

as the translator says, that "no material passages have been omitted," certainly some delightful immaterial passages seem to have fallen by the wayside. It is to be hoped that this book, complete as it attempts to be, is not the last word on this subject and that soon we may have one of these creatures on display in one of our oceanariums. In the meanwhile, every research vessel should have a copy of this volume in its library, although it may be necessary to chain it to the bulkhead to keep it from going ashore in someone's duffel bag.

JOEL W. HEDGPETH  
*Marine Science Laboratory,  
Oregon State University, Newport*

## Forestry and Industry

**Wood as Raw Material.** Source, Structure, Chemical Composition, Growth, Degradation and Identification. GEORGE TSOU MIS. Pergamon, New York, 1968. xii + 276 pp., illus. \$10.

This book presents a general, but quite comprehensive, review of the sources and characteristics of wood that affect its use as an industrial raw material. Beginning with a brief description of forest trees as sources of wood, the author goes on to give the reader descriptions of macroscopic, physical, and microscopic characteristics of wood, followed by discussion of its chemical composition and ultrastructure, the mechanism of wood formation, the formation and structure of bark, variations in wood structure, and abnormalities in and degradation of wood, and ends with keys for identification of wood and some material on techniques for microscopic investigation.

The book is written primarily as a textbook for students in fields in which a knowledge of wood is necessary—forestry and its various constituent specialties of forest management, silviculture, tree physiology, forest genetics, forest soils, forest engineering, forest and wood pathology, pulp and paper technology, and wood science and technology. The author also proposes to meet the needs of the wood industry, of engineers, and of architects.

Those objectives are attained only to a limited degree. The treatment is adequate in most respects for those wanting a general knowledge of wood structure and formation. The material is presented in such a way as to be understandable and meaningful to most such

readers. However, the presentation of such a broad range of information in a relatively small book has been at the expense of clarity in some places and has resulted in excessive generalization in others. Many of the illustrations are likely to be unclear to a person using the book as an introduction to the field and are thus not consistent with the text in level of understanding required. The book would be useful in a high school or a junior college provided the instructor knew enough of the subject to cope with some of the more general statements. The presentation does not seem adequate for serious students of wood science and technology or pulp and paper technology, for which much more detailed knowledge of wood structure and characteristics is essential.

The book omits any reference to the major strength and related mechanical properties of wood. This would seem to be a serious omission if the book is to be truly useful to engineers, architects, and many in the wood industry.

In spite of these limitations, the book is well worth consideration by those who desire a brief, general treatment of the growth and structure of wood. It certainly has merit for this purpose.

ROBERT L. YOUNGS  
*U.S. Department of Agriculture,  
Forest Service, Washington, D.C.*

## Books Received

**Above and Beyond.** The Encyclopedia of Aviation and Space Sciences. Wallace B. Black, publisher; Jean F. Blashfield, editor-in-chief; Raymond J. Johnson, editor. New Horizons, Chicago, 1968. 14 vols. xii + 2677 pp., illus.

**Advanced Engineering Dynamics.** Gerald M. Smith and Glenn L. Downey. International Textbook, Scranton, Pa., 1968. viii + 440 pp., illus. \$10.95. Second edition of *Advanced Dynamics for Engineers*.

**Advances in Infrared Group Frequencies.** L. J. Bellamy. Methuen, London, 1968 (distributed in the U.S. by Barnes and Noble, New York). xii + 304 pp., illus. \$10.50.

**Advances in Plasma Physics.** Vol. 1. Albert Simon and William B. Thompson, Eds. Interscience (Wiley), New York, 1968. x + 340 pp., illus. \$14.95.

**Alcohols.** Their Chemistry, Properties and Manufacture. John A. Monick. Reinhold, New York, 1968. xiv + 594 pp., illus. \$30.

**The American Empire.** Amaury de Riencourt. Dial, New York, 1968. xviii + 366 pp. \$7.50.

**The Analysis of Indeterminate Structures.** Alan Williams. Hart, New York, 1968. xii + 324 pp., illus. \$12.

**Anatomical Preparations.** Milton Hilde-

brand. University of California Press, Berkeley, Calif., 1968. viii + 100 pp., illus. Paper, \$3.95.

**Aromatic Substitution Reactions.** Leon M. Stock. Prentice-Hall, Englewood Cliffs, N. J., 1968. xiv + 156 pp., illus. Cloth, \$5.95; paper, \$2.95. Prentice-Hall Foundations of Modern Organic Chemistry Series.

**Aspects of the Physiology of Crustacea.** A. P. M. Lockwood. Freeman, San Francisco, 1968. x + 328 pp., illus. \$9. University Reviews in Biology.

