may be a more effective means of changing behaviour in traditional communities than the mass media.

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A little space in Sheffield

Life sciences research in space is still in its infancy despite solving the initial problems of keeping humans alive in such an inhospitable environment. To the earthbound clinician such endeavours have had little professional impact, although there are promises of greater understanding of cardiovascular, respiratory, and vestibular physiology, mineral metabolism, and locomotion. The prospect of such research has encouraged the University of Sheffield to set up the United Kingdom's first institute for space biomedicine, which was inaugurated on 19 October.

The institute's funding is limited at present to a two year grant totalling £50 000 from the university. The announcement about finances produced some surprise at the launch press conference, but the director of the institute, Professor Tim Scratcherd, confirmed that "We're currently thinking in terms of £10³ rather than £10⁹." Scratcherd would welcome government funding and he had been optimistic after initial positive discussions with the British National Space Centre. The rest of the story is history: Roy Gibson, the director of the centre, resigned from his post on 30 September owing to the government's decision not to increase its annual contribution to the European Space Agency's budget. So not surprisingly the timing of the institute's launch provided a forum for considerable discussion on government funding of space research in general.

Sir Geoffrey Pattie, ex-information technology minister, who opened the institute's launch symposium, declared that a "fog of myopia had fallen on the government" on the subject of investment in space. As a world trader and producer Britain could not afford to opt out of this field, yet our spending was "virtually in the noise level." Further evidence of the United Kingdom's lack of commitment to space research, especially in the biosciences, was presented by Dr Heinz Oser, director of life sciences of the European Space Agency. The United Kingdom's contribution to the agency's microgravity programme was about 2% of the total, although smaller countries such as Belgium and Switzerland had each paid over 4%. The bulk of the finance came from Germany (35%), Italy (18%), and France (15%).

Given this impoverished background how can Sheffield possibly succeed in contributing appreciably to space biomedicine? Much will depend on whether the institute will be offered a free flight to put an animal "test bed" into orbit. There were strong hints that the likely benefactor would be the Soviet Union, which would offer a mission in the late 1980s or early 1990s. This will presumably employ the Soviet reusable biosatellites, which were later described at the symposium by Academician Oleg Gazenko, head of the Institute for Biomedical Problems, Moscow. With a weight of about five tons, the craft provides about three cubic metres of useful space for automated studies on the animals restrained within it. In the 1990s a larger capsule is planned, probably three times the present size, which could dock with manned space craft and allow humans to work directly with the animal studies.

If a flight is given to the institute the likely priority for investigation will be the demineralisation of bone that occurs with prolonged space flight. The rapidity with which this occurs in space makes it a useful potential model for predicting the mechanisms concerned in terrestrial osteoporosis. During its investigations the institute would make use of skills and resources from the nine departments at Sheffield with which it has links and, in particular, the department of human metabolism and clinical biochemistry.

Inevitably the institute's autonomy will suffer if its major research expenses are to be met by a third party. I hope that it will have the opportunity to develop into more than just a service laboratory for the Soviets.

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Degenerative ataxic disorders: still perplexing

Degenerative disorders of the nervous system, including dementias, motor system disorders, and the spinocerebellar degenerations, are presenting a bigger problem as the population ages. The disorders result from selective and symmetrical degeneration of one or more groups of neurones. Some are wholly genetically determined, but most are not; often the disease develops because of a combination of genetic and environmental factors. The cerebellar and spinocerebellar degenerations comprise a complex group of over 50 distinct diseases. Their classification is controversial, but in practice they are best subdivided according to clinical and genetic features[1 2] rather than pathological criteria.[3]

Degenerative ataxias with recognisable metabolic defects are rare, but their diagnosis is important for genetic counselling and treatment. Some storage diseases more commonly associated with neurodegenerative disorders of childhood, such as hexosaminidase deficiency and the leucodystrophies,