

of teratoma cells that suggest that such cells might be useful models for analyzing tissue interactions, Nicholson *et al.* discuss adhesive interactions in tumor development, and De Petrocellis *et al.* report on the control of DNA replication via cell interactions in early development in sea urchins. The normal (Frank and Fischbach) and abnormal (Macagno) development of a functionally significant adhesive interaction, the synapse, is also discussed.

The book provides a valuable collection of papers that offer insight into the development of a number of systems. I recommend it for both students and investigators with interests in developmental biology.

BRIAN S. SPOONER

*Medical Research Council  
Laboratory of Molecular Biology,  
Cambridge CB2 2QH, England*

## Plant Hormones

**Hormone Action in the Whole Life of Plants.** KENNETH V. THIMANN. University of Massachusetts Press, Amherst, 1977. xii, 448 pp., illus. \$35.

The scientific career of Kenneth Thimann has coincided almost exactly with the vigorous development of the study of plant hormones, and, indeed, he and his students have contributed substantially to many aspects of that development. Like Dean Acheson at the United Nations, Thimann was "present at the creation"; as a young biochemist, he came into early and close contact with Frits Went, whose 1928 Ph.D. thesis conclusively established the existence in plants of the diffusible growth hormone, auxin. With Went, he wrote, in the late 1930's, a definitive monograph on the history, methodology, and state of our understanding of the physiology and biochemistry of plant hormones. First at Caltech, later at Harvard, now at Santa Cruz, he has continued his incisive exploration of auxin and other regulators of plant growth and development. In 1974, he accepted the invitation of the University of Massachusetts to collect many of his ideas, insights, and interpretations into a series of lectures surveying anew this entire enlarged field. This book, which is based on the lectures, is a valuable and highly personal narrative, in which historical, anecdotal, and experimental information are skillfully blended with literary grace and skill.

Reading the book will give the advanced student and professional worker

an appreciation not only of our present understanding of hormonal regulation in the higher plant, but also of stages in the evolution of our ideas. Thimann follows the plant from birth to death, starting with seed germination and proceeding chronologically through all developmental stages to maturity and the production of new seed. In the course of this intellectual journey, he gives detailed treatment to hormonal aspects of seed germination, cell enlargement, polarity, tropisms, differentiation, organogenesis, leaf and root growth, apical dominance, flowering, fruiting, senescence, and abscission. In addition, special chapters deal with the chemistry of plant hormones and concepts of their mode of action.

Thimann admits that "truly encyclopedic coverage was the last thing at which the lectures aimed"; accordingly he uses data from his own laboratory or the laboratories of his students wherever possible. He explains that "in many cases the data obtained by others could have about equally well been used, but our own materials were at hand." The result is that one does not expect or get a balanced coverage of the literature from the book; Thimann refers the reader instead to his extensively documented chapters in volume 6B of the treatise *Plant Physiology*, edited by F. C. Steward.

Into each personal synthesis, some error of fact, emphasis, or interpretation must inevitably creep, and this book is no exception. To take some trivial examples, Sievers, whose work on statoliths in *Chara* is discussed by Thimann, is not from Halle, East Germany, but rather from Bonn, West Germany; Kerns, not Carns, worked with Clark on auxin-induced flowering in pineapple; and my 1949 work on riboflavin-sensitized photoreactions was done not at Yale but at Caltech. Dealing with matters of scientific fact, Thimann states flatly on p. 33, as he has done elsewhere on the basis of experiments in his laboratory, that sucrose produces only very slight effects on the growth of excised etiolated pea epicotyl sections. But, as has been pointed out before, this ignores contrary work done elsewhere; Purves has clearly shown marked effects of sucrose on truly dark-grown pea tissue, and this has been independently confirmed elsewhere. Further, Bertsch and Hillman have shown that red light perceived by phytochrome specifically inhibits this extra growth induced by sucrose. Since the last finding might well explain the difference between Thimann's findings and those of others, one

might have expected less dogmatic treatment of the issue. In view of what we now know about auxin-mediated proton extrusion, sucrose-proton cotransport into plant cells, and the effects of phytochrome on the latter process, this matter is not trivial. Similarly, not all will agree with Thimann's interpretation of his experiments on the role of starch statoliths in the geotropism of gibberellin-treated *Avena* coleoptiles and of the significance of "crystal bodies" in *Avena* and *Phycomyces* or with his treatment of the thorny issue of carotenoid as opposed to riboflavin as a photoreceptor in phototropism. Regarding the last issue, it would have been helpful to disentangle the question of the nature of the photoreceptor from the question of subsequent physiology; specifically, the possible role of riboflavin as a photoreceptor in phototropism is made neither less nor more probable by the fact that lateral auxin transport, rather than auxin photooxidation, occurs following light absorption, since either pigment could produce either effect. It would also have been helpful to cite at least one literature reference providing data on flavin photoreception.

