The National Central Library

By DR. S. C. BRADFORD

THE new building of the National Central Library, Malet Place, W.C.1, which H.M. the King, accompanied by H.M. the Queen, has consented to open on November 7, crowns the generosity of the Carnegie United Kingdom Trustees, and marks the last main stage in the development of an organised system of library co-operation in Great Britain, which has been evolved during many years.

The need for a supply of books for the use of the general population is a comparatively modern development of civilisation. It is the outcome of a national system of education. The industrial revolution brought to ever-widening circles of the population the realisation of the need for knowledge, and education became a prime necessity of national life. Education implies books; and the need for books accessible to all classes led to the movement for the establishment of public libraries. The War emphasised the lesson that study and research are essential, not merely for progress, but also for survival in the struggle for existence, and now few would deny that, if Great Britain is to continue to hold its own, it can be only by the application of all the resources of knowledge and intellectual culture.

The public libraries movement in Britain may be said to date from the Select Committee of 1849, which was appointed by the House of Commons to report "on the best means of extending the establishment of Libraries freely open to the Public especially in large towns in Great Britain and Ireland". The report refers to the disadvantages under which intellectual progress laboured owing to the absence of public libraries. "The great practical education of an Englishman is derived from incessant intercourse between man and man and from the interchange and collision of opinion, both teaching him that most important of all lessons, the habit of self-control. But it would be wise to superadd to these rugged lessons of practical life some of the more softening and expanding influences which reading and thought supply." The establishment of mechanics' institutes and the foundation of lectures for adult education led naturally to a demand for books for reading. The power of access to standard works in a public library would tend to render the lecturer less superficial and to promote investigation among his hearers. Rural districts were not forgotten. "Much of the future character of our agricultural population, social, moral and religious, may depend on the extension and due formation of Village Libraries." The $\frac{1}{2}$ d. rate provided by the first Bill was increased to 1d. by the Public Libraries Act of 1855, which limitation was not removed until the Public Libraries Act of 1919.

From 1892 onwards very rapid progress in the development of the public libraries system of Great Britain took place through the munificence of Mr. Andrew Carnegie, and afterwards of his trustees. Besides the provision of the capital necessary for the building of hundreds of libraries, the funds vested in the Carnegie United Kingdom Trust, now representing nearly three million pounds, were applied to the extension of the County Library movement. The basis of this system is the formation of a central collection of books, the distribution of a selection of books to centres throughout the area,

and the loan of these books through the medium of local libraries.

For the co-ordination of the whole scheme of library service a central library was needed. With thirty-two million books in existence, no library can contain all that may be needed by students. The National Central Library arose from an experiment commenced in 1914. In that year the Workers' Education Association, in conjunction with Toynbee Hall, established a library for the purpose of supplying books to Workers' Educational Association classes. Recognising the importance of the work of this small library in making available the books required for study by working students, the Carnegie United Kingdom Trustees made in 1916 a grant of £600 to assist in the establishment of a "Central Library for Students", £2,000 for additions to the stock of books and £400 per annum. Afterwards these grants were greatly augmented. While continuing to serve individual students, the Library began more and more to lend through public and other libraries, so that every serious reader might obtain standard books that he could not obtain from his local resources.

The usefulness of the Library was further increased by the development of a system of 'outlier libraries', which received grants from the Trust on condition that the books and periodicals in these libraries were made available to the public through the Central Library. By 1932, 128 libraries had become so associated. The inquiry office established by university libraries through the Joint Standing Committee on Library Co-operation for inter-university loans was transferred to the National Central Library in 1931.

Another notable service rendered by the National Central Library is an arrangement whereby books, not obtainable in any other way, may be borrowed from or lent to foreign libraries. During 1932, 151 books were lent to 29 foreign libraries, while 52 books were obtained from abroad for 17 libraries in Great Britain. Although the number of books obtained in this way is not great, the service removes a difficulty which has long been irksome. Thus the function of the Central Library became to supplement the supplies of books which public libraries can provide for students and to co-ordinate the various existing agencies, so as to put the individual student, wherever he lives and whatever the subject of his study, into touch with the particular library, general or specialised, which has the books of which he is in need.

As the result of the Report of the Public Libraries Committee of the Board of Education, which was presented to Parliament in 1927, the Central Library for Students was granted a Royal Charter under the title of "The National Central Library" and given a Government grant of £3,000 supplementary to the generous contributions already being received from other sources. In the new building, provision has been made for housing one million volumes.

