

Clouds may lift over Brookhaven

Congress moves to reprove ISABELLE plan

Washington

ISABELLE, the new particle accelerator at Brookhaven National Laboratory on Long Island, may be saved for at least another year. Recently, serious problems arose with the original magnets, necessitating major changes in design, and causing delays and a rise in the project's construction cost from \$275 million to \$500 million. And because the troubled ISABELLE began taking a bigger than expected bite out of the US high-energy physics budget the question of whether to finish it at all has become a burning issue among US physicists.

It is also a burning issue in Congress, which is sensitive to pleas from the Long Island community to rescue the big machine, and, by extension, the Brookhaven Laboratory itself. The President's 1983 budget request included no funds for the construction of ISABELLE, although approximately \$24 million was included for work on alternative magnets and other research and development projects. Moreover, a high level panel representing the national physics community had just said that ISABELLE should not be finished unless the overall budget was increased. So ISABELLE seemed doomed.

Or so it seemed until 7 May, when Congressman Tom Bevill (Democrat, Alabama), chairman of a key House appropriations subcommittee which has jurisdiction over the high-energy physics budget, toured the buildings at Brookhaven and declared himself "impressed". Better to see the creature, he said, than read about her in reports. Bevill assured Congressman William Carney (Democrat, New York) that he would try to get as much as \$10 million in construction funds added to the budget when it comes before his subcommittee. Both Carney, who represents the Brookhaven area, and Thomas Downey (Democrat, New York) want to see ISABELLE finished almost as much as the scientists at Brookhaven do.

But ISABELLE has received only a qualified endorsement from other quarters. Congressman Don Fuqua, chairman of the House Science and Technology Committee which advises on how high-energy physics money should be distributed, has recommended either proceeding with ISABELLE or building a less costly machine at Brookhaven and using the ring tunnel already built.

Fuqua's recommendation carries some weight with Congress, as his committee

knows as much about science as any on Capitol Hill. Although it may be construed as an endorsement for ISABELLE, in reality it steers carefully among the factions that have emerged on the question.

More guarded still was the report of a panel headed by George Trilling of the University of California at Berkeley, appointed to evaluate future plans for high-energy physics. Possibilities considered included proceeding with ISABELLE, cancelling ISABELLE to keep other machines going at other laboratories, and building something else. One of the options was a lower cost machine at Brookhaven, and in January the Trilling panel endorsed this recommendation when it reported to the High Energy Physics Advisory Panel of the Department of Energy. Thus, the Trilling group's view carries the weight of the community at large.

The Trilling report said that ISABELLE should be completed only if funds for high-energy physics in the future "averaged" better than the 1982 level of \$395 million, for then ISABELLE's increase would not

hurt other projects. However, since the President has requested \$429 million for 1983, which is equal to the \$395 million level in 1982 dollars, then, according to the advisory panel reasoning, ISABELLE should not be built.

All concerned are trying to avoid an outright showdown between the major US accelerator communities involved in the scramble for funding commitments for future big machines. The issue, they all say, is US leadership in high-energy physics in the 1990s.

The argument is partly about what kind of physics should be done, partly about how experiments are shaped by the machines themselves and their costs and timetables, and partly about keeping the eastern portion of the country, in which Brookhaven is the only remaining big accelerator facility, on a par with the facilities in the Mid-West and the West. Congressman Bevill, it seems, is proposing to resolve all this with a stroke of his pen when the item comes before his subcommittee in the next month or so.

Deborah Shapley

Ulcer cure sweetener for Searle

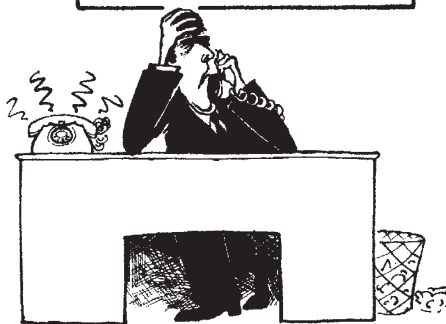
By the end of this year G. D. Searle and Co. Ltd expect to be testing their first recombinant DNA product in humans. It will be a peptide synthesized according to the instructions carried by a synthetic gene placed inside bacteria. Searle and Imperial Chemical Industries Ltd, initiators of the joint project, hope that the peptide, which is closely related to a gastrointestinal hormone, will prove to be an effective inhibitor of gastric acid secretion and hence of ulcers.