No book produced in the last ten years has so successfully integrated the vast and complex literature of this field. The author and the University of Massachusetts deserve congratulations for the excellence of the product of their collaboration.

ARTHUR W. GALSTON

*Department of Biology, Yale University,  
New Haven, Connecticut 06520*

## Books Received

**Aerial Remote Sensing Techniques in Archeology.** Papers from a symposium, Bal Harbour, Fla., May 1972. Thomas R. Lyons and Robert K. Hitchcock, Eds. Chaco Center (National Park Service and University of New Mexico), Albuquerque, 1977 (available from the Superintendent of Documents, Washington, D.C.). xiv, 202 pp., illus. Paper.

**Annual Review of Astronomy and Astrophysics.** Vol. 15. Geoffrey Burbidge, David Layzer, and John G. Phillips, Eds. Annual Reviews, Palo Alto, Calif., 1977. xii, 602 pp., illus. \$17.

**The Anthropological Imagination.** Muriel Dimen-Schein. McGraw-Hill, New York, 1977. xviii, 294 pp. Cloth, \$7.95; paper, \$4.95.

**Antibodies in Human Diagnosis and Therapy.** Papers from a symposium. Edgar Haber and Richard M. Krause, Eds. Raven, New York, 1977. xviii, 414 pp., illus. \$27.50.

**The Application of Technology in Developing Countries.** Papers from a seminar series, Aug.-Dec. 1976. Robert L. Bulfin, Jr., and J. Richard Greenwell, Eds. University of Ari-

(Continued on page 914)

## BOOKS RECEIVED

(Continued from page 874)

zona Office of Interdisciplinary Programs and Office of Arid Lands Studies, Tucson, 1977. x, 176 pp. Paper, \$10.

**Applications of Bifurcation Theory.** Proceedings of a seminar, Madison, Wis., Oct. 1976. Paul H. Rabinowitz, Ed. Academic Press, New York, 1977. x, 390 pp., illus. \$15.50. Publication No. 38 of the Mathematics Research Center, University of Wisconsin at Madison.

**Applied Geomorphology.** A Perspective of the Contribution of Geomorphology to Interdisciplinary Studies and Environmental Management. John R. Hails, Ed. Elsevier, New York, 1977. xvi, 418 pp., illus. Paper, \$39.95.

**Applied Salt-Rock Mechanics 1.** The In-situ Behavior of Salt Rocks. C. A. Baar. Elsevier, New York, 1977. viii, 294 pp., illus. \$38.95.

Developments in Geotechnical Engineering 16A.

**Approaches to the Study of International Organizations.** Unesco, Paris, 1977 (U.S. distributor, Unipub, New York). 208 pp. Paper. *International Social Science Journal*, vol. 29, No. 1.

**Atlas of Descriptive Histology.** Edward J. Reith and Michael H. Ross. Harper and Row, New York, ed. 3, 1977. xiv, 288 pp. \$14.95.

**Beyond the Crisis.** Norman Birnbaum, Ed. Oxford University Press, New York, 1977. xvi, 232 pp. Cloth, \$11.95; paper, \$5.95.

**Biochemical Actions of Hormones.** Vol. 4. Gerald Litwack, Ed. Academic Press, New York, 1977. xxxvi, 514 pp., illus. \$37.50.

**Biology as a Social Weapon.** Papers from a symposium, Ann Arbor, Mich., Sept. 1975. The Ann Arbor Science for the People Editorial Collective. Burgess, Minneapolis, 1977. vi, 154 pp. Paper, \$5.95.

**Cocaine: 1977.** Robert C. Petersen and

Richard C. Stillman, Eds. National Institute on Drug Abuse, Rockville, Md., 1977 (available from the Superintendent of Documents, Washington, D.C.). viii, 224 pp. Paper, \$3. NIDA Research Monograph No. 13.

**Combinatorial Surveys.** Proceedings of a conference, Egham, Surrey, England, July 1977. Peter J. Cameron, Ed. Academic Press, New York, 1977. viii, 226 pp. \$13.65.

