United Kingdom: The Annual Report for 1989/90 of the Medical Research Council

Policy issues

Pre-embryo research. The Medical Research Council (MRC) supports internationally recognised research on reproduction, some of which includes the use of human pre-embryos. This work includes research on pre-implantation diagnosis of genetic diseases, the development of a contraceptive vaccine, and improvements in the technique of in vitro fertilization. The MRC was active in its support for pre-embryo research providing information and organizing briefing meetings for Parliament members. This year both Houses of Parliament voted overwhelmingly to allow research to continue under license, and rejected amendments which would have limited pre-embryos available for research to those which were spare to a course of in vitro fertilization treatment.

Scientific experiments on animals. In the light of current debate about the use of animals in scientific experiments the MRC approved the following statement of its position [abbreviated here – Ed.]:

- Without the use of animals in medical research, many of the life-saving discoveries which are now in everyday use would not have been made.
- Medical research still needs to use animals. Animal work is essential, for example, to the search for a cure for such life-threatening diseases as cancer and AIDS. However, there has been a consistent reduction in the use of animals over the years, and the biggest cut has been made in the use of domestic species and primates. 98% of the animals used in MRC establishments in 1989 were rodents. The MRC has been active in the development of alternative methods such as cell culture and computer modelling, and these are used wherever possible.
- The MRC requires all the scientists it supports to observe the principle that animals should be used in their research only when necessary and then in the minimum number consistent with achieving a valid result in any experiment.

International activities. The main focus of the MRC's international commitments has continued to be in Europe where both the European Community Framework Programme (in particular the Medical and Health Research Programme) and the non-governmental European Science Foundation (ESF) offer opportunites for contact. The MRC's financial commitment to the ESF is expected to grow as the ESF steers a course of expansion over the next few years. A new activity, begun in 1990, is the series of Euroconferences, based on the Gordon Conference format from the United States. In addition, it is hoped to develop a post-doctoral fellowship scheme, which might be linked to ESF Networks and Scientific Programmes.

Training awards. As part of the Clinical Research Initiative the number of *training fellowships* available for award in the annual open competition has been increased from 44 to 65 per year, and the Research Training Support Grant from £1000 to a maximum of £4000 per year. The MRC continues to be concerned by the inadequate level of postgraduate stipends and the consequent decline in the proportion of *MRC research studentships* being taken up. The MRC therefore welcomes the decision of the Advisory Board for Research Councils to allocate research funds to enable all Councils to increase stipends by £400 per year from April 1991.

Clinical research initiative

The MRC has approved outline proposals for redeploying the greater part of the Clinical Research Centre (CRC) resources to those institutions recognised as Centres of Excellence in the regions both by relocating existing teams from the CRC and by reinvesting freed resources in new ventures. It has produced scaled-down plans for the Hammersmith site and is seeking support for a new building. The MRC has now set a December 1994 target date for the closure of the CRC.

U.K. Human genome mapping project

Additional funds totalling £11 million over three years (1989–92) were approved for the initial phase of a U.K. project of human genome mapping. After 1992, a sum of £4.6 million per year will be available to continue the project. This initiative reflects international interest in mounting a systematic analysis of the total genetic information in man. Over the year under review, a U.K. strategy has been developed that complements the U.S. one. The immediate aims are to produce worthwhile results in the five-year run-up to the U.S. programme and to maximise the return from an annual sum roughly one-thirtieth of that budgeted for in the U.S. Since only a few percent of the genome are actually genes, an approach which focuses at first on these regions will yield the largest immediate dividends. Questions concerning the function (if any) of the remaining DNA will be addressed when sequencing technology has become more cost-effective. The other innovation has been to stand the traditional approach to genetic mapping on its head. Most research hitherto has centred on particular genes of interest: cystic fibrosis or muscular dystrophy are examples that have gained public attention recently. But looking for a specific gene is like seeking one particular individual in a crowd of 100,000. What the project aims to do is pull out genes without reference to function and describe each in just enough detail for workers to access them later through data base searches when biological and medical

problems are being addressed. Another priority is to concentrate resources on mouse genetics, since the mouse genome and that of man show substantial similarities. A major component in the project is a Resource Centre that will aim to provide materials and collect data as well as carry out an intensive programme of systematic data generation. The Centre has been set up at the Clinical Research Centre at Harrow, and has been fully operational since October 1990.

AIDS

Anonymous testing for antibodies to HIV: Surveys involving voluntary named testing have been in progress for some time, and in January 1990 a major programme of unlinked anonymous testing was launched to complement this. The main advantage of anonymous testing is that since testing is done without individual consent, it is possible to test a representative sample of a particular population. Initially, the study populations will include people attending sexually transmitted disease clinics, drug-dependency units and antenatal clinics.

Therapeutic trials. Early in 1990 approval was given for a clinical trial of the drug dideoxyinosine (ddI) in patients with HIV disease including AIDS. This is a preliminary trial in patients who are unable to tolerate the drug zidovudine (AZT) and for whom there is therefore no other anti-viral therapy available. The aim of this double-blind controlled trial is to evaluate the effectiveness and toxicity of the drug by comparing two different doses of the new drug with a placebo. It is appreciated that some patients, given their situation, will want to be sure of receiving ddI, despite current lack of information on either safety or efficacy. The trial therefore offers these patients the alternative option of being randomized to receive one of the two doses of ddI. This trial will involve collaboration with France and possibly other European countries.

The study of zidovudine in asymptomatic HIV patients continues in spite of the termination of a similar study in the United States. While the U.S. study has shown benefit in the short term (up to one year), the present study is expected to yield information on longer term treatment. In addition, the extent to which HIV becomes resistant to zidovudine treatment (a phenomenon already demonstrated in AIDS patients) will be studied.

The directed programme. Steady progress has been made since 1987 in the development of vaccines for prevention and drugs for treatment of HIV infection and AIDS. Studies have now shown that it is possible to protect macaque monkeys from infection with SIV (the simian relative of HIV) using a vaccine made from inactivated virus. These results provide encouragement that a vaccine against HIV will ultimately be possible.

United Kingdom: The Science and Engineering Research Council (SERC): A Report on Research in the United Kingdom, France and Germany (W)

The SERC has published the first volume of a report presenting the main financial features of research and development (R&D) in these three countries, including both the broad lines of the institutional arrangements and the resources deployed, according to official national data. Major differences are found between the three countries.

Regarding the resources deployed in 1987 (the last year for which full data are available), particular attention has been paid to the support of the average researcher in each country, for different sectors of R&D.

For *R&D of all types*, total expenditure per researcher in the UK (£ 73,000 at market exchange rates) is much less than that in Germany (£ 128,000) or in France (£ 111,000); this discrepancy is only partly explained by the fact that there is substantially more support staff per researcher in Germany (1.77) and France (1.55) than in the UK (1.2).

Regarding specific sectors, German *industry* is shown to fund 2.5 times as much R&D (£ 11,600 million) as does British industry (£ 4700 million). Expenditure per researcher in UK industry (£ 73,000) is only about half that in either German or French industry (where in these countries the amount is roughly £ 145,000). Each industrial researcher in the UK has only about 1.1 staff supporters, compared to over 1.9 in France and Germany.

Regarding *public funding* of R&D, the UK (with its £ 4100 million) is substantially lower than either France (£ 6800 million) or Germany (£ 7200 million).

All the above figures for 1987 are based on market exchange rates (£ 1 = FF 10 = DM 3), giving substantially different results from the 'purchasing power parity' exchange rates used by the OECD (£ 1 = FF 12.74 = DM 4.25). A suitable index for 'research purchasing power parity' does not yet exist.