

NATURE

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SCIENTIFIC AND TECHNICAL BOOKS IN GREAT BRITAIN ^{5/16}

THE adjournment debate on September 27 in the House of Commons on the licensing of the import of books brought no hope of early relief; but it is at least satisfactory to find that protests are still being made against the handicap which the licensing system places on scientific and technical work. It has since been announced in the Press that the Economic Co-operation Administration has approved the purchase of American technological books and publications costing 22,500 dollars for use by the Department of Scientific and Industrial Research and by affiliated industrial research associations. It may be true, as the Secretary for Overseas Trade stated in the debate, that the balance of payments situation prevents the abolition of the licensing system at the moment; but his reference to the present allowance of 200 per cent by value of the pre-war imports of learned scientific and technical books took no account of the fact that prices had already approximately doubled even before the devaluation of the pound further increased them. Still less did it have regard to the fact that an allowance roughly pre-war in quantity has to serve the needs of workers on whose activities in research and development and at the universities the Government is now spending at the rate of more than £100,000,000 a year instead of £4,000,000, quite apart from the expansion in private industry.

There has now been published by the Library Association the report of a survey, made by Dr. Marjorie Plant under the auspices of the Rockefeller Foundation, into the supply of foreign books and periodicals to the libraries of the United Kingdom*. This admirable report provides the material for a more searching discussion of the real effect of the licensing system so far as users of books are concerned. The report is based on replies to questionnaires sent to librarians and booksellers in the United Kingdom, to publishers abroad, and to the librarians of national and university libraries and of learned institutions throughout the world. The questionnaire addressed to librarians in Great Britain, besides asking for general information as to the annual book grant, additions in 1947, and the normal method of acquisition, asked for details by country of the library's intake of foreign books and pamphlets in 1947, and of the periodicals currently taken in 1948, with certain comparative figures for 1938.

Of the 221 librarians who completed most of the questionnaire, only 130 were able to give statistics, by country, of their foreign accessions during 1947, and Dr. Plant comments that most librarians are unable to say with any exactness how much and what kind of material they have been acquiring from a particular country. The Board of Trade returns indicate that, by weight, there was a general decline in imports of books and periodicals from 322,805 cwt. in 1938 to 223,889 cwt. in 1947, with a more striking

* The Supply of Foreign Books and Periodicals to the Libraries of the United Kingdom. Report of a Survey made under the auspices of the Rockefeller Foundation by Dr. Marjorie Plant. Pp. iii+60. (London: Library Association, 1949.) 2s. 6d.; to Members, 2s.

decline in imports from the United States from 226,923 to 97,066; Canadian imports rose from 5,495 cwt. to 32,044 cwt., those from other British countries from 3,626 cwt. to 4,137 cwt. and those from other foreign countries from 5,046 cwt. to 56,420 cwt. Statistics from nine university and college libraries, fifteen scientific and technical libraries and six public and county libraries show that instead of American acquisitions falling by 43 per cent, they have more than doubled, and foreign acquisitions as a whole were well above the level of 1938. The drastic reduction in United States imports since 1938 accordingly appears to apply mainly to the more ephemeral material. Dr. Plant concludes that if the demand was unchanged, the supply of foreign books was unsatisfactory even in 1938 and allowing for the probability that the 1947 figures were swollen by the acquisition of war-time arrears. Nevertheless, the supply in the United Kingdom probably compared favourably with the foreign acquisitions of libraries in other countries.

Detailed returns received from a group of sixteen university and college general libraries showing a total expenditure in 1947 on books and periodicals of £35,756 indicated that roughly 25 per cent of the 40,741 non-serial publications required came from abroad, books and pamphlets coming from the United States and France being about equal in number (3,084 and 3,082, respectively), with Germany (1,338) and Switzerland (420) next. Of the serial publications, 1,390 periodicals and 78 Government serials came from the United States, 467 periodicals from France and 156 from Germany; but none of these libraries received a single Government report or serial from France, Germany, the Netherlands or Denmark.