**Computers and Their Societal Impact.** Martin O. Holoien. Wiley, New York, 1977. xiv, 264 pp., illus. \$10.95.

**Control Mechanisms in Cell-Type Conversion in Newt Lens Regeneration.** Tuneo Yamada. Karger, Basel, 1977. x, 126 pp., illus. \$32.75. Monographs in Developmental Biology, vol. 13.

**Corpus of Maya Hieroglyphic Inscriptions.** Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Mass., 1977. Vol. 3, part 1. Ian Graham and Eric von Euw. 62 pp. Paper, \$10. Vol. 4, part 1. Eric von Euw. 68 pp. Paper, \$10.

**A Course on the Application of Group Theory to Quantum Mechanics.** Irene Verona Schensted. NEO Press, Peaks Island, Me., 1976. 342 pp. Cloth, \$10; paper, \$5.

**Culture-Bound Syndromes, Ethnopsychiatry, and Alternate Therapies.** Papers from a conference, Honolulu, Mar. 1972. William P. Lebra, Ed. Published for East-West Center by University Press of Hawaii, Honolulu, 1976. x, 306 pp. \$16. Mental Health Research in Asia and the Pacific, vol. 4.

**Cyclic 3',5'-Nucleotides.** Mechanisms of Action. Hinrich Cramer and Joachim Schultz, Eds. Wiley-Interscience, New York, 1977. xiv, 554 pp., illus. \$38.

**Décalages vers le Rouge et Expansion de l'Univers; L'Evolution des Galaxies et Ses Implications Cosmologiques.** Papers from two colloquia, Paris, 1976. Editions du Centre National de la Recherche Scientifique, Paris, 1977. 620 pp., illus. Paper, 180 F.

**Drug Lag.** Federal Government Decision Making. Rita Ricardo Campbell. Hoover Institution Press, Stanford, Calif., 1976. viii, 62 pp. Paper, \$3.

**The Ecology and Evolution of Animal Behavior.** Robert A. Wallace. Goodyear, Pacific Palisades, Calif., 1977. xi, 348 pp., illus. \$15.95. Reprint of the 1973 edition.

**Ecoscience.** Population, Resources, Environment. Paul R. Ehrlich, Anne H. Ehrlich, and John P. Holdren. Freeman, San Francisco, 1977. xviii, 1052 pp., illus. Cloth, \$39.95; paper, \$19.95.

**The Emergence of Professional Social Science.** The American Social Science Association and the Nineteenth-Century Crisis of Authority. Thomas L. Haskell. University of Illinois Press, Urbana, 1977. xii, 276 pp. \$12.

**Environmental Effects on Crop Physiology.** Proceedings of a symposium, Bristol, England, Apr. 1975. J. J. Landsberg and C. V. Cutting, Eds. Academic Press, New York, 1977. xviii, 388 pp., illus. \$28.35.

**ERG, VER and Psychophysics.** Papers from a symposium, Louisville, Ky., May 1976. Theodore Lawwill, Ed. Junk, The Hague, 1977. viii, 404 pp., illus. Dfl. 120. Documenta Ophthalmologica Proceedings Series, vol. 13.

**Essays on an Information Scientist.** Eugene Garfield. ISI Press, Philadelphia, 1977. Vol. 1, 1962-1973. xlviii, 544 pp. Vol. 2, 1974-1976. xiv, 710 pp. \$25.

**The Evolving Continents.** Brian F. Windley. Wiley, New York, 1977. xviii, 386 pp., illus. Cloth, \$29.92; paper, \$11.95.

**The Eye.** Vol. 2B, The Photobiology of Vision. Hugh Davson, Ed. Academic Press,



Begin with the Microcorder, the first portable, digital seismic event recorder with keyboard entry and five microprocessors to process data and control recorder functions — or try one of our family of signal conditioners to improve your existing recorder performance. There's our AR-320 Helicorder Amplifier that offers one, two, or three channels and solid state, modular design with optional built-in time mark programs. There's our 42.50 Short-Period Amplifier that converts from analog to telemetry applications with the addition of a VCO. You can even magnify the 42.50's diversity by combining up to three of the units with our programmable PC-100 Pulse Calibrator and our Field Case, Model 49.50. It's a seismic signal control package that's portable, durable, and precise. Next, try our low-cost 46.12 Discriminator that features plug-in circuitry for quick center frequency changes. Finally, there's our S-500 Short-Period Seismometer, a seismic detector without equal in size and applications. So, write or call Teledyne Geotech today, we're waiting to help you interpret the earth.

