Chemists 'volunteered for nerve gas tests'

London

In a move that would bring instant disapproval from modern health and safety inspectors, former members of the chemistry department at Cambridge University have admitted that they tested nerve gases and other chemical warfare agents on themselves during secret World War II experiments.

On one occasion, chemist Fred Pattison went blind for ten days when his dosage was too high. "I thought I was permanently blinded," he now says.

In the early years of the war, when Britain feared that it would come under chemical attack, the Ministry of Supply arranged for several university chemistry departments to provide rapid response units. Staff of the chemical agents research team at Cambridge University were also encouraged to work on a number of potential warfare agents as a possible form of retaliation.

In the early 1940s, these researchers routinely tested new compounds on themselves. Staff were asked and "could have refused" to do the experiments, which were carefully monitored, says Pattison. But, he adds, everyone accepted the risks, as they saw their work as part of the 'war effort' and of national importance. "I remember being ushered

Chemical reactors: the Cambridge chemical agents research team in 1944. Fred Pattison (back row, second from left) was blinded for ten days.

into the gas chamber for 10-minute exposures, armed with paper and pencil to note down any symptoms," he says.

The human tests were intended to establish symptoms of exposure to the gases at sub-lethal doses. At that time, the researchers did not know the organophosphate compounds they were working on were nerve gases; only that they were extremely toxic.

"Everybody had a go," says John Ilett, another of the ex-Cambridge chemists. "I

can remember not being able to read anything for a couple of days." Ilett says as far as he knows nobody suffered long-term effects.

Alistair Hay, a senior lecturer in chemical pathology at the University of Leeds, is not surprised by the admissions of the Cambridge chemists. "There is a long history of scientists being involved in tests at Porton Down [in Wiltshire]," he says. After the war, Porton Down turned to volunteers from the armed forces.

Bernard Kilby worked in both the chemistry and pathology units at Cambridge and oversaw many of the human and animal tests. He says it was suggested that the units “do something useful” while they were waiting for a gas attack. The Cambridge unit was allocated lead and fluorine compounds, and tried to develop new toxic compounds based on those identified during the inter-war years. Kilby worked on making the fluorine analogue of mustard gas — widely used in the first world war.

When the Cambridge team discovered successful new substances, such as diisopropyl fluorophosphate (DFP), these were developed at the Ministry of Defence's Porton Down research centre. DFP went on to be manufactured on a large scale by the United States during the war. Gases were never used during the second world war, although once it was over, chemists realized that Germany had developed chemical agents much further than they had anticipated.

One of the chemists involved in the Cambridge experiments says he shudders to think what an ethics committee would say today about the research. But Ilett says they trusted the pathology lab's calculations on body weight. “It was war time. Everyone was taking risks. You were not offering yourself as sacrifice, but it took away the boredom of the war years in Cambridge”.

Natasha Loder

Cuts may force cancellation of Austrian research grants

Munich

Austria's new coalition government has slashed the annual budget of the Austrian Science Fund (FWF), the country's main funding agency for basic research, by a quarter, forcing the agency to consider cancelling two of the six rounds of grants awards that it makes every year.

The cuts are part of a broad cost-cutting budget introduced by the government. But what has particularly upset researchers is the fact that the cuts to the science fund are significantly higher than those being imposed on other areas of public spending.

Many have reacted with dismay to this decision, which means that no money for funding new projects will be available until after the summer. “This is absolutely unacceptable,” says Gunther Kreil, head of the department of biochemistry at the Austrian Academy of Sciences' Institute for Molecular Biology (IMB) in Salzburg.

The IMB employs about 20 PhD students and postdoctoral researchers on FWF grants, part of the 1,300 supported in the whole of Austria in this way. Although existing jobs

and projects may not be threatened in the immediate future, Kreil foresees bleak prospects for the next wave of researchers.

“It will become immensely difficult, even for very gifted young scientists, to get grant money,” he says, expressing particular concern at the impact that the move could have in competitive areas such as molecular biology. “It is a shame that this comes at a time when there is an abundance of excellent research ideas.”

Arnold Schmidt, the FWF's president, has called the cuts “a sheer disaster” for all basic research in Austria. He says that he is particularly disappointed that pre-election promises to increase public spending on research significantly over the next few years have apparently been abandoned.

With a mere 1.6 per cent of the gross national product being spent on research, Austria has never been the land of plenty for scientists, although some recent initiatives — such as the creation of a new Genome Research Centre in Vienna (see *Nature* 401, 630; 1999) — have brightened the general picture.

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