

## SCIENCE SURVEY

## The Rede Lecture and After

SIR Charles Snow's lecture, *The Two Cultures and the Scientific Revolution*,<sup>1</sup> may not have been particularly original or particularly profound—at least there have been critics to say both these things of it—but it has undoubtedly sparked something off. The reactions to it repay examination. Snow, it is worth recalling, had two main theses. He first analysed the cleavage in Western culture between scientists and what are conveniently called literary men: by reason of a basic difference in attitude which cuts across all other divisions, there is ceasing to be any common ground, any means of communication between them. They are simply not interested in one another's worlds. This is familiar enough, and perhaps overstated; Snow is more interesting when he relates the cleavage to failure on the part of educated men to understand either the industrial revolution, which introduced mechanical methods, or the more far-reaching scientific revolution of the past fifty years, which introduced radically novel methods, electronics, automation and the like, into industry. There must therefore be a change in the educational system to produce the right kind and number of people able to deal with this new situation, if we are not to see a steep decline in our civilization. Snow had some practical suggestions to make about this. But it was his second point that was really challenging. For the issue, he said, is no longer a local one; it lies with the non-industrialized countries, the new poor. Since it is technically possible to carry out the scientific revolution anywhere, the differences between us and Asia or Africa cannot last more than fifty years: the question to be faced is whether the change will be brought about with or without Western help. This is a moral question, and if we fail to meet its challenge, we shall eventually have failed as a civilization. We are being called upon to make an enormous investment in both men and capital, the whole thing to be done 'with no trace of paternalism', simply because the need is there. Nor is it easy to be optimistic about our chances.

The lecture, interestingly enough, first appeared in two numbers of the 'literary' journal *Encounter*, and led to distinguished comment in later issues. There was general agreement about the correctness of Snow's analysis, if not of its completeness or depth. In talking of education, he had drawn attention to the success of Russian methods, where everyone does every subject up to university level, after which intense specialization begins. Now it is well-known that sixth-form specialization is a necessity in England because of the demands of university examiners, so it was heartening to read Sir John Cockcroft's remark<sup>2</sup> that they hoped to do something to correct this at the new Churchill College in Cambridge. His idea that the normal mixing of undergraduates in residence was sufficient guarantee of mutual understanding at the university level was reactionary by comparison. Dr Plumb, also writing from Cambridge, was more pessimistic (and in any case how many colleges in Great Britain will ever be fully residential?). Despite the interest literary

<sup>1</sup> Cambridge, 3s. 6d.

<sup>2</sup> *Encounter*, August 1959.

men might take in science at the conversational level. Plumb considered that on the whole specialists in any subject were deeply indifferent to other people's worlds. This is unfortunately not the place to discuss his attribution of that indifference to the triviality of all contemporary art-forms. But it is relevant to mention a surprising omission in these letters from Cambridge, for it is there and at Oxford that the most serious attempt is being made to bridge the gap by teaching the history and philosophy of science. There is much more to this than is suggested by Cockcroft's 'formal lectures in science for the arts men, and potted culture for the scientists'. For one thing, it is not only the arts men who are thereby learning to understand science. As Professor Polanyi put it in a later article,<sup>3</sup> 'even mature scientists know little more than the names of most branches of science'. His own solution of the problem would be a radical rethinking of the nature of science, not to suppress specialization but to achieve harmony over its whole range. As he has argued at greater length elsewhere, this involves discarding the 'absurd ideal' of impersonal objectivity in science. It does not matter that such views are extremely suspect to many people. The point surely lies in the appeal to scientists to think philosophically. In this matter of understanding science, whether by literary men or by scientists themselves, a considerable part could be played by the study of its history and by 'second order' philosophical reflection. Both subjects are still too recently included in university programmes for their effect to be assessed, but their rapid expansion gives ground for hope.

In any survey of a field such as this, it is natural to turn to *The Listener* for further comment; the Third Programme of the B.B.C. has done so much in presenting science to educated non-scientists. At first sight, therefore, it was disturbing to read a talk by Dr Brooke,<sup>4</sup> which stated that the only way to reach full understanding of science was to do it. The language of science, he claimed, cannot be translated into other terms; you can only learn it by joining the scientist in his laboratory. The impression given was not really removed by Brooke's subsequent emphasis that he was only concerned with *full* understanding, for this turns his statement into a truism. A letter by the lecturer in philosophy of science at Cambridge<sup>5</sup> pointed out that by reason of the relationship between scientific theory and observation, considerable insight can be gained by the study of the published material alone; this provided a valuable corrective.