**TELEDYNE GEOTECH**  
Teledyne Geotech, 3401 Shiloh Road,  
Garland, Texas 75041/(214) 271-2561

# Finnpipette

Accurate, reproducible,  
variable volume micropipetting. 1  $\mu$ l-5000  $\mu$ l  
**When you consider the cost of test failure  
through faulty pipetting - you'll choose the  
precision Finn timer quality provides.**  
70,000 in use world wide



Send for FREE  
literature today!

5 instruments cover the range from  
1  $\mu$ l to 5,000  $\mu$ l with continuous  
adjustment and substitute 330 fixed  
volume pipettes.

Complete the system with quality  
Volumetrics tips and our new  
**SAFE/DETIPPER** for easy, safe tip  
removal and disposal.

**VARIABLE VOLUMETRICS, INC.**  
volumetrics, inc. 18 Cummings Park,  
Woburn, MA 01801  
(617) 933-8170

Circle No. 135 on Readers' Service Card

## THE NEW TECHNOLOGIES

### electronics and materials

#### Science Compendia Series

Philip H. Abelson, Series Editor

#### electronics: the continuing revolution

	Casebound	Paperbound
Retail	\$ 12.95	\$ 4.95
AAAS Member	11.95	4.45

#### materials: renewable and nonrenewable resources

	Casebound	Paperbound
Retail	\$ 12.00	\$ 4.50
AAAS Member	10.50	4.00



Send your order to  
AAAS Department D3  
1515 Massachusetts Ave., NW  
Washington, DC 20005

916

Circle No. 400 on Readers' Service Card

New York, ed. 2, 1977. xx, 690 pp., illus.  
\$49.50.

**Fiber Bundle Techniques in Gauge Theories.**  
W. Drechsler and M. E. Mayer. A. Böhm and  
J. D. Dollard, Eds. Springer-Verlag, New  
York, 1977. x, 248 pp. Paper, \$11.40.

**Genetic Manipulation as It Affects the Cancer Problem.** Proceedings of a meeting, Miami, Jan. 1977. J. Schultz and Z. Brada, Eds. Academic Press, New York, 1977. xiv, 274 pp., illus. \$14.50.

**Geriatric Orthopaedics.** Michael Devas, Ed. Academic Press, New York, 1977. xiv, 200 pp., illus. \$16.65.

**IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man.** International Agency for Research on Cancer, Lyon, 1977 (U.S. distributor, WHO Publications Center USA, Albany, N.Y.). Vol. 13, Some Miscellaneous Pharmaceutical Substances. 256 pp. Paper, \$12. Vol. 14, Asbestos. 106 pp. Paper, \$6.

**Immunobiology of Gametes.** Papers from a conference, Baltimore, May 1976. M. Edidin and M. H. Johnson, Eds. Cambridge University Press, New York, 1977. x, 310 pp., illus. \$29.50.

**International Legal Aspects of Marine Pollution.** Antonia Di Bari. Consiglio Nazionale delle Ricerche, Rome, 1977. 120 pp. Paper, \$10.

**Introductory Soil Science Laboratory Manual.** Robert G. Palmer and Frederick R. Troeh. Iowa State University Press, Ames, ed. 2, 1977. viii, 136 pp., illus. Spiral bound, \$5.50.

**Joints in Buildings.** Bruce Martin. Godwin, London, and Halsted (Wiley), New York, 1977. viii, 226 pp., illus. \$37.50.

**A Manual for Repertory Grid Technique.** Ray Fransella and Don Bannister. Academic Press, New York, 1977. xiv, 194 pp. Cloth, \$14.65; paper, \$7.50.

**Manual of Mineralogy (after James D. Dana).** Cornelius S. Hurlbut, Jr., and Cornelius Klein. Wiley, New York, ed. 19, 1977. xii, 532 pp., illus. \$19.95.

**Marine Manganese Deposits.** G. P. Glasby, Ed. Elsevier, New York, 1977. xii, 524 pp., illus. \$49. Elsevier Oceanography Series, 15.

**Maturity and Competence.** A Transcultural View. Douglas H. Heath. Gardner Press, New York, 1977 (distributor, Halsted [Wiley], New York). xxii, 288 pp. \$18.

**Medical Aspects of the Imported Fire Ant.** Robert B. Rhoades. University Presses of Florida, Gainesville, 1977. viii, 76 pp., illus. \$4.75.

