



NEWSLETTER

A PUBLICATION OF THE AMERICAN SOCIETY OF PHARMACOGNOSY - EDITED BY MELVIN R. GIBSON

WASHINGTON STATE UNIVERSITY, PULLMAN, WASHINGTON

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Officers. A mail ballot of the American Society of Pharmacognosy membership elected the following officers for the 1965-66 year: President: David P. Carew, State University of Iowa; Vice President: Robert F. Raffaui, Smith Kline & French; Member of the Executive Committee: Leo A. Sciuchetti, Oregon State University. The amendment to the Constitution and the amendments to the Bylaws were approved by the membership.

1966 Meeting. By mail ballot the Executive Committee of the Society has chosen the University of Minnesota as the site for the 1966 meeting. Members of the Society are reminded of the 1965 meeting at the University of Rhode Island, June 15-18. Information regarding this meeting will be sent to each member by the Program Committee in the near future. The Society for Economic Botany will join the ASP for this meeting.

1967 and 1968 Meeting Sites. The increasing complexities of planning ASP programs and finding meeting places have lead the Executive Committee to consider meeting sites farther in advance than heretofore was the policy. Invitations for the 1967, 1968, and 1969 meetings have been received. The Executive Committee by mail ballot subsequent to April 1, 1965 will choose the 1967 and 1968 sites. Hence, anyone wishing to invite the Society to his campus for those two years should submit an invitation to Dr. Melvin R. Gibson, President, ASP, College of Pharmacy, Washington State University, Pullman, Washington, 99163 prior to April 1, 1965.

International Symposia. The Tenth Annual Symposium on Advances in Tracer Methodology will be held March 25, 26, 1965 at Das Züricher Kunsthaus, Zurich, Switzerland. For further information contact Packard Instrument International, Talstrasse 39, 8001, Zurich, Switzerland or New England Nuclear Corp., Avenue de Chailly 28C, Lausanne 12, Switzerland... The 1965 International Symposium on Microchemical Techniques will be held August 22-27 at Pennsylvania State University, University Park. It is being organized by the American Microchemical Society and sponsored by the International Union of Pure and Applied Chemistry... "The Chemistry of Natural Products" is the topic of an international symposium to be held in Stockholm, Sweden, June 26-July 2, 1966. The symposium is being sponsored by the International Union of Pure and Applied Chemistry and arranged by the Swedish National Committee for Chemistry. The scope of papers will include polysaccharides, structural elucidation of natural products of low molecular weight, biosynthesis of compounds of low molecular weight, and chemical taxonomy. For further details write the U.S. National Committee for IUPAC, 2101 Constitution Avenue, Washington, D.C. 20418.

Chemotaxonomy Newsletter. Ralph E. Alston, University of Texas, and T. Swain, Low Temperature Research Station (Cambridge), as joint secretaries of an international committee for chemotaxonomy currently are publishing a mimeographed Chemotaxonomy Newsletter four times a year. This is distributed free of charge. Persons wishing to be placed on the mailing list for this publication should write Dr. Ralph E. Alston, Department of Botany, University of Texas, Austin, Texas 78712.

Morton Collectanea. Upon the request of the Editor, Julia Morton, Director of the Morton Collectanea, has prepared the following description of the activities of that unit: The Morton Collectanea of the University of Miami, Coral Gables, Florida is a specialized reference and research department devoted to the acquisition, classification, physical collation and maintenance of subject-filed data in the field of economic botany, with special emphasis on the tropical and subtropical. In selecting literature, book or periodical, for processing, primary attention is given materials having the broadest topical coverage. Publications devoted to highly developed or industrialized single commodities, which have substantial and readily accessible literature in their own right, are represented in the files mainly by bibliographic listings. The Collectanea is chiefly concerned with bringing together the more scattered data on a greater number of subjects, and from many sources and areas. The mass dismemberment of appropriate literature and subject-sorting of its contents automatically reveals an array of subjects and data from unsuspected regional and other sources to which the researcher would ordinarily have no clue and would not ordinarily be directed -- thus uncovering much material not found by the usual searching processes.

