

BRITISH ASSOCIATION SUPPLEMENT—LEEDS, 1967

“THE ADVANCEMENT OF SCIENCE”

CONVENTION has often required, in recent years, that people should shake their heads with regret and a little scorn at the supposed incomprehensibility of modern science. “Science is fragmented”, the saying goes. One way and another there is a widespread belief that the condition of science was much healthier a century or so ago, when it was often possible for intelligent country gentlemen, occupied for most of their time with doctoring or industry, to keep up with what the natural philosophers were writing and often to take issue with them as well. And it is true, of course, that circumstances were very different then. There was less science. The pace of advance was comparatively leisurely, so that there was time for new concepts to be assimilated by people not actively working in a field before they were in turn discarded by the professionals. But even in those supposedly halcyon days, understanding was not always easy to come by. Darwin was in everybody’s mind, but appreciation of the more abstract work on which Faraday was engaged was inevitably much more restricted, for example. Since then, there has been no real qualitative change in the character of scientific advance, but merely such a dramatic acceleration of the pace of discovery that things appear to be quite different from what they were.

In circumstances like these it makes no sense to complain about specialization as such. For centuries, and for long before the beginning of modern science, scholars have found that the interesting problems are only solved when effort is concentrated on them. Mediaeval scholars in particular were often firmly wedded to specific tasks—the translation of the Bible from one language to another. For all the ease with which Victorian gentlemen could participate in science, specialists were plentiful in the nineteenth century. A good many of them were as single-minded as any now alive. Just as at present, they would often fail to communicate exciting news to specialists in other fields. In other words, it seems that when it comes to making progress, specialization is not merely a necessity but often a virtue without which scholarship would be diminished. It follows that the only complaint against the specialists which can, in some circumstances, be sustained is that they take too little trouble to acknowledge that the essence of what they do can be enormously interesting and important to other kinds of people. It is not too fanciful to think that the advance of science as a whole consists of the integration into a whole of the separate discoveries of scientists working in fields which seem, at first sight, quite unrelated.

The annual meeting of the British Association, at Leeds this year, is a good time for remembering this, for the association has its roots in the days when it was possible—but, even then, not common—for amateurs to make contributions to the advance of science ranking in importance with the contributions of those who laboured full-time at some laboratory bench. The

records of the old meetings show how easily scientific issues could become matters for public debate between men (but few women) with widely different issues. Over the years, the association has quite properly changed its character with the acceleration of discovery, but it remains, as it should, a means by which a public wider than that of the full-time professionals can be kept abreast of new developments. In doing so it has come up directly against the difficulty of distilling from the continuing torrent of professional activity those developments which may in some sense be called essential. This problem is, of course, one that the association shares with a great many other organizations—responsible newspapers, for example, and the growing number of magazines designed to bridge the gap between the full-time profession as such and the great company of those outside.

The problem is that of reading the fine print and picking out the points at which matters of general interest escape almost without assistance from the technicalities with which they are inevitably accompanied. There is probably a case for saying that the professionals do too little to help outsiders and each other by drawing attention to matters of great importance. Yet there is much that can easily be done, as it is hoped the following pages will show. They are intended to pick out for the interest of a wider readership than that usually concerned with individual articles in this journal problems which seem to have become of special interest and excitement in the past year or so. The selection, it will be seen, is biased. It is mostly concerned with issues which have been raised in this journal, but it does not do justice to all the matters which are at present of great importance—the physiology and chemistry of vision, the mechanism by which platelets clump together in blood and a great many other topics.

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