Again, it was through a Third Programme talk that Snow's second point, concerning the application of science by technology, received its most significant discussion. Mr Bantock in *A Scream of Horror*<sup>6</sup> (that was how Snow had designated the reaction of literary men) tackled the effect of literary culture on the scientist. He questioned the assumption at the heart of this second thesis, that it is unreservedly good to develop our technical control over the forces of nature. For that, he tells us, means a 'stimulation of the assertive will', cutting us off from 'sensitivities of apprehension and definition relevant to balanced psychic development'. He quotes Lawrence as bringing out the implications for human relationship in the conquest of scarcity and want, necessary as that is: 'the inhuman principle in the mechanism' that was its attraction to a Gerald Crich (*Women in Love*). Bantock is not denying that starvation and deprivation have to be overcome in this way, any more than

<sup>2</sup> *Encounter*, September 1959.

<sup>1</sup> *The Listener*, 1 October, 1959.

<sup>3</sup> *The Listener*, 8 October, 1959.

<sup>4</sup> *The Listener*, 17 September, 1959.

Lawrence was; he is asking for this to be made a humanly satisfying process through the insights of such men as Lawrence in their attitude to nature.

What it comes to is this. We must continue to develop the world's natural resources by whole-hearted use of the new scientific methods. This is a moral demand, which makes the 'scream of horror' reaction, genuine as it is, beside the point. But the process of development must at the same time be a *humanization* of nature, not the inhuman reduction of matter to the will of man. The world lies in our keeping, and eventually we shall have to account for it to God. If this is not to be lost sight of, the technologists who shape our world have got to take notice of the intuitions of literary men; if the literary men are not simply to contract out, on the other hand, they must be given some understanding of the scientific culture which so much needs their assistance. As another letter in *Encounter* said, 'What Snow is asking is that we become whole men again, living in the modern world (rather than in some enclave labelled "science" or "literature") even while we change that world to make it more possible for us to be whole'. This is the challenge of the Rede Lecture, and the demand it makes for our continued serious attention.

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#### HEARD AND SEEN

FOR the first time for about eighteen months the really dedicated film-goer in this country can hold up his head again, for the preliminary wash of the *nouvelle vague* is at last lapping our island shores. All this time we have been reading about the wonderfully exciting films that were coming out of France from the new, very young directors appearing there. Travellers, back from Cannes or from Paris, were still muttering about the pictures they had seen days or even weeks earlier, and all the unhappy stay-at-home sheep could do was to look up at screens showing *Love is my Profession* or *Girls Disappear* and feel very unfed indeed. Not, of course, that all the films about which we had heard and not seen were by the new men; there were others, exceedingly important ones, by more familiar directors that nobody seemed moved to bring over here, in spite of the fact that critics and enthusiasts all over Europe were busy discussing their aesthetic, technical and moral implications. Chief amongst these is perhaps *Les Tricheurs*, directed by Marcel Carné, a study of young people living their lives by a tribal code of brutal amorality that was made all the more telling by the really extraordinary performances given by Jacques Charrier, Laurent Terzieff and Pascale Petit: we still await *Les Tricheurs*, but thanks to a few enlightened distributors and the organizers of the London Film Festival, by the time this issue of *BLACKFRIARS* appears it will have been possible to see at least one example each of the work of some of the more outstanding young French directors.

We may not have seen *Le Beau Serge*, with which Claude Chabrol made his explosive début, but we have at least seen his second picture, *Les Cousins*, which stars the same two astonishing young men, Jean-Claude Brialy and Gérard Blain. This film, made by Chabrol almost entirely on location because he could not afford to hire a studio, was completed for about the third of the cost needed to make an inferior feature in British studios. You may not like the result but it is idle to deny its compulsive spell or its accomplishment. A

<sup>1</sup> *Encounter*, August, 1959.