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man of the AEC's General Advisory Committee, a post he had held for 4 years. Johnson also served as chairman of the commission's Board of Senior Reviewers from 1949 to 1956. He is being honored for meritorious service in advancing the atomic energy programs of the commission and of the United States.

Johnson is the second recipient of the AEC Citation, which was established in 1960 to honor persons not in the employ of the commission. The citation, accompanied by a symbolic medallion, will be presented in a ceremony in Washington, D.C., late in April.

Nine U.S. scientists who received 1960 Borden Awards of a gold medal and $1000 for outstanding research achievements are listed in an annual directory just released by the Borden Company Foundation, Inc. A total of 179 awards has been made by the foundation since the program began in 1937. The awards are administered by professional and scientific associations. The administering groups and the 1960 award winners, with summaries of their principal contributions, follow.

American Chemical Society. Eugene L. Jack, professor of dairy industry, University of California, for his studies on the composition, structure, physical properties, and nutritional values of milk fat.

American Dairy Science Association. Norman L. Jacobson, professor of dairy husbandry, Iowa State University, for his research contributions to dairy animal nutrition, including work on utilization of carbohydrates by dairy animals and the effects on dairy cattle of feed treated with antibiotics.

American Dairy Science Association. Mark Keeney, professor of dairy manufacturing, University of Maryland, for a number of significant research contributions on the chemistry of butterfat.

American Home Economics Association. Marian E. Swendsen, associate professor of nutrition and physiological chemistry, University of California, for her research in vitamin and protein nutrition.

Association of American Medical Colleges. Robert F. Pitts, professor and chairman of the department of physiology, Cornell University Medical College, for his fundamental contributions to an understanding of renal tubular functions.

American Institute of Nutrition. R. Gauther Hansen, professor and head of the department of agricultural chemistry, Michigan State University, for a series of studies, in the general fields of biochemistry and nutrition, that have contributed to a clearer understanding of the nutritional role of milk sugar.

American Academy of Pediatrics. Harold E. Harrison, pediatrician-in-chief, Baltimore City Hospital, and associate professor, Johns Hopkins University School of Medicine, for his fundamental research on vitamin D and its role in the regulation of the transport of calcium and phosphorus.

Poultry Science Association. Frederick W. Lorenz, professor of poultry husbandry and poultry physiologist in the Experiment Station, University of California at Davis, for research contributions that are basic to the use of estrogens in poultry production and to artificial insemination in turkeys.

American Veterinary Medical Association. Henry H. Dukes, professor emeritus of veterinary physiology, Cornell University, for his studies in the general area of animal physiology, which have served as a starting point for many investigations into the metabolic diseases of cattle. He was also cited for his long and productive career as a teacher and trainer of research workers.

Donn Rosen has been appointed assistant curator in the department of ichthyology at the American Museum of Natural History, New York. For the past year he has been with the University of Florida at Gainesville, where he held the posts of assistant professor of biology and assistant curator of biological sciences at the university's Florida State Museum.

Werner K. Weibe, chief of the Far Infrared Branch at the U.S. Army Engineer Research and Development Laboratories, Fort Belvoir, Va., has been named executive editor for the United States for Infrared Physics, an international research journal to be published by Pergamon Press, Ltd., England. Other editors of the new journal include M. Migeotte of Belgium, T. S. Moss of England, Sidney Passman of the United States, and an international editorial board. A regional editor for the U.S.S.R. is to be appointed.

Margaret H. Sloan, National Blood Program executive and staff director of a recent medical research study for the Senate Appropriations Committee, has been appointed special assistant to the director of the National Cancer Institute. She will be active in program development, particularly in the international field. Dr. Sloan has earned international recognition for her service as assistant director and later director of advisory services to the National Blood Program of the National Academy of Sciences—National Research Council, which she joined in 1950.

Recent Deaths

M. Hillel Feldman, New York, N.Y.; 72; dentist who was a pioneer in oral surgery; in 1917 organized the dental department at Lincoln Hospital, where for many years he trained interns in oral surgery; wrote the textbook Exodontia; 1 Mar.

James O. Foley, Birmingham, Ala.; 64; since 1947 professor of anatomy at the University of Alabama Medical Center; a former department chairman, he was associate dean of the Medical College from 1951 to 1956; 28 Feb.

Irving Hyman, Buffalo, N.Y.; 52; chief of neurology at Buffalo General Hospital and chairman of the neurology department at the University of Buffalo Medical School; 7 Mar.

