

conceptual framework linking development, nutrition, and aging and, in the process, provide a means of better understanding neoplasia and at the other extreme a tightly focused review by M. H. Bernstein of the processes by which flying birds maintain thermal homeostasis despite power inputs tenfold greater than those at rest. Parts of several papers look familiar, having been presented at other venues, but this does not seem inappropriate given that the book is intended partly for students. I enjoyed the opportunity to observe further the development of C. R. Taylor's ideas on allometry as they relate to energy metabolism, support systems for metabolism, and locomotion. At this point his conclusion that allometry is a powerful tool for design analysis seems scarcely controversial. Taylor's analysis is nicely complemented by that of E. R. Weibel on oxygen transport. Schmidt-Nielsen has been an eloquent advocate of the value of comparative studies in physiology, and I'm sure he appreciated M. Peaker's discussion of salt glands, which points out the particular utility of the comparative approach for facilitating understanding of what initially appear to be unrelated processes.

The companion volume effectively documents the role that Schmidt-Nielsen's research and writings have played in comparative physiology, particularly with respect to physiological scaling, energy costs of locomotion, temperature regulation, avian respiration, function of salt-secreting glands, and osmotic problems. He should take satisfaction in the number of productive investigators, many of whom were in attendance at the conference, who manifest his influence. Physiological adaptation to the environment has been a prominent theme in Schmidt-Nielsen's work, and I believe the value of the companion volume would have been enhanced by a more concerted effort to place this theme in evolutionary perspective. (K. Johansen's paper on blood, circulation, and the rise of air breathing and E. C. Crawford's on thermoregulation do attempt to introduce some evolutionary considerations.) An opening of a badly needed dialogue between comparative physiologists and evolutionary theorists would have served to commemorate Schmidt-Nielsen's birthday in grand style.

My views on the need for a companion volume to Schmidt-Nielsen's textbook are probably influenced somewhat by having been the recipient of college textbook bills for three Dawsons and by teaching at an institution where extensive journal holdings are readily avail-

able to students. The book does not fully supplement the original, and there is little sustenance for persons who wish to explore further topics in endocrinology or neurobiology. However, the first four parts do work well in enunciating current issues and approaches in certain areas of comparative physiology. I was also very much taken with R. Beeuwicke III's contribution, which beautifully illustrates how understanding proceeds in science, through tracing the development of successive models to account for the operation of the renal countercurrent multiplier. These positive features will lead me to arrange to place *A Companion to Animal Physiology* on library reserve for my course in comparative physiology. Assignment of the paperback version would seem an appropriate strategy for instructors who wish to require it in addition to *Animal Physiology* but share my concern about the burden of added textbook costs.

WILLIAM R. DAWSON

*Division of Biological Sciences
and Museum of Zoology,
University of Michigan,
Ann Arbor 48109*

Books Received

Advances in Beta-Blocker Therapy II. Proceedings of a symposium, Venice, Oct. 1981. A. Zanchetti, Ed. Excerpta Medica, Amsterdam, 1982 (U.S. distributor, Elsevier North-Holland, New York). viii, 312 pp., illus. \$72.

Advances in Child Development and Behavior. Vol. 16. Hayne W. Reese and Lewis P. Lipsitt, Eds. Academic Press, New York, 1982. xvi, 330 pp., illus. \$34.

Advances in Heat Transfer. Vol. 15. James P. Hartnett and Thomas F. Irvine, Jr., Eds. Academic Press, New York, 1982. xvi, 352 pp., illus. \$54.

Advances in Heterocyclic Chemistry. Vol. 30. A. R. Katritzky, Ed. Academic Press, New York, 1982. x, 408 pp., illus. \$76.50.

Augmentin. Clavulanate-Potentiated Amoxycillin. Proceedings of a symposium, July 1981. D. A. Leigh and O. P. W. Robinson, Eds. Excerpta Medica, Amsterdam, 1982 (U.S. distributor, Elsevier North-Holland, New York). viii, 246 pp., illus. \$51.25.

Behavioral Enrichment in the Zoo. Hal Markowitz. Van Nostrand Reinhold, New York, 1982. xii, 210 pp., illus. \$24.

Behaviorism, Science, and Human Nature. Barry Schwartz and Hugh Lacey. Norton, New York, 1982. xiv, 282 pp., illus. \$19.95.

Beyond Separate Spheres. Intellectual Roots of Modern Feminism. Rosalind Rosenberg. Yale University Press, New Haven, Conn., 1982. xxii, 288 pp. \$19.95.

Biblical Games. A Strategic Analysis of Stories in the Old Testament. Steven J. Brams. MIT Press, Cambridge, Mass., 1982. xii, 196 pp., illus. Paper, \$5.95. Reprint of the 1980 edition.