**Atlas of Radiation Dose Distributions.** Vol. 3, Moving-Field Isodose Charts. K. C. Tsien, J. R. Cunningham, D. J. Wright, D. E. A. Jones, and P. M. Pfalzner. International Atomic Energy Agency, Vienna, 1967 (distributed in the U.S. by National Agency for International Publications, New York). xii + 58 pp., illus.; 168 charts, Paper, \$15.

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**Biological Properties of the Mammalian Surface Membrane.** A symposium, Philadelphia, April 1967. Lionel A. Manson, Ed. Wistar Institute Press, Philadelphia, 1968. ix + 160 pp., illus. Paper, \$5. Wistar Institute Symposium Monograph No. 8.

**Biologisches Zentralblatt.** Vol. 86, supplement. Written for Hans Stubbe on his 65th birthday, 7 March 1967. Thieme, Leipzig, 1967. 522 pp., illus.

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**Black Intellectuals Come to Power.** The Rise of Creole Nationalism in Trinidad and Tobago. Ivar Oxaall. Schenkman, Cambridge, Mass., 1968. xiv + 194 pp., illus. Paper, \$2.95. International Studies in Political and Social Change.

**The Book of The Giraffe.** C. A. Spinage. Houghton Mifflin, Boston, 1968. xii + 191 pp., illus. \$6.95.

**Brain Barrier Systems.** Abel Lajtha and Donald H. Ford, Eds. Elsevier, New York, 1968. xvi + 552 pp., illus. \$34. Progress in Brain Research, vol. 29.

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**Calculus for the Natural and Social Sciences.** Sherman K. Stein. McGraw-Hill, New York, 1968. xiv + 322 pp., illus. \$7.50.

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(Continued on page 827)

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**Chemical Warfare, Pyrotechnics and the Fireworks Industry.** T. F. Watkins, J. C. Cackett, and R. G. Hall. Pergamon, New York, 1968. viii + 114 pp., illus. Cloth, \$4.50; paper, \$3.50. Commonwealth and International Library: Chemical Industry.

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**Comprehensive Biochemistry.** Marcel Florin and Elmer H. Stotz, Eds. Vol. 26, Part A. Extracellular and Supporting Structures. Elsevier, New York, 1968. xvi + 295 pp., illus. \$17.

**The Computer and Chemistry.** An Introduction to Programming and Numerical Methods. T. R. Dickson. Freeman, San Francisco, 1968. xii + 216 pp., illus. \$5.75.

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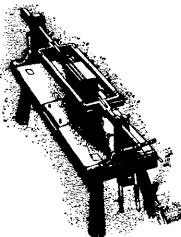
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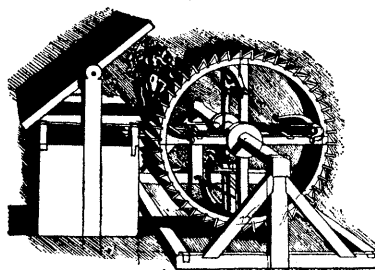
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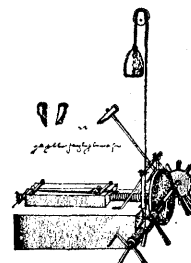
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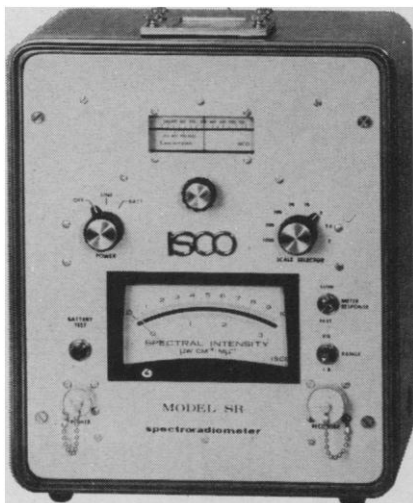
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**Directory of Fire Research in the United States, 1965-1967.** Committee on Fire Research, Division of Engineering, National Research Council. National Acad. of Sciences, Washington, D.C., ed. 4, 1968. vi + 267 pp. Paper, \$7. NAS Publication 1590.

**Ecological Adaptations for Breeding in Birds.** David Lack. Methuen, London, 1968 (distributed in the U.S. by Barnes and Noble, New York). xii + 409 pp., illus. \$15.

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**Encyclopedia of Animal Care (Formerly Black's Veterinary Dictionary).** William C. Miller and Geoffrey P. West. Williams and Wilkins, Baltimore, ed. 8, 1967. viii + 1015 pp., illus. \$10.25.

