US looks to biological weapons

Military takes new interest in DNA devices

Washington

New evidence suggests that the US Army is planning a substantial expansion in its biological warfare research programme, and may be particularly interested in the potential role of recombinant DNA in the development of biological weapons.

Since signing the 1972 Biological Weapons Convention, the US government has maintained that all research on biological warfare is unclassified and strictly defensive. This research is carried out openly at the US Army Medical Research Institute for Infectious Diseases (USAMRIID) at Fort Detrick, Maryland.

The Office of Management and Budget (OMB) has confirmed, however, that the Army has included in its overall budget for medical research a sum for defensive biological weapons systems which is classified and which is totally separate from the published budget.

The budget office apparently became concerned that the amount the Army requested for this classified work was out of proportion to the Army's stated aims in this area. One biologist contacted by OMB in the course of its review of the Army request says that it involved "hundreds of millions of dollars". USAMRIID's budget is approximately $17 million.

Reports of the Army's interest in recombinant DNA appear to have originated from a request sent by the Army to the National Academy of Sciences several months ago. The academy has confirmed that the Army was sounding out its willingness to carry out studies on chemical and biological warfare that would involve classified materials. The academy's Assembly of Life Sciences decided not to participate in either classified work or any work involving biological warfare, but said it would consider doing unclassified studies on chemical weapons.

According to Professor Matthew Meselson of Harvard University, a long-time critic of the government's chemical and biological weapons policies, the topics the Army wanted the academy to study included the possible offensive uses of recombinant DNA technology in biological warfare, ostensibly for the purpose of better understanding how to defend against them.

The Army has since submitted a proposal to the academy for an unclassified study on the detection of and protection against mycotoxins, which the life sciences assembly apparently considers to be chemical agents, despite their biological origin.

The public affairs officer for the Army's medical institute, Norm Covert, said he was not aware of contacts with the academy nor of any US Army research on biological weapons apart from that conducted at Fort Detrick. The institute's programme involves only the development of medical knowledge about biological warfare agents, including detection, treatment and prevention. The only project that uses recombinant DNA is an effort to develop an anthrax vaccine by cloning in *Escherichia coli* the determinant of the protective antigen for anthrax.

Two years ago the Army advertised in *Nature* for proposals to clone the gene for human acetylcholinesterase. At about the same time, the Army received permission from the National Institutes of Health Recombinant DNA Advisory Committee to clone the determinant of a mild exotoxin from *Pseudomonas*.

Concern over what the Army may be planning has prompted two researchers to propose an amendment to the recombinant DNA guidelines that would specifically forbid "the construction of biological weapons by molecular cloning" (see *Nature* 17 June, p.527). It will be taken up at the next meeting of the Recombinant DNA Advisory Committee on 28 June.

In a statement from the Arms Control and Disarmament Agency which was cleared by the Department of Defense, the government told the committee that it has no objections to the amendment, but believes it to be unnecessary. The statement said that the Army's research programme "does not and will not involve research to create and screen 'new' organisms as potential biological warfare agents. Our research is, and will continue to be, limited to developing protective measures to recognized infectious agents which pose a biological warfare hazard." The statement also stresses that developing weapons for deterrence is not considered to qualify as one of the "prophylactic, protective or other peaceful purposes" for which research is allowed under the treaty. An official of the arms control agency said there was no evidence that the military was interested in going beyond defence research, and that the only classified material was information related to US vulnerability to biological attack.

Many of the same points were made in a

Changes for German cancer research

Heidelberg

The crucial meeting of the governing body (*Kuratorium*) of the German Cancer Research Centre seems to have passed off successfully on Monday (21 June). The centre will continue much on its present scale, but there will be substantial changes in the administration, thus vindicating the ambitions of Professor Hans Neurath, the late-director of the laboratory whose resignation last year precipitated the present crisis.

