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Education by Radio.

**I**NFORMAL instruction, which need be neither illogical nor discrete, nor even so completely popularised in its presentation as to lack essential accuracy of fact and deduction, is perhaps as vital a force in the cultural development of a nation as its formal educational system. The new power of the broadcast message gives to the world a new university without matriculation and, what is perhaps more attractive, without examinations; a university the teaching of which is not only extra-mural but is also offered as a free gift to anyone who cares to go to the trifling expense and trouble of accepting it. As such it is in no sense a competitor with schools and colleges, nor ever can be; indeed, its success in Great Britain has been largely due to the co-operation which has been forthcoming from professional educators and their institutions.

In the United States of America the evolution of radio broadcasting has permitted a regular collaboration between the University of Pittsburgh and the radio station KDKA of the Westinghouse Electric and Manufacturing Co., a collaboration which has now completed four years of public service. Education by radio has its limitations and its pitfalls, as well as its attractions, and those responsible for these series of lectures have done well to emphasise that arm-chair listening forms no short cut to knowledge and culture, although it may add in no small measure to the sum of human happiness by providing mental stimulus, and widening vision of some of the less tangible matters of moment. Nothing can adequately function as a substitute for the influence of mind upon mind that comes of personal contact, but broadcasting at least provides a kind of one-way traffic which may well awaken response in many hundreds of thousands of minds which would otherwise be denied the opportunity of guidance towards thought extending beyond their immediate affairs.

The possibilities of this social service are, in fact, so vast that it would be as profitable at this stage to attempt to lay down rules for its development, or even to comment in detail on what has already been accomplished, as it would have been in Caxton's day to specify the contents and format, or to review the influence, of printed books. As an example, however, of the scientific side of the service, as offered outside Great Britain, we may briefly describe the contents of four booklets reproducing talks delivered by research specialists of the Mellon Institute of Industrial Research

under the auspices of the Pittsburgh collaborative scheme.

In "Science and Industry" (Radio Publication, No. 9) there are seven talks on such subjects as iron and steel, natural gas, petroleum, coal and coke, glass, and clay products; "Science in the Home" (No. 23) includes eleven talks on foods and food values, beds, fuel, textiles, disinfection, utensils, and structural materials. "Automobile Engines" (No. 28) formed the subject of six talks, which were doubtless appreciated by many thousands of motorists whose knowledge of the 'how and why' may previously have left something to be desired, whilst the seven talks on "Wearing Apparel, its Manufacture, Utility, Selection, and Care" (No. 37), must have appealed to an even wider circle. The list contains references to series of talks on "Conversations with a Philosopher," "Evolution and Heredity," "American Foreign Policy," "The Naturalist Afield," "Man and the Earth." The technical lectures mentioned form, of course, only one aspect of the educational edifice, and equally good use is being made elsewhere of similar opportunities for public service; but we feel that the enterprise of the University of Pittsburgh and the Westinghouse Company deserves both congratulation and encouragement.

#### A Directory of Specialised Information.

*The Aslib Directory: a Guide to Sources of Specialised Information in Great Britain and Ireland.* Edited by G. F. Barwick. Introductions by Sir Frederic G. Kenyon and Sir Ernest Rutherford. Published with the Financial Assistance of the Carnegie United Kingdom Trustees. Pp. xiv + 425. (London: The Association of Special Libraries and Information Bureaux; Oxford University Press, 1928.) 21s. net.

TRULY has it been said, "Of making many books there is no end." It is, however, a curious reflection on the perspicacity of the human intellect that mankind should continue to groan at the weariness of much study, while making so little effort to diminish the burden, either by attempting to limit the rate of increase of material, or by considering how to improve the method of handling it.

"'Tis pleasant sure to see one's name in print,  
A book's a book although there's nothing in't."

So the world's production continues to be mostly in books.

Recently in Great Britain a serious attempt was

made to estimate the magnitude of this output. From the "World List of Scientific Periodicals" we learnt that scientific and technical information has been published during the present century in some twenty-five thousand periodicals, besides separate books. Perhaps, of these periodicals, some fourteen thousand of those now current may contain useful matter. If then we might make a guess, that the average annual number of separate articles in a scientific journal is of the order of one hundred, the total yearly output of scientific papers might be taken as about one million or more. Thus at least we know now, that in order to find what information has been published on a given subject, we have to sort and index each year a million articles or notices published in periodical literature in addition to works issued separately. How to accomplish this task is a problem that must be solved, unless we are content to allow much of this tremendous volume of useful information to run to waste for ever.

It has been shown elsewhere that one solution of the problem is the general adoption of a standard classification, so that all those engaged in indexing information may join in a common movement for the common good. Now, it has been calculated that there are, in the Science Library at South Kensington alone, some forty million published bibliographical notices. So that the total number of published index-titles appears to be comparable with the total number of scientific papers issued. To produce a comprehensive index, therefore, requires merely the organisation of a quantity of energy, comparable with that which is now being expended uneconomically in isolated bibliographical efforts.

The work under notice makes a further contribution to the diagnosis of the extent of the malady. It does not profess to cure the evil. There exist, in Great Britain alone, some thousands of agencies, working by multifarious methods, for the purpose of collecting books or information on special subjects. The "Aslib Directory" is a worthy attempt to make a list of such agencies, and serves to indicate the vast amount of labour that is actually being expended in collecting information. While fully appreciating the value of this important contribution to bibliographical data, it is necessary to take exception to some remarks in the introduction to the work. After referring to the object of the Association of Special Libraries as being "to serve the need of the research worker," and adverting to similar organisations abroad, the introduction goes on to say "the fear is some-