

Science Survey

THE LEVERHULME STUDY GROUP REPORT

THE COMPLETE SCIENTIST (*Oxford University Press; 18s.; paper 12s. 6d.*) contains the report of a group of educationists, under the chairmanship of the Rector of Imperial College, to the British Association. Its purpose is to suggest means of overcoming the acknowledged narrowness of general culture of the professional scientists and technologists now being turned out by our universities. Though based on a comparatively small survey of selected schools and universities, the conclusions reached compel attention by their reasonableness, and the firmness with which they are pressed; they ought to be carefully considered by everyone with a concern for higher education in this country.

In broad outline, the conclusions are conservative: there is to be no radical change in the type of education we provide, but the main weaknesses have got to be cured. With one exception, members of the Group wished to maintain the educational system in which specialization begins with the sixth form at school and continues through a three-year university course: the continental and Scottish systems are not recommended. The basic change must be at the school level, though it will reflect itself higher up. In the sixth form, the specialist in science ought to spend twice as much time on non-scientific pursuits as he now does: some twelve periods a week instead of the present average of six, with, of course, consequent reduction in the time given to science. Below the sixth, the present time-table is regarded as satisfactory.

Now at least three factors enter into making this idea practicable. The first is a reform of the 'A' level syllabus of the G.C.E., so as to prune it of dead wood, and to make it a test of thought rather than of memory, by a greater emphasis on principles, not facts. The Group feels that the requirement of three 'A'-level passes (not more) should continue to meet the demand for university entrance, so long as this is not allowed to dominate educational ends, and distort the primary purpose of G.C.E. as a school examination. They are not, then, in favour of a special university entrance examination, and would like to see 'S' level papers done away with. They insist, on the other hand, that a real and central place should be given to achievement in non-scientific subjects (at present it only tips the scale in border-line cases), and this not by examination, but by report from the school. Clearly that raises difficulties, but on the other hand the closer relationship it implies between school and university is bound to be of value.

Next, the pressure on university entry must be reduced, so that 'getting a place' will cease to overshadow the whole later school life of the average intelligent boy (with whom the report, naturally, is mainly concerned). Here the situation is less hopeful; indeed the Group describes the prospect for the immediate

future as 'bleak.' Places cannot be provided by magic, and buildings and staff are already strained to the utmost unless standards are disastrously reduced. But they do suggest that the disproportionate pressure on Oxford and Cambridge, responsible for much of the absurd resitting of examinations already passed 'to get marks', could be removed by selecting three or four modern universities and going all out to raise their prestige to that of the two older ones, 'not only in specific academic development but also such things as the seemliness of the physical environment of these universities and the vitality of their social life.' It would be pleasant to think there was any hope of this idea being pushed through in the immediate future.

Finally the Group insist on the absolute necessity of getting better science teachers in schools, and on an adequate standard of pay as the *sine qua non* of this. 'It must be said emphatically that no country can afford to pay its schoolmasters and mistresses at a rate insufficient to secure good teaching for its school children . . . if it wants more graduate scientists and engineers and it wants them to be soundly educated, to be broadly educated, the country must will the means to this end: it must put first things first.' Sixth forms are constantly getting larger, and if the time spent on the specialist subjects is to be reduced, as it must, then better teaching and more individual attention is essential. Yet far from having more teachers of the required standard, one wonders if anybody at all will be going in for science teaching in a few years' time, so slight is the encouragement to do so.

Though no radical changes are recommended at the university level, a number of sensible things are said. A university course generally demands a disproportionate amount of time to be spent on specialist work. 'It provides too little time not only for any intra-curricular study of other subjects, but also too little leisure, an essential and vital element of university life—too little time in which to discuss and decide what the universe is like, too little time in which to go to a theatre, to listen to or make music, to play games, to read, to sit and think—or just to sit.' In general the Group calls for a reform of the syllabuses, along the lines suggested at school level; they consider that an extra year before or after graduation (not, in that case, for research) would help to relieve the pressure, but doubt if this is possible in the foreseeable future, while the demand for places is still so great. They do not recommend extra compulsory courses in non-scientific subjects; but the undergraduate must have the free time to go to them if he wishes. In the words of the Master of Emmanuel, 'compulsory athletics were avoided, and I hope that compulsory culture will be avoided too. As for leisure-pursuits generally, universities in towns such as London, Oxford and Cambridge obviously have the advantage over those in places which cannot even support a theatre, but the importance of developing halls of residence also is insisted on: 'a reasonably compact area is essential for student life . . . the long trek to and from lodgings is deadening for the student and for the life of the university.'

The destiny of a country is increasingly coming to depend on its scientists and

technologists. If their productions are to control its life, they will have the deciding voice in determining the use to which such productions are put. Are men with such responsibility to have grown up without any roots in the humane past of European culture? It is frightening to see how far the divorce has already gone. If the process is to be stopped, a real effort and real sacrifice must be made. This report points the way: hard thinking is now required to see how its recommendations can most speedily be put into practice.

LAURENCE BRIGHT, O.P.

Heard and Seen

ANTONIONI SURVEY

There is little doubt that the most OK cinematic name in England to-day is that of Michelangelo Antonioni; critics back from Cannes brought reports of *l'Avventura* as voluminous as they were contradictory, and when last autumn it finally came to London—briefly at the South Bank Festival and then for an extended commercial run—the wave of interest and praise gathered momentum. In January and February of this year the National Film Theatre, sensibly cashing in on a vogue which it had done much to initiate, has been running an Antonioni season, and at the time of writing we have been able to see all his work except *La Notte*, the latest, which may not be available in time for this series.

It is, however, quite possible to come to some general conclusions about the work of this enigmatic director from the films shown already and, judging from *l'Avventura*, it seems unlikely in any case that the new picture is going to be radically different from the rest. Antonioni would never, I think, be a director with whom I would feel instinctively at home; his world is not mine, nor his obsessions; the people in whom he is interested are not those whose lives I should often feel drawn to study minutely. But his seeing eye, his concentration of observation, his obvious intellectual and sensuous delight in image and composition and movement compel one's attentive admiration. In other words, though I often do not agree with what he has chosen to say, I would defend to the death his fashion of saying it. It is odd to find this emphasis on the aesthetic and plastic qualities of film in a director who is an avowed Marxist; there must be few Marxist *cinéastes* who seem so openly uninterested not only in the dogmatic assertions of the party line, but even in problems of class or politics. He probes, for choice, the relationships of the rich, the idle and sophisticated, the bored; and when he does, for once, as in *Il Grido* take a specifically working class nexus of character and situation, he works out his theorem in terms that are almost exclusively psychological and have little or no proletarian signifi-