That is one indication that Searle's early attempts to capitalize on biotechnology have survived two setbacks. The first was the departure, in 1980, of two key members of staff to help start up Celltech. Searle's second setback was its failure to make a commercial success of producing beta-interferon from cultured fibroblasts.

Another indication of Searle's resilience in biotechnology came last week with the opening of a new £7 million biotechnology pilot plant at their High Wycombe site in the United Kingdom. The plant will come into operation next month, less than two years after construction started, despite a change in plan half way through. The change involved increasing the part of the plant designed for bacterial culture at the expense of that for cell culture. That shift in balance reflected both the failure of the beta-interferon project and, according to Brian Richards, vice-president of UK pre-clinical research and development, the discovery of several peptides of potential value that could best be produced by genetically engineered microorganisms.

The pilot plant still has facilities for the culture of cells but Searle anticipates more activity in the bacterial fermenters, the largest of which has a 450 litre capacity. The plant, however, is designed to accommodate a 4,000-litre fermenter, large enough to advance from pilot to manufacturing scale in some circumstances. For yet larger scale fermentation, Searle will

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"That's right; we both create and cure them"

have either to build new plant or to arrange to use the vast fermentation facilities of the Japanese company Meija Seika, using a recent agreement to exchange technology.

That, however, is for the future, when and if Searle has something worth fermenting. Bacterial products planned, apart from the anti-ulcer peptide, include interferons. Much effort is being directed towards making structural variants of interferons with greater or more specific activity than the natural compounds. If

any are discovered the plan is to manufacture them with bacteria containing synthetic genes.

Searle may also use biotechnology in the less glamorous pursuit of producing, more cheaply than at present, the two amino acids that are fused together to make aspartame, Searle's low calorie sweetener which was approved for tabletop use in the United States last year. Both amino acids come from bacterial fermentation and so it is possible that the bacteria could be genetically manipulated to produce either amino acid more efficiently than at present.

Peter Newmark

Remote sensing

What war use?

Landsat, the US remote sensing satellite launched by the National Aeronautics and Space Administration (NASA) could have been used by the Argentine and British governments to obtain images of the Falkland Islands, but probably to little effect. While Landsat can pick up data from all over the globe, it passes over the Falklands only every eighteen days and a further twenty-four hours are then required to process images. Landsat has a resolution of 80 metres and could pick out — with luck and favourable weather conditions — an object as large as an aircraft carrier.

Landsat-3 is a near-polar orbiting spacecraft launched in March 1978. It carries visible and infrared wavelength sensors which send back images used in agricultural surveys, mineral and oil exploration and pollution monitoring. NASA collects the satellite data at Goddard Space Flight Center in Greenbelt, Maryland and it is then sold by the Interior Department through the Geological Survey's EROS (Earth Resources Observation Satellite) Data Center in Sioux Falls, South Dakota.

Fresh images can be obtained from NASA by prior arrangement but the usual time-lag is anything from one to six months. Ground stations within a 2,000 km range can pick up real time broadcasts by radio link. The British defence department's National Remote Sensing Centre at Farnborough, Hampshire, is licensed under ESA's Earthnet programme to tune into transmissions over Europe. Argentina also has a ground station at Mar Chiquita (600 km north-west of Buenos Aires), but to obtain fresh images of the Falklands, it would have to make a special arrangement with NASA so that the data would not be wiped off the recorders on board, which are limited in the amount of information they can store.

The delay in obtaining fresh images and the coarseness of their resolution makes the strategic use of Landsat dubious. Landsat images may, however, have provided information about prevailing terrain conditions.

