Carlsberg Foundation

Research rides on beer sales

SOME countries have natural resources; so does Denmark. It has beer. And Danish beer benefits science for, strangely enough, the United Carlsberg and Tuborg breweries are run by five professors for the profit of research. And since conservative Danes drink nothing but Carlsberg and Tuborg, and since the breweries have been investing effectively in breweries abroad (Britons now drink more Carlsberg than the Danes), the Carlsberg Foundation has been doing well.

In fact, the Carlsberg Foundation for Research has increased its spending by 20–25 per cent a year for the past four years, and it now disburses annually as much as the Danish natural sciences research council. A fair fraction of the foundation's money goes to the humanities, but that still leaves a fine sum for science, from astronomy to microbiology. Yet, says foundation secretary Niels Petri, most of the recent increases have been taken up in "supporting unemployed scientists". And future growth is threatened by new tax laws.

Beer also pays for the Carlsberg Laboratory, supported directly by the breweries as a tax-break, which is free to range (in style) over much basic agricultural and molecular biology. In the past, the laboratory was responsible for the first cloning of a microorganism (E. Christian Hansen's pure yeast cultures), S.P.L. Sørensen's concept of *p*H, Linderstrøm-Lang's concepts of protein structure and function and — they say — Schmidt's discovery of eel migration and Winge's discovery of sexuality in yeast. More recently, the laboratory did less well, but now in quite extraordinary new premises there appears to be something of a refermentation at the Carlsberg.

"Recruiting? We've never had to do any", says Carlsberg Laboratory director of physiology, Professor Carl von Wettstein. According to a Danish student, a scientist can get to work at the Carlsberg only "by invitation". The laboratory, however, has few permanent jobs. Of the 150 researchers at the laboratory at any one time, many will be postdoctoral people from abroad working on foreign money.

"But we get more results per kronor than any other institution in Denmark", claims von Wettstein. And the fact that he has to apply for outside money, from the European Communities for example, is proof that the laboratory is not over-generously supported, he says.

The only problem of working at the Carlsberg, say researchers there, is a strict requirement to publish in the house journal *Carlsberg Research Communications*, which has a circulation of only 400. But, says von Wettstein, the good work gets out anyway; the journal is critically refereed; it is not so affected by fashions as other journals; and it can report steps in major projects that take years to complete, as in the Carlsberg work on chlorophyll synthesis. "This was very fashionable in the 1960s, then everyone dropped it because it was too difficult. But we carried on and published in our journal."

In spite of acknowledged successes, some observers say the foundation could be more adventurous in the way it uses its funds. The five professors who direct it have considerable power to influence the directions of Danish science, but they usually walk in strict step with the research councils. Moreover, foreign beer sales are levelling off, and Petri expects the foundation's funds to level off next year, quite apart from possible tax changes aimed at a number of foundations somewhat less charitable than the Carlsberg.

Robert Walgate

Synchrotron radiation

THE French and West German governments have agreed to place the European Synchrotron Radiation Source (ESRS) at Grenoble, in the foothills of the French Alps, and not at Strasbourg as previously predicted by French government and scientific sources. This will put ESRS alongside the extremely successful high neutron flux beam reactor of the Institut Laue Langevin, and the announcement (last Friday) has been greeted with enthusiasm as making scientific sense.

Whether it makes political sense, however, is unclear. According to the announcement, ESRS will be a Franco-German facility; but the outline diagnosis of the synchrotron was done not just by France and Germany but also by the United Kingdom, Italy, Denmark, Sweden and Finland, two of which (Denmark and Italy) had put in firm site proposals.

Denmark has protested about apparent French hijacking of the project. All seven countries had been paying the costs of a study under the auspices of the European Science Foundation (ESF) to bring up ESRS, originally designed in 1979, to modern standards. The 300-page draft of the new design was sent to officials of the seven countries earlier this month, and a meeting of the ESRS intergovernmental programme committee (under ESF) is due to take place in Brussels tomorrow (Friday), ostensibly to discuss that design.

A French government spokesman on Monday was, however, unable to explain the relationship between the Franco-German ESRS decision and the ESF committee. Would ESRS be solely for the use of France and Germany? "France believes in creating a 'European space for research' " he said, quoting Prime Minister Laurent Fabius, "so ESRS will be open to all Europe". Robert Walgate

Genetic manipulation

Agency tries out regulations

Washington

THE US Environmental Protection Agency (EPA) last week formally announced its interim policy on field tests of microbial pesticides (*Federal Register* **49**, 40659–40661; 1984). Citing a "higher degree of uncertainty in predicting ecological impacts" of microbial as opposed to chemical pesticides, EPA will in future require 90 days' advance notice of field tests of "genetically altered or manipulated" organisms, or of those not indigenous to the test area. Hitherto, field tests of pesticides on plots smaller than 10 acres have been exempted from the notification requirement.

Industrial companies seem pleased with EPA's efforts to regulate in this area. The Monsanto Corporation has already given notice of its intention to carry out field experiments that will be controlled under the new policy; Robert Conken, director of registrations for the company, said the rules would satisfy the public's demand for regulation without impeding research.

As expected, EPA will not require a formal "Experimental Use Permit" for every test. Under the new policy, companies will, however, need to provide EPA with complete information about the proposed test, including details of the ecology and physiological tolerances of the test organism, as well as a complete description of the manipulations performed and their expected results. The agency will also require proposals for monitoring any spread of the microorganism and evaluating potential adverse effects, together with methods for disposal of exposed materials. The test will be allowed to proceed if EPA raises no objection in the 90-day notification period.

There were, however, some questions raised by industry about the scope of the new policy. Conken asked how a company should determine whether an organism is "non-indigenous" and so within the new guidelines: would an organism that occurs naturally elsewhere in the same state, for example, be counted as indigenous? There is similar uncertainty about the meaning of "genetically altered or manipulated" — the question being whether organisms obtained through artificial selection, for example, are included. But many of the questions are likely to be answered quite soon, when EPA produces a policy statement that will also cover releases of genetically-engineered or non-indigenous organisms other than pesticides. The agency plans to use the existing Toxic Substances Control Act for non-pesticides (see *Nature* 23 August, p.613). And EPA officials stress that no decisions in this area should be regarded as final: the agency is by its own admission feeling its way, and comments are invited on how the regulations should be improved. **Tim Beardsley**