**Methodicum Chemicum.** Friedhelm Korte, Ed. Vol. 11, Natural Compounds. Part 2, Antibiotics, Vitamins and Hormones. F. Korte and M. Goto, Eds. Academic Press, New York, Thieme, Stuttgart, and Maruzen, Tokyo, 1977. x, 304 pp., illus. \$49.50.

**New Perspectives in Personal Construct Theory.** D. Bannister, Ed. Academic Press, New York, 1977. x, 356 pp., illus. \$21.15.

**Nobel Lectures in Molecular Biology 1933-1975.** Elsevier, New York, 1977. x, 534 pp., illus. Paper, \$15.

**Ocean Thermal Energy Conversion.** Legal, Political and Institutional Aspects. H. Gary Knight, J. D. Nyhart, and Robert E. Stein, Eds. Lexington (Heath), Lexington, Mass., 1977. xiv, 252 pp., illus. \$16.

**Olorgesailie.** Archeological Studies of a Middle Pleistocene Lake Basin in Kenya. Glynn L. Isaac assisted by Barbara Isaac. University of Chicago Press, Chicago, 1977. xvi, 272 pp., illus. + plates. Paper, \$7.

**Patterns of Symmetry.** Marjorie Senechal and George Fleck, Eds. University of Massa-

SCIENCE, VOL. 199

chusetts Press, Amherst, 1977. viii, 152 pp., illus. \$12.

**Perceptions 4: People and Agricultural Land.** Charles Beaubien and Ruth Tabacnik. Science Council of Canada, Ottawa, 1977. 138 pp., illus. Paper, \$4.80.

**Pericyclic Reactions.** Vol. 2. Alan P. Marchand and Roland E. Lehr, Eds. Academic Press, New York, 1977. xii, 330 pp., illus. \$35. Organic Chemistry, vol. 35.

**The Physiology and Pathophysiology of the Skin.** Vol. 4, The Hair Follicle. A. Jarrett, Ed. Academic Press, New York, 1977. xx + pp. 1237-1540, illus. + index. \$36.10.

**Physiology of Nematodes.** D. L. Lee and H. J. Atkinson. Columbia University Press, New York, ed. 2, 1977. x, 216 pp., illus. \$16.

**Phytochrome.** A Bibliography with Author, Biological Materials, Taxonomic, and Subject Indexes of Publications prior to 1975. David L. Correll, John L. Edwards, and W. Shropshire, Jr. Published for Radiation Biology Laboratory, Smithsonian Institution by Smithsonian Institution Press, Washington, D.C., 1977 (available from W. Shropshire, Jr., Smithsonian Radiation Biology Laboratory, Rockville, Md.). xii, 411 pp. Cloth.

**The Pity of It All.** Polarisation of Racial and Ethnic Relations. Leo Kuper. University of Minnesota Press, Minneapolis, 1977. 302 pp. \$17.50.

**La Politique de la Science et de la Technologie en Roumanie.** Unesco Press, Paris, 1977 (U.S. distributor, Unipub, New York). 110 pp. Paper. Etudes et Documents de Politique Scientifique, No. 36.

**Proceedings of the First Marcel Grossmann Meeting on General Relativity.** Trieste, Italy, July 1975. Remo Ruffini, Ed. North-Holland, Amsterdam, 1977 (U.S. distributor, Elsevier, New York). xvi, 672 pp., illus. \$39.50.

**Proceedings of the International Conference on Quantitative Genetics.** Ames, Iowa, Aug. 1976. Edward Pollak, Oscar Kempthorne, and Theodore B. Bailey, Jr., Eds. Iowa State University Press, Ames, 1977. xxiv, 872 pp., illus. \$18.50.

**Progress in Acetabularia Research.** Papers from a meeting, Amherst, Mass., Sept. 1976. C. L. F. Woodcock, Ed. Academic Press, New York, 1977. xvi, 342 pp., illus. \$18.

**Progress in Medical Genetics.** New Series. Vol. 2. Arthur G. Steinberg, Alexander G. Bearn, Arno G. Motulsky, and Barton Childs, Eds. Saunders, Philadelphia, 1977. x, 290 pp., illus. \$27.50.

**Prostaglandin Research.** Pierre Crabbé, Ed. Academic Press, New York, 1977. xvi, 344 pp., illus. \$26. Organic Chemistry, vol. 36.

