

served as a food boiler into which heated stones were thrown. Similar cooking places are known elsewhere in Ireland, but none is thought to be so early.

Apart from the wealth of archaeological data, the Ballynagilly site presents a most important, possibly unique, opportunity of tracing the vegetational history of a site and correlating this with successive neolithic and Bronze Age settlements. Mr J. R. Pilcher and Dr A. G. Smith of the Palaeoecology Laboratory, Queen's University, Belfast, have been collaborating with Mr ApSimon throughout the excavation. They have taken samples of charcoal from the site for  $^{14}\text{C}$  dating at Belfast and samples of peat and soil from the site and the nearby bog for pollen analysis. The bog, for which a detailed pollen diagram has been prepared, contains fine layers of charcoal which coincide with forest clearance phases distinguished in pollen analysis. In the earliest of the clearance phases, a marked decline in pine and elm occurs at a level where pine charcoal occurs in the bog. Preliminary  $^{14}\text{C}$  dates for this level suggest it is of a similar date to the neolithic landnam phases (land clearances) recorded in Irish lowland bogs, but the nature of this early clearance and many other aspects of the vegetational history of the uplands site at Ballynagilly are proving to be quite different from those recorded in the lowlands. It is probable that the earliest clearance at Ballynagilly is correlated with the neolithic occupation, but further dating is needed to confirm this.

Once all the samples have been analysed there should for the first time be a complete picture of the vegetational changes wrought by a series of  $^{14}\text{C}$  dated occupations beginning well before 3000 BC. The detailed pollen analysis should also provide some clues about the agriculture of these occupations. So far, there is no direct evidence such as grain or pottery impressions that might indicate what crops, if any, people were growing.

## UNIVERSITIES

### University of Surrey Moves

ABOUT 1,200 students, three-fifths of the total number at the University of Surrey, are now installed in their new buildings in Guildford amidst bulldozers, scaffolding, workmen and mud. The rest of the students, who are still at Battersea in the buildings which house the former college of technology, are due to make the thirty mile move in the autumn of 1969. By then there will be about 2,250 students and 300 staff on the new site, all housed for about £6 million, of which the University Grants Committee will have provided about £3.5 million.

The new buildings are far from complete. At present there is only 60 per cent of the standard floor area per student; staff rooms are cramped, there is only one refectory, and only four of the seven student residences are ready. It is hoped, however, to have everyone reasonably settled, money permitting, with the proper space by the early 1970s. The present discomforts are being very cheerfully borne by the staff and students who must think it heaven after their accommodation near Battersea Park—a main building and four outstations, of which two were former primary schools, one a disused swimming pool, and the fourth a converted warehouse. Only two of the outstations are nearer than one mile from the main departments. The new buildings, in contrast, are extraordinarily compact. The essential buildings are arranged in three interlocking zones, “work”, “core”, and “living”, grouped in an eighty-five acre site adjoining Guildford Cathedral. Most of the academic buildings are planned for the work zone; the library, lecture theatres, social centres, and restaurants are in the core, and the living zone will accommodate students and some of the staff. This complex, on Stag Hill, is the first stage in the development, and it will eventually allow for a student popu-



View of the university site from the north-east, showing Senate House, academic blocks of phase I (on right) and academic blocks of phase 2 under construction (on left).

lation of up to 5,000. Ancillary buildings, sports fields and further expansion are going to be developed on the other section of the site—about 284 acres on the other side of the Guildford by-pass. The architects for the university, Building Design Partnership, have also allowed for great flexibility. This must be useful both at present, when there is restricted space, and for later expansion.

The whole programme has been based on the need to move the entire university from Battersea to Guildford by the end of next year, the end of phase 2. At a press conference last week, Dr D. M. A. Leggett, the Vice-Chancellor, described the move "as a calculated risk". From all accounts, it appears to have been a risk worth taking.

## Parliament in Britain

### University Building

THE University Grants Committee informed the Government on September 26 that as a result of its letter of August 1 to the vice-chancellors, university building programmes had been cut back from £28.7 million to £18.7 million. Mr Edward Short declared that the Government had asked for the reduction in the 1968-69 building programmes after the normal review of public expenditure and not because of changes in the economic situation. (Oral answer, October 24.)

### Science Teachers

AN advertising campaign aimed specifically at attracting science and mathematics graduates into school teaching will be launched shortly. In addition Miss Alice Bacon announced that the Department of Education and Science is collaborating with university

appointments boards and faculties of science in arranging a series of discussions with students about prospects in science and mathematics teaching. (Written answer, October 24.)

### Noise Research

IN the past three years the Government and industry have together spent £1.5 million on noise research. Mr J. P. W. Mallalieu said the Government's contributions had been £283,000 in 1965-66; £395,000 in 1966-67; £484,000 in 1967-68. The estimate for this year is £600,000, but the rate of expenditure for the next two years has not yet been decided. (Written answers, October 21 and 25.)

### Public Health

IN the nine months to July 1, the number of general practitioners in England and Wales rose by 86 to 19,935. Mr Kenneth Robinson said this could be compared with a fall of 505 in the three years to October 1, 1966, and a rise of only five in 1967. He admitted that although the trend this year is encouraging, many areas still have too few doctors. (Written answer, October 25.)

### Power Subsidies

PAYMENTS to the Scottish electricity boards, compensating them for using coal-fired instead of oil-fired generators, amounted to £1,031,671 between September 1967 and July 1968. Dr Dickson Mabon said the payments vary from year to year according to electricity load factors, fuel prices and so on. The payments will continue to be made until April 1, 1971. Replying to another question, Dr Mabon revealed that the power stations forming the Lanarkshire Hydro Scheme generate the cheapest electricity per unit in Scotland and the gas turbine station Townhill "B" at Dunfermline, using distillate gas oil, is the most expensive. (Oral and written answers, October 23.)

## Who Wants to be a Scientist?

ACADEMICS, schoolteachers and industrialists, meeting at the Royal Society last week, took a close look at that extraordinary and disturbing phenomenon, the swing away from science in British schools. As Professor O. E. Lowenstein said in his introduction to the one day symposium, at a time like this, when the success of our technological society depends on the efficiency of scientific effort, the young might be expected to be enthused with the fervour of their social mission. But this is not the case; a decline in the general esteem for science is demonstrated by the steady decrease in the number of applicants and entrants to science and technology faculties since 1962.

Dr F. S. Dainton, chairman of the committee of inquiry that reported this trend last January, said that at the moment the swing does not represent a great loss of scientists and technologists, but it is a social phenomenon that should arouse concern.

The age at which pupils have to choose the subjects that will eventually lead to A-level and university entrance was picked out as an important factor by the principals of four schools, who assessed the motivation

behind a pupil's choice for or against science. Mr H. F. Broad of the Cedars School, Leighton Buzzard, pointed out that four-fifths of grammar school pupils have often made their choice of subjects by the age of fourteen or fifteen, when there is a restriction on the number of subjects they can study.

Mr A. R. D. Wright of Shrewsbury School suggested that less restricted courses and good teaching at all levels have contributed to the continuing popularity of science in his school, where no swing has been experienced. At Shrewsbury all boys take chemistry, physics and mathematics at O-level. The School Mathematics Project has contributed to the sustained popularity of this subject. In answer to a questionnaire, thirteen and fifteen year old boys chose mathematics as the subject they would most like to study throughout the school, with English as the next most popular.

At Shrewsbury the pupils are of a higher than average intellectual quality; the range of IQs is from 107 to 140. Often standards required by O-level courses are too high to sustain the interest of less able pupils, who