Round Britain

CHANGES in the environment, for better and worse, are reviewed in the Fourth Report of the Royal Commission on Environmental Pollution, published last week (Cmnd 5780, HMSO, £1.10).

Little progress seems to have been made on old problems like the control of pollution in estuaries, but the situation with others, such as the use of persistent insecticides in agriculture, seems to be improving and there are new problems, such as noise, which the commission has picked out as a growing threat. Twenty-nine million people in urban areas in Britain are expected to be affected by 1980 through the growth of traffic noise above acceptable limits.

Inevitably there is concern that the environment could suffer unduly in the present financial climate, and it will be argued that action on environmental projects that cannot be evaluated in strict economic terms should be deferred. The commission comes out strongly against such arguments and feels that they should be "strongly resisted". "At the very least there should be permitted no further deterioration in environmental quality", it declares.

There is a useful section on 'who does what' setting out the structure of pollution control in the United Kingdom and the responsibilities of local authorities and the special statutory bodies. The commission also notes the increasing influence that bodies such as the European Economic Community are having and are likely to have on British pollution legislation. A section showing the interaction between United Kingdom legislation and international and European recommendations seems a must for the next report.

● The cuts in British defence spending will reduce military research and development expenditure by 10%. The detailed incidence of reductions is still largely a matter of negotiation in defence establishments and is not expected to be known for several months. Talk about increased coordination of research and development across NATO to save by avoiding duplication of expensive projects is largely misguided; collaboration is already fairly extensive, so the cuts cannot be confined to rationalisation. The Polaris programme remains untouched.

● THE creation of new, tenured posts in astronomy at any university is an event so rare these days as to merit attention from the astronomical community around the world. Just such a situation has occurred in Cardiff, where the Department of Applied Mathematics and Astronomy at University College recently moved to a new building and expanded its astronomy interests, under the guidance of Professor N. C. Wickramasinghe.

The atmosphere of the group is best summed up as one of youthful enthusiasm combined with a good deal of astronomical and mathematical ability. Some of the more conventional studies include aspects of the formation of stars and galaxies; at the other extreme one member of the team is working on aspects of the Hoyle–Narlikar theory of gravitation, and another is investigating problems in quantum gravity and relativity, which include the possibility of adding time to the list of quantum variable parameters.

It is hardly surprising that Wickramasinghe is full of praise for the way in which both the Science Research Council and University College, Cardiff, are supporting astronomy. In an interesting echo of remarks made recently by some other senior astronomers in the United Kingdom, he mentions that there is great interest in astronomy at undergraduate level, and says that there has already been an increase in enrolments in the mathematics department, partly as a result of the astronomy courses now offered.

● This year's crop of medals from the Royal Society conforms to the pattern of the past twenty years. Everything goes to Britons and all except the two specifically for achievement in industry (the Esso Medal is a newcomer this year) go to male Fellows. Sir Alan Hodgkin in his Presidential Address is slightly defensive about the quality of the medallists in the light of "some mild sniping from *Private Eye*". The quality we don't doubt, but the narrow national perspective goes against the intentions of the donors, some of whom prescribed specifically that the award was to be made regardless of nationality. Or sex.

Preparing for that space link-up

from Vera Rich, London

THE flight of Soyuz 16 (December 2-8, 1974) was specifically announced to have been a preparation for the joint Soyuz–Apollo programme scheduled for 1975. Observers of the Soviet space programme have interpreted recent Soyuz flights (including that of Soyuz 15 which somewhat coyly manoeuvred about the Salyut 3 space station, without actually effecting a link-up) as being a preparation for the joint programme.

The official purpose of the flight was described by the TASS agency as the "testing of on-board systems of the Soyuz craft, which have been modernised in accordance with the requirements of the joint flight, the carrying out of scientific and scientific–technical investigations, and also observation and photography of individual sections of the Earth's surface in order to obtain data for the solution of problems of the national economy." Leaving aside the final clause (which is included in all descriptions of Soviet space missions as a sop to the economic planners) perhaps the most interesting word in the whole release is "modernised"—which, to the student of Soviet semantics displays a refreshing honesty. At one time the word would surely have been 'adapted' and the implication would have been that in any international project it would not be the Soviet side which would have had to 'modernise' to meet the needs of the other.

The experiments carried out by Soyuz 16 relate, in fact, both to the details of the link-up and to the requirements of the on-board systems. The life-support systems were tested and the medical checks made with a cabin pressure of 540 mm Hg, which suggests a working atmosphere rich in oxygen. Hitherto, the Soviet programme has preferred a natural atmospheric mix, so this implies something of a compromise with US standards.

Preparations for the link-up included an orbital transfer, on December 3, into a circular orbit at a height of 225 km and inclination 51.8°, described as "similar" to the one the Soyuz craft will have to adopt in the joint mission. In the course of the 32nd, 38th, and 48th orbits, the new link-up systems, "created in accordance with the requirements of the 1975 joint mission" were tested *in toto* and also unit by unit, the tests being monitored by cosmonauts Filipchenko and Rukavishnikov themselves, as well as by ground control. Simulated link-up tests were carried out satisfactorily.

The programme also included a number of astrophysical and biological experiments, the latter ranging from the exchange of micro-organisms to the effect of prolonged illumination on the cosmonauts. □