Asa S. Kinney, South Hadley, Mass.; 87; associate professor emeritus of botany at Mount Holyoke College; 2 Mar.

Philip Schwed, Baltimore, Md.; 38; research physicist at the Research Institute for Advanced Studies (1956-1961); principal scientist in the institute's cosmic radiation program; conducted theoretical studies in particle and solid-state physics; formerly with Lewis Laboratory; 2 Feb.

Joseph C. Turner, New York, N.Y.; 51; professor of medicine at the College of Physicians and Surgeons of Columbia University; director of the Clinical Pathology Laboratories and head of the hematology clinic at Columbia-Presbyterian Medical Center; author of a textbook on clinical pathology; 2 Mar.

Carl J. Warden, De Land, Fla.; 70; former professor of psychology at Columbia University; headed the animal psychology laboratory at Columbia for some years, later had charge of the Laboratory of Comparative Psychology and dealt largely with human psychology; wrote The Emergency of Human Culture and served as associate editor of the Journal of Genetic Psychology; 28 Feb.
student in our colleges and universities. Then perhaps interest in beetles would become commensurate with the numbers of species. I think this manual could arouse such interest. It would get the student over the first discouraging stumbling blocks: numbers of species, complexity of terms, and the great variation of form. Perhaps it is the wealth of illustrations that makes the volume a fine manual. And you can bet that a lot of experienced coleopterists will be flipping those 85 plates when trying to identify specimens in groups outside their specialty. Caveat Coleoptera!

T. J. SPILMAN
U.S. Department of Agriculture, Washington, D.C.


This large and thorough volume constitutes a major contribution to the literature on the identification of wood and woody species on the basis of xylotomy. It is a presentation of photomicrographs, diagnostic pen and Ink sketches, detailed xylotomical descriptions, summary tables of characteristics, and keys to the identification of European deciduous trees and shrubs based on the structure of their wood. As such, it is a revised and enlarged edition of the author's successful Bestimmung der mitteleuropäischen Laubhölzer und Sträucher auf xylotomischer Grundlage which is now out of print.

The book is divided into a general section which treats the preparation of material and the fundamentals of the xylotomical determination of woody species, and a detailed section which treats 154 genera of 61 families of the Monochlamydeae, Ditaipetalae, and Sympetalae. The detailed section is divided into an expanded key to species and a thorough description of the anatomical features of the wood of each species treated. It is followed by 307 plates (9 by 13 inches) of photomicrographs and drawings of the 303 species treated. Six summary (Merkmalübersicht) tables are included inside the back cover of the volume.

The diagnostic key is presented in both German and English and uses both qualitative and quantitative characteristics. It is elaborated to include minor variations within species and specimens; I found it to be quite workable.

The descriptions of the xylotomical features of the wood of each species are presented in German, but they can be readily translated by anyone who has a command of the basic German vocabulary of wood anatomy. The features of cross, radial, and tangential sections are presented in great detail.

The plates are large and exceptionally well done. Each plate shows four photomicrographs (2 by 3 inches) and a series of pen and ink sketches of diagnostic features. The photomicrographs include a cross section (× 30), a cross and a tangential section (× 100), and a radial section (× 200). Where applicable, pen and ink sketches are given of vessels, tracheid shaped vessels, tracheids, wood fibers, fiber tracheids, wood parenchyma cells, ray cells, supplementary fibers, and septate fibers.

This volume, along with its companion, the author's Identification of Living Gymnosperms on the Basis of Xylotomy, will provide data and fill a need in the several areas of plant science concerned with wood and woody plants. It provides a comprehensive view of the structure of woody plants, for general botanical purposes. It serves as an exhaustive source of data for advanced study of wood anatomy and its relationship to phylogeny. Finally, it provides a comprehensive reference manual for workers in the fields of plant anatomy, wood technology, forestry, paleobotany, and related areas.

ELWOOD B. EHRL
Department of Science, State University College of Education, Geneseo, New York


At a time when the value of the information that can be derived from studying cells and tissues has been generally recognized by many disciplines, a book "integrating the newer methods of tissue and cell examination into histologic techniques" is highly welcome. The authors present here a selection of the methods they consider to be most valuable for the proper staining of histologic preparations. The selection, based on the authors' personal experience with the different techniques, includes well-established earlier procedures as well as newer methods—for instance, staining techniques used in electron microscopic studies which have recently been improved by Strugger, who applied additional "staining" with uranium salts for the detection of microstructures in cell constituents.