**Environmental Effects on Polymeric Materials.** Dominick V. Rosato and Robert T. Schwartz, Eds. Vol. 2, Materials. Interscience (Wiley), New York, 1968. xvi + 987 pp., illus. \$42. Polymer Engineering and Technology.

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**Essays on Form in Plants.** C. W. Wardlaw. Manchester University Press, Manchester; Barnes and Noble, New York, 1968. xiv + 399 pp., illus. \$8.75.

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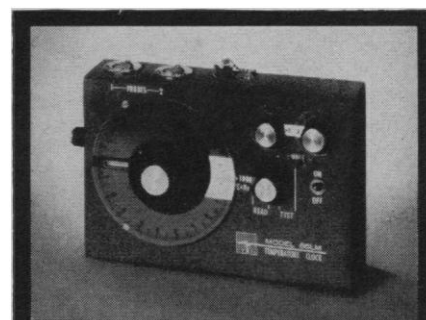
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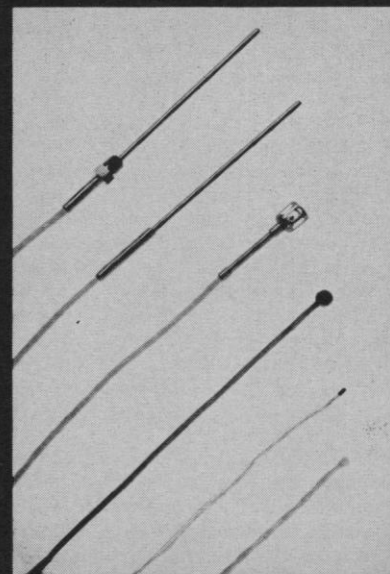
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by Interscience (Wiley), New York). ix + 338 pp., illus. \$11.

**A Glossary of Psychoanalytic Terms and Concepts.** Burness E. Moore, Bernard D. Fine, Mark Kanzer, Bernard L. Pacella, and George H. Wiedeman, Eds. American Psychoanalytic Assoc., New York, 1967. vi + 96 pp. Paper, \$3.25.

**Graphics for Engineers.** Visualization, Communication, and Design. Randolph P. Hoelscher, Clifford H. Springer, and Jerry S. Dobrovolsky. Wiley, New York, 1968. x + 917 pp., illus. \$11.95.

**The Great American Water-Cure Craze.** A History of Hydropathy in the United States. Harry B. Weiss and Howard R. Kemble. Past Time Press, Trenton, N.J., 1967. viii + 236 pp., illus. \$7.50.

**Group Theory and Its Applications.** Ernest M. Loebl, Ed. Academic Press, New York, 1968. xxvi + 696 pp., illus. \$19.50.

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**Handbook of Fuel Cell Technology.** Carl Berger, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1968. xvi + 607 pp., illus. \$18.50.

**Handbook of Middle American Indians.** Vol. 5. Linguistics. Norman A. McQuown, Ed. University of Texas Press, Austin, 1968. x + 402 pp., illus. \$15.

**Heredity, Evolution, and Society.** I. Michael Lerner. Freeman, San Francisco, 1968. xviii + 307 pp., illus. \$8. A Series of Books in Biology.

**Histological Typing of Breast Tumours.** R. W. Scarff and H. Torloni. World Health Organization, Geneva, 1968 (distributed in the U.S. by Columbia University Press, New York). 20 pp. + 40 figures, boxed with 50 color transparencies. \$16. International Histological Classification of Tumours, No. 2.

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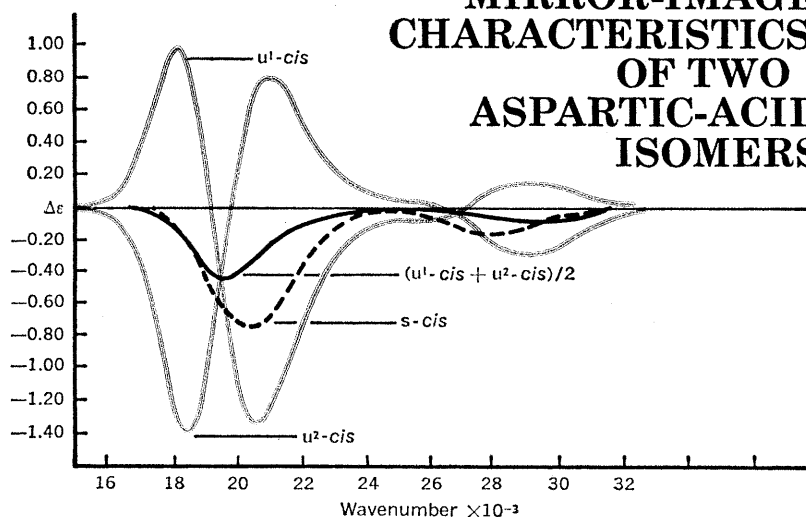
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## CHEMICAL PROFILES