The Collectanea is primarily for the use of the University faculty in the course of teaching or research, and for students in the preparation of term papers or theses. However, since its inclusion in the National Science Foundation's Directory of Specialized Science Information Services and in Gale's Directory of Special Libraries and Information Centers, requests for help are received from all over the world. Recently a query was received from North Rhodesia as to the edibility of dahlia tubers; and a missionary in the Solomon Islands needed to know how to create smudge with local materials to combat insects in coconut palms. There is a very active demand for information on cashew processing and culture from Tanganyika, Uganda, Nigeria, South Africa, Ceylon, England, Texas, and Latin America. On a fee basis, reports or tabulations of medicinal plants (for instance, those used as diuretics) are prepared for pharmaceutical companies. Considerable material on passion fruit raising has been supplied to pioneer growers in Venezuela and on tea culture to experimenters in Costa Rica. Special studies have been made to toxic plants which present an active problem in Florida, and almost daily calls are received concerning external or internal reactions of people, cattle, ducks, and dogs to plant parts ingested, contacted, or inhaled. Some of these cases require plant identification and personal investigation. (Editor's Note: The Collectanea is estimated to contain over 160,000 items of data collated in approximately 21,000 classified files.)

Pfizer Kit. The Educational Services Department of Chas. Pfizer & Co., Inc., 235 East 42nd Street, New York 17, New York makes available a kit of material on antibiotics and biologicals. This is primarily aimed at people in secondary school education, but some ASP members may be interested in having this in their files. The kit includes a number of reprints, project outlines, film catalog, and general information material.

Congress of Pharmacists of Yugoslavia. Professor Branka Akačić, Institute for Pharmacognosy, Zagreb, Yugoslavia, reports the topics of papers presented in the pharmacognosy section of the Fourth Congress of Pharmacists of Yugoslavia held in Opatia, October 12-15, 1964: "Flavonols in the Ammi visnaga (L) Lam.," "Contribution to the Chromatography of the Purines," "Measures which are Absolutely Necessary to be Taken in Order to Protect the Nature when Exploiting for Pharmaceutical Purposes the Plant Species Growing Spontaneously," "The Variation of the Amount of the Essential Oils of Some Species of Origanum vulgare L. and Teucrium chamedris L. Collected at Different Sea Levels," "Determination of Glucofrangulin by Means of Thin-Layer Chromatography," "Application of Lead Acetate and Basic Lead Acetate in the Extraction Process of Glycosides from Plant Material," "On the Problem of the Cultivating and Collecting the Medicinal and Aromatic Plants of Yugoslavia," "Amino Acids in the Pollen of Some Pine Species," "Flora of the Poisonous and Noxious Plants of Jugoslav Pasturages by which the Value of Farmers' Products is Diminished," "Aromatic Acids of the Plant Ammi visnaga (L) Lam.," "Contributions to the Pharmaceutical Studies on Chrysanthemum balsamita L.," "Cultivation of Lavender (Lavandula vera) in the Environment of Krusevac," "Simultaneous Determination of Arbutoside in Some Species of the Family Ericaceae Collected on the Stara Planina," "On the Possibilities of Application of Some Indigenous Tannic Natural Products in the Pharmaceutical and Chemical Industry," "Simultaneous Analysis of the Properties of the Species Aconitum divergens Panc.