Cell Differentiation. Molecular Basis and Problems. Lutz Nover, Martin Luckner, and Benno Parthier, Eds. Springer-Verlag, New York, 1982. 650 pp., illus. \$55. Revision of German edition (1978).

The Cenozoic Era. Tertiary and Quaternary. Charles Pomeroy. Translated from the French edition (Paris, 1973) by Derek W. Humphries and Evelyn E. Humphries. Horwood, Chichester, England, and Halsted (Wiley), New York, 1982. 272 pp., illus. \$67.95. Ellis Horwood Series in Geology. British Micropaleontological Society Series.

Chemistry. Experiment and Theory. Thomas L. Allen and Raymond M. Keefer. Harper and Row, New York, ed. 2, 1982. xxii, 742 pp., illus., + appendices. \$27.50.

Chloroplast Metabolism. The Structure and Func-

tion of Chloroplasts in Green Leaf Cells. Barry Halliwell. Clarendon (Oxford University Press), New York, 1981. xii, 258 pp., illus. \$45.

Chromosome Damage and Repair. Proceedings of an institute, Bergen, Norway, May 1980. Erling Seeberg and Kjell Kleppe, Eds. Plenum, New York, 1982. xiv, 624 pp., illus. \$69.50. NATO Advanced Study Institutes Series A, vol. 40.

Chronobiologie—Chronomedizin. Papers from a symposium, Halle/Saale, July 1978. J. Schuh, K. Hecht, and J. A. Romanow, Eds. Akademie-Verlag, Berlin, 1981. 884 pp., illus. Paper, 198 M. Abhandlungen der Akademie der Wissenschaften der DDR, Jahrgang 1979, Nr. 1 N.

Climatic Change in Later Prehistory. Papers from a conference, Durham, England, Mar. 1981. A. F. Harding, Ed. Edinburgh University Press, Edinburgh, 1982 (U.S. distributor, Columbia University Press, New York). viii, 210 pp., illus. Paper, \$18.

Coastal Landforms and Surface Features. A Photographic Atlas and Glossary. Rodman E. Sneath. Hutchinson Ross, Stroudsburg, Pa., 1982 (distributor, Academic Press, New York). xxii, 250 pp. \$40.

Cocarcinogenesis and Biological Effects of Tumor Promoters. Papers from a symposium, Schloss Elmau, Bavaria, Oct. 1980. Erich Hecker, N. E. Fusenig, W. Kunz, F. Marks, and H. W. Thielmann, Eds. Raven, New York, 1982. xxxii, 664 pp., illus. \$69. Carcinogenesis—A Comprehensive Survey, vol. 7.

Developments in Antibiotic Treatment of Respiratory Infections. Proceedings of a conference, Scheveningen, Netherlands, June 1980. Ralph van Furth, Ed. Nijhoff, The Hague, 1981 (U.S. distributor, Kluwer Boston, Hingham, Mass.). viii, 252 pp. \$39.50. New Perspectives in Clinical Microbiology, 4.

The Dictionary of Space Technology. Joseph A. Angelo, Jr. Facts On File, New York, 1982. viii, 384 pp., illus. \$19.95; after 1 January 1983, \$24.95.

Digital and Microprocessor Engineering. S. J. Cahill. Horwood, Chichester, England, and Halsted (Wiley), New York, 1982. 514 pp., illus. \$89.95. Ellis Horwood Series in Electrical and Electronic Engineering.

The Effects of Polymers on Dispersion Properties. Papers from a symposium, London, Sept. 1981. Th. F. Tadros, Ed. Academic Press, New York, 1982. viii, 424 pp., illus. \$39.50.

An Electoral Atlas of Europe 1968–1981. A Political Geographic Compendium Including 76 Maps. John Sallnow and Anna John. Cartography by Sarah K. Webber. Butterworth, Boston, 1982. x, 150 pp. \$49.95. Butterworths European Studies.

Electronics for the Modern Scientist. Paul B. Brown, Gunter N. Franz, and Howard Moraff. Elsevier, New York, 1982. xii, 496 pp., illus. \$29.95.

The Enchanted Ring. The Untold Story of Penicillin. John C. Sheehan. MIT Press, Cambridge, Mass., 1982. xvi, 224 pp., illus. \$15.

Energy and Development in Latin America. Perspectives for Public Policy. Nazli Choucri. Lexington (Heath), Lexington, Mass., 1982. xiv, 226 pp., illus. \$23.95.

Finite Simple Groups. An Introduction to Their Classification. Daniel Gorenstein. Plenum, New York, 1982. x, 334 pp. \$29.50. The University Series in Mathematics.

Fishes of the Minnesota Region. Gary L. Phillips, William D. Schmid, and James C. Underhill. University of Minnesota Press, Minneapolis, 1982. x, 250 pp., illus. Cloth, \$25; paper, \$12.95.

