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Telephone Number: GERRARD 8830.
Telegraphic Address: PHUSIS, WESTRAND, LONDON.

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Technical Libraries.

THE formation of the Association of Special Libraries and Information Bureaux, which held its second annual Conference at Balliol College, Oxford, in September, is a welcome sign not only that the librarians of technical and other specialist libraries are realising the need of co-ordination and co-operation amongst themselves, but also that manufacturers in Great Britain are at last seeing the vital importance of research to industry. They are realising the urgent necessity, therefore, of having ready access to existing library resources and greater facilities for ascertaining what is being done from day to day throughout the world.

The pressure behind the movement came in the main from outside and not from within the library world. The absence of the research habit in Britain, in contrast with the position in Germany, became so painfully evident after a few months of the War that the Government had no option but to undertake a Scientific Intelligence Service, which though conducted primarily for military purposes, yet necessarily covered so wide a field that it included in its survey a great deal of what in normal times would form part of the civil work of the nation. Fortunately, the necessity for a continuance after the War of similar organised efforts towards a comprehensive scheme of scientific research was clearly recognised, and numerous industrial research associations were formed, under the ægis of the Department of Scientific and Industrial Research, to act as laboratories and as feeders of up-to-date information for the benefit of the subscribing manufacturers. It is a significant fact that it was due mainly to the initiative of one or two of these research associations that the first Conference of Special Libraries was held at Hoddesdon last year, and that this was followed by the formation of an Association and the much larger Conference at Oxford this year.

At a very liberal estimate, the number of scientific and technical libraries in Great Britain may be put at about a couple of hundred. This figure, though probably not one-third of the number of similar institutions in the United States, where the Special Library Association has been in existence for more than sixteen years, may not on paper appear an unreasonable one for British needs. But when consideration is given to the fact that certainly more than one-half of this number—and of these probably the largest and most representative—would be found in London and its immediate neighbourhood, and when the nature and relative efficiency of the various collections are taken into account, it will surely be felt that the fullest advantage is not being taken even of the undoubtedly great resources we already possess.

There is, or was until quite recently, an entire lack of co-operation between the different libraries, even amongst those covering the same or closely related fields. Each shut itself in a watertight compartment, selecting and arranging its books and the still more important periodical literature without reference to its neighbours, and with the view solely of suiting the needs of its own readers—usually the members of the private or semi-private institution to which the library belonged. This involved a great deal of unnecessary duplication and a needless waste of effort, some fields being more than adequately covered, whilst others were only poorly or even not at all represented. Well-known treatises and journals could be found repeated in a number of libraries within walking distance of each other, to the entire exclusion of less well known but not always less important literature. A few fruitless efforts at reform have been made from time to time, especially in the field of engineering, but so far nothing has been accomplished that can in any way compare, for example, with the establishment of the United Engineering Societies Library in New York.

A beginning is, however, now being made in Great Britain, and one interesting experiment calls for special notice, namely, the scheme whereby, under agreement with the Carnegie United Kingdom Trust, approved special libraries are being linked up with the Central Library for Students. Already under this scheme a number of libraries—those of the Royal Aeronautical Society, the Scottish Marine Biological Association, the Rowett Research Institute, and others—have agreed to lend their books and periodicals (other than exceptional rarities) to borrowers applying through the Central Library, the latter institution becoming responsible for their proper care and return. The benefits of such a scheme are obvious. The Central Library is relieved of the necessity of purchasing a number of books, etc., already to be found in these other libraries, whilst at the same time those who avail themselves of its services will be able to borrow many books and periodicals, including back numbers, not otherwise obtainable.

Co-operation of this character is especially valuable, and the establishment of central loan libraries will be of increasing importance in connexion with the small but highly specialised libraries that are being formed by industrial establishments, research associations, and so on. As these grow, the question of the provision of shelf space for their rapidly increasing literature will undoubtedly arise and will be solvable in one of two ways, either by diverting some of the not too extravagant funds now devoted to experimental research from the laboratory to the library, or by a periodical survey of the library shelves for the purpose of weeding out the less important material.

Happily for the future prospects of research, the latter alternative, granted proper co-operation between all concerned, is not only the most practicable, but also the most desirable one. It would usually be unnecessary for the type of library now being considered, concerned as it is mainly with the results of current research, to continue to keep on its shelves copies of old editions and long runs of patent literature, or of any but the most important periodicals. At the same time, no librarian would agree to discard such material unless he could be quite sure that it would be readily and immediately accessible in some other library, if and when required. A central library to which might be sent on loan conditions all literature that could ordinarily be dispensed with would meet his needs, and would in many other ways be an invaluable adjunct to all the special libraries of a district. The increasing specialisation, and the growing interdependence of the various branches of science, render it quite impossible for any but the very largest libraries to include all the literature that might at some time or another be wanted by its readers, and reliance on other sources is the only possible solution of the difficulty.

