

New Degrees

RIPPLES from the permissive society are beginning in Britain to be felt in the strict world of the PhD degree, where ordinances are being revised. Bristol is the latest university to relax its requirements so that graduates of Bristol of eight years standing can now submit "substantial published work pursued in the university or elsewhere" for a PhD. These conditions supplement and do not replace the conventional supervised postgraduate work in the university.

Other universities have already introduced similar schemes. That at Cambridge has been in action for more than a year and a considerable number of applications and enquiries has been received. The idea is to provide some kind of recognition for the work that individuals, such as teachers or industrial research workers, have published, often as a result of studies in their spare time.

Mathematics for All

ONE of the principal recommendations of the Dainton Report, published on February 29, is that all pupils should study mathematics until they leave school. It seems from the report that a high proportion of pupils with O-level passes in this subject abandon it in the sixth form, but the Dainton Committee suggests that the overwhelming majority are capable of benefiting from its continued study. It considers that mathematics is a "key factor" in restoring flexibility to the present situation, and stresses that England and Wales are exceptional in western Europe in abandoning science and mathematics for a significant proportion of those in school over the age of 15.

One difficulty with this proposal may be the shortage of science teachers: paragraph 86 of the report itself states that there is a shortage—especially in mathematics. How then is mathematical teaching to be increased when teachers are themselves in short supply? The latest available figure for the number of mathematicians whose qualifications can be regarded as equivalent to a degree who are teaching mathematics in schools is 11,033 for 1965—an increase of only 252 over the figure of 10,781 for 1962. Moreover, in a sample of secondary schools, 36 per cent of mathematics teaching was given by teachers with no qualifications in mathematics. But the report stresses that the way in which these teachers are used and the support they are given is probably as important as their actual supply. It also emphasizes the encouraging fact that recent policies for the recruitment of young scientists into teaching have been quite successful; a survey in 1965 showed that 40 per cent of science teachers (including mathematics) with second class honours were under 30 compared with 33 per cent for languages.

Dr Bryan Thwaites of Westfield College, this year's president of the Institute of Mathematics, feels sure that the various professional institutes will back up the proposal, and maintains that it is right both

educationally and from the point of view of manpower supply. He is surprised, however, at the committee's assurance that the quality of science teachers is being maintained, instead of declining. In his experience, at least one headmaster has suggested that he could not obtain science teachers of sufficiently high quality.

The headmaster of the City of Bath Boys' Grammar School, Mr L. H. Scott, thinks that "everyone ought to know the language of mathematics", but thinks that a great many pupils will not be willing to be pushed into it. He emphasizes the necessity for a new type of course, particularly in the sixth form. Like Dr Thwaites, he believes that there is a definite fall in the quality of science teachers and expressed concern that the shortage is likely to become more acute within the next ten years—a study of the age distribution of teachers has shown that a high proportion of those with first class honours are approaching retirement. He thinks that teachers in this age bracket are still to a large extent holding the fort.

Professor Sir Nevill Mott of the University of Cambridge is also an advocate of a new mathematics course. What the report fails to bring out, he suggests, is that pupils are unlikely to study mathematics beyond O-level unless they are good at it, for the simple reason that they do not think it will help them in securing a university place. He suggests that there should be a new, less advanced mathematics course which makes use of mechanical aids and films, and that universities should be encouraged to accept reasonable performance in such a subject offered by pupils hoping to read biological subjects at university.

Parks and Countryside

THE eighteenth report of the National Parks Commission for the year ended September 30, 1967, has recently been published (HMSO, 8s. 6d.). This is probably the last time that the report will appear in its present form, for the commission's functions will be altered when the Government's Countryside Commission comes into being—though when this will be is uncertain, for a parliamentary standing committee is still considering the Countryside Bill which had its second reading in November 1967. The National Parks Commission, which reports to the Minister of Housing and Local Government and the Secretary of State for Wales, gives the impression in its report that it does not welcome the proposed Countryside Commission with open arms—"it seems certain that the Bill will not give us all that we asked for in the way of financial and executive independence . . .". The commission, however, "looks forward" to the wider responsibilities implicit in the new Bill.

At present, the National Parks Commission is continuing its job of preserving the ten National Parks and other "areas of outstanding natural beauty" in England and Wales. Last year, orders designating two new areas—Anglesey and the South Hampshire coast—were made by the commission, and plans were advanced for further areas including the Kent Downs, the Norfolk coast and Dedham Vale. Some of these orders have since been confirmed. Early in 1967, when a large estate in the heart of the Snowdonia National Park came on to the market, the commission urged the Government to purchase an area to which public access could be secured. Though the estate was

EMPLOYMENT OF MATHEMATICS GRADUATES IN MAINTAINED AND DIRECT GRANT SCHOOLS—UNIVERSITY GRADUATES ONLY

	1962	1963	1964
1st class honours	512	504	507
2nd class honours	1,523	1,581	1,663
3rd class honours	3,445	3,434	3,432
Total	5,480	5,519	5,602