

case, Dr Bronk is personally deeply engaged in trying to bring science and technology to bear on the formidable problems of the city of New York. He says that a deeper involvement in social problems is one of his wishes for the future of the Rockefeller University. He would also like to see the institution become even more successful than at present at interdisciplinary studies.

Of Dr Bronk's successor at the university, there is as yet no news. Several distinguished names have been whispered in this connexion. There seems to be something in the view that Dr Frederick Seitz, now president of the National Academy, has been approached. It would, of course, be something of a feather in the university's cap if there were two examples to support the generalization that presidents of the academy habitually succeed to the presidency of the university.

De-specialization

A JOINT working party is to be set up by the Schools Council and the Standing Conference on University Entrance (SCUE) to examine proposals for broadening the British sixth form curriculum. The position of sixth formers not wishing to go on to university is to be investigated by a second working party which is to be set up by the Schools Council alone. The two parties will work side by side, with a possibility of overlapping membership. While welcoming the move towards broader curricula in schools, the universities see the Schools Council proposals for two A-levels and accompanying "elective courses" (*Working Paper 16*) as an encouragement to further specialization (see *Nature*, **216**, 1260; 1967). A meeting of SCUE last week collected together the comments of the universities and the announcement of the working parties soon followed.

As well as reducing specialization, reform of sixth form curricula will, it is hoped, delay the point at which pupils decide what subjects they will study at university. The universities see experimental curricula as an essential step towards reform, and are prepared to adapt their entrance requirements so as not to prejudice the chances of those pupils who act as guinea pigs. Current curriculum revision by the examining boards and the Nuffield Science Teaching Project is welcomed by the universities, but they would like to see further intensive studies of syllabus-making and examination techniques, with emphasis on the balance between facts, imagination, analysis and presentation. The universities express a doubt that "there yet exists any adequate alternative to externally examined courses as the main basis for sixth form preparation, and selection, of entrants", but at the same time suggest that the "introduction of an element of internal assessment into the examining system merits consideration". A scheme for four or five equivalent two-year courses spanning arts and science subjects is suggested as worthy of experiment, despite teaching difficulties and the resulting lowering of final examination standards. Following on from this the question arises whether an appropriate first degree standard can be reached in three years.

On the basis of this combined view, the universities are joining with the Schools Council to discuss all the proposals so far put forward. The second working

party will be concerned with sixth formers not intending to go to university, with regard for qualifications required by industry and commerce. A successful curriculum will obviously have to cater for those both above and below the academic salt, so that pupils are free to decide on their future during their last year at school.

Other aspects of the move away from specialization were discussed at a meeting at Queen Elizabeth College last week of some 140 sixth form science teachers and a sprinkling of university staff. Dr J. E. Spice from Winchester described the workings of the Nuffield physical sciences A-level course which is now on trial in 58 schools throughout the country. In combining chemistry and physics as one A-level subject, the physical science course allows biologists, for example, to take mathematics within the three A-level pattern. The overall comment on the joint course was favourable, from both schools and universities, despite strong words from some quarters—notably from Dr E. R. Roberts of Imperial College, a chemist who regretted the dearth of chemical facts in the course. From the physics side at Imperial College, Dr H. J. Pain retaliated in favour of students who have taken this course, preferring their ability to think to a stream of well-learned facts. There were murmurs from chemistry staff who are beginning to teach the physics side of the course to the effect that they themselves can at last understand the physics they learnt at school.

The new London BSc system, now in its second year, allows students to delay their final choice of subject until the end of the first year. Professor R. E. Burge of Queen Elizabeth College described last week the workings of the system of equivalent course units and the possibilities of inter-college co-operation. By giving each college more control over its courses, the new system is more flexible and adaptable to new knowledge. With a minimum of eight of the equivalent units to be passed for a degree and a maximum of twelve, the new course provides for the wide range of ability now found in universities.

Where To Put It

As everyone had expected, choosing the site for the CERN 300 GeV synchrotron is proving to be an extremely touchy business. Nine countries have offered sites but no decision was reached at the last meeting of the council of CERN which discussed the recently published final report of the Site Evaluation Panel. The panel, consisting of three neutral representatives from countries which had not offered sites, has been working on the report since its appointment in 1966, and a separate geological survey of the sites has been prepared by Dr L. Bjerrum of Norway.

Based on the answers to the three questions of whether this laboratory can be built at the site (A), whether it can be operated there (B) and whether people will go there (C), the panel concludes that Doberdô in Italy is the most suitable location. Le Luc in France is second best and the other sites all less suitable. (See table.)

With the future development of CERN likely to hang on the choice of site for the new accelerator, the panel is understandably cautious in its report. It

points out that none of the sites is ideal by all three criteria, that several are perfectly acceptable and that a different set of criteria might change the order. The report stresses, however, that the acceptable sites are not of equal value.