A discussion of the different methods of preparing the tissue for staining precedes the chapters on specific methods for study of the constituents of cells and tissues and for the study of special cells, tissues, and organs. Two appendices—one giving an outline of basic techniques and another giving dilution and solubility tables, molar values, and buffers—increase the monograph's value for routine work and research.

The book continues the tradition of the famous standard works by Mallory, Bertrand, Lillie, and Glick, to mention just a few of the earlier and the more recent authors, and it will definitely fill the need of a modern tissue laboratory.

A. T. KREBS
Department of Biology, University of Louisville

Miscellaneous Publications
(Inquiries concerning these publications should be addressed, not to Science, but to the publisher or agency sponsoring the publication.)

Large-Scale Ground-Water Development. Water Resources Development Centre. United Nations, New York, 1960. 84 pp. Paper, $1.25. The first of a series of studies to be undertaken by various UN organizations. Contents cover basic considerations relating to use, stages of development, economic and financial aspects, the role of governments, and rights and other legislative matters.


Scientific and Technical Personnel in American Industry. Report on a 1959 survey. Prepared by the U.S. Department of Labor. National Science Foundation, Washington, D.C., 1960 (order from the Supt. of Documents, GPO, Washington 25). 66 pp. $0.45. American industry employed approximately 800,000 scientists and engineers in January 1959. Engineers were found to number 615,000 (80 percent of the survey); the 149,000 scientists included 72,000 chemists, 18,000 life scientists, 15,000 physicists, 15,000 earth scientists, and a smaller number in other occupational groups.

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Meetings

Entomology and Human Welfare

Frank S. Arant, head of the department of zoology and entomology, Alabama Polytechnic Institute, has been chosen by the governing board of the Entomological Society of America as the society's president for 1961. Acceptance of a foreign assignment by H. M. Harris, of Iowa, president-elect in 1960, led to his resignation and the selection of a president by board action rather than by ballot of the membership. Robert Glen, director, General Research Branch, Canada Department of Agriculture, Ottawa, is president-elect for 1961.

The 1960 Atlantic City meeting of the Society, held 28 November through 1 December, drew a larger attendance (859) than any previous meeting of the society other than joint meetings with Canadian societies. The theme of the meeting was, "Entomological Contributions to Human Welfare."

M. P. Jones, entomologist with the extension service of the U.S. Department of Agriculture, the society's president for 1960, delivered the presidential address, "Selling insect control information." The John Henry Comstock memorial lecture, "The challenge of insecticide resistance," was delivered by A. W. A. Brown of the University of Western Ontario. J. George Harrar, vice president of the Rockefeller Foundation, addressed a plenary session on food additives and public health.

Dionyz Blaskovic, director of the Institute of Virology, Blatislava, Czechoslovakia, and K. C. Willett, director of the West African Institute for Trypanosomiasis Research, Kaduna, Northern Nigeria, were participants in a symposium on biological transmission of disease agents. The Rockefeller Foundation made possible the attendance of these two speakers.

Lester G. MacNamara, chief of the New Jersey Bureau of Wildlife Management, also addressed an evening plenary session, on the role of chemicals in wildlife conservation.

There were 186 submitted papers, 14 symposia and panel discussions, and 19 invited speakers; the program was arranged by Ralph W. Sherman, U.S. Department of Agriculture, program chairman. L. G. Merrill, Jr., of Rutgers University, was chairman of the local arrangements committee.

RALEIGH W. SHERMAN
U.S. Department of Agriculture,
Washington, D.C.

Forthcoming Events

April

23–27. Society of American Bacteriologists, Chicago, Ill. (E. M. Foster, 311 Bacteriology, Univ. of Wisconsin, Madison)


24–26. International Acad. of Pathology, 50th annual, Chicago, Ill. (Miss M. Davis, Intersociety Committee on Pathology Information, 1785 Massachusetts Ave., NW, Washington 6, D.C.)


26–28. American Assn. of Pathologists and Bacteriologists, 50th annual, Chicago, Ill. (Miss M. Davis, Intersociety Committee on Pathology Information, 1785 Massachusetts Ave., NW, Washington 6, D.C.)