**Public Administration as a Developing Discipline.** Robert T. Golembiewski. Dekker, New York, 1977. Two parts. Part 1, Perspectives on Past and Present. xvi, 246 pp. \$16.75. Part 2, Organization Development as One of a Future Family of Miniparadigms. xviii, 210 pp. \$16.75. Political Science and Public Administration, 1.

**Recombinant Molecules.** Impact on Science and Society. Papers from a meeting, Boston, 1976. Roland F. Beers, Jr., and Edward G. Bassett, Eds. Raven, New York, 1977. xvi, 540 pp., illus. \$39.50. Miles International Symposium Series, No. 10.

**Regulation of Haemoglobin Synthesis.** J. Neuwirt and P. Poňka. Translated from the Czech edition. Nijhoff, The Hague, 1977. 206 pp., illus. Dfl. 50.

**Regulatory Biology.** Papers from a colloquium, Columbus, Ohio, Sept. 1975. James C. Copeland and George A. Marzluf, Eds. Ohio State University Press, Columbus, 1977. viii,

# TRIS AMINO® TRIS AMINO·HCl

Both come from Brae Labs, so each represents the highest purity reagent grade available. Virtually devoid of heavy metals.

And now you can get both in laboratory quantities!

The usefulness of TRIS AMINO\* as an effective buffer in sensitive biochemical

reactions is well known.

So compare Brae purity with products you've used in the past. We think you'll like the results... and the price.

But to prove it, you'll need a supply. So contact us now for a free sample, specifications and complete information.



Brae Laboratories, Inc.  
230 Centre St.  
Nutley, N.J. 07110  
(201) 661-1061

\*A brand of tris (hydroxymethyl) aminomethane

Circle No. 193 on Readers' Service Card

## SHARP Microtome Knives in Seconds-

IN ONE SIMPLE OPERATION, the  
**NEW H/I-76** reconditions  
hones and stropps any conventional  
knife — to meet pathology  
requirements



Completely dry process —  
no messy abrasives changes

Can be operated by anyone in lab  
without prior skill

**H/I 76**

Made in USA

Ask for brochure and free demonstration.



**HACKER  
INSTRUMENTS  
INC.**

Box 657, Fairfield, New Jersey 07006 • (201) 226-8450

Circle No. 22 on Readers' Service Card



358 pp., illus. \$20. Ohio State University Biosciences Colloquia, No. 2.

**Second European Nutrition Conference.** Munich, Sept. 1976. N. Zöllner, G. Wolfram, and Ch. Keller, Eds. Karger, Basel, 1977. xii, 516 pp., illus. \$55.75.

**Selection in One- and Two-Locus Systems.** Thomas Nagylaki. Springer-Verlag, New York, 1977. viii, 208 pp., illus. Paper, \$11. Lecture Notes in Biomathematics, vol. 15.

**Solar Heating Design by the f-Chart Method.** William A. Beckman, Sanford A. Klein, and John A. Duffie. Wiley-Interscience, New York, 1977. xviii, 200 pp., illus. \$14.95.

**Sputnik, Scientists, and Eisenhower.** A Memoir of the First Special Assistant to the President for Science and Technology. James R. Killian, Jr. MIT Press, Cambridge, Mass., 1977. xxiv, 316 pp., illus. \$14.95.

**Steady-State Economics.** The Economics of Biophysical Equilibrium and Moral Growth. Herman E. Daly. Freeman, San Francisco, 1977. xii, 186 pp. Cloth, \$9.95; paper, \$4.95.

**Strength of Materials.** John N. Cernica. Holt, Rinehart and Winston, New York, ed. 2, 1977. xii, 510 pp., illus. \$17.

**Stroke.** Richard A. Thompson and John R. Green, Eds. Raven, New York, 1977. xiv, 238 pp., illus. \$20. Advances in Neurology, vol. 16.

**Student-to-Student Counseling.** An Approach to Motivating Academic Achievement. William F. Brown. Published for the Hogg Foundation for Mental Health by University of Texas Press, Austin, ed. 2, 1977. xiv, 356 pp., illus. \$10.95. Hogg Foundation Research Series.

**Sulphur and Its Inorganic Derivatives in the Canadian Environment.** National Research Council of Canada Associate Committee on Scientific Criteria for Environmental Quality, Ottawa, 1977. 428 pp., illus. Paper, \$5.

