

## LIBRARY SERVICES IN BRITAIN

IN its report on "University Development, 1952-1957", the University Grants Committee pointed out that much university expenditure for research is expenditure on libraries, but although it is possibly true that libraries are relatively more important to the arts and related subjects than to the sciences—it has been estimated that library expenditure per arts student is double that on other students—the importance of efficient and adequate library service in science and technology is not easily over-stressed. The University Grants Committee did not discuss library expenditure exclusively in relation to research in the humanities and the social sciences; but in this report, although it recognized the constantly increasing pressure on university libraries, it did not emphasize the importance of the library itself as a factor in university education in general. Library expenditure increased by 64 per cent between 1951-52 and 1956-57, but is still only 3.9 per cent of university expenditure compared with 3.8 per cent in 1951-52, whereas full-time students have increased from 83,458 to 89,866 and academic staffs from 8,952 to 10,485; by 1961-62 the number of students is now expected to rise to 110,000 or more. Readers' places in university libraries increased by 17 per cent between 1953-54 and 1956-57, from 17,895 to 20,938; but the increase is unevenly spread, and in some universities the position is getting worse. Moreover, the 37 per cent increase in the cost of books, periodicals and bindings between 1951-52 and 1955-56 has reduced the real increase in library expenditure to something less than 10 per cent.

Although the University Grants Committee reports that capital works to cost about £1.75 million have been started in seven universities in Britain, there is no note of real urgency in its report. According to F. E. Hirsch, the Association of College and Research Libraries now recommends that the library should receive 5-7 per cent of the total educational budget of an institute. At the Home Universities Conference last December, Prof. R. J. Pumphrey advocated doubling the library allocation and instituting a three-year plan with the object of guaranteeing to every undergraduate access at very short notice to any book he is likely to want and a place in which to read it as one means of meeting the pressure which the forthcoming expansion is likely to put upon the universities. It may be doubted whether doubling the present expenditure of £1,620,978 is anything like enough to achieve this object, and Prof. Pumphrey gave no indication of the capital expenditure that would be involved. To provide libraries of 40,000 volumes for every 600 students, with a further 10,000 for every 200 students up to, say, 300,000 volumes, as suggested by the Association of College and Research Libraries, is a major task demanding financial resources which neither the University Grants Committee nor the Ministry of Education or local authorities appear at present to be contemplating. Indeed, the expansion

of university libraries, within the limits of any foreseeable resources that are likely to be made available, may need planning with some regard to the requirements of the colleges of technology and the technical colleges, if only from the point of view of the very close co-operation demanded by the Association of College and Research Libraries Committee on Standards. All are affected, too, by the presence of students coming from homes where there is no tradition of books but rather Ruskin's "abyss of penury", and who have not learned the value of possessing and cherishing even a few well-chosen books, and are unprepared to make the sacrifice that such purchase may entail.

In practice, it is probably only within the framework of an efficient and reasonable regional public library system that the needs of even the university student are likely to be met from the resources which the universities will be able to devote to library services within the next decade. These services, as already indicated, have to meet the needs of research workers, quite apart from the invaluable contribution which the universities themselves have long made to the national lending library system in Britain. The universities must thus be vitally interested in any proposals for the development of a national reference library or a national lending library for science and technology, just as the scope and content of any such libraries should be planned with some regard to regional needs and resources if duplication and waste of effort and resources are to be avoided.

It is in accordance with this that Miss H. Mews, of the University of the Witwatersrand, in a paper at the International Conference on Scientific Information last November, argued that it is a first responsibility of any central government to set up a central scientific and technical library and a national scientific and technical information service, either as an independent entity or attached to some existing institution. This has already been recognized as a primary need by the United Nations Educational, Scientific and Cultural Organization, which assisted, for example, the organization of the scientific documentation centre, Insdoc, in India. In the Union of South Africa, the Library and Information Division of the Council for Scientific and Industrial Research was from the start planned on broader lines than as a library service to the Council's laboratories only, while the Federation of Central Africa is at present considering grafting a similar service on to the library of the University College of Rhodesia or one of the existing scientific research institutes.

To a certain extent, the Department of Scientific and Industrial Research, which has been made responsible for the new National Lending Library for Science and Technology, now being planned at Thorp Arch, Boston Spa, Yorks, has, since a recommendation to that effect was endorsed by the Advisory Council on Scientific Policy some five years ago, been developing its Information Division to help

inquirers over the whole field of science, apart from the military sphere. In an address on the work of the Department which he delivered to the Society of Chemical Industry at Exeter last year, Sir Harry Melville laid some stress on this function of the Department which, he said, it is proposed to extend further. In view of the success of the Department's regional offices in Edinburgh and in Wales, it was thought desirable to extend the facility over Great Britain; for although the staffs in these offices could not be experts on everything, they could provide the links whereby information could be obtained very quickly. Dr. W. L. Francis stated on September 24 that further centres already exist at Manchester, Birmingham and Newcastle upon Tyne, and others are being planned where possible in co-operation with other libraries, universities, technical colleges, chambers of commerce, etc.

