



NEWSLETTER

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

WASHINGTON STATE UNIVERSITY, PULLMAN, WASHINGTON

Volume 5, 1968
Number 2

Annual Meeting. David P. Carew, University of Iowa, reports that the 1968 annual meeting of The American Society of Pharmacognosy will be held at the University of Iowa, Iowa City on July 23-26. A symposium on "Recent Advances in the Biosynthesis of Natural Products" will feature ten outstanding speakers. Five of the speakers and topics were listed in the last Newsletter. The complete list is as follows: M.H. Zenk, University of Munich, "Biosynthesis of Quinones"; Eric E. Conn, University of California, Davis, "Biosynthesis of Cyanogenetic Glucosides and Mustard Oil Glucosides"; Egil Ramstad, Purdue University, "Biosynthesis of Ergot Alkaloids"; Arnold Demain, Merck, Sharpe & Dohme, "Regulatory Mechanism and the Industrial Production of Microbial Metabolites"; Erich Heftmann, California Institute of Technology, "Biosynthesis of Plant Steroids"; R.N. Gupta, McMaster University, "Biosynthesis of Piperidine and Related Alkaloids"; D. Gröeger, Institute for Plant Biochemistry, Halle, "Biosynthesis of Alkaloids from Anthranilic Acid"; L.C. Vining, Atlantic Regional Laboratory, Halifax, "Biosynthesis of Chloramphenicol"; E. Katz, Georgetown University, "Polypeptide Antibiotics: Proteins that Never Grew Up?"; D. Shepherd, University of Manchester, "The Regulation of Ergot Alkaloid Formation."

The Scientific Program Committee has made special efforts to set a late deadline for submission of abstracts so that investigators may present their most recent experimental results. The deadline for submitting abstracts is June 10. Abstracts should be sent to Dr. Heinz Floss, School of Pharmacy and Pharmacal Sciences, Purdue University, Lafayette, Indiana, 47907.

Any questions regarding the meeting should be addressed to Dr. David P. Carew, College of Pharmacy, University of Iowa, Iowa City, Iowa 52240.

FIP Meeting. The Fédération Internationale Pharmaceutique meeting will be held in Hamburg, Germany, August 31-September 7, 1968. Of particular interest to members of the Society are the: Main Symposium, September 2 and 3, "Polypeptides with Therapeutic Action". There will be seven papers in this symposium; Scientific Section, September 4, "Natural and Synthetic Indole Derivatives". There will be five papers in this symposium. Section for the Study of Medicinal Plants, September 3 and 4, "Medicinal Plants with Active Antimitotic Principles". There will be seven papers in this symposium: "General Introduction, the Development by Chemical Substances", "The Inhibition of Tumor Development by Chemical Substances", "Indications for Antineoplastic Activity in Old Herbals", "Vinca and its Therapeutic Uses", "Active Principles of Podophyllum and Colchicum", "Recent Research on Thalictrum and Eupatorium", and "Anticancerous Antibiotics and Agglutinins." Section of Industrial Pharmacists, September 4, "The Codification of Extraction of Active Principles from Medicinal Plants."

Inquiries regarding this meeting should be addressed to Arbeitsgemeinschaft der Berufsvertretungen Deutscher Apotheker (ABDA), Organisationaburo FIP-Kongress, Postfach 97 01 08, Beethovenplatz 1-3, 6 Frankfurt am Main 97, Germany.

Fungi Symposium. Arthur E. Schwarting, University of Connecticut, refers us to an announcement from the University of Tennessee. A Symposium on "The Evolution of Higher Basidiomycetes" sponsored by the National Science Foundation and honoring the 80th birthyear of Dr. L.R. Hesler will be held at the University of Tennessee, August 5-10, 1968. It is anticipated that the symposium will bring together the world's leading investigators to discuss the morphological, cytological, genetic, nutritional, and biochemical approaches to the study. Registration information may be obtained by writing to Dr. Ronald H. Petersen, Department of Botany, University of Tennessee, Knoxville, Tennessee 37916.

