

## Is Botany Dead?

SIR FRANK ENGLEADOW paints a sad picture of the condition of botany in British universities, and what he has to say about the likely course of development in the years ahead is probably also true (see page 541). There seems to be plenty of evidence that university courses in botany and related subjects are failing to recruit the young people who used to throng to them in the comparatively recent past and—more serious—there is evidence that the industries and government establishments which are particularly in need of help from botanists are also failing to attract enough bright people. At least a part of the trouble is that the subject has a poor image, within the profession and outside. It needs very little preaching about the need to provide the growing population of the world with enough food for its survival and health to know that there is plenty of work for botanists and their colleagues to undertake. A few years ago the National Academy of Sciences in the United States performed a great public service by showing how the plant sciences can contribute to the economics of nations, developing and industrialized alike, and by presenting a forceful case for the development of the plant sciences at universities in the United States. More recently, it has been striking to see the way in which groups of engineers embarked on projects for desalting water have found themselves driven to the conclusion that the benefits which can be derived from better techniques of distillation are likely to be small in comparison with the benefits which might be won from better agricultural practices. In short, there is no lack of objectives to which botanists could work.

Why, then, are botanists hard to find? And what steps can be taken to recruit more of them? One immediate difficulty is that there is no ready agreement about the causes of the decline in the stature of botanical studies in Britain. Agreement on the remedies which should now be applied is necessarily still harder to come by. No doubt botanists still suffer from the popular vision of tweedy professors shuffling between the field and the herbarium—evidently not the kind of image likely to attract young people towards botanical studies, but hardly a serious impediment to the recruitment of mature young people into useful work in the plant sciences. The possibility that the recent tendency in British universities to combine the teaching of botany and zoology has drawn people away from botany is also real, and this indeed is one of the causes which Sir Frank Engledow singles out in his article. Professor J. L. Harper's view that it would often be more interesting to combine the teaching of pure and applied botany—to use somewhat unseemly terms—is challenging, and it may well be that the teaching pattern which

has traditionally separated the academic aspects of plant science from the applied aspects should quickly be abandoned. Nobody, however, should seriously believe that the decline of botany in British universities and industry can be halted simply by teaching botany more ostentatiously in the schools and universities. Given that the problem to which Sir Frank Engledow and his colleagues have drawn attention is a serious one, the need now is for a thorough examination of the way in which plant scientists should be trained. In several obvious ways, the problem has much in common with other current preoccupations among British educationists—the question of how best to produce qualified engineers, for example.

The first thing to be said is that there is no obvious or even sensible way of turning back the clock and asking biology students at universities to choose between botany and zoology or even more specialized parts of the biological sciences as a whole. Not merely is it intellectually proper that the education of biologists should be designed, among other things, to draw attention to the common features of all kinds of living things, plants and animals, but it is also unwise to ask that students should commit themselves in advance to courses of study which are uncomfortably and prematurely narrow. The direction in which the pattern of university studies is changing suggests quite plainly that the trained people for whom there is now a crying need will have to be provided by postgraduate courses at the universities and elsewhere. Briefly, there would probably be great benefits to be won from increasing substantially the scale on which postgraduate students in the plant sciences are dealt with at British universities. First impressions suggest that there are at present too few PhD students in botany.

But how would the extra students find work? And what kind of work would it be? These questions are again an echo of the questions which have been asked repeatedly in Britain in recent years about the difficulty of recruiting scientists and engineers into industry. And here again, first impressions would suggest that people who undertake the kinds of work which may make possible a dramatic increase of the scale of food production are nevertheless dealt with in a niggardly way. Even in comparison with engineers, applied plant scientists seem to be badly paid. They are also badly organized as a profession, with isolated posts scattered through government departments, frequently overseas. In the circumstances, it would do no harm if those who now rightly regret the decline of botany in Britain were to spend some time and energy on the improvement of the conditions under which applied botanists are compelled to work.