The expenditure of a group of fourteen medical libraries was £5,497; and of the 3,720 non-serial publications received, a little more than 30 per cent were from abroad. Of the books and pamphlets, 591 came from the United States, France being next with 66. Of the periodicals, 482 and 34 Government serials came from the United States and 104 periodicals from France; but in all, acquisitions came from more than seventy other countries. The total expenditure of twenty-five out of a group of twenty-seven representative libraries in science and technology on books, pamphlets and periodicals including Government publications in 1947 was £18,967, and of the 14,032 non-serial works acquired by all these libraries, roughly 48 per cent were from abroad. The United States again was the chief supplier, with 3,813 books and pamphlets, 719 non-serial Government reports, 1,350 periodicals and 228 Government serials. France came next with 596 books and pamphlets and 249 periodicals, followed by Germany (307 and 80, respectively), Sweden (196 and 68) and the Netherlands (164 and 102). The proportion of Government publications in this group is appreciably larger.

In a group of twelve libraries concerned with the social sciences, the total expenditure on acquisitions was £7,048, and of the 15,685 non-serial publications acquired, approximately 45 per cent were from abroad. More than half the total and the foreign items were

for the British Library of Political and Economic Science. The United States was again the chief source of supply with 1,874 books and pamphlets, 331 non-serial Government reports, 703 periodicals and 998 Government serials; but the discrepancy was less marked, 888 books and pamphlets, 67 periodicals and 74 Government serials coming from Germany, and France supplying 604 books and pamphlets, 53 non-serial and 74 serial Government publications and 67 periodicals. Besides these figures, the British Museum subscribes for 2,897 periodicals from abroad, of which 2,244 are Government publications, and receives many others by gift. Its purchases of foreign books and pamphlets declined from 8,095 to 5,794. The Bodleian Library with its dependent libraries receives altogether about four thousand periodicals from abroad.

Putting all these returns together by countries, the great preponderance of the United States is again very evident, as is the very small number of publications coming from South America. Dr. Plant, however, raises the pertinent question whether, in those libraries which are acquiring as much material from abroad as from the United Kingdom, it can really be assumed that the other 50 per cent covers all the correspondingly important publications of the United States, France, Germany, Italy, Spain and the rest of the world. Of the university and college librarians consulted, leaving out the Oxford and Cambridge colleges, which have the Bodleian and Cambridge University Libraries as reserve, there are nine which are satisfied with their acquisitions and eighteen which are not; but in special libraries of all types thirty-nine librarians stated they were obtaining all the publications they required, and sixty-three wanted more.

On the other hand, only fifty-one librarians complained of shortage of funds for buying foreign books, a figure surprisingly small in view of the expenditure quoted by Dr. Plant and in the recent "Returns from Universities and University Colleges in receipt of Treasury Grants", in which the University Grants Committee has included a table on library expenditure. A greater difficulty appears to be in knowing what to order, and this was the complaint of eighty-nine librarians. In the absence of more definite information about new foreign publications, the librarian cannot always be sure that he is spending his money to the best advantage. In this connexion the licensing regulations appear to be a minor inconvenience. Dr. Plant includes a number of suggestions for improving the position as well as some useful regional notes on the state of the book trade in various countries and a list of addresses of foreign publishing houses. Names of libraries prepared to send, on request, lists of their recent acquisitions of English books to librarians abroad or to other librarians in the United Kingdom and lists of their recently acquired foreign books, are also appended to a report into which, for its size, a surprising amount of information has been packed.

The report was completed before the devaluation of the pound, but the figures given show how greatly that will affect the budgets of libraries wishing to

maintain their present acquisitions of American publications; and especially in the scientific and technical group already drawing from foreign services nearly half their acquisitions, and of this half some 70 per cent from the United States. Two comments might be made on that aspect in conclusion. On the evidence given in this report, the Government could well afford, even in the present dollar position, to drop the licensing system so far as *bona fide* scientific and technical libraries are concerned. Further, no discussion on the importation of foreign books is complete that does not probe the reasons for this excessive dependence on American scientific and technical books. It is certainly not due to inherent deficiencies in British scientific men and technologists. Indeed, it might be suggested that at the present time it should be a major preoccupation of scientific workers and technologists in Britain to attempt to make good some of the gaps in the output of British books which have been caused during the past ten years by their pre-occupation with the prior claims of war-work and recovery. Some of the senior workers now going into well-earned retirement but yet full of vigour and of ripe experience might take an active part, both directly and indirectly, in this task of stimulating, and also contributing to, a healthy flow of British scientific and technical books.