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### PROVING THE MIRROR-IMAGE CHARACTERISTICS OF TWO ASPARTIC-ACID ISOMERS

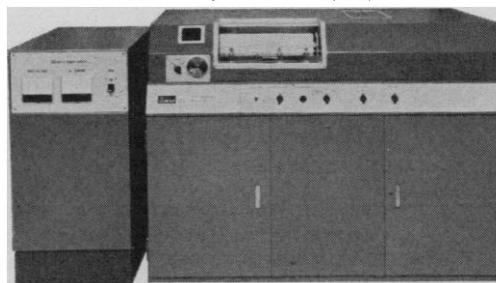


Aspartic acid, with its three donor sites, can form a variety of hard-to-identify chelate isomers. The circular-dichroism profiles drawn here, plotted from data gathered by a Durrum-Jasco CD recorder, are typical of the molecular detective work\* that can be achieved with this versatile instrument.

The steric requirements of aspartic acid indicate that in a cobalt-diethylenetriamine complex, three isomers will predominate: one *s-cis* (symmetrical), shown as a dashed-line profile in the drawing above, and two *u-cis* (unsymmetrical) isomers, shown in color. The latter are essentially mirror images of each other, and the Durrum-Jasco instrument provides a way to identify one from the other.

The configurational contributions to the CD traces of the two mirror-image isomers should, in theory, cancel out, leaving an "average" trace that approximates that of the *s-cis* isomer where there are no configurational contributions. As seen here, a very close correlation is achieved, proving that the two *u-cis* isomers are indeed pseudo-mirror images and providing clues as to their specific forms.

The Durrum-Jasco CD recorder is a powerful analytical tool, used throughout the world to classify and identify complex organic and biochemical compounds. In addition to detailing the conformation and configuration of such substances as steroids, alkaloids, proteins, nucleic acids and synthetic polymers, the instrument can serve to measure their concentrations, kinetic properties, and stereochemical characteristics. Durrum-Jasco CD prices start at \$29,600.



\*AS REPORTED BY J. IVAN LEGG AND DEAN W. COOKE IN THE DECEMBER 20, 1967 ISSUE OF JOURNAL OF THE AMERICAN CHEMICAL SOCIETY.



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This primer surveys all pertinent aspects of the interrelation of biochemistry and biology of connective tissues. The authors correlate and interpret all that is currently known on fine cell structure and secretory function, and on the relation of ground substance and fiber arrangements to the mechanical properties of connective tissues. Synthesis of collagen and polysaccharides, excluded volume effects of protein-polysaccharides, ultra-structure of connective tissue cells, and mechanisms of calcification are among the subjects covered in this clear, concise presentation.

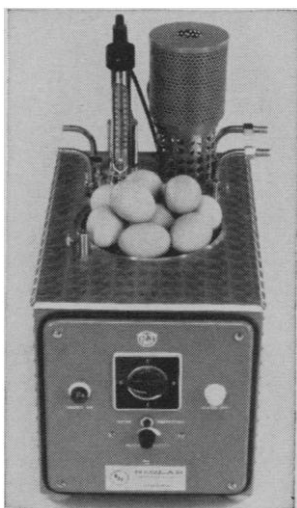
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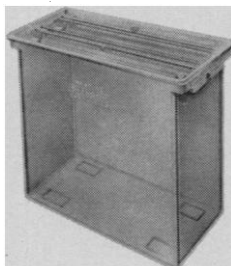
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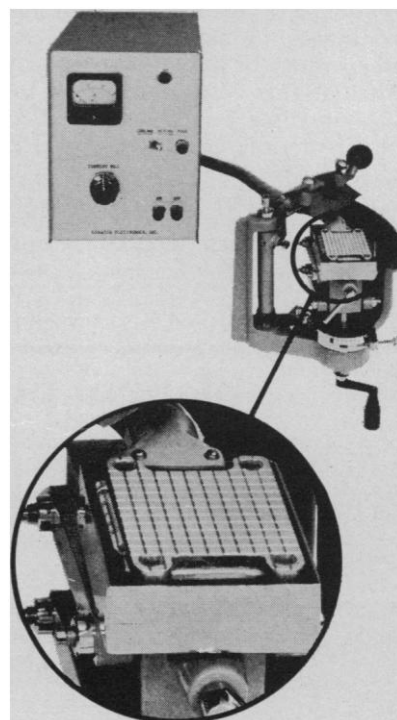


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