Flavins and Flavoproteins. Proceedings of a symposium, Ann Arbor, Mich., June 1981. Vincent Massey and Charles H. Williams, Jr., Eds. Elsevier/North-Holland, New York, 1982. xxiv, 890 pp., illus. \$140. Developments in Biochemistry, vol. 21.

Food Policy and Farm Programs. Don F. Hadwiger and Ross B. Talbot, Eds. Academy of Political Science, New York, 1982. x, 254 pp. Paper, \$6.95. Proceedings of the Academy of Political Science, vol. 34, no. 3.

Fourier Transform Infrared Spectroscopy. Techniques Using Fourier Transform Interferometry. Vol. 3. John R. Ferraro and Louis J. Basile, Eds. Academic Press, New York, 1982. viii, 216 pp., illus. \$29.

Fracture Problems and Solutions in the Energy Industry. Proceedings of a conference, Winnipeg, Canada, Sept. 1981. Leonard A. Simpson, Ed. Pergamon, New York, 1982. x, 252 pp., illus. \$50.

Free Radicals in Biology. Vol. 5. William A. Pryor, Ed. Academic Press, New York, 1982. xx, 284 pp., illus. \$48.

Geoelectromagnetic Investigation of the Earth's Crust and Mantle. I. I. Rokityansky. Translated from the Russian edition by N. L. Chobotova, G. M. Pestryakov, M. N. Pristay, and B. G. Shilman. Springer-Verlag, New York, 1982. xvi, 382 pp., illus. \$70.50.

The Geological Sciences in the Antebellum South. (Continued on page 189)

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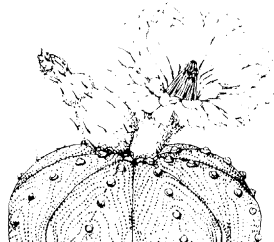
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on steroid production"; S. E. Sauder, "Alteration of gonadotropin secretory pulsatility produced by prolactin"; B. Benson, "Maintenance of gonadal function by prolactin in hamsters—regulation by environmental lighting and the pineal gland." Keynote address: Michael O. Thorner, "Interrelationships between prolactin and gonadotropin secretion."

17 February. Prolactin-secreting pituitary tumors (K. Mashiter, discussion leader): K. Kovacs, "Morphology and immunocytochemistry of human pituitary tumor cells"; D. W. McKeel, "Characterization of prolactin secreting rat pituitary tumor cells"; W. Hymer, "Activities of purified pituitary tumor lactotropes"; T. F. J. Martin, "Protein phosphorylation in pituitary tumor cells"; P. Dannies, "Effects of estrogen on prolactin and cell growth." Action of prolactin on mammary gland and tumor cells (A. Frantz, discussion leader): H. Nagasawa, "Role of prolactin in rat and mouse mammary tumor development"; D. Djiane, "Prolactin receptor interaction and effect of prolactin relay on the mammary cell nucleus"; D. L. Kleinberg, "Anti-prolactin effects of estrogens on lactalbumin production in primate mammary tissue."

18 February. The interdependence of the brain and prolactin cell function (I. S. Login, discussion leader): M. Selmánoff, "Activity of brain catecholamines in response to prolactin"; R. Hruska, "Impact of prolactin on striatal biochemical events"; U. Scapagnini, "Modification of behavior by prolactin"; J. B. Martin, "The role of prolactin as a regulator of brain function."

Organic Thin Films and Solid Surfaces

Holiday Inn

Charles B. Duke, chairperson; J. A. Thornton, vice chairperson.

10 January. Organics in microelectronics. Planar processing (Bill Meuli, discussion leader): Y. K. Lee, "Polyimide coatings for microelectronic and other applications"; Eric Kay, "Plasma polymerization and etching"; G. N. Taylor, "Future of organic films for microlithography." Beam processing (Dan Ehrlich, discussion leader): M. Hatzakis, "Organic resists: x-ray and e-beam"; M. Kaplan, S. R. Forrest, P. H. Schmidt, T. Venkatesam, "Unique optical and electronic properties of irradiated and non-irradiated organic thin films and their device applications."

11 January. Large area applications and characterization methods. Large-area applications (Jerry Lando, discussion leader): M. Schadt, "Electro-optical properties of new liquid crystal mate-

rials for high information density: guest-host and automotive applications"; T. W. Smith, "Polymeric optical disc recording media"; P. Kolodner, "Ultra-high resolution fluorescent thermal imaging." Characterization methods (Dave Allara, discussion leader): P. Schissel, "Characterization of thin polymer films for solar energy"; N. Sato and K. Seki, "Photoemission and optical spectroscopy of polymeric and molecular thin films."