Books. (Continued) Thin-Layer Chromatography by G.B. Marini-Bettolo, Editor (Elsevier, 1964, \$11.75); The Biochemical Aspects of Hormone Action by Albert B. Eisenstein, Editor (Little, Brown & Co., 1964, \$8.50); Plant Growth and Development by A. Carl Leopold (McGraw-Hill, 1964, \$12.50); A Selected Guide to the Literature of the Flowering Plants of Mexico by Ida Kaplan Langman (University of Pennsylvania Press, 1964, \$25); Antibiotic and Chemotherapy by Mary Barber and Lawrence P. Garrod (Williams and Wilkins, 1963, \$8) (Reviewed by Robertson Pratt in January, 1965, J. Pharm. Sci.); Structure and Activity of Enzymes by T.W. Goodwin, J.I. Harris and B.S. Hartley, Editors (Academic Press, 1964, \$6); Biomedical Applications of Gas Chromatography by Herman A. Szymanski, Editor (Plenum Press, 1964, \$12.50) (This contains a chapter on the gas chromatography of amines, alkaloids and amino acids.); 16 Plants Poisonous to Livestock in the Western States (Catalog No. A 1.9:2106/3, U.S. Printing Office, 1964, \$.35); Growing Ginseng (Catalog No. A 1.9:2201, U.S. Printing Office, 1964, \$.10); Animal Chemistry by Justus Liebig (facsimile of the Cambridge Edition of 1842 with a new introduction by Frederic L. Holmes) (Johnson Reprint Corporation, 111 Fifth Avenue, N.Y., \$14.50); Rapid Mixing and Sampling Techniques in Biochemistry by Britton Chance, Quentin H. Gibson, Rudolf H. Eisenhardt, and K. Karl Lonberg-Holm, Editors (Academic Press, 1964, \$9); Continuous Cultivation of Microorganisms by Ivan Malek, K. Beran, and J. Hospodka (Academic Press, 1964, \$14.50); Methods in Carbohydrate Chemistry, Volume V General Polysaccharides by Roy L. Whistler, Editor (Academic Press, 1964, \$16.50); Advances in Tracer Methodology, Volume 2, by Seymour Rothchild, Editor (Plenum Press, 1964, \$12); Das Kleine pflanzenphysiologische Praktikum by Franz Bukatsch (Gustav Fischer Verlag, Stuttgart, 1964, DM 26.60); Die Infloreszenzen, Typologie and Stellung im Aufbau des Vegetationskörpers by Wilhelm Troll (In vier Teilen, Teil 1, 1964) (Gustav Fischer Verlag, Stuttgart, 1964, Teil 1, DM 85); Vegetationsmonographien der einzelnen Grossräume by Heinrich Walter, Band II: Die Vegetation von Nord- und Mittelamerika by Rudiger Knapp (Gustav Fischer Verlag, Stuttgart, 1964, DM 50); Analytical Methods for Pesticides, Plant Growth Regulators, and Food Additives, Vol. 2, Insecticides by G. Zweig (Academic Press, 1964, \$12); Plants at Work by F.C. Steward (Principles of Biology Series, Addison-Wesley Publ. Co., 1964, \$2.95 paper, \$3.95 cloth); Interpretation of the Ultraviolet Spectra of Natural Products, International Series of Monographs on Organic Chemistry, Vol. 7 by A. I. Scott (Pergamon, 1964, \$12.50); Men with Green Pens by L. Bush-Brown (Dorrance & Co., 1964, \$5) (lives of the great writers on plants in early times); Symposium on Phytochemistry. Proceedings of a Meeting Held at Hong Kong in September, 1961 by H.R. Arthur, Editor (Oxford University Press, 1964, \$10); The Life of Plants by E.J.H. Corner (World, Cleveland, Ohio, 1964, \$12.50); Enzymes, Second Edition, by Malcolm Dixon and Edwin C. Webb (Academic Press, 1964, \$16); Essentials of Practical Microtechnique by Albert E. Galigher and Eugene N. Kozloff (Lea and Febiger, 1964, \$10); An Introduction to the Chemistry of Carbohydrates, Second Edition, by R.D. Guthrie and John Honeyman (Oxford University Press, 1964, \$3.40); Protein Metabolism in the Plant by Albert Charles Chibnall (reprint of 1939 edition) (Yale University Press, 1964, \$1.95 paper, \$6.50 cloth); Textbook of Pollen Analysis, Second Edition, by Knut Faegri and Johs, Iversen (Hafner, 1964, \$6.25); The Lore of Living Plants by Johannes van Overbeek and Harry K. Wong (National Science Teachers Association, Washington, D.C., 1964, \$.50) (This book has been aimed at the high school student and teacher of plant physiology. Its amazing simplification may make it appreciated by readers at the college level, and you can't beat the price!); Botany: An Introduction to Plant Science by Wilfred W. Robbins, T. Elliott Weier, and C. Ralph Stocking (Wiley, 1964, \$8.95); Cytology and Cell Physiology, Third Edition, by Geoffrey H. Bourne (Academic Press, 1964, \$20); Handbook of Cell and Organ Culture, Second Edition, by Donald J. Merchant, Raymond H. Kahn, and William H. Murphy, Jr. (Burgess, 1964, \$6.25 paper, \$7.50 cloth); Methods in Cell Physiology, Vol. 1, by David M. Prescott, Editor (Academic Press, 1964, \$16.50); Molecular Biology: Genes and the Chemical Control of Living Cells by J.M. Barry (Prentice-Hall, 1964, \$3.35); Perspectives of Biochemical Plant Pathology. Symposia and Lectures Commemorating the 75th Anniversary of the Department of Plant Pathology and Botany, New Haven, Connecticut, May, 1963 by Saul Rich, Editor (Connecticut Agricultural Experiment Station, New Haven, Conn., 1963, \$?); Pesticides Handbook, 1964, Sixteenth Edition, by Donald E.H. Frear and Sidney Friedman (College Science Publishers, State College, Pennsylvania, 1964, \$2.50 paper, \$3.50 cloth); Pollen Physiology and Fertilization.

