

USA

Now New York steps in

The New York State Attorney General's office is considering whether or not to impose controls on recombinant DNA experiments performed in facilities in the State. Colin Norman reports from New York

A windowless hearing room on the 47th floor of New York City's World Trade Center last week provided a somewhat unlikely venue for another round of public hearings on the potential risks and benefits associated with recent advances in genetic engineering. The hearing marks a potentially important development in the long process of regulating recombinant DNA research in the United States, for it is the first time that the matter has been taken up by a state government.

Called by the New York State Attorney General, Louis J. Lefkowitz, the hearing was designed to elicit the views of various concerned individuals—mostly scientists who have been in the thick of the debate over the potential hazards of recombinant DNA research for the past two years—on whether New York should impose its own controls on the research and, if so, just how strict those controls should be.

The crux of the discussion was concerned with two closely related issues. First, whether the guidelines, published by the National Institutes of Health last June to control recombinant DNA experiments which NIH supports, are strict enough to guard against possible public health hazards. And second, whether or not the guidelines should be enforced in New York State by law.

The outcome of the discussions in New York will be closely watched elsewhere in the United States, for other states are likely to take up the matter at some stage. Already, the City Council of Cambridge, Massachusetts, has imposed a temporary moratorium on a few types of recombinant DNA experiments at Harvard and Massachusetts Institute of Technology, while a special review board, consisting of city residents, is looking into the risks and benefits associated with the research. (The Cambridge moratorium was due to expire on October 7, but it has quietly been extended until January 7 to allow the board more time to make its recommendations.) And a committee of the City Council in San Diego has also

been taking evidence from both supporters and opponents of the research. New York is the first state to consider adopting legal controls, however.

According to one official in the Attorney General's office, a major factor which led New York to look into the matter is the fact that the NIH guidelines apply only to NIH grantees, and there are no legal sanctions which can be applied if the guidelines are violated. Research supported by industry, and even by other government agencies, is not formally covered. Thus a prime consideration in New York is whether or not the controls should be backed by the force of law and made to apply to all facilities, including industrial laboratories.

Last week's hearings consisted of a parade of about a score of witnesses who urged the State government to undertake a variety of measures ranging from doing nothing to banning virtually all recombinant DNA experiments in the state. The hearings were mostly low-key, punctuated by some fairly gentle questioning by officials in the Attorney General's office. They contrasted rather starkly with the highly charged, emotional nature of the Cambridge City Council's hearings earlier this year.

Leading the call for a moratorium on the research were George Wald of Harvard, Leibe Cavalieri of the Sloan-Kettering Institute, Erwin Chargaff of Columbia University and Jonathan King of Massachusetts Institute of Technology. Cavalieri kicked off with a critique of the guidelines and the way in which they had been developed, arguing that there had been only "token" input from the public, and suggesting that "it is up to society to see that the research effort is directed toward solution of problems, not the creation of new problems". Cavalieri was the only speaker to dwell at length on what he called "the hazards of success", suggesting that so far the discussion of recombinant DNA research has failed to consider the implications of the successful manipulation of the genetics of, for example, crop plants. The result, he said, "would be a change in the intricate balance of our environment, which has taken millions of years to establish".

Wald was the most outspoken critic of the research and the guidelines, however. He suggested that the recent outbreak of Legionnaires

Disease in Philadelphia has provided "a beautiful model" of what a public health problem with recombinant DNA research would be like—"unidentifiable and impossible to trace to its source". Wald argued that recombinant DNA research should not be conducted in universities, but it should be isolated in one or two national safety facilities.

As for proponents of the research, the most outspoken was James Watson, Director of the Cold Spring Harbor Laboratory. Watson said that he once told former Presidential candidate Sargent Shriver that the furore over recombinant DNA research is "the most overblown thing to enter the American scene since (President Kennedy) created the fallout shelter". Watson argued he could see no danger in transplanting genes from higher organisms into viruses or bacteria, and he said that he could see little hazard even in transferring genes from viruses known to cause cancer in animals into bacteria. The impact of infection by such organisms would be "negligible" compared with the impact of infection by the viruses themselves, he said, and suggested that "the marginal danger of this thing is a joke compared with other dangers". He suggested that the Attorney General's office could better spend its time looking into the potential health hazards of hair dyes and flame retardants in children's clothing. "What started as an attempt by the scientific community to be responsible takes on the aspects increasingly of a black comedy", Watson stated.

Faced with such widely conflicting viewpoints, the New York Attorney General's office is going to have a tough time deciding whether or not to impose additional controls on researchers in New York. Its decision will, however, be carefully watched in other state capitals. □

● Eleanor Lawrence adds from London:

The US National Institutes of Health guidelines and the report of the British Williams Committee have now been followed by recommendations for the conduct of *in vitro* recombinant DNA research by two European organisations, the European Science Foundation (ESF) and the European Molecular Biology Organisation (EMBO).