12 January. Organics as imaging and optical materials. Organic films in photography and electrophotography (Evan Felty, discussion leader): W. Mey, "Organic photoconductors: Current practice and future promise"; R. E. Wingard, Jr., "Infrared active organic electrophotographic photoconductors"; T. Whitesides, "Multilayer thin films for color instant photography." Organics in optical storage and electrooptics (C. L. Tang, discussion leader): G. R. Meredith, "Organics in electrooptics: Applications, issues and prospects"; D. Burland, "Organic materials for optical storage media."

13 January. Specialty films and fibres. Novel applications (Duane Cowan, discussion leader): J. van Turnhout, "Polymeric electrets"; G. G. Roberts, "Langmuir-Blodgett films in microelectronics"; P. Fromherz, "Chemical imaging in protein-pigment-semiconductor structures." Organic films in fusion research (John R. Miller, discussion leader): R. Liepins, "Organic thin films in fusion research."

14 January. Organics in energy and electrochemistry (Alan Heeger, discussion leader): R. R. Chance, "Plastic batteries: History and prospects"; M. S. Wrighton, "Surface-confined polymeric electrodes"; M. Aizawa, "Electrochemical doping and undoping of polymer electrodes."

The purpose of this conference is to provide a broad survey of the materials requirements and challenges facing chemists and materials scientists who are interested in developing new organic materials for practical applications. Its focus is applications of organic solids in the high-growth electronics, communications, energy, and office products areas. It is hoped that by participating in this broad, interdisciplinary forum for the discussion of such applications, researchers in organic materials synthesis and characterization will be able to achieve a realistic perspective on the possible end uses of the fruits of their labors in practical devices and systems, as well as an indication of the current uses of organic solids in these rapidly developing areas of application.

BOOKS RECEIVED

(Continued from page 151)

Papers from a symposium, Birmingham, Ala., Mar. 1980. James X. Corgan, Ed. University of Alabama Press, University, 1982. viii, 196 pp., illus. \$17.50.

Green's Functions and Transfer Functions Handbook. A. G. Butkovskiy. Translated from the Russian edition (Moscow, 1979) by L. W. Longdon. Horwood, Chichester, England, and Halsted (Wiley), New York, 1982. 238 pp. \$64.95. Ellis Horwood Series in Mathematics and Its Applications.

Guide to the Chemicals Used in Crop Protection. E. Y. Spencer. Agriculture Canada Research Branch, Ottawa, ed. 7, 1981 (available from Canadian Government Publishing Centre, Ottawa). lvi, 596 pp., illus. Spiral bound, \$36. Publication 1093.

Handbook of Heating, Ventilating and Air Conditioning. F. Porges. Butterworth, Boston, ed. 8, 1982. iv, 268 pp., illus. \$39.

Handbook of Neurochemistry. Vol. 1, Chemical and Cellular Architecture. Abel Lajtha, Ed. Plenum, New York, ed. 2, 1982. xx, 496 pp., illus. \$65.

The Healthiest City. Milwaukee and the Politics of Health Reform. Judith Walzer Leavitt. Princeton University Press, Princeton, N.J., 1982. xviii, 296 pp., illus. \$22.50.

Hemoperfusion. Papers from a meeting, Bologna, Mar. 1981. V. Bonomini and T. M. S. Chang, Eds. Karger, Basel, 1982. vi, 150 pp., illus. Paper, \$53.50. Contributions to Nephrology, vol. 29.

Hippocratic Heritage. A History of Ideas about Weather and Human Health. Frederick Sargent II. Pergamon, New York, 1982. xlii, 582 pp., illus. Cloth, \$65; paper, \$25.

Histological Atlas of the Laboratory Mouse. William D. Gude, Gerald E. Cosgrove, and Gerald P. Hirsch. Plenum, New York, 1982. xii, 152 pp. Spiral bound, \$25.

Introduction to Organic Laboratory Techniques. A Contemporary Approach. Donald L. Pavia, Gary M. Lampman, and George S. Kriz, Jr. Saunders, Philadelphia, ed. 2, 1982. xiv, 676 pp., illus. Cloth. Saunders Golden Sunburst Series.

Introduction to Physical Anthropology. Harry Nelson and Robert Jurmain. West, St. Paul, Minn., ed. 2, 1982. xx, 582 pp., illus. Paper, \$19.95.

An Introduction to Tensor Calculus, Relativity and Cosmology. D. F. Lawden. Wiley, New York, ed. 3, 1982. xiv, 206 pp. \$35.95.

The Invertebrate World. Robert H. Barth and Robert E. Broshears. Saunders, Philadelphia, 1982. x, 646 pp., illus. Cloth.

