

seems to be one explanation of the tortuous nature of the committee's report.

With these reservations, the committee does seem to ask that there should be a more deliberate federal policy for the use of research and development expenditure as an instrument of regional development. The committee in particular suggests that the Government should establish a number of "Exploratory Centres for Regional Development" to explore the possibilities of the direct application of technical innovation. For the rest, there should be a deliberate policy of helping less fortunate universities to grow, especially at the graduate level.

#### UNIVERSITIES

### Towards a Swann PhD

ALMOST a year ago the universities were criticized in the Swann Report for their almost complete lack of imagination in the development of higher degrees with some bearing on the requirements of potential employers. The Swann Committee urged the universities "to start experimenting boldly with the PhD" (*The Flow into Employment of Scientists, Engineers and Technologists 1968*, HMSO, 17s 6d). The Science Research Council took up the gauntlet and earmarked a small number of postgraduate awards for the Interdisciplinary Higher Degrees Scheme drawn up by a joint committee of the Science and Social Science Research Councils under the chairmanship of Professor H. Kay of the University of Sheffield (*Nature*, **222**, 421; 1969).

The scheme, to its credit, has demanded a much more thorough rethinking of traditional university ideas than the now well established SRC Cooperative Awards in Pure Science (CAPS) which require close liaison between university and industry but are not interdisciplinary. In contrast to CAPS students, holders of the so-called Swann awards are required not only to spend part of their time in industry but also to be involved in, for example, an economic or sociological aspect of the technical problem they are working on. At the University of Aston in Birmingham, where Professor I. F. Gibson and his colleagues are supervising several PhD projects of this type, postgraduate students are doing such work as a manpower planning project for an engineering company and a study of a possible investment in a transportation system for a group of Caribbean islands. The employment prospects for these new style PhDs seem bright; companies apparently look forward to recruiting from scientists who appreciate the overall problems that industry faces. For its part, Aston is hoping to increase the number of interdisciplinary projects to about ten next academic year and to include a team research project of the sort often encountered in industry.

The department of liberal studies in science at Manchester, which, under Professor F. R. Jevons, is rapidly making a name for itself, has also taken advantage of the interdisciplinary awards scheme and has research students working on the international collaboration aspects of the Dragon high temperature nuclear reactor and a study of the Route 128 phenomenon. The department has also persuaded the UGC to back interdisciplinary MSc courses. A few other universities, notably Loughborough and Stirling, have also started experimenting with the Swann PhD.

#### UNIVERSITIES

### Medical Schools Integrate

THE contradictions in medical training in London today, which the latest step in the implementation of recommendations of the Todd report are designed to alleviate, can be traced back several hundred years. The principal teaching hospitals looked for their standards to the professional associations such as the Royal College of Physicians or the Royal College of Surgeons. The colleges opposed the foundation of the university in the nineteenth century and since then the tendency has always been to ignore it.

As a result, medical training is something of a compromise: most students spend their first two or three years learning human biology at an ancillary medical school associated with a teaching hospital, and then a further three or more years with surgeons and consultants in the wards. These schools, if only because they are inadequately equipped, are not where the rapid advances in medical science are now being made. Neither do they run courses in the newer university curricular subjects, such as biophysics and social science, which are increasingly being seen as relevant to medical practice.

The changes announced last week in a joint statement by the University Grants Committee and the University of London are designed to alter all this. Following the recommendations of the Royal Commission on Medical Education, they ask that, where conditions permit, all possible steps should be taken to implement the ideal of "a unified medical teaching centre embedded in a university complex". The students will probably enjoy it more because they will be able to mingle with other faculties. They should be able to choose from a wide range of subjects, perhaps even including arts, and to opt for either an express course of essentials, taking about 18 months, or longer courses, leading to a BSc, and taking 3 years.

As plans stand, University College Hospital Medical School and the Royal Free Hospital Medical School are to be integrated as a matter of priority. Indeed, students at University College Hospital seem to be extremely fortunate, for they already get their pre-clinical training in the science faculty of University College. The Royal Free Hospital Medical School should be incorporated here at almost any price and not transferred to Hampstead as proposed earlier. The preclinical department of St Bartholomew's Hospital and the London Hospital will become part of the enlarged biological sciences complex at Queen Mary College. Because of limitations of its site, Bedford College cannot incorporate the medical schools of the Middlesex and St Mary's Hospitals and some compromise will have to be worked out. Guy's and King's College Hospital Medical Schools will form a fourth pair and St Thomas's and the Westminster Medical School a fifth. One of these will be linked to King's College, possibly through the development of a biomedical centre. The other two teaching hospitals will remain unpaired.

Clearly the sort of medical education offered depends on the sort of doctor the community thinks it needs. At the moment the consensus seems to be that hospital experience is not enough and that experience in first-class science is desirable, too. There may also be a case for sending students to work with a good GP for a