

## Yellow rain

## Another treaty threatened

Washington

THE Canadian government last week reluctantly released new information casting further doubt on charges that the Soviet Union has engaged in biological warfare in South-East Asia. The new data show that trichothecene toxins, claimed to be the toxic agent in yellow rain, can be found in individuals who do not report being exposed to yellow rain attacks.

The data were collected as part of a Canadian effort to monitor the use of biological and chemical weapons. A spokesman for the Canadian Ministry of External Affairs said investigators obtained 272 blood samples in 1984 from different locations in Thailand. By early summer 1985, Agriculture Canada had analysed all the samples using gas chromatography and mass spectrometry. Blood from five individuals in three different locations showed signs of trichothecene toxins T-2 and HT-2 ranging from 2 to 76 parts in  $10^9$ . The analysis also correctly detected 7 of 8 control blood samples that had been spiked with 100 parts of  $10^9$  of trichothecene toxins.

Although the Canadian government has had the results of the analysis for more than a year, government officials are quick to deny that the information was being suppressed. Ron Cleminson for the Ministry of External Affairs explained that the information is for a report to the United Nations on arms-control verification procedures, and was never intended as a study on toxin poisoning.

Officials from the US State Department had no specific comment on the Canadian data. But department official Tom Reich says that the United States still maintains that the Soviet Union engaged in biological warfare in South-East Asia in the early 1980s. Unofficially, however, a government official did say that the new data should have a profound effect on the US position.

The past few weeks have seen a spate of new data on yellow rain. Reports from both Canada and the United Kingdom found insignificant levels of trichothecene toxins in yellow rain samples (*Nature* 320, 699; 1986 and 321, 459; 1986) gathered in 1982. Matthew Meselson of Harvard University, a principal author of the theory that yellow rain is not a biological weapon but rather mass bee defecation, believes that the Canadian evidence makes the US position untenable.

The latest controversy comes as the United States is preparing to attend the Geneva conference reviewing the 1972 Biological Weapons Convention. Hailed as the first step on the road to true disarmament, the treaty requires signatories to destroy existing stockpiles of biological

weapons. It further prohibits any future development of production of biological agents that have no justification for "prophylactic, protective or other peaceful purposes".

The United States now takes the position that the Soviet Union has violated the terms of that treaty. In addition to charges that the Soviet Union has used biological weapons in South-East Asia and Afghanistan, the US government also believes that the Soviets have a biological weapons

## French research

## Chevènement's expected outburst

JEAN-Pierre Chevènement, the architect of the past administration's buoyant policy on research, last week accused France's new government of "unilateral disarmament in the economic war". He was referring to the cuts on science spending which flow from the conviction of the right-wing Prime Minister, M. Jacques Chirac, that reduced public spending will revitalize the economy by releasing private enterprise from tax burdens.

Chevènement's complaint, published in *Le Monde* last week, stems from his belief that world competition now threatens "whole economic and social systems" and that research is particularly important, and will "more and more decide the winners". So, says Chevènement, the Chirac government's transformation of real growth of four per cent a year in science spending into a four per cent cut was "a grave blow".

Chevènement fears that the new government is allowing the "two conservatismisms" against which he had to battle to reestablish themselves. One conservative influence is industry, where only 100 companies employ more than 50 researchers and only 1,500 have any at all. The other is the academic community, which Chevènement fears may abandon its flirtation with industry and retreat to its old ivory towers.

Chevènement has a kind word for General de Gaulle, who he says was the only president before Mitterrand to recognize the importance of research, but who took ten years (1958-68) to make an economic impact with it. But the Mitterrand-Chevènement policies have now been "halted in mid-stream", while power has now returned to those who, under President Pompidou, presided over a steady decline of scientific output. Chevènement quotes Pompidou as saying that, of three ways to lose money "the most agreeable is women, the most rapid gambling, and the most certain research".

Chevènement also credits the new mini-

programme under way at a research facility near Sverdlovsk. But James Leonard, former US disarmament negotiator who negotiated the 1972 treaty, says the United States has made charges that "cannot be substantiated." To reverse the present climate of mistrust, Leonard recommends steps to encourage communication among the superpowers, such as an international registry of high-containment laboratories and greater participation in international scientific exchanges. While there is no indication that the treaty will collapse, Leonard believes the prospects for strengthening or expanding it in the fall review are nil.

Joseph Palca

ster of research and higher education, Alain Devaquet, for "courageously defending" the research councils against dismemberment. On the break-up of his own ministry of research and technology, Chevènement said that it would not now be possible to establish joint programmes across research institutions. What Chirac has dismembered is the "ministry of the future".

Robert Walgate

## Optical computer in sight

Edinburgh

A GALAXY of stars of European science politicians gathered at Herriott-Watt University in Edinburgh on Monday to celebrate what former French science minister Pierre Aigrain described as a "spectacular" success along the road to the development of an entire optical computer.

EJOB, the European Joint Optical Bi-stability programme, has cost just 1.8 million ECU (about £1.2 million) over two years but it has stimulated 20 research groups around Europe to produce what was first demonstrated in Edinburgh this week — broad-band optical switching and a basic "classical finite state machine" (the guts of a computing engine) using nothing but lasers and nonlinear optical material. "Massively parallel" optical image processing and new forms of laser-driven television are also just plausible.

Professor Desmond Smith of Herriott-Watt University and leader of the EJOB project, says the programme could absorb a tenfold increase of funding to 10 million ECU per year, but the European Council of Ministers, meeting in Luxembourg next Tuesday, has yet to be convinced of the need for an increase. Parliamentarians at Edinburgh agreed, and pressure is now increasing on European ministers, to divert a small part of the enormous Commission agricultural policy funding to science and technology. Robert Walgate