Judgment under Uncertainty. Heuristics and Biases. Daniel Kahneman, Paul Slovic, and Amos Tversky, Eds. Cambridge University Press, New York, 1982. xiv, 556 pp., illus. Cloth, \$44.50; paper, \$14.95.

The Lady or the Tiger? and Other Logic Puzzles. Including a Mathematical Novel That Features Gödel's Great Discovery. Raymond Smullyan. Knopf, New York, 1982. x, 226 pp. \$13.95.

Lasers. Light Wave of the Future. Allan Maurer. Arco, New York, 1982. xviii, 174 pp., illus. \$12.95. The Arco How It Works Series.

Leukotrienes and Other Lipoxigenase Products. Papers from a conference, Florence, June 1981. Bengt Samuelsson and Rodolfo Paoletti, Eds. Raven, New York, 1982. xviii, 366 pp., illus. \$44. Advances in Prostaglandin, Thromboxane, and Leukotriene Research Series, vol. 9.

Man and the Australian Environment. Current Issues and Viewpoints. Wayne Hanley and Malcolm Cooper, Eds. McGraw-Hill Australia, Sydney, 1981. xxii, 362 pp., illus. Paper, \$18.25.

Man in the Heat, High Altitude and Society. Jean Hiernaux. Thomas, Springfield, Ill., 1982. xii, 108 pp. \$23.75. American Lecture Series Publication No. 1051.

Manipulation of Host Defence Mechanisms. Tadao Aoki, Ichiro Urushizaki, and Eiro Tsubura, Eds. Excerpta Medica, Amsterdam, 1981 (U.S. distributor, Elsevier North-Holland, New York). viii, 282 pp., illus. \$51.25.

Marine Slides and Other Mass Movements. Proceedings of a workshop, Algarve, Portugal, Dec. 1980. Svend Saxov and J. K. Nieuwenhuis, Eds. Plenum, New York, 1982. x, 354 pp., illus. \$32.50. NATO Conference Series IV, vol. 6.

Mathematical Techniques in Crystallography and Materials Science. Edward Prince. Springer-Verlag, New York, 1982. viii, 192 pp., illus. \$22.50.

Meaning and Purpose in the Intact Brain. A Philosophical, Psychological, and Biological Account of Conscious Processes. Robert Miller. Clarendon (Oxford University Press), New York, 1981. x, 240 pp. \$34.50.

Mechanics and Physics of Bubbles in Liquids. Proceedings of a symposium, Pasadena, Calif., June 1981. L. van Wijngaarden, Ed. Nijhoff, The Hague, 1982 (U.S. distributor, Kluwer Boston, Hingham,

Mass.). 392 pp., illus. \$71.90. Reprinted from *Applied Scientific Research*, vol. 38.

Nutritional Ecology of the Ruminant. Ruminant Metabolism, Nutritional Strategies, the Cellulolytic Fermentation and the Chemistry of Forages and Plant Fibers. Peter J. Van Soest. O & B Books, Corvallis, Ore., 1982. vi, 374 pp., illus. \$30.

Observational Astronomy for Amateurs. J. B. Sidgwick. Fourth edition prepared by James Muirden. Enslow, Hillside, N.J., 1982. x, 350 pp., illus. Cloth, \$19.95; paper, \$5.95.

Oliphant. The Life and Times of Sir Mark Oliphant. Stewart Cockburn and David Ellyard. Axiom Books, Adelaide, Australia, 1981. xviii, 370 pp., illus. Cloth.

Ore Genesis. The State of the Art. A Volume in Honour of Professor Paul Ramdohr on the Occasion of His 90th Birthday. G. C. Amstutz and six others, Eds. Springer-Verlag, New York, 1982. xx, 804 pp., illus. \$65.

Organic Acids in Man. Analytical Chemistry, Biochemistry and Diagnosis of the Organic Acidurias. R. A. Chalmers and A. M. Lawson. Chapman and Hall, London, 1982 (U.S. distributor, Methuen, New York). xiv, 524 pp., illus. \$59.95.

Progress in Inorganic Chemistry. Vol. 29. Stephen J. Lippard, Ed. Interscience (Wiley), New York, 1982. viii, 402 pp., illus. \$49.50.

Prohibitive Policy. Implementing the Federal Endangered Species Act. Steven Lewis Yaffee. MIT Press, Cambridge, Mass., 1982. xiv, 240 pp. \$17.50. MIT Studies in American Politics and Public Policy, 9.

Proximity and Preference. Problems in the Multidimensional Analysis of Large Data Sets. Reginald G. Golledge and John N. Rayner, Eds. University of Minnesota Press, Minneapolis, 1982. xi, 312 pp., illus. \$35.

Psychiatry 1982. The American Psychiatric Association Annual Review. Lester Grinspoon, Ed. American Psychiatric Press, Washington, D.C., 1982. x, 540 pp., illus. \$38.50.

