

of interest to both the specialist and the non-specialist reader. The book is generally free from typographical errors, but the practice of collecting footnotes at the end of the book is an irritating one which makes it tedious to locate the sources of the many quotations and references. There is an adequate index and a selected bibliography of 75 items.

D. LEGGE

UNIVERSITIES OF THE BRITISH COMMONWEALTH

Commonwealth Universities Yearbook 1964

A Directory to the Universities of the Commonwealth and the Handbook of their Association. Pp. xxxi + 1930. (London: The Association of Commonwealth Universities, 1964.) 105s.

THE forty-first edition of the *Commonwealth Universities Yearbook*, the principal publication of the Association of Commonwealth Universities, follows, so far as its format is concerned, the traditions of its predecessors. This annual publication continues to be the most comprehensive directory as yet available of academic institutions of the British Commonwealth. It not only covers seventeen Commonwealth countries, including the United Kingdom, but also two countries no longer members but which have expressed a wish to remain in the *Yearbook* and to retain close association with the Association of Commonwealth Universities: those of the Republic of Ireland and the Republic of South Africa (Appendixes 1 and 2).

Commonwealth countries have been rapidly expanding their facilities for higher education. In Britain the Robbins Report on higher education recommended in October 1963 that there should be a further 28 institutions with full university status and that there should also be a substantial development of other sectors of higher education; and such plans can be paralleled in other Commonwealth countries. The *Yearbook* has become a yard-stick with which to measure these developments; for example, this edition shows an increase of 105 pages on the fortieth edition. Entries for the first time appear for the Chinese University of Hong Kong; the University of Burdwan, India; the University of Waikato, New Zealand; the University of Lagos Medical School, Nigeria; and the Universities of Essex, Kent at Canterbury, Lancaster and Warwick, in England. Some institutions now appear under a newly constituted form, and Appendix 4 contains a summary of information concerning the ten colleges of advanced technology in England and Wales, and certain Scottish institutions, which are to gain university status now that the Government has accepted the recommendations of the Robbins Report.

In the *Yearbook*, sections are devoted to each Commonwealth country. These in the main are prefaced by a "National Introduction", which is intended to supply a factual guide to the general background of university education in the country concerned. Then follow alphabetically the universities of that country. Members of staff are listed according to departments and details are given of administrative and other staff, associated or affiliated institutions, general information, and "The Year 1962"—the last-mentioned supplying details of developments, retirements, resignations, statistics, and degrees and diplomas awarded during 1962.

Besides the three appendixes already referred to, there are six others which consider: university admission requirements (Appendix 3); students from other countries in United Kingdom universities (Appendix 5); British academic institutions outside the Commonwealth (Appendix 6); a short bibliography (Appendix 7); the Commonwealth Scholarship and Fellowship Plan

(Appendix 8); the Association of Commonwealth Universities (Appendix 9).

The *Yearbook* is rounded off by two invaluable indexes. The first, a general index, contains references to institutions, to subjects of study and to such topics as admission, degrees, superannuation, vacation courses, etc. The second is a name index which makes it possible to find at which university any of more than 50,000 men and women, who comprise the teaching and administrative staff of the universities of the British Commonwealth, are serving.

CITATION INDEXING

Science Citation Index

An International Interdisciplinary Index to the Literature of Science. Vol. 1: AABE-CAPL, 1961. Pp. xxx + 496. (Philadelphia: Institute for Scientific Information, 1963.) Five-volume set: 700 dollars.

A NUMBER of surveys have shown that the most generally used method of finding relevant papers is by looking at the references quoted in a known paper. This is a technique which is widely favoured by scientists, but it has the disadvantage that it can only go backwards in time. An attempt to overcome this point is the reason for the citation index, which is a directory of cited references each of which is accompanied by a list of citing source documents. Thus, knowing a relevant paper, it is possible to consult the citation index and find references to all the subsequent papers which have cited the known relevant paper. By working backwards and forwards in time it is claimed that a comprehensive collection of references on a given topic can quickly be obtained. Citation indexing has, for many years, been used in law; this series of volumes presents an attempt to apply the technique in the field of science. As such, it may be said to raise two points: first, whether citation indexing can usually be applied to scientific papers, and secondly, whether these volumes represent a good example.

Undoubtedly a citation index must suffer from certain built-in handicaps. Most of the references which an author cites are not directly relevant to the main theme of the paper and the result is that a high proportion of the papers to which one is referred will be of no interest. It is a weakness of this particular citation index that the searcher is given only the citing author and journal reference. It would have been possible to have included a list of the citing papers with their titles; no doubt this was omitted because of the additional costs incurred, but the result is that the user is compelled to refer either to other indexes or to the original papers to obtain any clue as to which reference might be of interest. While it is possible, if somewhat tedious, to compile a citation index clerically, it involves the type of sorting operation for which a computer is well suited. The resulting print-out is, however, in the usual computer print face, and the severe reduction in type size adds to the difficulties of its use.

Volume 1 of *Science Citation Index* covers 102,000 papers which appeared in the issues for 1961 of 613 source journals. It grew out of an earlier citation index in genetics, and there is a consequent emphasis on journals in the life sciences. It is claimed in the introduction that the journals have been selected for their inter-disciplinary interest, and that the number of journals covered will be increased in future years. As it is, for the physicist, this index covers only about 5 per cent of the 800 journals included in *Physics Abstracts* for 1961. While it would be unwise to underestimate the possible value of this method of indexing, I cannot visualize many situations where these volumes could be used more effectively than other existing indexes.

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