

SCOPE also wants to see at least two International Research Reference Stations established, one at least in a tropical area. The purpose of these should be partly to monitor (as with the other stations), but also to determine other substances for measurement and to develop standard methods for the measurement.

These stations are all land based. SCOPE recommends that pilot studies be undertaken before a full programme gets under way in marine environments. It recommends the North Sea, Baltic Sea, Mediterranean and Puget Sound as the first areas for study. From these beginnings, and other national programmes, a world monitoring programme can be built up.

To ensure unity of approach, SCOPE recommends that an operations manual should be prepared and a Central Monitoring Coordinating Unit established. This would plan and run the monitoring programmes, collate the results, standardize observations and report to the United Nations. The actual data can be stored in a number of centres, some based on ones already in existence, with a strong effort made between them for cooperation.

The report has nothing to say on how the information the monitoring system will obtain should be applied to prevent damage to the environment. It does, however, acknowledge that monitoring is only part of the environmental problem and it does urge the United Nations to consider establishing an international unit to coordinate monitoring, research and policies.

Although the problem is global, SCOPE sees individual nations being responsible for various parts of the monitoring programme and it recommends that the United Nations and its agencies, other relevant organizations and the Central Monitoring Coordinating Unit should meet to "formulate, define and assign responsibility for individual contributions to a practicable and unitary monitoring programme".

#### SCIENCE POLICY

### Another Assault

LORD ROTHSCHILD'S proposals on the future organization of the British Government's research and development activities came in for more heavy criticism at a meeting of the Science Policy Foundation last week.

His report, published last November in a green paper together with the Council for Scientific Policy's views on the research council system, was criticized for vagueness, for not properly considering the function of the research councils, for being too limited in its scope, for being better on paper than it was likely to prove in practice, and for putting control of science too closely into the hands of government—against

the recommendations of the Trend committee eight years ago. At the same time, the government was criticized for accepting the customer-contractor principle without discussion and for allowing too short a time for discussion of the reports.

But while there was much voluble criticism, the attitude of the conference was not all negative. Many participants clearly agreed with Lord Shackleton who said that Lord Rothschild had stated a basic truth in his customer-contractor principle, but he doubted if government departments have the capability to become as efficient and well informed a set of customers as Lord Rothschild envisages. Fears were expressed that the government would accept the Rothschild report without any trial period to see if his recommendations really could be put into practice, and it was felt that there is a real danger that science will be left trying to operate a customer-contractor principle with unintelligent customers. It was also suggested that the fears caused by the imprecision of the report, if repeated often enough, might become facts.

To some, however, Rothschild's proposals are not entirely welcome but do open up some exciting possibilities. The interchange between government, industry and universities would be improved and the seconding of scientists to work with Rothschild's proposed Chief Scientist would not only provide the departments with scientific foresight but would also give scientists experience of the real world of hard decision taking.

Dr Walter Marshall, director of the Atomic Energy Research Establishment at Harwell, described his establishment as a "multi-functional" laboratory, and produced a breakdown of its expenditure to show that much of Harwell's

work already fits Lord Rothschild's customer-contractor principle. By 1975-67, he thought that 45 per cent of his laboratory's income would come from contracts. He warned, however, that almost one-fifth of the laboratory's work is long-term industrial research, for which there is no immediate customer, but for which customers can be found once industry has become accustomed to the ideas being offered it. This work, said Dr Marshall, can be justified over a period of years, but no researcher could be held accountable for it on a month by month or annual basis. And it is precisely this work which might suffer if the customer-contractor principle is too firmly enforced.

Overall, in spite of the battering to which the report was subjected, it was felt within the meeting that some of Lord Rothschild's recommendations for accountability and for a scientifically aware civil service were all to the good, providing that the changes were introduced slowly, preferably with an experimental period.

But Lord Rothschild's suggestion for hiving off money from the research councils and placing it in the hands of the departments was heavily criticized. It was clearly felt that under this arrangement the days of the research councils would be numbered as they would lack sufficient size to operate effectively. The fears were greatest for the future of the Natural Environment Research Council.

As a framework for stimulating discussion and self-examination, the report was clearly felt to be valuable, but as a framework for action it was felt to be too ill-defined. Its underlying principle that researchers should be accountable was approved, but the details of Lord Rothschild's attempts to enforce that principle were not.

## R and D and the Select Committee

THE Select Committee on Science and Technology is to hold a series of public meetings as part of its investigation into the government's policy on research and development. One of the foundation stones of their investigation is the green paper that contains the reports of the Council for Scientific Policy on the future of the research council system and Lord Rothschild's report on the organization and management of government research and development. The following people will give evidence to the select committee in committee room 15 of the House of Commons on the dates shown.

January 26	Lord Rothschild.
February 2	Sir Frederick Dainton.
February 9	Sir Alan Hodgkin.
February 16	The Duke of Northumberland and members of the MRC.
February 23	The Hon. J. J. Astor and members of the ARC.
March 1	Professor F. H. Stewart and members of NERC.
March 8	Professor Sir Brian Flowers and members of the SRC.
March 15	Professor R. C. O. Matthews and members of the SSRC.

Mrs Margaret Thatcher and Lord Jellicoe will also give evidence to the select committee on dates to be arranged.