Psychology. John P. Dvoretzky. West, St. Paul, Minn., 1982. xxvi, 694 pp., illus. \$22.95. Study guide. Richard D. Rees and Stephen S. Cooper. x, 308 pp. Paper \$7.95.

Reactivity in Organic Chemistry. Gerhard W. Klumpp. Translated from the German edition (Stuttgart, 1978) by Ludmila Birladeanu. Wiley-Interscience, New York, 1982. xvi, 502 pp., illus. \$49.95.

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., 1982. xxiv, 316 pp., illus. Paper, \$8.95. Reprint of the 1977 edition.

Steps to Language. Toward a Theory of Native Language Acquisition. I. M. Schlesinger. Erlbaum, Hillsdale, N.J., 1982. xx, 326 pp. \$29.95.

Structural Use of Wood in Adverse Environments. Proceedings of a symposium, Vancouver, May 1978. Robert W. Meyer and Robert M. Kellogg, Eds. Van Nostrand Reinhold, New York, 1982. xiv, 510 pp., illus. \$42.50.

Structure and Bonding in Crystals. Vol. 2. Michael O'Keefe and Alexandra Navrotsky, Eds. Academic Press, New York, 1981. xviii, 358 pp., illus. \$51.

Surface Chemistry of Froth Flotation. Jan Leja. Plenum, New York, 1982. xxii, 758 pp., illus. \$69.50.

Television and the Socialization of the Minority Child. Papers from a conference, Los Angeles. Gordon L. Berry and Claudia Mitchell-Kernan, Eds. Academic Press, New York, 1982. xx, 290 pp. \$25.

A Textbook of Entomology. Herbert H. Ross, Charles A. Ross, and June R. P. Ross. Wiley, New York, ed. 4, 1982. viii, 666 pp. illus., + index. \$25.95.

The Transfer and Utilization of Technical Knowledge. Papers from a conference, Dec. 1980. Devendra Sahal, Ed. Lexington (Heath), Lexington, Mass., 1982. xvi, 272 pp., illus. \$29.95.

Transonic, Shock, and Multidimensional Flows. Advances in Scientific Computing. Proceedings of a symposium, Madison, Wis., May 1981. Richard E. Meyer, Ed. Academic Press, New York, 1982. x, 346 pp., illus. \$21.

Typical and Atypical Antidepressants. Molecular Mechanisms. Papers from a symposium. E. Costa and Giorgia Racagni, Eds. Raven, New York, 1982. xxiv, 392 pp., illus. \$45. Advances in Biochemical Psychopharmacology, vol. 31.

The Ventricular Septum of the Heart. Papers from a course. A. C. G. Wenink, A. Oppenheimer-Dekker, and A. J. Moulart, Eds. Nijhoff, The Hague, 1981 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xii, 240 pp., illus. \$49.50. Boerhaave Series for Postgraduate Education, 21.

Water and Power. The Conflict over Los Angeles' Water Supply in the Owens Valley. William L. Kahrl. University of California Press, Berkeley, 1982. xii, 584 pp., illus., + plates. \$24.95.

Water and Western Energy. Impacts, Issues, and Choices. Steven C. Ballard and nine others. Westview, Boulder, 1982. xxx, 322 pp., illus. \$27.50.

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CLASSIFIED ADVERTISING DEADLINES:

29 October issue (mailed 22 October): **8 October**
 5 November issue (mailed 29 October): **15 October**
 12 November issue (mailed 5 November): **22 October**
 19 November issue (mailed 12 November): **29 October**

POSITIONS WANTED: 40¢ per word, plus \$4 for use of box number, per insertion. \$10 minimum, per insertion. Prepayment required. This rate is available only to individuals seeking jobs.

DISPLAY (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth): \$9 per millimeter; \$225 minimum, per insertion (minimum charge covers 25 millimeters on a single column; 25 millimeters equals 10 lines of 50 spaces per line). No charge for use of box number. No agency commission for ads less than 103 millimeters (4 inches). No cash discount. Prepayment required for all foreign ads. Purchase orders and billing information required for all other advertising.