There would appear to be some danger here of overlapping with the work of the Association of Special Libraries and Information Bureaux, which for more than thirty years has been functioning effectively in precisely this field; but apart from this, the success of the development will depend largely on the calibre of the regional officers. Sir Harry Melville's address, however, added little to the very meagre accounts of the work of the Intelligence Division of the Department which have hitherto appeared in the Department's annual reports; some comprehensive survey of its activities and its resources for that work appears to be overdue, particularly in view of concern currently entertained as to the ability of the Council of Scientific and Industrial Research to secure adequate resources for its work as a whole. That the position is, however, improving is indicated by a written answer in the House of Commons on March 25, when Mr. H. Nicholls, Parliamentary Secretary to the Ministry of Works, as representing the Lord President of the Council, stated that provision has been made in the five-year plan for 1959-64 of the Department of Scientific and Industrial Research for the National Lending Library for Science and Technology to be fully operational in 1962. It is anticipated, he said, that some buildings of the former Royal Ordnance Factory, Thorp Arch, which are being adapted for use by the library, will be ready for occupation by March 1961. When the library is fully operational, it is estimated that the annual cost will be £280,000, and the estimated cost of adapting and equipping the buildings for the library is £250,000.

It is now clear that the new Lending Library is to be independent of the Science Museum Library, although it will take over some of the literature held by the latter, which in future will concentrate on meeting the growing needs of the Imperial College of Science and Technology, London. Apart from the additional cost to the new library involved in this decision, it does not appear that attention has been given to the possibilities of savings both in the purchase of stock and in storage which would follow from the planning of a lending library in some relation to a reference library. For a library which

it is intended should function primarily for postal loans, there may be no inherent need to stock its holdings of periodicals other than as microcards, at least if the original periodicals are readily obtainable from the reference collection for photocopying. It appears, moreover, from the location now announced, that the idea that the new lending library should also serve industrial areas of the north of England and the Midlands as a scientific reference library has been abandoned. Dr. D. J. Urquhardt expressed the opinion at Washington that perhaps 75 per cent of the current serials in the Science Library are so little used that one loan copy in the United Kingdom would meet the needs of all users. His statement that about 1,250 serials are sufficient to meet 80 per cent of the demand, if confirmed, has a vital bearing on the economics of regional development and the inter-library lending and stocking that are involved.

There is yet another important aspect to which neither Sir Harry Melville nor the Advisory Council on Scientific Policy refers, and that is the relation of these schemes to the British Museum Library. According to the last report of the Advisory Council on Scientific Policy, the idea of a Science Centre has now been definitely abandoned; but it should be remembered that part of that original scheme involved making the British Museum Library the repository for literature more than fifty years old. No statement has yet been made as to the scope of the new Science Reference Library, but Dr. Urquhardt has indicated that the new Lending Library will only be comprehensive from 1950 onwards. There is a possible gap here to be considered if the national library service is to be as vital and positive as Mr. F. C. Francis recommended in his presidential address to the annual conference of the Association of Special Libraries and Information Bureaux at Nottingham last September.

Mr. Francis said he hopes that in the next four years it will be possible to lay the foundations of a new library service which will give the British Museum the place in the modern world which it occupied at the end of the nineteenth and the beginning of this century. Much that he said in this address is highly pertinent to the development of national library services primarily intended to serve science and technology. He recognized, for example, the inevitability of some decentralization, but he was forthright as to the danger of being conservative and parsimonious in our thinking about libraries. That is what is most likely to prevent their full and aggressive use, and depreciate a real national asset. Mr. Francis believes that the staff of the British Museum Library are able to play a full part in co-ordinating library activities, provided there is an appropriate breakdown of services and sufficient awareness of what was being done in other libraries. He made the pertinent point that special librarians owe it to their clients to be familiar with the resources of the great collections, and ready to take the trouble to find the relevant material.

Reiterating the importance both of adequate financial resources and of seeing that money is not

wasted, Mr. Francis remarked again that, with the present growth of literature and the present demands made on libraries, no library can look upon itself as being self-sufficient. It is in this context that it is essential to keep to the minimum the number of institutions receiving in full, for example, government publications, with the considerable cataloguing and storage problems involved. Again, the National Library is the only library with an obligation to maintain and preserve its collections, and this responsibility would be difficult or impossible to distribute. Likewise, it is often the only institution in a country which can provide detailed information on the thousand and one subjects for which no specialized library exists.

