

French research strategy

CNRS embraces plans for research networks

THE French multidisciplinary research council, the Centre National de la Recherche Scientifique (CNRS), is learning to live on a static budget after a rapid period of expansion, its director-general Pierre Papon implied this week. This year's budget of FF8,000 million (roughly £800 million), although up by 8 per cent, will not be enough to cover the rising costs of keeping productively at work the 10,000 of France's most able researchers (10 per cent of whom are foreign) and the 15,000 technicians, engineers and administrators on CNRS's books. But CNRS does not intend to stagnate. Papon says that it will continue to move into new fields of research by adopting new methods of management and organization.

Papon's intentions make an interesting contrast with those of research organizations elsewhere, in Britain for example, similarly constrained by static budgets. Science minister Hubert Curien has effectively ruled out increased concentration of research resources on centres of excellence, saying that would be an unforgivable waste of research talent. This position is supported by Professor Frederick Joliot, science adviser to the prime minister, who argues that the US model for research support entails "excessive" competition, and that the French alternative, based on protected careers in research, allows greater freedom for the pursuit of long-term and speculative projects.

The key word in French science planning now is neither "selectivity" nor "concentration" but "networks", a term once fashionable at the European Commission in Brussels, but introduced in the context of CNRS by M. Curien just before Christmas. The intention is to link existing laboratories and their staffs into new projects, each lasting perhaps only a few years, to share staff and equipment without a concomitant increase of costs.

So Papon and Curien intend that researchers should be more willing to change disciplines and that laboratories should be more open to others, both in France and elsewhere in Europe. Papon, for example, wants to create networks for the study and development of new materials, an approach that contrasts with the decision last year to set up a special laboratory devoted to one of the most fashionable of these, gallium arsenide.

Since 1981, CNRS has been creating new laboratories, usually linked with universities, at the rate of 20 a year, but last year there were only 10 and, during 1986, there will only "a few" additions to the present roster of 750 CNRS laboratories.

Even so, expansion will not be entirely halted. In what may turn out to be a last gesture towards expansionism, CNRS will build a dozen laboratories in the general field of information technology by the end of the decade at Marne la Vallée, a new town still under construction.

Growth will also be sustained by cooperation with regional governments, which now spend up to 3 per cent of their total budgets on research, and with industry. Thus, 1986 will see the beginning of a new metallurgy laboratory in cooperation with the company St Gobain and an inorganic polymer laboratory founded in conjunction with Rhone-Poulenc. But Papon insists that the work at the new laboratories will be basic and strategic — St Gobain, for example, is interested in metallic glasses — and that CNRS will not slip into the role of an applied research agency.

CNRS also intends in 1986 to create several "national laboratories" at which equipment and technicians will be provided only on condition that they are made available for use by other groups for a proportion of the time. An experiment on these lines in engineering science during 1985 is seen as a success and other disciplines are likely to follow in 1986.

During the year ahead, CNRS will have to find FF50 million for projects under the

banner of Eureka, the European collaboration in high technology, out of the 8 per cent budget increase of FF700 million, but even so it will be able to increase spending on medium-scale equipment by 24 per cent, on minicomputers by a third and on large-scale equipment by 13 per cent. Spending on basic research materials will increase by 10 per cent in the life sciences, by 12 per cent in engineering and by 7 per cent overall.

CNRS intends to deal generously with some of its special programmes. Thus the budget of an interdisciplinary programme of materials research begun four years ago will increase by 58 per cent (to FF9.5 million), while there is to be a grand new programme (with a budget of FF11 million in the first year) to bring organic chemists and molecular biologists together.

CNRS will expand by a quarter its department concerned with the application of research, funds allocated to international cooperation are to increase by 13 per cent (international subscriptions are not included) and, in the scientific programme, there is to be more emphasis on the Earth sciences and oceanography (probably at the expense of astronomy); there is, for example, to be a new oceanography laboratory at Toulouse using remote-sensing data, particularly those from the SPOT series of satellites, not to mention a new programme of "cheap" communications research involving neurobiology, cognitive science, linguistics and artificial intelligence. Stasis does not mean to CNRS what it means to other people.

Robert Walgate

Nuclear winter

Soviet researcher's part hyped

VLADIMIR Valentinovich Aleksandrov, the Soviet computer programmer who disappeared in Spain last March, was an "irreplaceable" Soviet scientist whose disappearance put an immediate end to East-West cooperation in the "mathematical modelling of global biosphere processes", in other words, research into nuclear winter, according to the Soviet weekly, *Literaturnaya Gazeta*. After a belated announcement by the Academy of Sciences (his employers) in December, which said little more than that he had disappeared, and a subsequent polemic in *Izvestiya* accusing the Central Intelligence Agency of having kidnapped him, *Literaturnaya Gazeta* devoted a full page to Aleksandrov and "nuclear winter".

By this account, Aleksandrov "is one of the scientists who have made the weightiest contribution to this field of research, thanks to which the consequences of a nuclear war have been placed before the entire world in an entirely new light, even more terrible than before". (He was in fact never more than a junior member of

the Soviet teams to ENUWAR symposia discussing nuclear winter.) In the light of his lack of a doctoral degree, some Westerners have suggested that his place in the delegations may have been dictated by political rather than scientific motives; it is now claimed that he was too busy campaigning about nuclear winter, and that he was due to defend his doctoral thesis on 20 April.

According to his superior at the Computer Centre of the Academy of Sciences, Nikita Moiseev, despite his "comparative youth" (47), his election as a Corresponding Member of the Soviet Academy of Sciences was a foregone conclusion, although he has not been elected in *absentia*.

In one respect the paper is incorrect — international cooperation in "nuclear winter" studies was not "instantly broken" by Aleksandrov's disappearance. An ENUWAR symposium took place in June at the University of Essex, with a Soviet delegation clearly embarrassed by Aleksandrov's absence, to which it referred as a "tragedy".

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