Send copy for all **Positions Wanted** ads and **Display** ads less than 1/6 page in size (125 millimeters) to:

SCIENCE, Room 107
 1515 Massachusetts Avenue, 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 Avenue, NW
 Washington, D.C. 20005

POSITIONS WANTED

Biologist, M.S. Experienced field vertebrate zoologist. Proficiency in radiotelemetry, capture and preservation techniques, statistical analyses, field photography, experimental design. Desires employment providing challenging growth opportunities in exchange for optimal services. Box 274, SCIENCE. X

Licensed professional Chemical Engineer; expertise in evaporation, crystallization plus drying, fermentation, scale-up design, process and project engineering, plant operations, and research and development. Seeks consulting or permanent position. Box 272, SCIENCE. X

Ecologist, Ph.D. Broad research experience in vertebrate and vegetation monitoring, species-habitat relationships, computer data analysis, writing skills. Excellent references and publications. Seeking diverse research position. Box 273, SCIENCE. X

Multidisciplinary Electronics Engineer, three degrees, 70 publications, U.S. citizen with 20 years of microwave, telecommunications, biomedical European experience in governmental/industrial research and international consulting; seeks North American position. Current research interest in biomedical, biomechanical topics. M. Brady, Box 154 Vinderen, Oslo 3, Norway; telephone: (47 2) 148274.
 10/8, 15, 22, 29; 11/5, 12

Molecular Biologist: B.S. 1979, University of Michigan. Three years of experience with recombinant DNA technology. Publications. Excellent references. Seeks challenging position on West Coast. Box 271, SCIENCE. X

Pesticide Residue Chemist. Experienced in pesticide residue analysis of animal feed, feed ingredients, fat and other agricultural commodities. Postdoctoral experience. Ph.D. (agronomy) and M.S. (organic chemistry). Telephone: 601-373-0264 after 5 p.m. CDT. Write: Box 267, SCIENCE.
 10/8, 15, 22, 29; 11/5

POSITIONS OPEN

AGRICULTURAL or CHEMICAL or MECHANICAL ENGINEER. Career Federal Service. Incumbent will conduct research on methods, techniques, equipment and facilities for handling and storage of grain and oilseeds. Position located at U.S. Grain Marketing Research Laboratory, Manhattan, Kansas. GS-11/12; salary based on qualifications and experience. For applications: **J. Brooks, USDA-ARS-B47, 2000 West Pioneer Parkway, Peoria, Ill. 61615. Telephone: 309-671-7319.** Candidates must be U.S. citizens. *An Equal Opportunity Employer.*

ANATOMY, FACULTY POSITION—The Department of Anatomy of the Medical College of Pennsylvania has a tenure-track faculty position available to begin 1 January 1983. Candidate should have postdoctoral experience and significant record of research experience with the capacity to function as an independent investigator in the field of cellular neurophysiology and the ability to teach or to learn to teach medical neuroscience. Rank and salary will depend upon qualifications and experience. Applicants should send a résumé, including statement of research interests and the names of three references, by 1 December 1982 to: **Dr. Leonard L. Ross, Chairman, Department of Anatomy, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, Pa. 19129. An Equal Opportunity Employer, M/F.**

ANATOMY, FACULTY POSITION. The Department of Anatomy of the Medical College of Pennsylvania has a tenure-track faculty position available beginning 1 January 1983. The candidate should have postdoctoral experience and significant record of research experience, with the capacity to function as an independent investigator in the field of cellular or molecular neurobiology and the ability to teach or to learn to teach medical microscopic anatomy. Rank and salary will depend upon qualifications and experience. Applicants should send a résumé, including a statement of research interests and the names of three references, by 1 December 1982 to: **Dr. Leonard L. Ross, Chairman, Department of Anatomy, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, Pa. 19129. An Equal Opportunity Employer, M/F.**

Applications are requested for a tenure-track position at the **ASSISTANT PROFESSOR** level (11-month appointment) in the Department of Botany and Plant Sciences, College of Natural and Agricultural Sciences, University of California, Riverside, with concurrent appointment in the California Agricultural Experiment Station. A Ph.D. is required; postdoctoral experience is preferred, but all qualified candidates will be considered. The successful candidate, with a Ph.D. or postdoctoral training in the physiology of plant development and/or plant biochemistry, will be expected to develop a vigorous, innovative, independent research program, with major emphasis on plant development, maturation, or senescence. Teaching responsibilities will include courses at both undergraduate and/or graduate levels and supervision of graduate students.

Send curriculum vitae and official transcripts, and arrange to have at least three letters of recommendation sent to: **Dr. William W. Thomson, Chairman, Plant Physiologist Search Committee, Department of Botany and Plant Sciences, University of California, Riverside, Calif. 92521.** Application deadline is 1 January 1983 or later if a suitable applicant has not been selected by this date.