A Symposium, University of Nijmegen, The Netherlands, August, 1963 by H.F. Linskens, Editor (North Holland, Amsterdam, 1964, \$11.50); The Structure and Life of Bryophytes by E.V. Watson (Hillary House, New York, 1964, \$3); Vistas in Botany, Volume 4, Researches in Plant Taxonomy by W.B. Turrill, Editor (Pergamon and Macmillan, \$14); Water Metabolism in Plants by Theodore T. Kazlowski (Harper and Row, 1964 \$3.95); Plants in Perspective. A Laboratory Manual of Modern Biology by Eldon H. Newcomb, Gerald C. Gerloff, and William F. Whittingham (Freeman, San Francisco, 1964, \$3.75); The Thymus. A Symposium, Philadelphia, Pennsylvania, April, 1964 by Vittorio Defendi and Donald Metcalf, Editors (Wistar Inst. Symp. Monograph No. 2, Wistar, Inst. Press, Philadelphia, 1964, \$5); Radioisotopes and Radiation, Recent Advances in Medicine, Agriculture, and Industry by John H. Lawrence, Bernard Manowitz and Benjamin S. Loeb (McGraw-Hill, 1964, \$18); Steroid Chromatography, Second Edition, by R. Neher (translated from the German, 1958 Edition by R.H. Bathgate) (Elsevier, 1964, \$11); The Geography of the Flowering Plants, Third Edition, by Ronald Good (Wiley, 1964, \$13).

The following are listings from the Science and Mathematics catalog of Blackwell's, Oxford, England: Chemotaxonomie der Pflanzen, Volume III. Dicotyledoneae: Acanthaceae --Cyrillaceae by R. Hegnauer, 10/10/- (the continuing series published by Birkhauser Verlag, Basel and Stuttgart); The Genera of Flowering Plants, Volume 1, Angiosperma, Dicotyledons by J. Hutchinson, 6/6/-; Grundzüge der Biochemie der Pflanzen by W.L. Kretowitsch (translated from the Russian) 5/14/6; Flowers of the Mediterranean by O. Polunin and A. Huxley, 25/-; Photomicrographs of the Flowering Plants by A.C. Shaw, S.K. Iazell, and G.N. Foster, 10/6; Flora Europaea, Volume One, Lycopodiaceae to Platanaceae by T.G. Tutin, et al, 70/-.

Consultants Bureau, 227 West 17th Street, New York, N.Y. 10011 offers the journal Soviet Plant Physiology in cover-to-cover translated form at an annual subscription for 1964 (six issues) for \$125. Overseas subscriptions are \$130.

Editor's Notes. Persons submitting books for listing should include all the information regarding the book including complete authors' names, publisher, year of publication, and price. A failure to list books from contributors may be due to illegible writing, incomplete listing, or the books may have appeared in previous listings of the Newsletter.

Members who become aware of the deaths of other members should notify the Editor so that mention may be made of this in the Newsletter. It is planned that these deaths will be noted at each annual meeting of the Society in the future.

Members wishing to nominate persons for membership in the Society may obtain nomination forms from the Editor or from the Secretary of the Society: Rolf Westby, Eli Lilly and Co., Indianapolis, Indiana.

