

tion from 15 per cent in 1971 to 22 per cent in 1981; in 1961 the figure was 7 per cent.

But in spite of the expansion there are one or two warning notes on economy in the government's white paper. Student-staff ratios are to be increased from 8:1 at present to 10:1 by 1981. This transition, the government says, "should be possible without lowering standards". The government is also patently eager to encourage more students to live at home. The number living away from home now is "unrealistic and unnecessary". The government also plans to introduce a 2 year Diploma of Higher Education, available within all the principal sectors of higher education. The DipHE is "not a cheap substitute" for the forms of higher education already available, the white paper says.

Immediate reactions to Mrs Thatcher's package were not all favourable. The Committee of Vice-chancellors and Principals is pleased that universities will be expanding as fast in the current quinquennium as they did in the one just past, but is concerned that while undergraduate numbers will increase by a third, postgraduate numbers will rise by only a sixth. Equally the student-staff ratio of 10:1 is a worry if it is to be applied to universities as well as to polytechnics and colleges of education. Such a ratio could severely hamper research in the universities.

The Association of University Teachers complains that Mrs Thatcher did not consult everyone fully before producing her plans, and states that university places will fall short of demand by 75,000 to 100,000.

RESEARCH AND DEVELOPMENT

Government Replies

DETAILED replies to the four reports on government research and development produced earlier this year by the Select Committee on Science and Technology were given by the government in white papers published last week. (Command 5176 and 5177, HMSO, £0.105 and £0.13.) Sharing the load, Lord Jellicoe answered the select committee's first and fourth reports on research and development policy, and the Department of Trade and Industry replied to the second and third reports on the non-reactor work of the Atomic Energy Authority and the department's industrial research establishments.

Lord Jellicoe's document explains the government's rejection of the select committee's proposal for a minister for research and development in rather more detail than was managed in the cursory two paragraphs devoted to the select committee's views in last July's

white paper. A separate minister for research and development, the government now says, would contravene the principle of functional organization. Each department should be a complete and coherent body and should have all the facilities necessary to do its job, including the right and means to commission the research and development it needs to fulfil its tasks.

Each department must be accountable for the effective use of its money, and a minister could not carry this responsibility if part of his facilities—the right to approve research and development—lay elsewhere.

The government also holds that the "central advisory function" that the select committee proposed for the minister for research and development is already provided by the Chief Scientific Adviser, who advises the Cabinet.

The select committee argued that Britain's entry to the EEC would require "something more coherent than the existing machinery", but the government replies that while entry into the community will lead to more collaboration the same principles—that each minister should be responsible for all his department's efforts—still apply.

The select committee's proposal for a Council for Science and Technology is also rejected largely on the grounds that it is closely tied to the proposal for a minister for research and development.

But one of the select committee's proposals does receive the government's blessing. Government departments will, in future, publish annual reports on their research and development activities. The government is also to publish an annual list of official sources of information on its research and development.

But if Lord Jellicoe's reply offered cold comfort to the select committee, the DTI's answer was marginally more encouraging. The department accepts that the funding of non-nuclear projects commissioned by government departments from the Atomic Energy authority should appear on the department's vote and be listed separately in the UKAE's annual report. It also agreed that more of the Authority's non-nuclear work should be done on a full repayment basis. But the department does not accept that an Industrial Advisory Committee should be set up to keep under review, in cooperation with the new Requirements Boards, the extent and scope of the authority's nuclear and non-nuclear work. Delay and duplication would be the only result of such a board in the department's view.

In reply to the select committee's recommendations that a Research Establishment Authority is needed to give the establishments more indepen-

dence, the government simply argues that in fact fuller integration with the department is what the establishments need, not more freedom under a separate authority.

The reaction of Mr Airey Neave, chairman of the select committee, was predictably cool. "The committee believes," he said, "that with increasingly large national research and development programmes in Europe, the government will have to change its mind about the central organization for research and a minister to direct it."

The select committee will open its work this session by enquiring into the computer industry once more with a view to assessing the impact entry into Europe will have on it, and by completing its work on nuclear reactor policy.

LIFE SCIENCES

New Japanese Institute

by our Special Correspondent

Tokyo, December

THE opening of the Mitsubishi-Kasei Institute of the Life Sciences was celebrated last week in Japan with two scientific symposia on the future of the life sciences which were held in Tokyo on December 4 and Kyoto on December 6. The institute itself, which is housed in a brand-new building 50 km south-west of Tokyo, has been assembling since early November but is unlikely to be fully up to its planned strength of sixty scientists for some months. The director, Dr Fujio Egami, now professor emeritus at the University of Tokyo, says that the annual budget of the new institute is at present the equivalent of \$1.7 million. One striking feature of the employment policy so far is that the number of women scientists on the staff is much higher than in comparable scientific laboratories in Japan.

The new institute was founded in June 1971 to celebrate the twentieth anniversary of Mitsubishi Chemical Industries Limited, but the intention is that it should be concerned entirely with basic research in the life sciences and that its link with Mitsubishi should be that of a recipient with its donor. The institute is at present organized into four departments concerned with the general life sciences, neuroscience, environmental biology and special research. The first of these departments is the most complete and will be concerned with certain basic biochemical problems and in particular with the function of bacteriocins, the comparative biochemistry of enzymes of thermophilic bacteria, attempts to modify the genetic properties of bacteria by the use of specific nucleic acid enzymes and a variety of problems in developmental biology.