**Tales from the South Pacific Islands.** Told by Anne Gittins. Illustrated by Frank Rocca. Stemmer House, Owings Mills, Md., 1977. vi, 90 pp. \$4.95.

**Underfoot.** An Everyday Guide to Exploring the American Past. David Weitzman. Scribner, New York, 1977. 192 pp., illus. Paper, \$7.95.

**Urban Transportation Planning.** Current Themes and Future Prospects. Papers from a conference, Leeds, England, 1976. Peter Bon-sall, Quasim Dalvi, and Peter J. Hills, Eds. Abacus Press, Tunbridge Wells, Kent, England, and Allanheld Osmun, Montclair, N.J., 1977. vi, 386 pp. \$29.50.

**What Is This Thing Called Science?** An Assessment of the Nature and Status of Science and Its Methods. A. F. Chalmers. Humanities Press, Atlantic Highlands, N.J., 1977. xviii, 158 pp. Cloth, \$14.75; paper, \$8.75.

**Work and Play among the Aged.** Interaction, Replication and Emergence in a Jerusalem Setting. Don Handelman. Van Gorcum, Assen, the Netherlands, 1977. xvi, 194 pp. Paper, Dfl. 29.50.

**The World's Worst Weeds.** Distribution and Biology. LeRoy G. Holm, Donald L. Plucknett, Juan V. Pancho, and James P. Herberger. Published for the East-West Center by University Press of Hawaii, Honolulu, 1977. xii, 610 pp., illus. \$35.

**The Year Book of Drug Therapy 1977.** Daniel L. Azarnoff, Leo E. Hollister, and David G. Shand, Eds. Year Book Medical Publishers, Chicago, 1977. 426 pp., illus. \$24.50.

**The Year Book of Pathology and Clinical Pathology 1977.** Frank A. Carone and Rex B. Conn, Eds. Year Book Medical Publishers, Chicago, 1977. 444 pp., illus. \$25.75.

## Personnel Placement

Personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, or national origin.

**Positions Wanted:** 40¢ per word; \$4 extra for use of box number. \$10 minimum charge, per insertion. Prepayment required. Rate available only to individuals; personnel agencies, companies, colleges, and universities take display rate for all advertising.

**Display (Positions Open, Market Place, and so forth):** \$5.80 per millimeter; \$145 minimum (covers 25 millimeters on single column; 25 millimeters equals 10 lines of 50 spaces per line), per insertion. No charge for use of box number. Rates net. No agency commission for ads under 4 inches. No cash discount. Prepayment required for foreign advertising. Purchase orders and billing information required for all other ads.

SCIENCE is published weekly, on Friday. Copy must be received in writing by Wednesday, 3½ weeks before Friday issue date required. Send copy for all positions wanted ads and display ads under 5 inches to:

SCIENCE, Room 207  
1515 Massachusetts Ave., NW  
Washington, D.C. 20005  
Telephone: 202-467-4456

Send copy for display ads, 1/6 page and larger, to:

Scherago Associates, Inc.  
1515 Broadway  
New York, N.Y. 10036  
Telephone: 212-730-1050

Blind Ad replies should be addressed as follows:

Box (give number)  
SCIENCE  
1515 Massachusetts Ave., NW  
Washington, D.C. 20005

## POSITIONS WANTED

**Agricultural Biochemist:** Ph.D. 1975. Background: cereal protein quality, analytical biochemistry, food analysis, and herbicide pesticide work. Previous international assignment; seeking supervisory R & D position. J. H. Wolfram, 68 New Road, Southampton, Pennsylvania 18966; telephone: 215-355-5826. 2/24; 3/3

**Biochemist:** Ph.D. Seeking 2- to 3-year research position; 2-year postdoctoral research; 1 year at NIH; publications; reproductive endocrinology of rodents and monkeys, radioimmunoassays of cyclic AMP, steroids, gonadotropins, immunology, and cell culture. Box 63, SCIENCE. X

**Chemical/Biomedical Engineer:** doctorate (summer 1978); master's in CHE; graduate certificate in BME. Teaching experience; research experience; opening position in university/industry. Box 67, SCIENCE. X

**Chemist/Pharmacologist.** Ph.D. seeks challenging position in government, industry, or academia. Experience: pharmacokinetics, metabolism, protein drug binding, protein chemistry, radioisotopes, kidney disease, rheumatoid arthritis, and muscle disease. Box 65, SCIENCE. X

**Immunologist-Microbiologist.** M.S., D.V.M., postdoctorate. Wants to change position. Several years of experience in research and practice. Seeks industry/research/teaching position. Negotiable term. Box 68, SCIENCE. X

