French research budgets

Let the good times stop

AFTER months of hanging on a thread, French scientists have at last heard how much money they are really getting in 1983. Or at least the research councils have. The Centre National de la Recherche Scientifique (CNRS), the principal basic research council, loses 12.5 per cent of the cash it was granted in 1983 for laboratory expenses — materials, apparatus, special projects and so on. The medical research council (INSERM) loses 10 per cent, and the agricultural research council a little more. One surprising cut: the biotechnology programme of the ministry of industry and research, one of ex-minister Chevènement's incentive "programmes mobilisateurs", is slashed by a quarter.

Now it is up to the scientists in each institution to work out how to share out the shrunken cake. At CNRS, for example, the Paris-based scientific directors who manage the different sectors of CNRS research must decide whether to cut general laboratory budgets, or the special programmes (the *actions thématiques programmées*, or ATP), and in what proportion.

But how severe a blow are these cuts, after two years of large increases? Professor Pierre Chambon, director of a prominent laboratory of molecular biology in Strasbourg, calculates roughly that his budget will be 15 per cent down on what he

was promised in January. "And this was the first year in which we really got what we needed", he said on Monday. "We will just have to stop work in November." His losses arise this way: of expected running expenses this year of FF 8.4 million (£720,000), FF 6.5 million comes from basic support by CNRS and INSERM. The rest comes from 2–3 year contracts (such as the ATP and the ministry's biotechnology programme). If the cuts are applied to him in full, Chambon will lose some FF 700,000 on the basic CNRS and INSERM support, and 10 per cent of the remainder as there are likely to be fewer contracts around this year than he expected. That is a loss of around 10 per cent on the total. Then the dollar and other foreign currencies have strengthened against the franc over the past year, and around half of Chambon's budget buys material and equipment from abroad.

However, the loss was on a good budget, so Chambon believes his laboratory is still 5–8 per cent up in real terms on its position in 1980. But that was a poor position, and Chambon feels that foreign laboratories — say in the United States with various sources of finance to call on — may have done better.

So after two years of rhetoric in support of research in France, one of France's best laboratories has had a budget increase of only 5–8 per cent. **Robert Walgate**

Hungarian science

Budget cuts weathered

HUNGARY'S scientific community must develop greater mobility, Dr Yanos Szentagothai, president of the Hungarian Academy of Sciences, said on Budapest radio recently. He was reporting on this month's general meeting of the academy, the first since last summer's traumatic cutbacks in science spending, when many researchers found themselves deprived of promised funds. The cuts were introduced so suddenly that scientists had no chance to suggest where economies might best be made, with the result that essentials were sacrificed and less important items in the science budget conserved.

During the past few months, however, the scientific community has been able to make its case to the government and the cuts have been adjusted to fall where they are least regretted. Even so, this process has inevitably generated what Dr Szentagothai described as "fear and unease".

The immediate cause of the cutbacks was the world recession, aggravated by a number of internal problems, in particular, the expansion of the Academy of Sciences. During the past thirty years, the academy has developed from a purely honorific body with no research base into a major complex of institutes and research groups, with much autonomy in the allocation of research funds and considerable fringe benefits. The academy research structure, says Dr Szentagothai, has now reached saturation point, and if young and talented graduates are to be given their chance, room must be made for them at the expense of experienced but not particularly creative senior staff.

Early retirement, the obvious answer in many countries, is unacceptable. Hungary encourages pensioners to stay on at work as long as possible. Some of the older scientists, Dr Szentagothai suggests, could well take up university lectureships.

Industry also offers considerable scope. There are at present a number of research areas designated for priority resource allocations — pharmaceuticals, aluminium metallurgy, petrochemicals and protein production, for example — which industry is committed to support. Yet industrial managers are not eager to establish their own research facilities, preferring to contract out research projects to scientists already working in the universities or academy institutes.

Dr Szentagothai's suggestion, that the prestige of research work within the industrial sector should be raised and that older scientists should make way for newcomers would therefore appear to depend on persuading industrial managers to provide research jobs and facilities within their factories. **Vera Rich**

Lopsided Z^0 particle tracked down?

DR Carlo Rubbia of Harvard University revealed in a talk at Princeton University last week that his group at CERN, the European Organization for Nuclear Research in Geneva, may have detected the Z^0 particle, the third of the intermediate vector bosons predicted by theory. Rubbia's group detected the two other particles, the W^+ and W^- , last January.

Rubbia revealed the finding in a general talk on his group's research. "He showed one event that's spectacular", said Dr Pierre Piroué of Princeton, who attended the talk. "There's no question it could be a Z^0 ". But one event is not considered enough to justify an announcement that the particle has definitely been detected.

Rubbia's evidence is the detection of an electron and a positron, the predicted decay particles of the Z^0 . The event occurred close to 100 GeV, which is the predicted mass of the new particle. According to Piroué, the exact mass implied by Rubbia's observation was actually slightly higher than that predicted by theory.

Rubbia and his group are resisting the temptation to make a public announcement, but an "internal statement" is circulating at CERN. The statement is said to

have been written by Rubbia and is headed "First sign of the Z^0 ?" (the question mark is significant). It reads:

"During the night of 30 April a remarkable event was recorded by the big UA1 detector. Two very high energy tracks were recorded, and identified as an electron and a positron from their calorimetry, flying away from each other at a wide angle. The most likely interpretation is that they come from the decay of the Z^0 particle."

A CERN spokeswoman said that Rubbia would not wish to make an announcement until he has 4 or 5 similar events. But there may be a stronger reason for caution.

It is widely accepted that the Z^0 should be recognizable by its decay into an electron and a positron. In Rubbia's putative event, however, the electron track has an energy of 50 GeV but the positron is said to have only 8 GeV, the rest of the 50 GeV on that side of the event being found as radiation. Although positrons (and electrons) radiate strongly on passing through matter, the conversion of such a high proportion of the energy into radiation is unusual. To that extent the event is an oddity, and so not one on which to stake a reputation.

Stephen Budsonsky & Robert Walgate