In this way a library service has now been established whereby a student, living beyond the range of the reading rooms of the great libraries in London and requiring a rare or expensive book for the purposes of research, may apply in the usual way to his public library. If the public library does not possess the book and does not consider it reasonable

to buy it, application is made by the librarian to one of the regional libraries to be established for the co-ordination of public libraries within definite areas. If the regional library cannot supply the book, the application is sent to the National Central Library. The National Central Library applies to the institution likely to possess the book, borrows it on behalf of the student and accepts responsibility for its return. Or, if the book cannot be traced in any library, the National Central Library will purchase the book and lend it to the public library for the use of the student.

A considerable proportion of the books for which applications are made under this scheme are scientific, particularly scientific periodicals. The Science Library in the Science Museum at South Kensington is being developed as a central library to provide for the needs of scientific workers, whose claims have been emphasised on a number of occasions. It is hoped that in time all scientific periodicals which are of substantial importance will be available. By an arrangement which came into force in 1926, books and periodicals are lent to research workers through the medium of approved institutions or organisations where scientific or technical work is carried on. Books are also lent to universities, scientific societies and Government institutions. A very extensive collection of bibliographies comprising forty million references is maintained, periodical literature is indexed and bibliographies are supplied on request.

It was therefore arranged that the Science Library

should be the principal source on which the National Central Library should depend for the loan of books needed by students in science. In order that the Science Library might be made as complete as possible, it was recommended in 1927 that its purchase grant should be increased by £3,500, of which an annual increment of £1,500 has been received. Applications from public libraries for research books in science are forwarded through the Central Library to the Science Library, whence the books are despatched to the library making the application.

It is clear that the work of the National Central Library will be greatly facilitated when it is in possession of a catalogue of all libraries associated with it, whether regional libraries, university libraries or special libraries. Were the catalogues of these libraries available in printed form and prepared in accordance with a uniform system, the problem would be of easy solution. It is extraordinary that no standard system of cataloguing has yet been agreed upon, and that each library undertakes the routine cataloguing of all the books it receives, when a single catalogue title for each book prepared in a central library would eliminate all this unnecessary work. On account of the diversity of system adopted, the formation of a union catalogue of all libraries associated with the National Central Library becomes a matter demanding much time and energy. The work is, however, making satisfactory progress, and its completion will do much to simplify the work of the National Central Library.

Physics in the Building Industry

THE twentieth lecture in the "Physics in Industry" series of the Institute of Physics was delivered by Dr. R. E. Stradling, director of the Building Research Station, before the Manchester and District local section of the Institute of Physics on October 27 and again in London on November 1.

Referring to attempts which have been made to give a logical basis to traditional knowledge or craftsmanship as it appears particularly in the building industry, Dr. Stradling instanced the case of classifying building materials. Three groups have been suggested: crystalline aggregations, amorphous materials, and quasi-solids or gels. After a brief description of the first two groups, Dr. Stradling gave a rather more detailed discussion of the third group. He pointed out its importance in building work and gave a general discussion of the physical properties to be expected. Special emphasis is laid upon the volume changes due to variations in moisture content and the associated changes in physical properties; and the phenomenon of 'creep' seems to be a general characteristic of the group.

Dr. Stradling discussed the plasterers' craft, indicating how the original traditional art has been made impossible in practice by the conditions of modern times. The basis of the craft was work in lime as a medium, and local traditions with local limes were the original conditions. Modern transport facilities both for men and materials have changed all this, bringing about almost hopeless confusion to the craftsman. In addition, the time allowed for the completion of a building is now much shorter than that required for traditional construction. This in itself almost prevents the use of certain limes which do not develop, at a sufficiently early date, even the

little strength required for this type of work. Thus 'new' plastering materials have been introduced, sometimes of the 'patent medicine' variety, and as the craftsman tries to use these by his usual craft methods, there should be little surprise that failures occur.

Hydraulic cements form a section of industry of comparatively modern growth. Their development at first was purely empirical, by trial and error on a large scale. Even now little is known of the chemistry of the subject. Owing to commercial competition, certain special lines of development have taken place since the War and this has necessitated an intensive study of moisture relations and creep phenomena. This work seems to indicate that a too one-sided development has occurred and that for general practice a return to earlier products may be desirable. Dr. Stradling offered an explanation of the interaction of 'creep' and shrinkage due to moisture change and outlined the problem of the effects of heat generations during the chemical processes of setting.

Steel structures are of interest in that they represent an industry, comparatively modern, which has taken the step of inaugurating research into its practice in order that no chance should be missed of bringing about true economy in construction. Mathematical problems of considerable complexity are involved and the effort is being made to present such work in the form of 'working rules'. Measurements of the actual strains in existing buildings are carried out, and although the work is still in hand, there seems every hope of it resulting in placing this section of the building industry upon a higher plane of scientific and practical development than almost any other.

The present state of an industry possessing a long