

Yellow rain

Waiting for data

A group of representatives of the United States government has been visiting ten European capitals during the past three weeks, presenting the evidence behind allegations by Mr Alexander Haigh, the US Secretary of State, that Russian-produced mycotoxins have been dropped on civilians in Kampuchea (*Nature*, 1 October, p.327). The representatives — who asked that they and their affiliations should not be identified — have discussed the evidence with government scientists and the press. But the evidence remains chiefly circumstantial and the release of information before the scientific evidence has been properly presented has done little to clarify whether the allegations are correct.

The mycotoxins concerned are from the tricothecene group, produced by the *Fusarium* fungi. The circumstantial evidence for their use in Laos, Kampuchea and Afghanistan consists largely of the descriptions of symptoms experienced by civilians within a few hours of the dropping of "yellow rain" from low-flying aircraft. According to the anonymous speakers at the US Embassy in London last week, the progressive symptoms of vomiting, skin blisters, haemorrhaging of mucous membranes and death were observed by journalists, doctors and refugees from these countries and, it was stated, were not consistent with "traditional" chemical warfare agents. Moreover, according to the speakers, the climatic conditions in Laos (from where the detailed evidence was drawn) are not conducive to the natural production of these toxins by fungi.

Only one sample of vegetation affected by yellow rain, taken from Laos by a person "trained in chemical warfare", has so far been analysed, and the results of that investigation — carried out by Dr C. J. Mirocha of the University of Minnesota — have not yet been accepted for publication. Dr Mirocha confirmed that three toxins, T2, nivalenol and deoxynivalenol, had been identified, and agreed with the statement that the concentrations of the last two were about twenty times the amounts observed in contaminated vegetation in other parts of the world. But he disagreed that the climate of Laos would prohibit toxin production, although he felt that other fungi would prevent *Fusarium* from producing the toxins. He felt that until his results had been published, they could not be properly discussed.

Several questions remain unanswered. None of the descriptions of observed symptoms were attributed to specific observers so that it is not possible to ascertain how objective that evidence is. The symptoms produced by mycotoxin poisoning vary greatly from species to species, according to Dr D. Paterson at the Central Veterinary Laboratory in

Weybridge, who has investigated the effects of mycotoxins on cattle. It is not obvious, therefore, that the symptoms described can definitely be attributed to mycotoxins. When asked what type of vegetation had been sampled, the government scientist replied that it was "a small bush".

Other samples are being analysed, and — as the rainy season in Laos is soon to end — it is expected that "yellow rain" may soon be falling again. But the combination of unattributed evidence, premature and incomplete discussion of scientific evidence and vested interest may have combined to defeat the purpose of the European expert tour. **Philip Campbell**

European Community research Savings on defence?

Brussels

European Commissioner Karl-Heinz Narjes has set the cat among the pigeons by suggesting that EEC countries should cooperate on defence and military research.

This was just one of the ideas put forward in a policy paper on industrial innovation which looks at how Europe's flagging competitiveness could be improved by action at EEC level. Although only cautiously mooted by Narjes, the suggestion has led to a heated debate among the European Commissioners. Not only is cooperation on military matters excluded from the Treaty of Rome and therefore not a matter for EEC, but certain member states, notably Ireland, are already disturbed that discussions by EEC's foreign affairs ministers should include defence questions. Ireland is not a member of NATO and has neutral status.

Narjes, however, feels that the time is right to debate the advantages of sharing the costs of military research. France and the United Kingdom devote about 50 per cent of their public sector research and development budgets to military research which frequently provides valuable commercial spin-offs. France under Mitterrand is certainly more amenable to wider cooperation on defence matters and in the rest of the Community the need to keep public sector budgets pared to a minimum will surely make the idea attractive.

Another suggestion Narjes raises in the paper is to link the Community's research with the activities of the European Space Agency. The new horizons this could open up were considered in a report by European parliamentarian, André Turcat (see *Nature* 1 October, p.330).

In the main, though, the paper concentrates on more down-to-earth prospects: more innovation-orientated spending by the social and regional funds, improving access to risk capital, bringing together European companies to pool research in new technologies, and improving the incentives for investment in new technology. The European Commission has already

organized a meeting of representatives from information technologies to identify the areas in which basic and non-competitive research could take place.

A chief target of the paper is the restrictive nature of the national public supply markets. These absorb some 10 per cent of the gross domestic product and are under the immediate control of governments which, claims the commission, only favour national suppliers. These public markets are invariably in technologically rapidly evolving sectors (telecommunications, information technology, energy, transport and education) and where the successful can seldom take advantages of the large European market.

Narjes's paper will be followed by a second with more detailed suggestions that could be ready for the next European Council in London on 26 November. There the so-called May 30th mandate, which requires that the Community should move away from the heavy emphasis on agricultural spending and put more effort into industrial and social affairs, will be discussed. **Jasper Becker**

French science budget

More for all

Is a budget increase of — on the face of it — nearly a third for research and development, 1,800 new posts in universities and a further 630 in research agencies a vision of some glorious year of the 21st century? No, it will be France in 1982, if budget plans announced last week are put into effect.

Research and innovation are clearly a central plank in the Mitterrand government's philosophy of boom or bust; and provided inflation does not waste the rewards, French scientists seem likely to benefit greatly in the next few years.

In 1982, there should be a 20 per cent increase (less inflation) in the civil research budget. The universities will get only a 16 per cent cash increase, but many new posts, 400 of them from 1 January. Of the research agency posts, 348 will be at the prestigious Centre Nationale de la Recherche Scientifique — an increase of nearly 5 per cent on its total research staff. The university posts will be principally "assistants", junior appointments to absorb unemployed graduates of the "troisième cycle" (effectively post-docs) and rejuvenate ageing departments.

According to Jean-Pierre Chevènement, minister for research and technology, the exact allocation of the increased research budget will not be decided until after the National Colloquium on Science and Technology in Paris in mid-January. However, the division of the budget among research agencies already makes clear some rather remarkable priorities.

For example, despite the new French commitment to nuclear power (strongly championed by Chevènement), the lowest