of the more important features is welcome A narrower group of enzymes involved in nitrate and nitrite reduction in plants and micro-organisms is considered in great detail by E J Hewitt The chapter entitled "Chemistry and Biochemistry of Algal Cell-wall Polysaccharides" by A Haug is more chemical than biochemical, for the reason that few biochemists have turned their attention to these complex materials

In conclusion, this volume ought to be on library shelves for research and teaching purposes It is not particularly expensive, bearing in mind the valuable collection of information it contains

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Plant Biochemistry II (International Review of Biochemistry, Vol 13), edited by D H NORTHCOTE University Park Press, Baltimore, MD, 1977, ix+262 pages $29 50

This is the second volume on plant biochemistry in the second series of *International Review of Biochemistry* and the general comments made in reviewing the first volume are still applicable The high standard has undoubtedly been maintained and, again, the book should be welcomed by students of biochemistry as well as by researchers I hope the Consultant Editors will not object if I say that the only part of the book that gave me trouble was the statement in their Note this undoubtedly will send many biochemists scurrying to the nearest Department of Modern Languages for an accurate translation

The subjects dealt with appear to be even more varied than in the previous volume Readers with interests ranging from physical chemistry to botany are catered for In the first chapter, D Boulter and his colleagues pay particular attention to the structures of plastocyanins from various sources, and then continue with a description of phylogenetic implications The review of transport across chloroplast membranes that can be found in the first volume of this series has a sequel in this second volume, where D S Bendall discusses the complex subject of electron- and proton-transfer in chloroplasts Sucrose, one of the most ubiquitous of naturally occurring compounds still has its secrets for example, the location of the sub-cellular site of synthesis this and other "riddles" are discussed by H G Pontis In some cases, osmotic regulation in plant cells also involves carbohydrate derivatives, and this subject, together with the roles of other organic materials and inorganic ions, is covered by H Kauss The metabolic events occurring before, during, and after infection of plants by pathogenic fungi are described by J Friend There is some reference to this topic in the next chapter (although this is not shown in the Subject Index!), in which R G Brown and W C Kimmins deal with plant glycoproteins,

polymers that are involved in polysaccharide synthesis, cell growth, and, probably, many other physiological processes Ion transport in plants is the subject of the last chapter, by E A C Macrobbie who, inadvertently perhaps, reminds the reader of the close relationships of basic processes in animal and plant cells It would, I think, have been helpful for the non-expert had a few "flow diagrams" been included here to illustrate some of the fluxes

In conclusion, possession of this volume is imperative for all plant biochemists, and it will make interesting reading for many other workers in the biological sciences

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Computer-Assisted Structure Elucidation edited by DENNIS H SMITH, ACS Symposium Series 54, American Chemical Society Washington D C 1977, 151 pages $15 50

This book comprises the direct reproduction of the typed manuscripts of nine papers presented at a symposium sponsored by the Division of Chemical Information at the 173rd Meeting of the American Chemical Society at New Orleans, Louisiana in March, 1977 The first paper describes a retrieval Probability Based Matching (PBM) system and an interpretative Self-Training Interpretive and Retrieval System (STIRS) developed for the analysis of low-resolution mass spectra The second communication discusses the identification of the components of complex mixtures by g l c–m s and is from a laboratory that acquires and analyzes half a million spectra a year from diverse sources The system used is illustrated by reference to mixtures of peptides

Storage of information on magnetic discs rather than on tape has the advantage that the former are amenable to random access, reductions in the cost of such discs now make their use a viable proposition A method of interactive computing using several types of data bank (*e g* for mass and n m r spectra and X-ray results) stored on magnetic discs is explained in Chapter 3 This is followed by a paper on information theory directed to the determination of the secondary structure of globular proteins

Two communications are concerned with computer programs for using ^{13}C-n m r data for the determination of structures the methods have been applied to alkanes and acyclic amines The final three chapters discuss systems for interactive structure-elucidation, particularly of those compounds categorized as 'natural products'

This selection of papers illustrates the great advances that have been made in computer-assisted structure-elucidation, and the work described gives a good overview of the present state of the art in the United States there is only one non-American contribution, and that is from Japan No applications to carbohydrate