

New Books

J. F. Gerecht, Book Review Editor

New Techniques in Amino Acid, Peptide and Protein Analysis, Edited by A. Niederweiser and G. Pataki (Ann Arbor Science Publishers, Inc., Ann Arbor, Mich., 1971, 461 p.).

This book is a very useful compilation of information concerning the separation of amino acids. It has already been used extensively in Burnside's Laboratory. The first chapter deals with the widely used resin chromatography of amino acids and peptides. The various factors involved in obtaining successful separations using resin columns are discussed.

The next chapter, on gas chromatography, should make that the method of choice for amino acid analysis. The material presented in this chapter covering sample preparation and derivatization and column parameters makes it possible for a person to successfully analyze amino acids by gas liquid chromatography.

Chapter 3 deals with a relatively unexplored area of research involving the separation of mainly di- and tripeptides. Conditions for the preparation and derivatization of the larger molecules are given.

Exciting possibilities in the application of mass spectrometry to peptide chemistry are discussed by Das and Lederer. The chemical modifications of peptides required for mass spectrometry are presented. A comprehensive discussion of the various fragmentation modes of peptides is followed by examples of the application of mass spectrometry to specific structural problems. The structure determination of the peptido-lipids fortuitine, peptidolipin NA, as well as staphylomycin, isarijn and various mycosides is illustrated. Mass spectrometry, however, appears as of now to be limited to the determination of the first twelve N terminal amino acid residues (after permethylation, m/w 1580).

Chapters 5 and 6 deal with molecular sieve column chromatography of proteins and the technique of thin layer gel filtration, respectively. Other topics covered in this volume are: microelectrophoretic determination of protein and protein synthesis in the 10^{-7} and 10^{-9} g range, electrofocusing of proteins, chemical accessibility and environment of amino acid residues in native proteins and methods for the investigation of the quaternary structure of

proteins.

Each chapter contains a detailed list of pertinent literature references. The index (21 p.) is extensive and appears to be arranged usefully for quick access to topics covered in the volume. Many topics are cross-indexed. This reviewer highly recommends this book to both the novice and experienced chemist who wish to get more deeply involved in the separation and analysis of proteins, peptides and amino acids.

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The Peanut (American Peanut Research and Education Association, Inc., 1972, 416 p., \$15.00); orders to Astor Perry, 460 Williams Hall, North Carolina State University, Raleigh, N.C. 27607.

This book is a symposium consisting of 20 chapters. Included are chapters on Economic Importance, Early History and Origin, Structure and Genetic Resources, Genetics, Breeding, Physico-Chemical Properties, Water Relations, Soils and Fertilization, Cultural Practices, Weed Control, Irrigation, Insects, Diseases, Harvesting Practices, Curing, Peanut Proteins, Peanuts and Human Nutrition, Peanut Quality, Quality Deterioration and Marketing.

Each chapter was prepared by a different author or authors, and no attempt was made to edit the chapters to achieve uniformity of format. Consequently there is some duplication, particularly on statistics relating to production and uses. Literature citations are not uniform; each author used the style to which he was accustomed. These shortcomings are more than offset by the wealth of information on this interesting crop. All people engaged in research on peanuts or peanut products, and in educational or promotional activities related to peanuts, will find the book very helpful. It will also be an excellent reference book for college level courses dealing with crop production. Treatment of new peanut products is less than adequate, and there are no recipes for peanut dishes. Almost

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Call for Nominations 1973 Honored Student Awards

Nominations are solicited and will be accepted until December 1, 1972, for the 1973 AOCS Honored Student Awards. Graduate students at any North American institution of higher learning, in any area of science dealing with fats and lipids, who are doing research toward an advanced degree and who are interested in the areas of science and technology fostered by this Society, are eligible. The student must be a registered graduate student at the time of application. To receive the award he must remain a registered graduate student, and must not have

received his degree or begun career employment, prior to the AOCS meeting he is to attend. Selection of awardees is on the basis of educational qualifications and performance.

The awards provide funds equal to travel costs plus \$75.00 to permit attendance at a national meeting of the AOCS. In 1973 these meetings will be held April 29-May 3 in New Orleans and September 16-20 in Chicago. Students will be awarded travel to the nearer meeting to allow as many awards as possible from the available funds.

Nomination forms may be obtained from AOCS headquarters (508 S. Sixth, Champaign, Ill. 61820) or from the chairman of the Honored Student Award Committee. Completed nominations should be returned before December 1, 1972, to: Ralph T. Holman, HSA Committee Chairman, The Hormel Institute, University of Minnesota, Austin, Minn. 55912.