In this the greater public libraries of Great Britain may well play an important part. Many of the municipal authorities throughout the country—notably that of Manchester—are viewing with favour the formation as part of their library system of special technical sections having particular reference to the industrial interests of the district. It would not be a difficult matter to arrange that the special libraries of the neighbourhood should each restrict its selection of literature to that relating specifically to the subject with which it is mainly concerned, leaving the public library to provide for its needs in the way of general scientific works and the literature of neighbouring fields which might be required from time to time. The public library would also serve as the reservoir, of which we have spoken, for the less important material weeded out periodically from the specialist libraries to make room for current growth. By reciprocal loan arrangements, such material would always be available when required, and the public and specialist libraries would each be able to draw on the resources of the other in case of need. Any specialist library would thus have access to a far wider range of literature than it could possibly hope to provide for itself, and would at the same time, by the elimination of the necessity to provide works on subjects outside its immediate scope, be enabled to make its own collection more fully representative of its subject than would otherwise be the case. Consolidated catalogues kept up-to-date in each of the libraries concerned would be a necessary corollary.

In London, with its varied interests, a somewhat

different method might have to be introduced, and a separate loan library be formed as an auxiliary to the scientific libraries of the Metropolis, to which the rarely used volumes could be sent for the common use and benefit.

With greater co-operation between scientific institutions, we may expect to see an improvement in those indispensable tools of the research worker, abstracts and indexes of periodical literature. An enormous amount of unselfish work is being done in this field at the present moment, and unity of effort is being aimed at in more than one direction. The two leading chemical societies have since last year pooled their abstracting resources in the Bureau of Chemical Abstracts, and though two separate publications, differing in format, one for pure and one for industrial chemistry, are still being issued, it is understood that with next year the two publications will be combined into one. A much larger question arises when the actual number of journals abstracted or indexed is considered. Though we are still waiting for the second volume of the "World List of Scientific Periodicals," we shall not be far wrong in assuming that a considerable proportion of the current periodicals recorded in that invaluable work are not to be found in any British library. Dr. Chalmers Mitchell, at the Oxford Conference, made the bold suggestion that a central library should be established which should contain a copy of every current periodical issued throughout the world and publishing scientific and technical research, and keep it available for the use of indexers and abstractors for two years after publication. After that period the volumes would be distributed for permanent reference to other suitable libraries. Such a library would not be a lending library, but would be available only for abstractors and indexers from recognised organisations, and for the librarians of other libraries. A certain amount of cold water has been thrown on the proposal on the ground of the extensive nature of the work involved; but nothing is impossible unless we make it so.

Such are some of the many problems awaiting solution in the world of technical libraries, before these can render to the community that service which they alone can give, and, it may confidently be expected, will more and more be demanded of them. Improvements in the facilities provided and the growth of a healthy desire for knowledge of what others are doing in invention and research will proceed *pari passu*, for the two are mutually dependent and will stimulate each other. The newly formed Association of Special Libraries is supplying the necessary impetus. From the seriousness with which it is setting about its self-imposed task, there is distinct hope that one at least of the lessons taught by the War will not be forgotten.

Ancient Assyrian Chemistry.

On the Chemistry of the Ancient Assyrians. By Dr. R. Campbell Thompson. Pp. 158+6 plates. (London: Luzac and Co., 1925.) 25*s*. net.

DR. THOMPSON'S brilliant monograph on ancient Assyrian chemistry is worthy of very careful study. To appreciate it fully one must be both an Assyriologist and a chemist, but even those who, like the present writer, have no knowledge of cuneiform, will delight in Dr. Thompson's skill in argument, lucidity of explanation, and quickness in perceiving the key to difficulties. His results and conclusions are of considerable importance, and, while one may not always agree with him entirely, he has certainly thrown a flood of light upon the chemical knowledge of one of the most talented nations of antiquity.

The texts concerned form part of the remains of the royal library of Ashurbanipal, now preserved in the British Museum. They describe in detail the processes of glass-making as practised by the Assyrians of the seventh century B.C., and give information not only on the composition of various kinds of glass but also on a variety of colouring matters used in the production of tinted glass. By subjecting these texts to a close and critical examination in the light of philology, checked at each step by appeal to chemistry and to known methods, ancient and modern, of glass-making, Dr. Thompson has succeeded in identifying a surprisingly large number of chemicals. It becomes evident, indeed, that chemistry of a practical and empirical nature must have been brought by the Assyrians to a level hitherto unsuspected.

Dr. Thompson points out that up to the present time the Assyrian words for minerals and stones have been much neglected, and that the custom has too commonly been to regard the large number of substances specified by the determinative for "stone" as (exclusively) "precious stones." He inclines to the view that "stone" in the scientific texts must have a much wider meaning; that it must, in fact, include mineral drugs and inorganic pigments. This suggestion, the fruitfulness of which is shown throughout the book, has a great deal to recommend it. Most important of all, perhaps, is the fact that in the related Semitic language of Arabia we find that the chemical writers habitually use the term *ḥajar* ("stone") for any inorganic chemical. Since the early Arabs undoubtedly derived many of their mineral-names, and possibly much of their empirical chemical knowledge, from Assyria, it is not incredible that this technical use of the word "stone" may have been handed down to them in the same way. Quite apart from this extraneous evidence, however, it is difficult for any one who follows Dr. Thompson's arguments to