SEB Meeting. The Ninth Annual Meeting of the Society for Economic Botany will be held at Ohio State University, Columbus, Ohio, September 4-6, 1968, in conjunction with the Nineteenth Annual Meeting of the American Institute of Biological Sciences (AIBS) scheduled for September 3-7. September 4 will be devoted to contributed papers on topics related to economic botany. On Thursday, September 5, there will be an all-day symposium of invited papers on "Centers of Plant Diversity and the Conservation of Crop Germ Plasm." Further information regarding this meeting may be obtained from the Society secretary, Dr. Llewelyn Williams, New Crops Research Branch, U.S. Department of Agriculture, Beltsville, Maryland 20705.

Harvard Symposium. R.E. Shultes, Harvard University, reported on the interdisciplinary symposium held at Harvard May 8-10, 1968. Sponsored by the Botanical Museum of Harvard University and American Academy of Arts and Sciences, the symposium was entitled "Plants in the Development of Modern Medicine". The program was as follows: S. Henry Wassen, Gothenburg Ethnografiska Museet, "The Anthropological Outlook for Ameriindian Medicinal Plants"; John Mitchell Watt, University of Queensland, "Magic and Witchcraft in Relation to Plants and Folk Medicine"; Richard Evans Schultes, Harvard University, "The Plant Kingdom--A Thesaurus of Biodynamic Constituents"; T. Swain, Cabinet Office, London, "The Significance of Comparative Phytochemistry in Medical Botany"; Rudolf Hansel, Freie Universitat, Berlin, "Medicinal Plants and Drug Research"; Nestor Bohomos, Children's Cancer Research Foundation, Boston, "Biodynamic Agents from Microorganisms"; Ara der Marderosian, Philadelphia College of Pharmacy and Science, "Drugs from Plants of the Sea"; Albert Hofmann, Sandoz, Basel, "Ergot--A Rich Source of Pharmacological Constituents"; S. Morris Kupchan, University of Wisconsin, "Recent Advances in the Chemistry of Tumor Inhibitors of Plant Origin"; Norman R. Fransworth, University of Pittsburgh, "The Phytochemistry and Biological Activity of Catharanthus"; Bo Holmstedt, Karolinska Institutet, Stockholm, "The Ordeal Bean of Old Calabar: the Pageant of Physostigma venenosum in Medicine"; Daniel Efron, NIH, "Psychopharmacology and Plants."

Meetings in England. K. Swann, University of Manchester, reports on two meetings recently held in England. The Phytochemical Society met at the University of Cambridge, April 1-3, 1968 to commemorate the tenth anniversary of the founding of the Society as the Plant Phenolics Group. The main part of the program consisted of a symposium "Phytochemistry 1958-1968". The Symposium was divided into three principal parts "Advances in the Structural Determination of Plant Constituents"; "The Biosynthesis of Plant Constituents"; and "The Natural Distribution of Plant Constituents." There were a total of eleven lectures given by representatives from Great Britain, Europe, and the United States.

The Pharmaceutical Subjects, April 16-19, 1968 at Sunderland College of Technology. The chairman of the Pharmacognosy Group meetings was Dr. F. Fish, Senior Lecturer in Pharmacognosy, University of Strathclyde. He addressed the group on "Pharmacognosy and Forensic Science." Dr. E.J. Shellard, Reader in Pharmacognosy, Chelsea College of Science and Technology, also spoke to this group on "Applications of Chromatography in the Evaluation of Drugs from Plant Sources."

Japan Meeting. Isao Inagaki, Negoya City University, sent a review of the meeting of the 88th Annual Meeting of the Pharmaceutical Society of Japan held at the University of Tokyo, April 5-7. In the Section on Pharmacognosy and Chemistry of Natural Products, cytological, pharmacognostic and chemical studies were presented on a wide range of plants (Members wishing this list may obtain it from Dr. Inagaki or the Editor of the Newsletter). Special lectures were given on alkaloids of lycopodium, biosynthesis of Rutaceae alkaloids, ophiobolin, polymixins, colistins, circulin, Cypridina hilgendorffii-luciferin and insect molting hormones isolated from plants.

Ohio State-Purdue Meeting. James Robbers, Purdue University, writes about a very successful and stimulating meeting April 12 and 13 when the pharmacognosy faculty and graduate students of Purdue and Ohio State got together in Columbus for informal presentations of their research work with an exchange of ideas.