**Oncologist.** ABIM. MO. Medical school faculty with administrative health care experience; desires relocation. Preference: medical school interested in developing cancer program. Box 64, SCIENCE. 2/24; 3/3, 10, 17

**Project Leader:** M.S.E.E.; experience in biomedical and engineering projects; familiar with medical device legislation. Seeks industry/government/research position with project responsibility, for example, product manager, principal engineer, staff scientist. Box 66, SCIENCE. X

**Veterinarian, laboratory animal;** experienced; AC-LAM diplomate; ACVP eligible; M.P.H.; research interests; New York license; New York metropolitan area. Box 62, SCIENCE. X

## POSITIONS OPEN

### ANATOMY AND PHYSIOLOGY

Applications are invited for a tenure-track position at the assistant or associate professor level available beginning September 1978. Applicants should have a Ph.D. Primary duties involve teaching anatomy and physiology to undergraduate students in Allied Health Programs. Development of an advanced course in specialty area encouraged. Send résumé and three names of references to: **Dr. D. F. Gordon, Jr., Chairman, Department of Medical Laboratory Sciences, Box 191, Quinnipiac College, Hamden, Conn. 06518.**

*An Affirmative Action/Equal Opportunity Employer*

### DEPARTMENT OF ANATOMY WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE

Applications are invited from anatomists experienced in teaching gross, microscopic, and neuroanatomy. Applicants must have postdoctoral research experience and an established research program of high quality which applies in vivo microscopic, physiologic, and pharmacologic methods to the study of the microvascular systems of organs. Closing date for applications is 15 March 1978. Submit curriculum vitae, brief description of research interests, and names of three references to: **Dr. Robert S. McCuskey, Department of Anatomy, West Virginia University Medical Center, Morgantown, West Virginia 26506. West Virginia University is an Equal Opportunity-Affirmative Action Employer.**

**AQUATIC BIOLOGISTS.** Possibility of one or more 1-year positions in the areas of fisheries, macroinvertebrates, and phycology for environmental impact studies. B.S. required. Salary \$10,200 to \$11,988. Send résumé, transcripts, and two letters of recommendation to: **Personnel Office, Central Michigan University (CMU), Mt. Pleasant, Michigan 48859** by 15 March. *CMU is a non-discriminatory Education Institution and Employer.*

A position of **AQUATIC ECOLOGIST** is available in the Water Resources Division, U.S. Geological Survey. Applicants should have research experience in nutrient uptake, stream ecology, and ecological modeling. The incumbent will participate in a study of nutrient dynamics in stream ecosystems with a geochemist and a hydrologist and will provide a comprehensive data set, consistent with needs of an ecological model, to begin elucidation of processes regulating solute concentrations in streams. Applicants should submit a résumé and publications to: **Dr. Harry V. Leland, Research Advisor for Ecology, Water Resources Division, U.S. Geological Survey, Menlo Park, California 94025.**

**ASSISTANT DIRECTOR, MARINE LABORATORY.** Ph.D. and marine-oriented research background required. Administrative responsibility for managing the Baruch field station near Georgetown, S.C. Some research. Salary of \$16,000 per year and residence on the field station provided. This is a 3-year appointment. Send a letter of intent, curriculum vitae, and names and addresses of three references by 20 March 1978 to: **Dr. Bruce C. Coull, Baruch Institute, University of South Carolina, Columbia, S.C. 29208.**

### DENDROLOGY—ASSISTANT PROFESSOR

Tenure-track position with primary responsibility of teaching undergraduate dendrology. Teaching of specialized forest ecology and silviculture courses will also be required. Ph.D. required in forestry or related field. Send application and professional papers by 15 March 1978 to: **Dr. Dale A. Thornburgh, Forestry Department, Humboldt State University, Arcata, California 95521.**

### ASSISTANT PROFESSOR—MICROBIOLOGIST/ IMMUNOLOGIST

Tenure-earning position in the Department of Biological Sciences at Florida International University to begin September 1978. Ph.D. required with commitment to teaching and research in microbiology and immunology. Applicants should submit résumé, transcripts, statement of research interests, and three letters of recommendation by 1 March 1978: **Dr. C. K. Okubo, Department of Biological Sciences, Florida International University, Miami, Florida 33199. An Equal Opportunity/Affirmative Action Employer.** A member of the State University System of Florida.