

international news

AN appeal to the scientific community by a committee of the National Academy of Sciences to refrain from conducting two types of genetic manipulation experiments because of potential hazards to society (see *Nature*, July 19) has drawn a swift and positive response from the National Institutes of Health (NIH). In a letter sent last week to Academy President Philip Handler, NIH Director Robert S. Stone indicated that he will establish a committee to define the possible hazards associated with such research and that NIH is willing to support an international meeting of scientists to discuss the matter.

The academy committee has urged that a moratorium should be placed on experiments which (I) involve the introduction into a bacterium of genes which either confer resistance to antibiotics or cause the formation of bacterial toxins and (II) those which involve the introduction of genes from viruses into bacteria. Furthermore, the committee suggested that experiments which introduce genes from animals into bacteria "should not be undertaken lightly".

The reason for concern is that the bacterium most commonly used for such studies is *Escherichia coli*, which

NIH backing for NAS ban

by Colin Norman, Washington

usually present in the human intestine. But the committee is quick to point out that the concern is "based on judgments of potential rather than demonstrated risk", and that the danger is yet to be precisely defined.

Each member of the committee, which was chaired by Dr Paul Berg of Stanford University, has agreed to eschew experiments of both sorts. And they have called on their colleagues throughout the world to join them in deferring such research until the hazards have been evaluated.

When the committee's statement was made public last week, Berg said that an international meeting is being planned for next February to "discuss whether there are in fact experiments that should or should not be done". The meeting, which will probably be attended by about 100-150 scientists, will not only attempt to define what types of research should be included in the embargo but also for how long it should be maintained.

Asked whether he expects that a

voluntary moratorium will be effective, Dr David Baltimore, a member of the committee, said that at present he knows of no laboratory which is planning to undertake experiments of type I or II, and that peer pressure on scientists now to eschew such studies will probably be sufficient to make the embargo stick. He pointed out, for example, that study groups at NIH—committees of scientists which provide initial peer review of grant applications—will be wary of approving funds for such studies and that the editorial boards of scientific journals will probably think twice about publishing research papers derived from experiments covered by the embargo. "To me", he said, "it is almost unthinkable that scientists would go out and do this type of work now".

The committee acknowledges, however, that its recommendations "will entail postponement or possible abandonment of certain types of scientifically worthwhile experiments". It therefore remains to be seen how long the scientific community will go along with this move toward self regulation, and much will depend on the outcome of the NIH committee's deliberations and next February's international meeting.

What British scientists say . . .

Molecular dirty tricks ban

THE critics of molecular biology are fond of pointing out the scarcity of practical benefits. It is a sad paradox that the very developments which could ultimately have immense value for production of useful, but rare, molecules, should result in an urgent cry of 'halt' from a committee of leading scientists involved, supported by no less than the United States National Academy of Sciences. The amplification of selected genes and their products by synthetic recombination with freely replicating DNA of bacterial plasmids, could, for example, revolutionise the commercial production of substances like insulin, or pituitary hormones, while the bulk synthesis of a transforming gene protein from an oncogenic virus might allow the design of specific antagonists. As more genes are identified on cleavage products of DNA from animal

cells and viruses, so the potential for practical application will increase, to say nothing of the basic knowledge gained.

Yet few will deny the wisdom of the appeal for a moratorium on certain classes of experiment until the implications are more clearly understood. It is not just the risk of unpredicted and explosive self replication of some sinister DNA sequences which causes concern, it is the possibility that by using *Escherichia coli*, the workhorse of molecular biology, the explosion might occur in someone's gut and then be transmitted like antibiotic resistance, throughout the world. No doubt a good many dirty tricks have been attempted and discarded by nature in the course of evolution, but the disquiet arises from the utterly novel associations of genetic material which are now possible. The potential benefits should, therefore,

be delayed, not for ever, but until consequences can be assessed, and preliminary experiments carried out under conditions of maximum security.

Most of the technology involved in all this has been developed in the United States and it is encouraging that the very leaders in the field have taken the initiative and have been supported by the academy. It is now to be hoped that academics and learned societies in other countries will add their weight, and that international organisations such as the European Molecular Biology Organisation will lend support. Granting agencies, and even editors of scientific journals, will also need to consider their policies in the face of wide support for a moratorium. For many it will be a test of self denial and social responsibility in the face of strong intellectual temptation.

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