	Timescale (yr)	Proposer
Spallation neutron source	400-570	8-15	Karlsruhe and Jülich
BER II reactor improvement	47	2	Hahn-Meitner Inst., Berlin
Relativistic heavy ion accelerator	190	6	Darmstadt
Superconducting nuclear cyclotron, 250-300 MeV per nucleon	a) 44 b) 33	4-6	a) Jülich b) Technical Univ., Munich
Ion beam fusion accelerator	100	5	Karlsruhe; <i>proposal withdrawn</i>
LEP	350 (for Germany)	6-8	CERN, Geneva
HERA	600	7	DESY, Hamburg
European synchrotron radiation source	100-230	5	European Science Foundation
Research vessel	75	2	DFG; to replace 'Meteor'
Continental deep drilling	120-300	1-5	DFG; price is per hole

* £1 sterling = 4.14 DM