AOCS members approve amendment to Articles of Incorporation

Through attendance at the special business meeting called at the Fall Meeting in Ottawa and through ballots returned to the Proxy Committee, a majority of AOCS members have registered approval of an amendment to Article VII, "Officers and Their Election," of the AOCS Articles of Incorporation. The amendment adds the phrase

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everything else that anyone would want to know about peanuts is included.

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Progress in Thin Layer Chromatography and Related Methods, Vol. III, Edited by A. Niederwieser and G. Pataki (Ann Arbor Science Publishers, Inc., Ann Arbor, Mich., 1972, 298 p.).

The third volume in this international series contains six contributions dealing with general topics of thin layer chromatography and specialized subjects. The authors of each chapter are in general active contributors to their areas of specialization. This book contains six chapters, divided into many subsections. Chapter 1 deals with the effects of chemical constitution on chromatographic behavior. The structural interactions of hydrocarbons, phenols, carbonyl compounds, quinones, carbonic acids, nitrogen-containing compounds and heterocycles, oxygen and sulfur heterocycles are discussed. In the second chapter, the effects of experimental parameters on the reproducibility of Rf values in thin layer chromatography are discussed in detail. The effects of solvent vapor, adsorbent quality and activity, chamber type, temperature, adsorbent layer thickness, solvent quality and general technique are stressed.

Chapter 3 covers in detail the application of thin layer chromatography to the separation of alkaloids. Methods of detection and quantitation are outlined. This chapter is exceedingly well documented with a total of 1050 references, containing numerous citations to literature as late as 1968. The next chapter treats the thin layer chromatography of porphyrins and complementary analytical methods.

An excellent discussion of the use of polyamide layers in thin layer chromatography comprises Chapter 5. This adsorbent functions by the formation of a hydrogen bond between the amide linkage in the polyamide and the deposited compound. Detailed applications of this technique to the separation of various amino acid derivatives are given.

In the last chapter of this volume, the applications of thin layer chromatography to air pollution research are outlined. The separation of common pollutant and chemical carcinogens found in coal tars, pitch, etc., is shown.

Each chapter contains an individual list of pertinent references. The short topical index to the complete volume is adequate but covers only major topics. Detailed separations, etc., must be found by searching the pertinent chapters. It would appear that the chapters dealing with effects of structure on separation and that covering influences of experimental variables on the reproducibility of Rf values might be the most useful to the lipid chemist.

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"except the treasurer who may serve four consecutive terms" to the final sentence in Article VII.

The amendment was proposed by the Governing Board after several past treasurers commented on the need for additional time to effectively carry out the duties of that office. The growing complexity of AOCS financial activities in recent years has added greatly to the treasurer's responsibilities. While the amendment makes possible an extended term for any individual elected to the office of treasurer, the membership will retain the opportunity to vote yearly on candidates for that office. Election to that post will not automatically qualify an individual for a 4 year term. ■

CALL FOR NOMINATIONS AWARD OF MERIT

The Society Award of Merit is to be presented to qualified Society members at the 64th Annual Meeting, New Orleans, April 29-May 3, 1973.

The Award is given to recognize current and past achievements in serving the Society:

- (a) Active productive service to AOCS committee work.
- (b) Marked leadership in technical, administrative or special committee or Society activities.
- (c) Outstanding activity or service that has particularly advanced the Society's prestige, standing or interest.
- (d) Any distinguished service to the Society not herein otherwise specifically provided for.

Nominations shall cite the record of the nominee which qualifies him for the Award, and five copies of the nomination shall be submitted to James Lyon, Executive Director, American Oil Chemists' Society, 508 S. Sixth, Champaign, Illinois 61820 before February 2, 1973. ■

• National Research Council programs . . .

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NRC Resident Research Associateship, Postdoctoral and Senior Postdoctoral

These associateship programs also provide opportunities for basic research and advanced training to scientists and engineers of superior ability. Like the above, awards are made on a competitive basis and are tenable in federal laboratories.

Resident Research Associateships are awarded to persons with less than 5 years research experience beyond the doctorate. Senior Associateships are available to scientists and engineers of demonstrated accomplishment with at least 5 years postdoctoral experience. These programs are open to U.S. citizens and, in some cases, to foreign nationals.

Final date for applications: January 15, 1973. Announcements of awards: April 1973. NASA: Completed applications and official endorsement of these by the NASA Center, must be received by January 15, May 15 and September 15, 1973, to be reviewed for awards to be announced in March, July and November, respectively. Stipends: Postdoctoral, \$13,500 annually (Natick Laboratories \$13,000). Senior: Dependent on qualifications. All stipends are subject to U.S. income tax. For details contact the NRC Associateship Office (address above). ■