Sigma is pleased to announce the availability of reagents for the Colorimetric Determination—OF PHOSPHOHEXOSE ISOMERASE

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(Per Bodansky)\(^1\)

Serum Phosphohexose Isomerase has been reported to be occasionally elevated in all types of cancer and particularly in cancer of the breast and prostate with metastases. \(^3\) More consistent elevations were observed in viral hepatitis while substantially normal values were observed in other types of liver disease. \(^2\) However, diagnostic significance has not yet been established.

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OF ISOCITRIC DEHYDROGENASE

@ 410 m\(\mu\)
(Per Taylor & Friedman)\(^4\)

Serum Isocitric Dehydrogenase has been reported to be of considerable significance in viral hepatitis and other conditions involving the liver specifically. \(^3\) ICD is reported to remain normal in Myocardial Infarction and malignancies not involving the liver. \(^5\) The determination of Isocitric Dehydrogenase at 340 m\(\mu\) has already become routine in many laboratories using Sigma Kit No. 150. This new Colorimetric Procedure No. 175 now promises to make the procedure considerably more widespread.

For the Colorimetric Determination of Isocitric Dehydrogenase
Ask for Free Technical Bulletin No. 175

REFERENCES:
1. O. Bodansky, Cancer, 7, 1101, (1954).
2. O. Bodansky, Cancer, 6, 1087, (1955).

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lumbus, Ohio. (Miss N. F. S. Woodbury, Arizona State Museum, Univ. of Arizona, Tucson)
4-6. American Philosophical Assoc., western division, St. Louis, Mo. (L. E. Hahn, Washington Univ., St. Louis 30, Mo.)
4-6. American Soc. of Human Genetics, Atlantic City, N.J. (W. J. Schull, 1133 E. Catherine St., Ann Arbor, Mich.)
4-6. New York State Psychological Assoc., annual, Rochester. (H. P. Iker, Strong Memorial Hospital, Room R-201, 260 Crittenden Blvd., Rochester 20)
4-6. Society for American Archaeology, Columbus, Ohio. (J. B. Wheat, Univ. of Colorado Museum, Boulder)
4-7. Hypertension Symp. (by Hahmann Medical College), Philadelphia, Pa. (Hahmann Medical College and Hospital, 235 N. 15 St., Philadelphia 2)
5-7. American Soc. of Internal Medicine, Miami Beach, Fla. (G. T. Bates, 350 Post St., San Francisco 8, Calif.)
5-8. American Psychoanalytic Assoc., Chicago, Ill. (Mrs. H. Fischer, 1 E. 57 St., New York 22)
6-7. Academy of Psychoanalysis, annual, Chicago, Ill. (J. H. Merin, 49 E. 78 St., New York 21)
7-10. American Inst. of Chemical Engineers, Cleveland, Ohio. (J. F. Van Antwerpen, ACLhe, 25 W. 45 St., New York 36)
7-11. Institute of Food Technologists, New York, N.Y. (C. S. Lawrence, 176 W. Adams St., Chicago 3, Ill.)
7-12. Medical Library Assoc., Inc., Seattle, Wash. (Miss R. J. Mann, Mayo Clinic Library, Rochester, Minn.)
7-12. Society of American Bacteriologists, 62nd annual, Kansas City, Mo. (E. M. Foster, 311 Bacteriology, Univ. of Wisconsin, Madison 6)
7-12. Society of Motion Picture and Television Engineers, Toronto, Canada. (SMpte, 55 W. 42 St., New York 36)
8-10. Titrimetric Methods of Analysis, symp., Cornwall, Ontario, Canada. (J. R. McCullum, Courtaulds (Canada) Ltd., Cornwall)
8-10. Mathematical Theories of Biological Phenomena, symp., New York N.Y. (N. Rashevsky, Committee on Mathematical Biology, 5741 Drexel Ave., Chicago 37, Ill.)
8-12. American College of Physicians, 42nd annual, Miami Beach, Fla. (ACP, 4200 Pine St., Philadelphia 4, Pa.)
(See issue of 17 February for comprehensive list)


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- RECORDING SPECTROPHOTOMETER is designed for analysis of samples at temperatures up to 1000°C and higher. Three of the compartment walls of the sample cell are water cooled; free space inside the compartment is 16 in. along the optical path. The instrument utilizes reverse beam operation throughout its range. It is designed to eliminate measurement errors resulting from energy originating in the sample which might be within the range of the detector. Range of the instrument is 1850 A to 2.65 μ. Resolution is 1.5 A over most of the ultraviolet and the visible range, and 4 A in the near infrared. Stray light is said to be less than 0.001 percent over most of the range and 0.1 percent at the range limits. Photometric error of absorption measurements due to thermal radiation from cells up to 1000°C is less than 0.001 absolute. Temperatures above 1000°C may be used at some sacrifice to instrument noise. (Applied Physics Corp., Dept. Sci138, 2724 S. Peck Rd., Monrovia, Calif.)