The ESF makes a number of suggestions. It says national registries of recombinant DNA research, analogous to the Genetic Manipulation Advisory Group proposed for Britain, should be set up in each country. It also suggests that all industrial, university and government laboratories be legally obliged to declare relevant aspects of

their work to such a registry. The supervisory and monitoring machinery would remain a national responsibility. There is a further recommendation that the code of practice drawn up by the Williams committee be followed rather than the NIH code since Williams specifies a greater degree of physical containment for most experiments, and is more flexible.

The EMBO guidelines also support the idea of national advisory groups, which would specify the conditions of containment to be used. EMBO says that either the Williams or the NIH codes of practice may be followed, but not a mixture of both. The different degrees of emphasis on biological and physical containment in the two codes, it contends, could lead to confusion.

Both organisations emphasise the need for regulations to operate at the same level in different countries and

therefore suggest that the national advisory committees should meet regularly. In addition they both propose that suitable experiments should be undertaken to assess the conjectural risks associated with recombinant DNAs and to pave the way towards eventual adjustments to the guidelines.

In Britain, however, many biologists are unhappy about the draft Health and Safety Commission (HSC) regulations now being circulated for comment. The regulations require among other things compulsory notification to the HSC of any experiment intended "to alter or likely to alter the constitution of any microorganism". Although the HSC has asked which experiments should be excluded, this type of blanket regulation, and the fear that proposals submitted to the HSC would be delayed interminably by bureaucratic machinery, have stimulated a group of

scientists to ask government that the HSC regulations should be withdrawn completely. They wish to see the voluntary procedures recommended by Williams followed instead.

There is strong feeling that in this instance the HSC is not the most appropriate body to deal with the complex scientific issues involved and that public interest would be better served if they were considered by an expert committee such as the Genetic Advisory Manipulation Group for example. The Health and Safety Commission would still have powers under the present Health and Safety at Work Act to inspect laboratories to see whether the containment procedures recommended by Williams were being implemented, and could probably be brought in by GMAG to prevent experiments considered unsafe being carried out. □

COMECON

● Scientific cooperation between Comecon countries is still "incommensurable" with the requirements and potentialities of the member countries, according to the Polish journal *Sprawy Międzynarodowe*. The relatively slow development of joint research and development projects is to a certain degree attributed to "subjective factors" such as lack of personal initiative, but also to the "excessive autarchic tendencies" of individual bodies which often necessitate intervention by the "central authorities" (that is, Party and Government) of the member countries.

A number of remedies are proposed to help the integration of research which is a fundamental tenet of Comecon planning. Most of these relate to improvements in organisation and management, the integration of science and industry and so on. One, however, suggests a basic lack in the whole policy of cooperation. This involves the question of funding. At present, it appears, the necessary funds are obtained often only after protracted negotiations between the countries concerned. To speed up the process, it is suggested that a special fund should be created within the International Bank (in Moscow) for the integration of research and development in the Comecon countries, with, in due course, the possible establishment of a Comecon bank especially for the financing of research.

● Since the discovery of lasers, laser research has been seen as a modern and progressive subject, eminently suitable for Socialist countries. The Second International Conference on

Luminescence at Szeged in Hungary last month showed that interest continues unabated. In particular, a Hungarian team described the use of lasers to determine "hitherto-undiscovered properties of substances", while Soviet, Polish and East German specialists reported considerable success in the use of lasers to investigate photosynthesis.



● Cosmonauts from all the Comecon countries—including Cuba and Mongolia—are to take part in manned space-flights between 1978 and 1983 as part of the Interkosmos programme. Until now, the programme has consisted solely of the launching of unmanned satellites, put into orbit by Soviet rockets and carrying experiments and equipment provided mainly by the Soviet Union with some participation from the European members of Comecon, notably East Germany and Czechoslovakia. Not surprisingly, Soviet participation in the new programme will also be considerable: as well as providing the spacecraft, orbiting stations, and launch facilities,

the Soviet Union will train the cosmonauts—training will take place at the Soviet "Yuri Gagarin" training centre. And the wording of a recent TASS communique suggests that at least one crew member in each flight will be from the Soviet Union.

● *Chemicisation*, the massive, widespread, undesirable use of artificial fertilisers, has long been a cornerstone of Soviet agricultural policy, and, not surprisingly, has become standard practice in other Comecon countries. In certain cases, however, the results have not been entirely successful. In Hungary, for example, excessive use of fertilisers has considerably reduced the sugar content of sugar beet in recent years, so that while the yield of beet itself has increased steadily, the overall sugar yield has remained constant. To encourage the production of maximum-yield crops rather than overall gross bulk, the Director-General of the Hungarian Sugar industry recently announced a new scheme of payment for sugar-beet crops under which farmers will receive a premium based on sugar content. The Hungarian experience is, apparently, not unique; recent Soviet resolutions on the further improvement of agriculture stress the need "to increase research on the study of the effect of mineral fertilisers and other chemical products on the quality and biological total value of agricultural production". This marks a radical change from traditional attitudes: until now the largest crops rather than the best have always won official acclaim.

Vera Rich