

Understanding begins at home

A British committee has suggested how the general understanding of science might be improved. In Britain, education cries out for revolution. But everywhere, science needs a more open manner.

THE appearance of the Royal Society's report (see p. 104) on the public understanding of science, and the existence of the committee that has produced it, is a mark of the general depression of the morale of the scientific community in Britain two years ago (when the committee came into being). For then it was generally believed that science and research would not have been so badly treated by a seemingly uncaring government if they were not also unfairly short-changed in public esteem. The most obvious dangers were that the analysis of an important problem would be biased by speculations about the most efficient way of creating a more effective lobby for the research enterprise or by inward-looking complaints about the failure of newspapers and other channels of communication to do the same job on a voluntary basis. In the event, the Bodmer committee has avoided these pitfalls. Instead, it has produced a valuable and liberal document that will help in two specific ways: by further strengthening the opinion that the most public ignorance of science (especially among members of the British government and their servants) can be traced to the educational system, and by creating a climate in which researchers are more willing to talk about their work. The sad thing is that a report along these lines should now be necessary in a community previously outstanding for the vigour with which science was a part of the general culture. Josiah Wedgwood's Lunar Society in the late eighteenth century was only one of the informal institutions that kept this spirit alive for the best part of 200 years.

What went wrong? The Bodmer committee is right in almost everything it says, but its analysis is over-timorous and, as such, may also be over-flattering to the scientific community everywhere, not just in Britain. Throughout Europe, the Enlightenment that occupied the closing decades of the eighteenth century was a conspiracy between intellectuals of all kinds, for whom rationality and optimism were the common unifying cement. The period spawned revolutions (in the United States as well as France), public educational systems (as in what became Germany), a flood of endearing but enduring literature, the techniques of business (such as joint stock-banks) and the technology that became the industrial revolution. That it should have been a period when people without specialist knowledge (of which there was not much) chose to take a lively interest in the natural world cannot have been an accident. In retrospect it appears that the circumstances were right for just such a revival of general interest in what science is about four decades or so ago, with the ending of the Second World War and the recognition of how much research had contributed to that end. (Awful though the war had been, it was clear that it could have been disastrous, so that there were also grounds for optimism.) Yet within a decade, in Britain, C.P. Snow found it necessary to write his tract on the "two cultures", a complaint that society had chosen to rob itself of profit and intellectual excitement by arranging that there should be two distinct, sometimes conflicting, intellectual camps.

The Bodmer committee is right to single out the British school system as one of the causes of this state of affairs in Britain, but the problem goes deeper. One of the reasons why people were more willing to argue about intellectual matters two centuries ago is that the divisions between ordinary people and the professional gatherers of knowledge were not then as sharp as they have since become. That there has since accumulated a vast bulk

of knowledge with which most non-academic people are unacquainted is a fact, but need not so often be an impenetrable barrier to general discussion. And the root cause of that development is the convention of self-certitude that has been taken up by academics, both in relation to students and, more alarmingly, among each other. In one respect, the advantages are obvious, in the other, the benefits are that people are politely restrained from too open mutual competition.

Among academics, scientists have earned themselves the reputation of being the least discursive, with consequences that are thoroughly unwelcome. The convention that one should not be too enthusiastic about one's own preoccupation is not merely a device for not giving good ideas away, or for avoiding the embarrassment of having them shown up as false, but it is a restraint on mutual stimulation. The convention that one should also be seen to be a deal smarter than one's students may be natural enough, but can hardly be necessary to the self-esteem of able academics and is in any case untenable, given the smartness of students nowadays. Yet the convention robs students of what should be essential stimulation. The frontiers of knowledge are also the boundaries of ignorance, and people whose teaching steers clear of the unknown provide their students with an ill-drawn map. Moreover, while the Bodmer committee has been understandably concerned in its analysis with what the "public" may know about science, it is more than likely that the general interest in this field is with the other side of this coin, what remains unknown.

That is one reason why the Bodmer prescription for the improvement of public understanding in Britain, good as it is, should be given an even more vigorous trial where it matters most, in the lecture halls and seminar rooms of the universities. If scientists, following Bodmer, are to tell the world why their own work is interesting, and to guess where it may lead, should they not also tell their students? If teachers are made thereby to seem a little more fallible, may they not also be more valuable as teachers, partly by stimulating those who listen to them, partly in providing a model of open discussion that will eventually communicate itself more generally? To the rejoinder that this is what outstanding teachers have always done, the counter-rejoinder is to ask how many teachers now regard the isolation of the intellectual nub of a topic, rather than its description, as the objective of an encounter with students.

So the moral, for scientists everywhere, is that public understanding begins at home, in the laboratory and the lecture room. For most practising scientists, the growing army of people who profess to write about science will be an irrelevance (and even a continuing embarrassment, given their tendency to ask questions that cannot be answered conveniently, or prudently). The benefits of more understanding between scientists and with their students would not necessarily be as distant as implied by the time taken for the same students also to be part of the general population. For in the past three decades, since the rot set in, scientists have had only moderate success in the competition that ultimately matters most to them — that for bright potential students. The arts and humanities have consistently done better than their practical value would suggest, no doubt because students enjoy such studies and are stimulated by them. Is that not a cause worth winning? □