RATING OF REPLIES TO QUESTIONS A, B AND C

Site				Overall
	A	B	C	rating
Göpfritz—Austria	γ	γ	γ	γ
Focant—Belgium	γ	β	γ	γ
Drensteinfurt—Germany	β	a	γ	γ
Le Luc—France	a	a	β	β
Aspropyrgos—Greece	δ	δ	γ	γ
Doberdò—Italy	γ	a	a	a
El Escorial—Spain	β	γ	γ	γ
Uppsala—Sweden	a	β	γ	γ
Mundford—Great Britain	γ	β	γ	γ

Needless to say, the report has been accompanied by what amount to special pleadings from the delegations of the disappointed countries. The Spanish delegation called for a widening and revision, the Greek delegation contests the view that Aspropyrgos cannot be considered because of the risks of earthquakes, the Austrian delegation disagrees with the geological survey of Göpfritz and the British delegation holds that the cost of construction and operation should be the most important criterion.

Back to Chicago

THE capability of the National Science Foundation to hold its own in Washington will be further diminished, in October this year, by the departure of Dr John T. Wilson, at present deputy director at the foundation, for the post of vice-president at the University of Chicago. In the past five years, Dr Wilson has become known as a powerful source of new thinking about the policies of the National Science Foundation, and there will now inevitably be speculation that his resignation has been prompted as much by the frustrations of his work in Washington as by the attractions of Chicago.

Since the war, Dr Wilson has alternated between the foundation and Chicago. He was assistant director for biological and medical sciences at the foundation from the mid-fifties until 1961, when he became a professor of psychology at Chicago and special assistant to the president of the university, Dr George Beadle. In his new post as vice-president of the university, he will be responsible for the academic administration. If his experience and temperament are any guide, he will expect to play an important part in the development of a strategy for the development of the university under its new president-designate, Dr Edward Levi.

Dr Wilson's departure from the foundation may well bring into the open some of the continuing doubts about the management of the foundation which are now widely shared among scientists in the United States. There is much to support the view that the direction of the foundation has been less than adequate since its establishment in 1950. For the first decade or so, under the late Dr Alan T. Waterman, the foundation was perhaps unduly and unwisely preoccupied with the problems of support for fundamental research, and too little concerned with the relations between research

and education on one side and government on the other. More recently the foundation's influence seems to have been needlessly muffled. On one view, the continuing ill-health of the present director, Dr L. J. Haworth, is a part of the trouble. Elsewhere it is held that a more thorough recasting of the hierarchy at the foundation may now be necessary.

Postgraduate Biologists

THE report of the biology sub-committee of the committee of the Royal Society which is surveying postgraduate training in science and technology, the third of six, has just been published. Faced with the problem of surveying the multitude of specialized disciplines which came under the umbrella of biology, the sub-committee, under the chairmanship of Professor J. L. Harley of Sheffield University, decided to collect evidence in four ways. It read the prospectuses and proposals of the universities. It sent a questionnaire to the heads of departments and research stations (167 replied), and some heads of departments were also interviewed. The sub-committee sent another questionnaire to people who had gained their PhD degrees in the past five years from five universities. Finally, the committee obtained descriptions of PhD programmes in North American universities from senior biologists who also knew the conditions in Britain. Clearly, compared with the physics sub-committee which based its report entirely on the replies of heads of departments to a questionnaire, the biology group has spread its net wide.

What are the conclusions? The report says that "British systems of PhD training in biology are designed essentially for the candidate who is well prepared by his first degree for research and whose success depends principally on his own initiative and that of his supervisor. The systems are not so appropriate to those candidates who are less well prepared, nor to some students from overseas". That sounds like a polite way of saying that there are no organized programmes for training PhDs but rather an apprenticeship system in which making a shrewd choice of supervisor at the outset is vitally important. This is borne out by the two recurrent themes in the suggestions for improvements sent to the sub-committee. They are, first, to improve the system of supervision and, second, to increase the number of lectures and seminars for postgraduates.

Altogether, 90 per cent of the recent PhDs recognized that some formal instruction is now necessary, but fewer than 10 per cent of the 167 departments in the survey run lecture courses specifically designed for postgraduates. The most favoured proposal, which the sub-committee endorses, is for unexamined lecture courses and surveys spread over the first two years of postgraduate study. And, because the standard of the first degree is usually higher in Britain than in the United States, such courses need not be on the scale of those in American PhD programmes. In contrast with the views of recent PhDs, the senior staff of 40 per cent of the departments consulted were against formal instruction. They no doubt fear the extra teaching load and, as the report points out, the chief reason for the present situation is the small size of most departments, the staff of which is fully committed to undergraduate work. This, coupled with the small