



THURSDAY, JUNE 9, 1921.

*Editorial and Publishing Offices:*

MACMILLAN & CO., LTD.,

ST. MARTIN'S STREET, LONDON, W.C.2

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### Co-operative Indexing of Periodical Literature.

THE selection, examination, and classification of the valuable matter contained in periodical literature is performed by two agencies, viz. certain abstracting and indexing societies and journals. "Science Abstracts" and the abstracts published by the chemical societies of England, France, Germany, and the United States are examples of the former class, while the "International Catalogue of Scientific Literature," the "Engineering Index," the "Index Medicus," the "Index to Legal Periodicals," and the various indexes published by the Anglo-American library associations represent the latter. Almost without exception, where the same field is covered by both types of publication, the two agencies work independently of each other. Further, in this country the publication of abstracts generally precedes the corresponding index publication, especially where the latter makes any pretence to completeness. This obviously is an indefensible arrangement; for the index material, which is the result of the wider survey, should be accessible to the abstractor prior to the preparation of the abstracts. We propose to indicate how this change could be accomplished with a minimum of disturbance to existing interests. It should be observed that the phrase "periodical literature" is used in its widest sense to include society publications and institutional reports, as well as annual, quarterly, monthly, and weekly publications.

The growth of periodical literature owing to the

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increased specialisation of knowledge is one of the most significant features of our times. A union catalogue of the current periodicals preserved in the German libraries, published in 1914, comprised some 17,000 entries. A similar list for the periodicals filed in the libraries of the United Kingdom, prepared in 1914-15 by some English State and Copyright librarians, was submitted for publication to the Department of Scientific and Industrial Research, but the proposal met with no encouragement. Yet the compilation of such a list is an essential preliminary to the proper national organisation of knowledge. For a union list indicates the relative strength and weakness of our national libraries in respect of their periodical collections: it enables the librarian to correct the latter, without unduly increasing the expenditure of the library in that department of literature. Moreover, while primarily a time-saving expedient for locating the place of deposit of a periodical, it emphasises the essential unity of the library service in the satisfaction of the legitimate requirements of research. Our first proposal, therefore, is that representations should be made to the Trustees of the British Museum with the view of inducing them to undertake this necessary piece of national work. These representations would carry greater weight if accompanied by some guarantee of financial support. The work done in 1914-15, which is in the custody of the British Museum library authorities, would, of course, require considerable revision and extension, but the cost of its publication should not exceed 500*l.*—a portion of which would be recouped by its sale.

That a large proportion of periodical literature is of an extremely composite character is, of course, a commonplace; but the labour which this feature entails upon those responsible for the collection of material relevant to their particular fields of inquiry is not equally well realised. This composite character applies not only to the popular magazines and journals, but also to the repositories of original investigations in all branches of knowledge. The *Comptes rendus* of the Paris Academy, for example, furnish material not only for the seventeen sections of the "International Catalogue," but also for psychology, education, archæology, and technology. In the *Sitzungsberichte* of the Berlin Academy theories of relativity jostle with disquisitions on Hittite inscriptions and Turco-Tataric philology. In short, periodical literature may be said to consist of two classes: (a) watertight

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compartments containing homogeneous material, and (b) compartments which admit freely any literary matter of sufficient merit or popular appeal. The problem, therefore, is to devise a scheme by which information contained in the latter class—for class (a) presents no special difficulties—can be made to flow towards its proper recipient, and this, obviously, can be effected economically only by the acceptance of a common system of classification.

So far as the literature of science is concerned, a classification already exists in the scheme adopted by the "International Catalogue of Scientific Literature." This scheme has been incorporated in that of the Library of the United States Congress—a library the staff of which appears to possess special qualifications for dealing with the literature of the exact sciences. Further, this scheme has been published in two forms: (a) with its headings arranged in class order and issued in separate sections, *e.g.* Q=science in general [QA=mathematics, and so forth]; and (b) with its headings arranged in one general alphabet. Thus science possesses a classification stamped with its own hall-mark, but grafted on to a scheme for the general classification of knowledge. Still, the acceptance of the Library of Congress classification is not an essential feature of these proposals, which are based on the recognition (1) of the division of periodical literature into (a) the homogeneous and (b) the non-homogeneous classes; (2) of the economic advantage of dealing on a co-operative basis with the latter; and further, since the non-homogeneous periodicals cover all departments of knowledge, (3) of the necessity of adopting some agreed system of classification for the purpose of establishing a means of exchange between the different interests.

Thus we have shown that the core or *umbra* of a subject is comprised in a body of homogeneous literature which unquestionably can best be dealt with by its representative professional society, but that outside this core there exists a *penumbra* of relevant matter dispersed through a literature of gradually increasing irrelevance, with the result that the recovery of the relevant matter can be effected economically only by co-operative effort. The solution, therefore, would appear to be to bring into existence a Central Bureau which should deal solely with the indexing of periodicals of the non-homogeneous character—and in the first stages of its work, with a restricted list of periodicals assigned to it by the

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contributory bodies. These bodies would receive from the Central Bureau entries from the periodicals examined corresponding to their specified requirements. But as the professional abstracts became more fully representative of progress in their respective fields the need for the publication of the corresponding indexes would tend to disappear. The institution, therefore, of a Central Bureau would ultimately make for economy in all branches of science in which the publication of abstracts is admittedly indispensable.

So far as science is concerned, it will probably be found that the simplest and most effective method for obtaining the necessary index slips would be to invite the Central Bureau of the "International Catalogue of Scientific Literature" to provide them. Indeed, the possibility of co-operation between the "International Catalogue" and the abstracting journals was one of the subjects considered at the conference held last September. Any such arrangement would probably begin with the year 1921, and, as a preliminary, the "International Catalogue" should be brought up to date by the publication of volumes for 1915–20. The provision of funds for this purpose is an urgent necessity, as explained in NATURE for October 7, 1920, vol. cvi., p. 195.

In the foregoing observations we have assumed that the proper bibliographical equipment of the sciences will in the main be founded upon the possession of adequate abstracts. But if the subject were threshed out in an open conference at which representatives of all branches of knowledge were invited to attend, this proposition would not be accepted as holding good universally. Some branches would probably prefer periodical critical reviews or summaries of the year's progress, while others would be content with alphabetically arranged index entries. Our final proposal, therefore, is that such a conference should be held in order that the special requirements of each division of knowledge should be authoritatively ascertained, and the feasibility of co-operative or co-ordinated action discussed.

*See also Sept 8 p 43*

### Piezo-chemistry.

*Piezochemie kondensierter Systeme.* By Prof. E. Cohen and Dr. W. Schut. Pp. ix+449. (Leipzig: Akademische Verlagsgesellschaft m.b.H.: Gustav Fock, 1919.)

THE direction and extent of a physical or chemical change are frequently determined or modified by pressure. This fact has long been