

a few examples. On p. 37 we read "The life span of a free radical in the process of polymerization is estimated of the order of a few seconds only"—a misleading statement without further qualification. The polymerization of γ -methyl-L-glutamate N-carbonyl anhydride in the presence of pyridine is not necessarily initiated by traces of water as implied on p. 45. The phenomenon described on pp. 316-17 and cited as an example of "replica polymerization" has, in fact, no connexion with the latter (see Waltcher, *J. Polymer Sci.*, 14, 411; 1954). The section on synthetic polyamino acids (Chapter 25, section 4) is particularly inadequate. The chain-growth of polyamino acids in the Leuchs reaction is said to be promoted by the presence of a polyamino-acid (the observation being attributed to Waley and Watson), with the suggestion that this is a further instance of replica polymerization. This is quite untrue; the pre-formed polymers used by Waley and Watson simply function as initiators (in the systems studied) by virtue of their terminal base groups, as stated clearly by these investigators; no mysterious "orientation effects" are involved. The α polypeptide of D-glutamic acid is not the capsular substance of *Bacillus anthracis* as might be inferred from p. 428. The important fact, mainly responsible for the recent rapid growth in interest in synthetic polypeptides, that these polymers can exist in crystalline α and β forms is not even mentioned. Finally, the uninitiated reader, looking at p. 474 and Figs. 125 and 126, will be left wondering whether silk fibroin is, after all, a β protein. Defects of this kind detract considerably from the value of the book as an introduction to macromolecular chemistry.

The first 16 chapters (comprising Part 1, 280 pages) deal with fundamental principles and general methods of preparation and study, while the remaining 18 chapters (Part 2) deal with selected groups of organic colloids. The scope of this part is illustrated by the following selection of chapter headings: Macromolecular hydrocarbons: Cross-linked space polymers; Cellulose and similar polysaccharides; Globular proteins; Nucleic acids, nucleoproteins and viruses; Colloid phenomena in cells and tissues; Colloid-chemical characterization of biocolloids in disease; Micellar detergents, dyes and pigments.

The book is well produced and misprints are few.

C. H. BAMFORD

VIRUS AND VEGETABLE

Investigation of Virus Diseases of Brassica Crops
By Dr. L. Broadbent. (Agricultural Research Council Report Series, No. 14.) Pp. vii+94+8 plates. (Cambridge: At the University Press, 1957.) 15s. net.

BRASSICA crops are susceptible to two virus diseases, cabbage black ringspot and cauliflower mosaic, which, periodically, have caused great loss to the industry. The years 1948-50 saw more than usually severe outbreaks in crops of cauliflower and broccoli. In 1950, Dr. Broadbent, with the collaboration of many members of the National Agricultural Advisory Service and others, began to expand work already in progress at Rothamsted Experimental Station with the view of learning more about these diseases, especially those aspects relating to their control. Work continued for the next five years, and in "Investigation of Virus Diseases of Brassica Crops" it is reported in detail.

The contents of the book may be divided into two main parts, one dealing with response to infection and the other with spread of virus. The first of these includes a study of the response of a wide range of hosts including many different varieties of cauliflower, cabbage, and other brassicas, and the effect of factors such as strain of virus, weather conditions and manuring on symptoms. It also includes a useful list of plants susceptible to each virus. The other part of the book deals first with the process of transmission of the viruses, including the relative importance of different species of aphids in the natural spread of the diseases and, secondly, with their spread into and within the seedbed and crop. Appended is a short account of the two viruses transmitted by flea-beetle causing turnip yellow mosaic and turnip crinkle.

The recommendations for control which emerge from the study are similar to those advocated in the past. However, the experimental scrutiny to which they have been put should enable them to be applied with greater confidence and effectiveness. It is heartening to learn that commercial varieties of cauliflower differed both in the readiness with which they became infected and in the severity of the symptoms displayed after infection. This encourages the hope that varieties with increased resistance or tolerance may be bred for use in the future.

The inclusion of a large amount of experimental detail tends to slow the reader, but this is largely off-set by good lay-out. The production and most of the plates are excellent. Combining as it does original observation and reference to the published work of others, it will be of great service to those requiring an up-to-date and full account of the virus diseases of brassicas.

J. H. HITCHBORN

AN IMPORTANT HERBARIUM

The Sloane Herbarium

An Annotated List of the *Horti Sicci* composing it; with Biographical Accounts of the Principal Contributors, based on Records compiled by the late James Britten. Revised and Edited by J. E. Dandy. Pp. 246+2 plates+96 facsimiles of handwritings. (London: British Museum (Natural History), 1958.) 147s.

AMONG the historical collections at the British Museum (Natural History), the Sloane Herbarium is one of the most important. A few years ago the director, Dr. G. R. (now Sir Gavin) de Beer, published a biography of Sir Hans Sloane, under the title "Sir Hans Sloane and the British Museum" (published for the Trustees of the British Museum by the Oxford University Press, 1953). Sloane is rightly regarded as the founder of the British Museum and his herbarium is probably the most extensive accumulation of botanical specimens of the seventeenth and early eighteenth centuries extant or ever made. The dried specimens forming the *Horti Sicci* are in bound volumes (*H.S.* 1 to 334), many one to a volume, but some bound together in twos or threes, five not present, one (*H.S.* 334) in two volumes, and eight with extra numbers giving a total of 265 volumes.

The late James Britten, who for thirty-eight years was an assistant in the Department of Botany at South Kensington, prepared an account of the Sloane Herbarium, which was unfinished at the time of his death and was not published. This account