

Potential weaknesses in unaccustomed generosity

The large boost of funds for British science is an essential means to arrest its decline. Attention now needs to focus on ensuring these funds are distributed fairly.

There is, as the poet Samuel Butler pointed out, a natural reluctance to look a gift horse squarely in the mouth; but there are occasions when it can be prudent, if only to avoid nasty surprises later on. Such is the case with the extra funds that the British government has announced it is to make available for the support of research in universities and through the research councils over the next three years (see page 307).

Three interrelated aspects of the boost in funds stand out. The first is the central role in which it places the Wellcome Trust, which is contributing £400 million (\$660 million) towards the £1.4 billion of new money announced by the government — including half of the £600 million fund for refurbishing university laboratories and equipment. The second is the de facto power given to the Director General of Research Councils (DGRC), as co-chair of this fund's steering committee, over the way its money is distributed. The third is the heavy emphasis being given, implicitly through Wellcome's involvement in this fund and explicitly in the allocation of new money to the research councils, to the life sciences.

The logic behind that emphasis is clear. The sciences of molecular biology and genomics are among those at which Britain excels, while its pharmaceutical and biotechnology companies have a stronger competitive edge in the market-place than most other sectors. Wellcome's major commitment to genome research is already complemented by the keen interest that those companies have shown in exploiting this research. Economically at least, it makes sense to play to the strongest suit.

But the danger of a continuing decline in the physical sciences —

or at least in those substantial parts of such disciplines that are unlikely to contribute, either directly or indirectly, to the exploitation of the genome — is obvious. To be fair, the scientists at the top of the government's science structure — Sir Robert May, chief scientific adviser, and Sir John Cadogan, the DGRC — have never underestimated the importance of core sciences. Physics and chemistry will no doubt continue to be supported, at least insofar as they underpin economic development and improving the quality of life. A fair implementation of the original case made by Sir John to the Treasury for the science base would be for Wellcome's £300 million to be spent on rebuilding the infrastructure of biomedical sciences, and most of the other £300 million equipment boost to be devoted elsewhere.

Given their influential supporters, chemists and environmental biologists are likely to see their situations improving. But others can anticipate an accustomed and possibly increasing lack of generosity. Although particle physicists have received the long-term backing of the Particle Physics and Astronomy Research Council for involvement in the Large Hadron Collider at CERN, the European Laboratory for Particle Physics, this leaves the council's other clients, mostly astronomers, more exposed to the pressures of government priorities. Meanwhile 'small' physicists — for example, the excellent UK community working on semiconductors and other functional materials — may suffer by comparison with biologists, given the lack of powerful voices from industry or elsewhere speaking up on their behalf. Without such external advocates, the envisaged structure for allocating the new funds, and the all-powerful DGRC in particular, are likely to have difficulty in finding the motivation to give them the necessary support. □

Adult cloning marches on

New results on cloning technology increase the urgency for regulations to ensure its responsible use.

Despite some recent suggestions to the contrary, it now appears that Dolly (see *Nature* 385, 810–813; 1997) was indeed a clone produced from the nucleus of a differentiated cell derived from an adult sheep. Those who questioned that conclusion can now accept it in the light of experiments, including DNA analysis of original tissues, reported in the Scientific Correspondence section of this issue (see page 329). Circumstantial evidence is also added by the fact that the trick has been accomplished again, this time with mice (page 369). The conclusion for developmental biologists remains fascinating: the differentiation of cells is in some cases reversible — the expression of their genomes can be reprogrammed to that of the undifferentiated state. As Davor Solter describes (page 315), the new results sharpen the scientific challenge to be addressed.

But the results also highlight progress in the face of pessimism about the technical obstacles. They throw into sharp relief the response of some researchers to the concerns expressed by others about human cloning, namely that the technological capability is a long way off, and the practical obstacles apparently insuperable. That

response looks like becoming irrelevant all too quickly.

Thus it becomes all the more probable that, where someone is legally allowed to do it, they will. After all, there are, as Solter bullishly describes, potential benefits. And one country where human cloning is in principle legal, despite strong opposition, is the United States. Only federal funding of such work is banned.

Republicans in Congress have attempted to prohibit altogether not only the gestation and bringing to birth of human clones, but also experiments at the pre-implantation stage — an initiative that was successfully derailed by the scientific community. A bill that would permit pre-implantation research has been proposed, but progress is unlikely before Congress breaks up in early October.

Private companies are free to make their move. Debates continue over the protection of the unborn, while the technology moves on. Given the demonstrable potential for moral panic in this field, it is regrettable, and not in the best interests of science, that the world's scientific superpower has so far failed to deliver a satisfactory contract between researchers and its citizens at large on this issue. □