Harvard News. R.E. Schultes reports that one of his graduate students, Timothy Plowman, is interested in certain solanaceous genera for his doctoral dissertation. He may monograph the genus Brunfelsia, and he is much interested in getting information and specimens of the Chilean poisonous plant Latua venenosa. Another graduate student Richard T. Martin is preparing his doctoral thesis on the section of the genus Erythroxylon in which E. coca is classified. Both men have had considerable field experience in tropical America. Plowman expects to spend part of the coming year in South America on his field work for thesis data.

Professor George H. Stout, University of Washington Department of Chemistry, has been at Harvard for a year working with Dr. Schultes. He spent January in Colombia working with Professor Hernando Garcia-Abrriga of the National University, Bogata, collecting poisonous plants, particularly Guttifera.

Kalahari Desert Material Available. Marjorie Grant Whiting, 1022 29th St. N.W., Washington, D.C. 20007, has recently returned from a two-month stay in the Kalahari Desert where she collected voucher specimens for food and medicinal plants. The vouchers have been identified at the herbarium in Pretoria, and a list is available for anyone interested in ordering quantities. These can be collected and shipped by other members of the party who will remain in the desert for two more years. There will be a fee for cover collecting and shipping costs. Dr. Whiting also has small samples of gums of a few specimens of Acacia which are available to anyone interested. More of these can be obtained next fall. Dr. Whiting notes that Kung Bushmen in the area recognize gums by taste from twenty or more different species of Acacia.

Lloydia Series. Jerry L. McLaughlin, University of Washington, Chairman ASP Publicity Committee, in March publicized the series of articles begun in the December, 1967 issue of Lloydia. Prepared by Jonathan L. Hartwell of the National Cancer Institute, these articles represent a survey of the world's medical literature on plants used against cancer. Several thousand references, dating from early Egyptian medicap papyri to modern clinical reports and including previously unpublished material have been screened for references regarding plants with anticancer activity. For each species the compilation lists the preferred botanical name, common name, references, plant part used, preparation, indications and comments. It is planned to publish this survey in several installments, starting with the higher plants and proceeding according to alphabetical order of the families. Pertinent references will follow each family compilation. The final installment will contain indices of genera, common names, and authors. This is another important venture of the official publication of our Society.

Survival Manual. Last month ASP member Julia Morton, University of Miami, was featured in a six-column feature story in The Miami News. This publicized her month-long visit to Vietnam and Thailand where, under U.S. government sponsorship, she will gather material for a survival manual for use by the troops stationed there. Color photographs will illustrate this manual of edible and poisonous plants.

Information Wanted. Rustem S. Medora, University of Montana, is interested in obtaining permanent microscope slides of official crude drugs. Dr. Medora also reports that the facilities for graduate work at Montana will be remodeled and equipped this summer to carry out work in phytochemistry and plant tissue culture. Graduate assistantships are available.

Marine Pharmacognosy. Ivor Cornman, 15 Glenview Terrace, Kingston 6, Jamaica sends the following: "Inclusion of marine organisms in the pharmacognosy armamentarium is new, but growing. . . One of the obstacles in the way of a frontal attack on the great diversity of organisms in the ocean is that the richest collecting areas are farthest from the pharmacology laboratories. Moving the testing laboratory to the collecting site is one answer

to this problem, and has operated successfully over the last few years. In our laboratory we have screened thousands of species and have been successful in finding those species which contain active substances. Moreover, extracts we find active are active in subsequent tests by traditional pharmacological methods. The indicator systems we use in the screen are derived primarily from marine organisms available locally or from species that are easily transported. With modifications, this on-site screening could operate anywhere in the tropics which provides the greatest diversity of species. The equipment need be nothing more than a mortar and pestle, a microscope, a pressure cooker, and an assortment of dishes. The laboratory can be as primitive as the investigator is willing to suffer. It is our hope that potential marine research pharmacognosists who have been discouraged by lack of research facilities will be encouraged to try this simple, inexpensive approach to seeking out more of the remarkable substances to be found in tropical, marine. . . . organisms.