Collected on the Different Mountainous Chains," "Contribution to the Determination of the Alkaloids in the Belladonna Leaf," "Climatic Factors and the Distribution of the Medicinal Plants in the Socialist Republic Bosnien and Herzegovina," "Influence of Ecologic Factors on the Digitoxine Level in Some Species of the Genus Digitalis Collected on the Tara-mountain Chain," "Jugoslav Standard Folium Digitalis Lanatae," "Intraspecific Differences in the Genus Mentha," "Contribution to the Knowledge of the Influence of the Manure on Valerian (Valeriana officinalis L.)," "Contribution to the Study of the Teucrium chamedris L. and its Volatile Oil," "Ecology of the Species of the Genus Hypericum Collected on the Taramountain, Taking its Active Substances into Consideration," "Scopolia carniolica Jacq., Contribution to the Analysis of the Drug," "Production of the Ergot Containing Pure Ergometrine," "Purification and Separation of the Secale Alkaloids by Means of the Adsorption Column," "Contribution to the Pharmacognostical Study of Mentha piperita L.," "Contribution to the Pharmacognostic Study of Solanum laciniatum Ait.," "Contribution to the Pharmacognostic Study of the Scopolia lurida Dun.," "Pharmaco-Medical Prospects of the Genus Glycyrrhiza," "Medical Preparations from Some Plants Containing Iodine Growing in the Prvince Azerbaidzan, SSSR," "Chemical Investigations on Some Species of Erysinum Growing in Bulgaria." The following four papers were from German contributors: "Basic Constituents of Galega officinalis L." (Berlin), "On the Physiology and Biochemistry of Guanidin Derivatives Contained in Galega officinalis" (Halle/ Saale), "On Cultivation of a Datura Hybrid Containing Pure Scopolamine" (Halle/Saale). (Translation of titals by Branko Poje, Zagreb.)

UAR Lecturing Award. There is an opening for a lecturer in pharmacognosy for the 1965-66 year at the University of Cairo under the Fulbright Program. Persons interested should contact Mr. W.A. Copeland, Program Officer, Committee on International Exchange of Persons, 2101 Constitution Avenue N.W., Washington, D.C. 20418.

Recommended Article. Ara Der Marderosian, PCP, recommends the article "New Developments in Plant Drugs" by Stanley Scheindlin (Am. J. Pharm., 136, 216(1965)) for student reading. This is a publication based on an address to the New Jersey Chapter, A.Ph.A., which should be of interest to anyone in pharmacy.

Gröger Receives Award. Detlef Gröger, Halle/Saale, in December received the gold Hufeland-Medal for his scientific work. This award, named for a famous German physician (1762-1836), is given annually in the D.D.R. to persons who have made outstanding contributions to the health professions. There are three grades, bronze, silver, and gold. This year two pharmacists (Gröger is one) and several professors of medicine and physicians received the gold medal.

Revision Planned. George M. Hocking, Auburn University, is planning the revision of A Dictionary of Terms in Pharmacognosy with the probable appearance in January, 1967. He indicates that any suggestions for amending or amplifying this volume will be gladly received.

Pharmacognosy in Paris. R. Paris, University of Paris, writes the following: Pharmacognosie de Paris (Laboratoire de Matière Médicale de al Faculté de Pharmacie de Paris) sous la Direction des Professeurs Dr. R. Paris et P. Delaveau, une quinzaine de chercheurs et une dizaine de techniciens poursuivent des travaux orientés sur le Biologie et la Biochimie végétales...Les problèmes envisagés se rapportent aux pigments flavoniques et anthocyaniques (répartition-métabolisme-structure) aux alcaloïdes et flavonoïdes des légumineuses. Génistées - aux plantes médicinales exotiques (Cambodge, Côte d'Ivoire, Gabon) à l'amélioration des plantes médicinales cultivées (Pavot) aux problèmes de dessiccation et de stabilisation. Le laboratoire continue d'étudier les applications de la chromatographie (sur papier, en couche mince, en phase gazeuse) à l'analyse des végétaux. En septembre un symposium de chromatographie en couche mince a été organisé.

Grants. Leo A. Sciuchetti, Oregon State University, has been awarded a grant in the amount of \$43,104 from the PHS for the second year of a three-year study of screening Northwest plants for medicinal activity...Paul Sacco, Xavier University, has been awarded a grant of \$5,520 by the Cancer Association of Greater New Orleans, Inc. for a study of certain pseudomonas which parasitize tobacco and produce toxic substances.