The Intelligence Division of the Department of Scientific and Industrial Research thus must take full cognizance of the scope of the British Museum Library if it is to perform efficiently the functions now entrusted to it; and that will be even more the case as its responsibilities for providing scientific advice for our embassies through scientific attachés increase. Sir Harry Melville and Dr. W. L. Francis referred specifically to this function, and the importance of the scientific attaché was also emphasized by Miss Mews, who referred to the value of the two-way flow of information and co-operation which is promoted by the system of scientific attachés and scientific liaison officers. Miss Mews mentioned particularly its bearing on the co-operation of professional and scientific societies, and the potentialities of their co-operation in a national library service appear to have been ignored almost completely in the official approach to the new schemes.

The original Science Centre scheme was designed to facilitate the co-operation of such bodies, with full recognition that their participation offered substantial advantages in economy, both of storage and holdings and in operating costs. It is unlikely in view of the decisions which some of the scientific societies have already been forced to take in regard to library and other accommodation that any Government scheme could to-day obtain the full advantages of co-operation that were possible ten years or more ago; none the less, even informal co-operation could offer very real benefits. This was fully realized by President Eisenhower's Science Advisory Committee, and when that Committee's Panel on Scientific Information reported last December, stress was laid on the value of the contribution to the dissemination of scientific information generally made by scientists and technologists in addition to their regular scientific or technical work. Accordingly, the scheme proposed by the Panel is intended to enable the National Science Foundation to take full advantage of all such initiative, whether informally or formally, and to create no more than the minimum of formal organization. What that minimum is cannot be determined either for the United Kingdom or for the United States without a clear view of the whole field and the potential contribution which a wide range of institutions and professional bodies could make—and this appears to be notably lacking in Britain.

Moreover, the responsibilities of the National Science Foundation in regard to science information, which, besides research, includes the support of scientific publications, put it in a much stronger position to influence development and provide missing services than any existing institution in Britain could yet hope to do.

What is most discouraging is the absence of any realization at high level of the importance of an adequate national library service or appreciation of the basis on which it must be built. The Committee appointed by the Minister of Education in September 1957 under the chairmanship of Sir Sydney Roberts was concerned with the structure of the public library service in England and Wales and was charged with advising what changes, if any, should be made in administrative arrangements, having regard to the relation of public libraries to other libraries. It might have been expected, therefore, that the Committee would have given some attention to these broader issues, particularly in view of the place which some of the commercial and technical libraries at, for example, Manchester, Sheffield, Liverpool, Leeds and elsewhere have already taken as regional centres. This development, however, which was so well described by Mr. J. P. Lamb four years ago in his book, "Commercial and Technical Libraries", is virtually ignored in the Committee's report\*, as are also the earlier report of the Library Association on the post-war development of the university and research libraries of Great Britain, the Association's proposals for the post-war re-organization and development of the public library service and the McColvin report on which the proposals were based. The Committee recognizes, indeed, that co-operation between libraries is essential, and that existing arrangements embrace all public libraries in the country, as well as many university libraries and those of learned societies, scientific and professional organizations and industrial concerns. It is convinced that the regional library systems must be put on a firmer basis and that both the regional bureaux and the National Central Library should be provided with sufficient financial resources.

Nevertheless, it rejects the suggestion that the regional systems and the National Central Library should form integral parts of one national system, the cost of which would be met jointly by the central Government and by the local authorities and other sources, the contributions to be assessed by a new national committee on library co-operation. Instead, it would place the responsibility for providing a satisfactory system of library co-operation on the existing eight regional library bureaux, financed by compulsory payments from each library authority. Virtually, the sole positive contribution to more effective library co-operation proposed by the Committee is the recommendation that under a new Public Libraries Act all library authorities should be given specific powers to combine or co-operate with

\* Ministry of Education. *The Structure of the Public Library Service in England and Wales: Report of the Committee appointed by the Minister of Education in September 1957.* Pp. iv+57. (Cmd. 660.) (London: H.M. Stationery Office, 1959.) 3s. 6d. net.

each other and to co-operate with education and other authorities.