". . . information on methodology: Fertilization, cell division, and embryogenesis of the sea-urchin egg; Behavioral and toxicity responses of a fish; Toxicity to brine shrimp; Alteration of sensory reception, nervous transmission and muscle coordination in a sea urchin; Inhibition of seed germination and modification of seedling growth; and Antibiosis of three microorganisms. Since there are multiple events to be observed in each system, each material is assured a scoring on twenty-seven different observations. Then, active materials are diluted to threshold, so the total qualitative and quantitative notations can run as high as fifty-three for a single substance."

Core Curriculum Study. ASP members will be particularly interested in the chapter on pharmacognosy in Studies of a Core Curriculum edited by the editor of the Newsletter. This five-chapter book on core course content is available from AACP, Suite 301, 850 Sligo Avenue, Silver Spring, Maryland 20910 for \$3.50. The Subcommittee on Pharmacognosy of the AACP Committee on Curriculum responsible for the pharmacognosy chapter included, besides the Editor, ASP members Jack L. Beal, Ohio State University, Norman R. Farnsworth, University of Pittsburgh, Varro E. Tyler, Purdue University, and Maynard W. Quimby, Massachusetts College of Pharmacy.

Grants. Gerald Sullivan, University of Texas, has received a \$4,200 grant from the NIMH for a study of the production of peyote alkaloids in root tissue culture. . . James R. Stoker, University of Manchester, received a grant of 3,204 English pounds from The Science Research Council to purchase radio and gas chromatographic equipment for studies on the biosynthesis of pharmaceutically important compounds in plants and microorganisms. . . Carman A. Bliss, University of Saskatchewan, has received the following grants: \$8,500 for biosynthetic studies on galactitol formation in Euonymus spp., \$3,300 for the study of extractives of Saskatchewan plants, and \$2,235 for the culture of medicinal plants in Saskatchewan, particularly peppermint. The first grant was from the Medical Research Council of Canada, and the second and third were from the Saskatchewan Research Council. . . Two graduate students at the University of Saskatchewan who are majoring in pharmacognosy have received grants from the Medical Research Council of Canada. Mike Furniss received \$3,600 and Terry Danielson, \$3,000.

Personal. ASP President Maynard W. Quimby will leave Massachusetts College of Pharmacy effective July 1, 1968 to join the faculty of the University of Mississippi as professor of pharmacognosy. . . J.A. Mockle, University of Montreal, is serving on a government committee preparing a drug formulary for use in their health insurance program. . . Sam Cooper, University of Montreal, has been appointed research assistant in pharmacognosy. He graduated under the direction of E. Stahl. . . Ralph Blomster, University of Pittsburgh, was one of several persons featured in the February issue of Lutheran Witness. He was cited for his work in pharmacognosy and his leadership in St. Stephen Church in Pittsburgh. . . Auckland University has conferred the D.Sc. degree upon William I. Taylor, Ciba Pharmaceutical Co. . . William I. Taylor, Ciba is author of the section on alkaloids in Kirk-Othmer Encyclopedia of Chemical Technology, 2nd Ed., 1: 758-778, Interscience, New York.