- AUTOMATIC CELL COUNTER counts red or white blood cells and gives a direct indication of the count on a panel meter in 25 sec. The instrument uses a high dilution ratio which permits individual cells to be sensed as they pass through an inspection chamber. The panel meter is calibrated with two scales: one for red-cell counts from 0 to 7.4 X 10^9 per cubic millimeter; another for white-cell counts from 0 to 25,000 per cubic millimeter. The total number of cells sampled is approximately 50 times that of a manual count. Facilities are provided for checking instrument calibration. (Sanborn Co., Dept. Sci136, 174 Wyman St., Waltham 54, Mass.)

- HARMONIC MOTION TEST TABLE supports an inertial load of 0.05 in. lb sec^2 and a static load of 10 lb while oscillating at frequencies of 0 to 30 cy/sec and through amplitudes of ±6°. Amplitude is mechanically variable by a lead screw with sensitivity of 120° rotation for 0.1 amplitude change; frequency is changed by a variable speed drive. Maximum amplitude error is said to be ±12 sec of arc, maximum frequency deviation ±1 percent, and maximum harmonic distortion ±1 percent. A fail-safe mechanism cuts off power if an incorrect combination of amplitude and frequency is set. (Power-Tronic Systems, Inc., Dept. Sci142, Pine Court, New Rochelle, N.Y.)

- SONAR SOUNDER SET indicates depth from 5 to 100 ft or 5 to 100 fathoms. Accuracy is said to be ±3 percent of full scale on either range. An automatic low-water alarm may be set to operate between 5 and 30 ft or 5 and 30 fathoms. The equipment consists of a remote indicator and control box; a transmitter, receiver, and power supply box; and a through-the-hull transducer. Operating temperature range of the transistorized unit is 0° to 50°C. (General Precision Inc., Dept. Sci114, 1150 McBride Ave., Little Falls, N.J.)

- CONTINUOUS-WRITING STREAK CAMERA produces an uninterrupted streak image 50 in. long on 35-mm film. Writing rate is 9 mm/μsec at a maximum mirror speed of 2600 rev/seg; time resolution is 5 X 10^-4 sec or better; minimum total writing time is 145 μsec. The beryllium rotating mirror is said to be essentially distortion free at operating speeds. The optical system permits operation in the ultraviolet region. (Beckman & Whitley, Inc., Dept. Sci129, San Carlos, Calif.)

- VACUUM-TUBE VOLTMETER for a-c measurements is said to provide accuracy of ±1 percent. The instrument consists of a rectangular meter having a 4.5-in. mirror-backed scale. Standard ranges are available in single-scale sensitivities ranging from 10 mv to 300 v. Input impedance is 1 megohm; frequency range is 50 cy to 50 kcy/sec. Power requirement is 6.3 volts at 0.5 amp and 200 volts d-c. (Trio Laboratories Inc., Dept. Sci109, Plainview, N.Y.)

- WIDE-SCREEN FILM VIEWER for 16-mm film features motorized film drive, remote control, operator control, and magnification of 20. The operator can locate data of interest by using a push button to traverse the film in either direction at 120 cm/sec. Data can be viewed in detail at speeds continuously variable between 0 and 1.3 cm/sec. A film area of 14.5 by 35 mm is projected; 50- to 200-ft reels are accommodated. Distortion is said to be not more than ±1 percent. (Geotechnical Corp., Dept. Sci134, 3401 Shiloh Rd., Garland, Tex.)

- MICROFOCUS X-RAY UNIT manufactured by Hilger and Watts can be supplied with a choice of tubes and guns to provide a 40-μ spot, a 1.4-mm by 100-μ line, or a 6-mm by 100-μ line, with tube loading up to 50 kv. 10 ma. The generator can be used with the manufacturer's Y125 recording diffractometer. (Engis Equipment Co., Dept. Sci139, 431 S. Dearborn St., Chicago 5, Ill.)

Joshua Stern
National Bureau of Standards, Washington, D.C.