Jane Wynn

Nairobi environmental meeting

More and less

A Japanese environmental delegation is this week trying to recover its pride, after its proposal for a "Brandt commission" on the environment took a battering at a series of environmental meetings in Nairobi.

Japan had proposed that a group of independent and widely respected personalities get together to produce a weighty document on the global environment to the year 2000. Much to the delegation's chagrin, however, the Group of 77, representing developing nations, proved solidly opposed to the idea. The group wanted direct development aid — for re-afforestation, for example — and not simply another expensive report for the bookshelves.

This was only one of the little battles which have coloured Nairobi life in recent weeks, during the three meetings which celebrated the ten-year anniversary of the Stockholm environment conference. The meetings held were one for non-governmental organizations concerned with the environment, a "meeting of special character" convened by the United Nations Environment Programme (UNEP) to review the decade, and the general council of UNEP itself.

Environmentalists have left the meetings with mixed feelings. A lot of hard political and scientific lessons had been learned over the decade, said one, but there was still a consummate lack of will to do anything practical.

The current governmental attitude was represented by the level of the delegations sent by most countries to the "meeting of special character". UNEP invited all heads of state, but in the end there were just three — Presidents Mobutu (of Zaire), Nemeiry (Sudan) and Arap Moi (Kenya). The United States sent its head of the Environmental Protection Agency (EPA), Anne M. Gorsuch, who made a fine speech recording US environmental support in the 1970s. Ms Gorsuch has been generally regarded as President Reagan's ax-woman at EPA, so her speech came as a surprise. However, she left her cutting comments for a press conference — the US contribution to UNEP would fall from \$7 million in 1982 to \$3 million next year, she said. James Buckley of the State Department added that the US government saw UNEP as a "catalyst" rather than a prime actor.

One bonus for UNEP, though, came from a surprising quarter. Britain's junior environment minister Tom King promised an increase in the British contribution from £600,000 this year to £750,000 next. Even allowing for inflation, this is a substantial increase, which the UK Department of the Environment must find within its cash-limited budget. "We are conscious that resources are strained", said Mr King, and "now is the time for action".

Libya also promised its first ever contribution to UNEP — \$1 million. The Netherlands offered another 50 per cent; Japan, Finland, Malaysia, Uganda and Thailand also promised more. But these increases would not cover the big cuts threatened by the United States.

There was agreement on one thing, however: a declaration, now to be known as the "Nairobi declaration", sixteen pages of fine prose. "The world community of States solemnly reaffirms its commitment" says the declaration "to the Stockholm Declaration and Action Plan . . . It also reaffirms its support for strengthening UNEP as the major catalytic instrument for global environment cooperation . . .". The word "catalytic" is to be noted.

Robert Walgate

Information technology

Europe wakes up

Brussels

Europe's leading electronics and information technology companies are taking seriously the European Commission's grandiose plans to pool all their research efforts. Dubbed "Esprit", the European Strategic Research Programme in Information Technology, it has evolved in a series of meetings that the Commission has held with leading European electronics firms during the past year.

The first fruits of these discussions have been leaked from a communication sent to the Council of Ministers in preparation for the EEC's Science Council to be held on 30 June. Yet despite industry approval, it is in the political arena that the real fight will take place to get the Commission's ambitious ideas implemented. Discussions with UK government bodies such as the Department of Industry and the Science and Engineering Research Council have left officials in Brussels with the impression that although there is token acceptance of Esprit's principles, the national officials doubt that they can ever be realized.

Europe is losing out to Japan and the United States in the race to develop information technology, argues the Commission, not for want of spending vast sums on research. Siemens alone devotes around \$800 million a year to research. Yet Siemens, ICL and the others are in financial difficulties and failing to reap the rewards from their research investments.

Industrialists feel strongly that to get the best out of Europe's research expenditure a new body should be set up to coordinate activities. Far from wishing to build empires, Commission officials dismiss the idea that they themselves should tackle this. A more professional body such as the United Kingdom's National Research and Development Corporation with experience in turning research into marketable products would be given the job. It would be co-financed by the companies involved