Books. W.I. Taylor, Ciba, recommends Oxidative Coupling of Phenols (Marcel Dekker, Inc., New York, 1967) as an excellent coverage of the formation of natural products derived by the oxidative union of phenols. . Jacques Beliveau, University of Montreal, indicates that the 2nd Tome of Precis de Matiere Medicale, Vol. II by Paris and Moyse (Masson et cie, 1967, 60F) is now available. .K. Swann, University of Manchester, recommends Chemistry of Natural Products, Vol. 4, International Symposium, Stockholm, 1966 (Butterworth & Co. Ltd., London, 50 s, 1967). . Ali Askari, University of Rhode Island, recommends two publications available from the author Fred A. Barkley, Northeastern University, Boston, Massachusetts 02115. These are published by the Hopkins Press, Providence, R. I. The first is a list of the orders and families of the Anthophyta with generic examples (222 pp., \$3) which is a classification of the Angiosperms down to genera by a modification of the Hutchinson System of which 87 pages is index. The second publication is an outline of classification of organisms (25 pp.) In this, the classification of living organisms is carried down to the orders. The four-kingdom system is used and an index is included. . Rustem S. Medora, University of Montana, recommends the article "The Biosynthesis of the Monoterpenes" by J.R. Hanson which appeared in Perfumery & Essential Oil Record, Vol. 58, pp. 787-795, 1967. . . Dr. Medora also indicates that Mondray Ltd., agents for Camag, publish a TLC bibliography about every two months. Comag in Switzerland plans to publish a cumulative edition. For further information write to Mondray Ltd., 4180 De Courtrai Avenue, Montreal 26, Quebec, Canada. Dr. Medora also finds Horticultural Abstracts useful in locating miscellaneous references of pharmacognostic interest. They are described under the title "Drug Plants" in the section "Miscellaneous Temperate and Tropical Plants-Useful". Abstracts is published by the Commonwealth Agricultural Bureau, Farnham Royal, England. . . An unidentified person at the University of Manchester recommended Poisonous Plants and Fungi in Colour by Pamela North (Bradford Press, London, 1967, 21/). . . A number of persons recommended The Alkaloids, Volume 9 and Volume 10. by R.F. Manske (Academic Press, Vol. 9, 1967, \$27, Vol. 10, 1968, \$28). . . Jerry McLaughlin, University of Washington, recommends Plant Physiology, Volume 4B, Metabolism: Intermediate Metabolism and Pathology, Edited by F.C. Steward (Academic Press, 1966, \$22) and the other volumes of this series. He also calls our attention to Screening Methods in Pharmacology by Robert A. Turner (Academic Press, 1965, \$12) and Bio-genesis of Natural Compounds, 2nd Ed. Edited by P. Bernfeld (Pergamon Press, 1967, \$45). . . George Constantine, Oregon State University, recommends Chemistry and Enzymology of Marine Algal Polysaccharides by E. Percival and R.H. McDonald (Academic Press, 1967, \$12) and An Introduction to Alkaloids by G.A. Swann (Wiley, 1967, \$10.50). . . G. Ferrari, Milan, recommends Flora Orientalis, Seu Enumeratio Plantarum in Oriente A Graecia et Aegypto ad Indiae Fines Hucusque Observatarum by E. Boissier. This is the facsimile edition, five volumes plus supplement, 5868p. (Krypto. F. Flück-Wirth, Botanische un naturwissenschaftliche Versand-Buchhandlung und Antiquariat, 9053 Teufen AR-Schweiz, Switz. Francs 1.705). . . An unidentified person at the University of Paris wrote as follows: "En France: parution d'un nouvelle Revue Plantes médicinales et Phytothérapie. Editeur: Centre d'étude des plantes médicinales, Faculte mixte de médecine et de Pharmacie, 49, Angers. 4 numéros par an N° I Janvier, 1967. Abonnements: France et zone franc: 40 F. - Etranger 45 F. payables aur Secrétaire de la Revue: Pr. Jolivet Jean, Faculté de médecine et de Pharmacie 49 Angers, réglemeent par chèque bancaire ou chèque postal Nantes 2.918.33.

The Editor suggests that the following might be books of interest: The Biochemistry and Physiology of Infectious Plant Disease by Robert N. Goodman, Zoltan Kiraly and Milton Zaitlin (Van Nostrand, Princeton, N.J., 1967, \$12.50); Chromatography by Erich Heftmann (Reinhold, New York, 1967, \$27.50); Techniques of Autoradiography by Andrew W. Rogers (Elsevier, New York, 1967, \$20); Antibodies to Biologically Active Molecules (Proceedings of the second meeting of the Federation of European Biochemical Societies (Vienna, April, 1965) Edited by Mernhard Cinader (Pergamon, New York, 1967, \$18.50); Techniques in Protein Biosynthesis Vol. 1, by P.N. Campbell and J.R. Sargent (Academic Press, New York, 1967, \$15); Cardiac Stimulant Substances by Roland H. Thorp and Leonard B. Cobbin (Academic Press, 1967, \$12); Biostatistics by Alvin Lewis (Reinhold, 1966, \$8.50); Psychopharmacological Agents, Edited by Maxwell Gordon (Academic Press, Vol. 2, 1967, \$25); Instrumentation in Biochemistry (Biochemical Society Symposia/Number 26), Edited by T.W. Goodwin (Academic Press, 1967, \$5); Topics in Pharmaceutical Sciences Edited by David Perlman (Wiley, New York,