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INTERNATIONAL RHEOLOGY

Proceedings of the International Congress on Rheology, Holland, 1943

Edited by the Organising Committee. Pp. 15 + 640. (Amsterdam: North-Holland Publishing Co.; New York: Interscience Publishers, Inc., 1949.) £3 3s.

WHEN the Society of Rheology held its first conference in Washington in December 1929, it was the intention of at least some of its leading members, certainly including the late Prof. E. C. Bingham, that the Society should eventually be international and that branches should be set up in other countries, including Britain. For various reasons this intention was not fulfilled, but, although only a small number of foreign delegates attended the Washington conference, nevertheless it had something of the atmosphere of an international gathering.

When the British Rheologists' Club held its first conference at Oxford in 1944 it was quite clear, of course, that it was a national body, and the Conference on Viscosity of Liquids and Colloidal Solutions, held in Moscow just before the German invasion in 1941, though representative of many sections of the vast territories of the U.S.S.R., made no claim to be international.

Accounts of how the First International Congress on Rheology came to be held in Scheveningen in September last and of its relation to the Joint Committee on Rheology (I.C.S.U.) have already appeared in *Nature* (161, 104; 162, 747; 1948). Now that the Proceedings of the Congress have been published, it is interesting to compare their contents with those of the earlier Conferences. (See *J. Rheol.*, 1, Nos. 2, 3, 1930; "Essays in Rheology", Pitman, London, 1946; *Nature*, 156, 147, 1945; 157, 455, 1946.)

During the past twenty years rheology has developed many new branches; but its roots have not

extended correspondingly in depth. Application to a host of industries, extended use in medicine and in the arts and an ever-widening vocabulary there have certainly been; but in fundamental theory the foundations are but little changed. Notable exceptions are concerned with the kinetic theory of elasticity and viscosity in liquids. H. S. Green's lecture on this subject is far in advance of anything that could have been read in Washington in 1929. The theory of rate processes, which American rheologists have applied widely since Glasstone, Laidler and Eyring's book was published under that title in 1941, also marks a considerable advance, but was scarcely mentioned at Scheveningen, perhaps because the rather late date of the Congress made it difficult for more than a very small number of American rheologists to attend. Work on anelasticity, a field to which there has been considerable fundamental advance, especially in relation to metals, also had scarcely any place in the Proceedings.

In spite of determined efforts on the part of those organising the Congress, no Russian rheologist was present and the Proceedings lack all account of the theoretical work of Frenkel and his school, and also of the very wide practical applications of rheology which have been made by Volarovich.

Although it is therefore apparent that one cannot regard the Proceedings of the First International Congress as fully representative of the present state of the science, the lectures and papers do form a very interesting collection of reports of work in progress in various parts of the world.

Fundamental theory still rests on the twin foundations of the theories of elasticity and of viscosity. K. Weissenberg's transformation theory seeks to find invariant quantities and relations under conditions such that the simplifying assumptions of classical theory are inapplicable, and M. Reiner has studied various combinations of elastic and viscous units which can be made to account for much complex rheological behaviour.

Applications of rheology to older industries are discussed by many authors, but it is perhaps natural that a greater emphasis rests on the study of synthetic macromolecules. The viscosity-concentration relations of dilute solutions of such systems are fast elucidating the intricacies of molecular structures; but this work has not hitherto been very well co-ordinated, and C. Sadron's lecture does much to present the picture as a whole. R. Houwink, with his wide knowledge of industries old and new, gives interesting comparisons between the thermally and chemically controlled consistency of plastics and the humidity controlled 'body' of clays. A. L. Copley's able summary of biological applications shows how much waits to be done in this field, rather than stressing present achievements; and it is interesting that only one sectional biological paper, that of W. T. Astbury, on the interaction of myosin and actin, was read. Though Sullivan and her colleagues published psychological studies on the direct perception of rheological states in the early 'twenties, only one laboratory appears to have followed up this work under rheologically controlled conditions, and psycho-rheology, like bio-rheology, was represented at the Congress by one lecture only (G. W. Scott-Blair) and by a single sectional paper (R. Harper).

Experimental procedures have developed considerably in recent years, and F. R. Eirich's critical summary should help many rheologists in the difficult choice of methods.