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IS THERE TOO MUCH LITERATURE?

PEOPLE have been complaining that there is too much to read ever since the development of printing presses in the fifteenth century. In most branches of learning there is probably a Parkinsonian law to the effect that the volume of the literature will always increase so as to become more than any individual can comprehend, which means that the efficient use of original sources is an essential part of all academic activity, requiring self-conscious attention and even deliberate study. So much is old hat, as historians have known for centuries, but the question naturally follows of whether scientists may not be protesting too plaintively at the flood of literature now reaching their laboratories. What are the special properties of what is frequently called the "information explosion" in science? Which of these could be avoided? And what could be done to make the scientific literature more suited to its purposes—whatever they may be?

That the sheer physical bulk of the scientific literature is growing quickly is, of course, beyond dispute. Professor Derek Price has done a public service in pointing to the exponential growth in time of several parameters related to the activity of the scientific community—the numbers of scientists at work, the cost of what they do and the volume of the original material which they publish. The most obvious characteristic of the scientific literature is the time-constant of these processes of growth. As a whole, the literature is probably doubling in bulk every decade or so.

This is the immediate stimulus of the several attempts now being made to simplify access to this torrent of words and information. It is natural that attention should first be paid to the ways in which machinery could help with the management of the literature, and there is obviously a bright future for schemes to provide working scientists with lists of titles likely to be of immediate interest to them. It is to be hoped that the methods now being worked out in medicine and chemistry will eventually be applied in other parts of science. Yet the machine men are the first to insist that computers will not be able to rid scientists of the drudgery of reading some of the literature for themselves. Even if that were desirable, it would not be practicable. The retrieval systems so far devised will serve chiefly to provide some kind of an awareness of important articles which appear in unfamiliar journals. Those who now complain of the time they spend in libraries should not look for drastic savings from the coming of computers.

Another characteristic of the literature is its fragmentation, although that is frequently an advantage,

not a drawback. Although specialization may increase the difficulties of keeping tidy catalogues, and may also impede the traffic in ideas between people with widely different interests, at the same time it helps to restrict the categories of journals and other publications which individuals feel obliged to read. This is probably most apparent in high energy physics, where fewer than half a dozen journals seem to satisfy most people's curiosity, but there are also many other fields in which the bulk of the literature as a whole does not seriously complicate the process of identifying the original communications which must be read. This is one respect, at least, in which the problem of the literature has sometimes been exaggerated. Fragmentation is not in itself a good thing, but it has its compensations.

Calculations like these, cheerful or otherwise, assume that the first objective in the handling of the literature is to help with the dissemination of the original publications which already exist and with the writing of others like them. This begs a great many questions and, in particular, makes the assumption that the literature is already well suited to its purpose.

That, unfortunately, is an illusion. As things are, too many scientific articles are written in the hope of attaining too many objectives. That they should serve to communicate information and ideas to other people is, of course, essential. But is it also necessary that they should serve as entirely self-contained and even historical records of work accomplished in the laboratory? There should be different answers in different circumstances, but authors tend to err towards completeness, which makes the literature repetitive. Authors also err towards a kind of quasi-legal language, no doubt intended to avoid ambiguity but so convoluted—and so often in the passive voice—that it often creates boredom and even, paradoxically, confusion. Too often it seems to be forgotten that if the literature is worth writing at all, it is meant for reading. Moreover, the literature should as often be stimulating as informative. Although the incidental value of the literature as a historical record or as a storeplace for factual information is undoubtedly important, these functions can and should be carried out in other ways (which is one reason for welcoming the growth of the secondary literature, data centres and organizations for compiling critical evaluations of experimental data). In spite of all the care and money now being lavished on the management of the literature, people will be complaining about the literature, and justly, until matters like these are attended to.