This would indeed remove existing legal obstacles, and the responsibility for seeing that inter-library co-operation is effective would rest ultimately with the Minister of Education, who should, in the Committee's view, exercise a general oversight of the public library service. This is in keeping with the educational functions of the public library service, but is not enough. The real problems in establishing an adequate national library service which will meet scientific and technical needs, among others, have not been faced; and the extent to which it is a factor in industrial and scientific efficiency and not merely in education is not understood. The contribution which the commercial or technical library of a large local authority could make in developing an economic service is ignored, as are the financial implications which arise when such a body is asked to meet national needs from local resources. If the nation's growing needs for scientific and technical information, educationally or in research, in industry and in commerce, are to be met at any reasonable and practicable cost, full and effective account must be taken of all existing resources, and the means provided for efficient co-operation without making demands liable to impair the efficient discharge of any institution's primary responsibilities. Further, we must proceed boldly and imaginatively to fill lacunae in the existing structure from national resources, making full use of all appropriate advances in the handling and processing of scientific and technical or other information.

## MORE PROTEIN CHEMISTRY

Advances in Protein Chemistry, Vol. 12

Edited by C. B. Anfinsen, Jr., M. L. Anson, Kenneth Bailey and John T. Edsall. Pp. x+687. (New York: Academic Press, Inc.; London: Academic Books, Ltd., 1957.) 14 dollars.

THIS addition to the well-known series on "Advances" contains seven articles, each written by masters well versed in the difficult art of weaving together several hundred disconnected papers into a readable whole. The activation of the zymogens, reviewed by Neurath, and the conversion of fibrinogen to fibrin, reviewed by Scheraga and Laskowski, are chemically related phenomena. Each involves the activation of a precursor by the hydrolytic action of a specific enzyme. It is only in the conversion of trypsinogen to trypsin, however, that the process has been fully elucidated, while the activation of chymotrypsinogen, procarboxylase, pepsinogen and fibrinogen each consists of a different and complex proteolysis as yet only partly understood. In fibrinogen, moreover, the splitting by thrombin is followed by a polymerization, the intricacies of which challenge the physical chemist. The discussion of these phenomena becomes highly technical, but both articles contain lucid summaries for the non-specialist.

Literature on the chemical nature of antibodies is a jungle of confusing observations through which Isliker guides us with skill. Their purification, and the complexities of even the simplest immune reaction

by whole animals, baffle the biochemist. Decisive advances probably await the production of antibodies by homogeneous cultures of specific cells or, even better, by microsomal particles extracted from them.

Li's short article reviews the structure and biological activity of the melanocyte-stimulating hormones, including the most recent results by himself and Harris on the relations between these hormones and adrenocorticotrophic hormone. Work on prolactin, an interesting protein of molecular weight 24,000 with a cystine bridge screening the terminal carboxyl group, is also described.

The abnormal haemoglobins are a new field to which Itano has made outstanding contributions; his paper gives a lucid summary of the observations and a thoughtful discussion of the physiological, chemical and genetic problems they raise. I should have thought it an understatement, though, to describe Ingram's work on the chemical differences between normal and abnormal haemoglobins as a "significant advance".

"Protein Crystallography without Tears" might be the title of Kendrew and Crick's article, a popular exposition spiced with pictures of mermaids and quotations from "Alice in Wonderland". However, the frivolous tone conceals scientific rigour in an introduction to crystallography for the non-physicist. This is followed by a balanced account of X-ray work on fibrous and globular proteins, the latter now fortunately rendered obsolete by Kendrew's three-dimensional Fourier analysis of myoglobin.

Goodman and Kenner's monograph on peptide synthesis describes the newer synthetic methods, followed by more than a hundred pages of tables with data and references for all the peptides ever made.

The book is a mine of useful information and should be on the shelf of every biochemical department.

M. F. PERUTZ

## TEXT-BOOKS OF ZOOLOGY

Borradaile's Manual of Elementary Zoology

Thirteenth edition, revised by W. B. Yapp. Pp. viii+769. (London: Oxford University Press, 1958.) 30s. net.

General Zoology

By Mary J. Guthrie and Prof. John M. Anderson. Pp. xv+708. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1957.) 60s. net.

General Zoology

By Claude A. Villee, Warren F. Walker, Jr., and Frederick E. Smith. Pp. xix+877. (Philadelphia and London: W. B. Saunders Company, 1958.) 52s. 6d.

THE authors of these books set out to provide a text for a first course in zoology. "Borradaile's Manual" is the thirteenth edition of a standard work which many generations of students found well written and intelligible, and this last revision, coming so soon after the major one in 1955, was in response to criticism concerning illustrations, misprints and errors which then appeared. Guthrie and Anderson's "General Zoology" is planned to replace a standard American work—Curtis and Guthrie's "Textbook of Zoology"—but in preference to a fifth edition an essentially new book has been written which preserves