This week's meeting of the Kuratorium was called to consider the critical report of the independent commission of inquiry under Sir Michael Stoker that was published earlier this year and the response of the present staff, the new director and of the two governments (in Bonn and Stuttgart) that are involved.

The laboratory, strictly the *Deutsches Krebsforschungszentrum* (DKFZ), is West Germany's largest cancer research institute and has a staff of more than 1,000 deployed in 39 departments and a budget of nearly DM90 million (more than £20 million) a year.

The director, Professor Otto Westphal, and ministerial director Dr Fritz-Rudolf Güntsch presented the official response to the criticisms of the Stoker commission after the Kuratorium meeting. They agreed with the report's main contention, but said the commission had failed to appreciate the broad aims of the institute and also the administrative and legal constraints of West German institutions.

Within three months, Otto Westphal has succeeded in obtaining the cooperation of the Bonn ministry, the *Land* and the members of the institute in reaching a consensus on new measures. First, the role of scientists in the running of DKFZ is to be strengthened. A new scientific committee manned from outside will advise the Kuratorium on scientific projects, staffing, space problems and personnel. The Kuratorium will have eight scientific members out of 14 and, it is hoped, will be less concerned with administration and more with science. The executive committee of DKFZ must now either implement or rediscuss all decisions of the Kuratorium and not, as in the past, leave them in abeyance.

Second, deficiencies in reviewing procedures will be remedied, in particular by *ad hoc* commissions appointed by the Kuratorium and under the chairmanship of a Kuratorium member.

DKFZ is one of the few big cancer institutes without its own clinic. Westphal admitted the Cinderella role of clinical research in West Germany, which he put down to the structure of the medical institutions. He is optimistic about opportunities for unconventional extra-institutional collaboration. **Sarah Tooze**

0028-0836/82/250615-02$01.00

separate statement filed with the committee by Dr William Beisel, deputy for science at USAMRIID and the Defense Department's representative on the committee. An open question, however, is whether USAMRIID and the arms control agency are even aware of the Army's classified programme on defensive biological weapons. **Stephen Budiansky**

UK–Dutch agreement

Seeing stars

A far-reaching agreement for collaboration on major research projects was signed last week between the British Science and Engineering Research Council and its opposite number in the Netherlands, Nederlandse Organisatie voor Zuiver-Wetenschappelijk Onderzoek (ZWO). The immediate objective is to specify the rules under which the two research councils will collaborate on projects which involve expensive capital equipment.

A spokesman of the British council said last week that this development is a mark of the "steady convergence" of the policies of the two councils. Exactly a year ago, they signed an agreement on collaboration in astronomy under the terms of which ZWO will pay a fifth of the cost of the Las Palmas Observatory on Tenerife, receiving a fifth of the observing time in return.

Those administering the agreement say that the constructive benefits of the agreement are already apparent. Technical arguments by Dutch astronomers, for example, have led to the decision that the planned sub-millimetre telescope planned as part of the Las Palmas Observatory should be sited instead in Hawaii.

The intention now is that similar arrangements should be extended to other expensive projects, including the synchrotron radiation source at Daresbury, the British Starlink system for the common processing of astronomical data and possibly even the common use of major computer facilities. There is a possibility that the two councils may mount a joint project to build an improved neutron source for diffraction and other studies.

One administrative convenience in the new agreement is that it will not always be necessary for the costs of projects to be shared out one by one. Rather, when it suits the two councils, barter may replace the exchange of money.

The love affair between the two research councils has already led to the setting up of committees of which British and Dutch nationals are members. This has not yet, however, led to cross-membership of the principal policy-making committees, nor is there an immediate prospect of common grant-making procedures except where these are ancillary to some major project.

The Science and Engineering Research Council is the largest of the five in the United Kingdom, and exists to support scientific research at British universities and polytechnics. The terms of reference of ZWO are wider, extending to the humanities and social sciences. On the other hand, ZWO is not responsible for Dutch contributions to international projects (such as CERN), while the proposed Anglo–Dutch collaboration in the infrared satellite is similarly the direct responsibility of the Dutch government.