1968, \$7.95); Paper Chromatography and Electrophoresis by Gunter Zweig and John R. Whitaker (Academic Press, 1967, Vol. 1, \$16.50); Electrophoresis, Vol. 2, Edited by Milan Bier (Academic Press, 1967, \$21); Advances in Marine Biology, Vol. 4, Edited by Sir Frederick S. Russell (Academic Press, 1967, \$14); Mescal and Mechanisms of Hallucinations by Heinrich K. Klüver (University of Chicago Press, 1966, \$3.95); The Particle Atlas by Walter C. McCrone, Ronald G. Draftz, and John Gustav Delly (Ann Arbor Science Publishers, Inc., P.O. Box 1425, Ann Arbor, Michigan 48106, 1968, \$125); Biosynthesis of Antibiotics Edited by J.F. Snell (Academic Press, 1967, Vol. 1, \$10); Index of Antibiotics from Actinomycetes, Edited by Hamao Umezawa (University Park Press, 115 Chamber of Commerce Bldg., Baltimore, Maryland 21202, 1967, \$49.50); Ernährung und Stoffwechsel der Pflanze by Konrad Mengel (Gustav Fischer Verlag, Stuttgart, 1968, DM 36); Geschnittene Drogen by Ulrich Weber (Gustav Fischer Verlag, 1965, DM 19.50); Eihführung in die Pharmazeutische Biologie by Otto Moritz (Gustav Fischer Verlag, 1967, DM 54); Nature's Medicines: The Folklore, Romance, and Value of Herbal Remedies by Richard Lucas (Prentice Hall, 1966, \$5.95); Heilpflanzen-Lexikon für Ärzte und Apotheker by Han Braun (Gustav Fischer Verlag, 1968, DM 36); The Poppy and Other Deadly Plants by Esther Baskin (Delacore Press, New York, 1967, \$12.50); Design of Active-Site-Directed Irreversible Enzyme Inhibitors by B.R. Baker (Wiley, 1967, \$13.50); The Hallucinogens by A. Hoffer and H. Osmond (Academic Press, 1967, \$25); Edible Plants of the Rocky Mountains by H.D. Harrington (The University of New Mexico Press, 1967, \$8.95); Chemistry of Amino Sugars, Vol. IA, Edited by Roger W. Jeanioz (Academic Press, 1968, in press); Anabolic Steroids by H.L. Kruskemper, 1968, \$12.50); Antihypertensive Agents by Emil Schlittler (Academic Press, 1967, \$22); Antimicrobial Agents by Loyd W. Hedgecock (Lea and Febiger, 1967, \$7.50); Analytical Methods for Pesticides, Plant Growth Regulators, and Food Additives, Vol. 5, Edited by Gunter Zweig (Academic Press, 1967, \$24); Fungicides An Advanced Treatise, Vol. 1, Edited by Dewayne C. Torgeson (Academic Press, 1967, \$29); Handbuch der Pflanzenphysiologie, Vol. XVIII: Sexuality, Reproduction, Alteration of Generations, Edited by W. Ruhland (Springer-Verlag, 1967, \$87); Plants, Man and Life by Edgar Anderson (Reprint of 1952 edition) (U. of California Press, 1967, \$1.95, paper); Tritium-Labeled Molecules in Biology and Medicine by Ludwig E. Feinendegen (Academic Press, 1967, \$17); Microbial Transformation of Steroids, A Handbook by W. Charney and H.L. Herzog (Academic Press, 1967, \$21).

Blackwell's, Broad Street, Oxford, England in their catalogs list the following books which may be of interest: Plant Cells by F.A.L. Clowes and B.E. Juniper, 75/; Bio-synthetic Patterns in Microorganisms and Higher Plants by H. Grisebach, 75/; Index to Botanical Monographs by D.H. Kent, 42/; Growth and Organization in Plants by F.C. Steward, 6/15/-; Biophysical Technique as Applied to Cell Biology by J. Chayen and E.E. Denby, 35/; An Atlas of Biological Ultra-Structure by D. Dodge, 30/; Biochemistry of the Acute Allergic Reactions, Edited by K.F. Austen, 75/; Data for Biochemical Research, 2nd Ed., Edited by R.M.C. Dawson, D.C. Elliott, W.H. Elliott, and K.M. Jones.