Personal. Finn Sandberg, Stockholm, took three trips during 1964. First, he attended the International Symposium of Chemistry of Natural Products in Kyoto in April, and was then invited to participate in the symposium on medicinal plants of the Pacific area organized by the French Research Center in Noumea, New Caledonia in April and May. Twenty-two invited participants contributed to the symposium which will be published by the French organization, Centre National de Recherches Scientifiques. His second trip was for four weeks in China invited by the Chinese Pharmaceutical Association, giving lectures in Peking, Nanking, and Shanghai discussing the research on the Chinese medicinal plants being done in China. The third trip, in December, was made as an invited European expert in the UNESCO symposium in Kandy, Ceylon on medicinal plants of South East Asia and South Asia. Participants in this symposium came from Japan, Hong Kong, The Philippines, Thailand, Burma, India, Pakistan, Afghanistan, and Sweden. The papers will be published by the Ceylonese Research Council... Jerry L. McLaughlin has been appointed assistant professor of pharmacognosy, University of Michigan, effective August, 1965... Richard M. Doughty, University of Kentucky, has been appointed acting chairman of the Materia Medica Department. At the Centennial Founder's Day Convocation of the University of Kentucky, Dr. Doughty served as the representative of The American Society of Pharmacognosy... Anna H. Koffler, Ohio Northern University, is listed in the 1964 edition of Who's Who in Austria. Dr. Koffler was invited to present a paper on "Trace Elements in Plants" at the Interdisciplinary Symposium in the Earth and Medical Sciences held during the AAAS meeting in Montreal in December... Gordon H. Svoboda, Eli Lilly and Company, under the auspices of the AACP Visiting Scientists Program, delivered lectures on "The Current Status of Research on the Alkaloids of Vinca rosea Linn. (Catharanthus roseus G. Don) and Their Role in Cancer Chemotherapy" at University of Arizona, University of Southern California, University of the Pacific, University of Minnesota, and South Dakota State College of Agriculture and Mechanic Arts... Frank R. Stermitz, Utah State University, is studying the alkaloids of some rare papaveraceous plants under a \$54,951 grant from NIH. He is studying the alkaloid content and biosynthesis in Romneya coulteri, Argemone munita, Arctomecon californicus, Roemeria refracta, Meconella linearis and Meconella oregana. Under another PHS grant he has been studying the poisonous principles of Oxytropis sericea and Astragalus miser... A.E. DeMaggio, formerly associate professor of pharmacognosy at Rutgers University College of Pharmacy, has joined the staff of the Department of Biological Sciences, Dartmouth College... Charles L. Winek, Duquesne University, was selected as one of forty participants in the workshop in teratology held at the University of California at Berkeley in January. This was sponsored by the National Academy of Sciences Drug Research Board and the University of California under a grant from the Pharmaceutical Manufacturers' Association... Julia Morton, University of Miami, presented a paper "Balsam Pear (Momordica charantia L.)-- An Edible, Medicinal and Toxic Plant" at the meeting of the American Society for Horticultural Science, Caribbean Region, at Cagua, Venezuela. She also presented a version of this in Spanish at the College of Pharmacy, University of Central Venezuela, Caracas. This will be published in the Revista de la Facultad de Farmacia of the University of Caracas.

Books. R. Paris, University of Paris, reports the recent publication written by him and H. Moyse Précis de Matière médicale, tome I. Pharmacognosie générale - Pharmacognosie spéciale: Schizophytes: Bactéries, Actinomycétales - Thallophytes - Périodophytes - Spermaphytes: Gymnospermes (Masson et C^o, 1965)... B.K. Kim, University of Connecticut, reports the recent publication of Yakpoom Jawon Shilmulhak (Pharmaceutical Botany) by Y. J. Kim, I.H. Kim, K.S. Ryu, and Y.R. Lee (Jiphyunsa Co., Seoul, \$3, 1964)... Philip A. Babcock, Rutgers University, calls our attention to Methods of Biochemical Analysis, Vol. 12 by David Glick, Editor (Interscience, 1964); the Biosynthesis of Steroids, Terpenes and Acetogenins by J.H. Richards and J.B. Hendrickson (W.A. Benjamin, 1964, \$18.50); and Encyclopedia of Plant Physiology, Parts 1 & 2, Vol. XV (Springer Verlag, 1964). This volume is on differentiation and development... The Editor has compiled the following list of books which may be of interest to Society members: Common Poisonous Plants of New England by Heber W. Youngken, Jr. and Joseph S. Karas (Public Health Service Publication No. 1220, Superintendent of Documents, U.S. Printing Office, Washington, D.C., 1964, \$.35); The Natural Geography of Plants by Henry Allen Gleason and Arthur Cronquist (Columbia University Press, 1964, \$10); Fatty Acids: Their Chemistry, Properties, Production and Uses, Part 3, Edition 2, by Klare S. Markley, Editor (Interscience (Wiley), 1964, \$35); Laboratory Techniques in Botany by M.J. Purvis, D.C. Collier and D. Walls (Butterworth, 1964, \$11.50).