As a rule of thumb, the budget of ZWO in Dutch guilders is roughly equal to the budget of the Science and Engineering Research Council in pounds sterling (£1 = 4.7 guilders).

Cetus goes begging

Standard Oil Co. of California, an investor in Cetus Corporation, a leading California biotechnology firm, has elected not to fund the firm's plan to produce fructose commercially. Cetus hopes to find some other sponsor for the work, perhaps a sweetner manufacturer, instead.

The process would attempt to produce pure fructose at the same price as, or more cheaply than the main competitors — high fructose corn syrup (used in soft drinks) and sucrose. Although Cetus carries out research involving recombinant DNA techniques, the enzyme at the basis of the process was found using standard microbiological techniques.

Standard Oil's decision may represent a retrenchment by major oil companies in the biotechnology field generally. Investors in such firms are said to be more cautious now than they were one or two years ago, the budding recombinant DNA industry benefited from the enthusiasm — and dollars — of major firms. Standard Oil of California (Socal) owns 17 per cent of Cetus Stock. **Deborah Shapley**

Global systems analysis

Insult or injury?

The International Institute for Applied Systems Analysis (IIASA) in Vienna is going hawking for money. Abandoned recently by the US National Academy of Sciences, IIASA has suffered another blow. Its British member, the Royal Society, quit last week. Hopes for survival now centre on the institute's friends in the United States, who are trying to raise private money. Next month the director, Canadian Professor C. S. Holling, will visit Britain to attempt to rekindle interest.

For just over a decade, the institute's chief claim on public attention has been its unique status as the paradigm of the truly East–West research centre. Its collapse, now possible, could spell the end of an era or simply mean that the project was misconceived.

IIASA is being attacked on three fronts: political, financial and academic. Politically, the institute is a creature of detente, planned as a forum where East and West could tackle problems of global importance; but detente is dead, as is the Reagan government's interest in IIASA. And the £5 million budget (1982) is seen as an unnecessary luxury in hard times.

Academic criticism such as that which seems to have moulded the British decision has been more of a surprise. Sir Hermann Bondi, British member of the IIASA Council and also chairman of the UK National Committee for IIASA under the Royal Society, professes himself "horrified" at how few friends IIASA has on the committee. But Sir Hermann is by background a theoretical physicist, not a systems analyst, and must demur to professional opinion.

The UK committee seems to have been dismayed by the draft research plan for 1983, the first produced by Professor Holling. The committee had expected to see drastic pruning of the 24 projects current in 1981 under Soviet leadership of IIASA. Holling had reduced the number to nine, but these included the biggest of last year's projects, including for example the analysis of energy policies, the impact of industrial change, environmental regulation and institutions and regional and urban development. The committee decided that resources at IIASA were still being spread too thinly.

This opinion thus left the Royal Society unable to press the British government to continue membership. The Department of the Environment, the formal channel for the annual subscription, had already decided for internal reasons that it need no longer support IIASA. The Royal Society, Britain's formal member, without any obvious means of paying the subscription, resigned.

IIASA complains that the British committee does not understand the institute's objectives, which — as Holling has put it — are to provide policy-makers with "creative options". The British attitude is more pragmatic, IIASA staff members say, while there is very little overlap between the research interests of UK National Committee members and those of IIASA.

The institute is also offended that the British decision was taken when only the draft plan for 1983 was available. With the plan approved by the IIASA Council, the proposals can now be "fleshed out". Bondi has invited Holling to present his more detailed case personally to the UK National Committee next month. Holling will travel with Professor K. S. Parik of India and A. Wierzbicki of Poland to emphasize the international interest in IIASA work. It is too late for the Royal Society to reverse its decision, but Bondi hopes it is not too late to find another sponsor, however slim the chances.

In the past, IIASA has been represented by member institutions from 17 countries including the Soviet Union and the United

0028-0836/82/250616-02$01.00