An Affirmative Action/Equal Opportunity Employer

ASSISTANT PROFESSOR OF NUCLEAR ENGINEERING. To join interdisciplinary staff with research, teaching, and service responsibilities. This is a tenure-track position. A doctorate in engineering or the sciences is required; experience in teaching, industry, and/or the military is desirable. Opportunities exist to develop interactive research with national laboratories and private and public entities. *We are Equal Opportunity/Affirmative Action Employer.* **LOUISIANA STATE UNIVERSITY, Nuclear Science Center, Baton Rouge, La. 70803-5820. Dr. Edward N. Lambremont, Director. Telephone: 504-388-2163.**

ASSISTANT/ASSOCIATE PROFESSOR OF PHYSIOLOGY. Tenure-track position for established investigator in membrane physiology of cultured cells. The candidate must have experience in tracer kinetics, culturing cells, teaching medical and graduate students, and maintaining a vigorous research program. Send curriculum vitae, a brief statement of research interests, and the names of three references to: **Dr. Robert B. Gunn, Chairman, Department of Physiology, Emory University School of Medicine, Atlanta, Ga. 30322. Emory University is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

ASSISTANT PROFESSOR OF PHYSIOLOGY, Louisiana State University (LSU) Medical Center, New Orleans. Applicant for this tenure-track position should have at least 4 years of postdoctoral experience in whole animal, isolated organ, or tissue metabolism. Appointee will be expected to maintain an independent research program of high quality. Send curriculum vitae and names of three references to: **John J. Spitzer, M.D., Professor and Head, Department of Physiology, LSU Medical Center, 1901 Perdido Street, New Orleans, La. 70112.**

LSU is an Equal Opportunity/Affirmative Action Employer.

ASSOCIATE IN PHARMACOLOGY. Research associate for NIH-supported work on the physiology and chemistry of carbonic anhydrase dependent systems in the reproductive tract and in muscle, and inner ear. Ph.D. and experience in CO₂ chemistry, ion transport, and metabolism. Salary: \$15,000 minimum; maximum negotiable. Position available 1 November 1982. Send applications by 20 October 1982 to: **Dr. T. H. Maren, Department of Pharmacology, Box J-267, JHMH, University of Florida College of Medicine, Gainesville, Fla. 32610. An Equal Opportunity/Affirmative Action Employer.**

BENTHIC BIOLOGICAL PROCESSES North Carolina State University, Raleigh

A tenure-track position is available in the Department of Marine, Earth and Atmospheric Sciences at the level of assistant professor. Applications are especially invited from individuals trained in the biological aspects of marine benthic boundary layer processes having interests in: (i) animal-sediment interaction with specific expertise in sedimentary structure or sediment transport; or (ii) chemical dynamics with specific expertise in pore water nutrients or organic geochemistry. A Ph.D. is required. The candidate will be expected to strengthen the graduate teaching and research programs. Applicants should forward a résumé and the names of at least three references to: **Dr. Daniel Kamykowski, Chairman, Search Committee, P.O. Box 5068, North Carolina State University, Raleigh, N.C. 27650.** Application materials should be sent by 15 November 1982. *North Carolina State University is an Equal Opportunity/Affirmative Action Employer.*

The Department of Psychology at the University of Texas at Austin has a tenure-track position available for a **BIOPSYCHOLOGIST** in the area of brain mechanisms and behavior. The individual would be responsible for teaching graduate and undergraduate classes in physiological psychology and neuroscience as well as departmental service courses and would be expected to develop an independent program of research. The position is open at the assistant professor level, but others will be considered. Please send curriculum vitae, three letters of recommendation, and publications to **BIOPSYCHOLOGY SEARCH COMMITTEE (ATTENTION: MICHAEL DOMJAN), DEPARTMENT OF PSYCHOLOGY, UNIVERSITY OF TEXAS AT AUSTIN, AUSTIN, TEXAS 78712. An Equal Opportunity/Affirmative Action Employer.**

CELL BIOLOGIST trained in growth of human cancer cells in culture and in xenografting in nude mice to join team of immunochemists, biochemists, pathologists, and clinicians interested in research combining cell biology and biological markers with human investigation. Appointments at Harvard and Boston University Schools of Medicine available. Send detailed résumé to **Norman Zamcheck, M.D., Director, Cancer Research, Mallory Institute of Pathology Foundation, 784 Massachusetts Avenue, Boston, Massachusetts 02118, or call 617-535-4746. An Equal Opportunity Employer.**

CELL BIOLOGIST or BIOCHEMIST

Tenure-track Assistant Professorship, requires setting up active research program and teaching graduate and undergraduate courses. Any area of cell biology or biochemistry will be considered, including molecular biology, membrane or lipid biochemistry, or neurochemistry. Solicit three or more letters of recommendation to be sent, and send curriculum vitae (including both home and business telephone numbers), a summary of current and/or anticipated research, reprints, and a brief statement of teaching interests to: **Dr. Karl Wilson, Department of Biological Sciences, State University of New York at Binghamton, Binghamton, New York 13901. Deadline is 1 December 1982. Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE AT SOUTHERN METHODIST UNIVERSITY, RADIOCARBON LABORATORY. We are seeking a person with experience in laboratory research.

Qualifications. The position requires an M.S. degree; however a B.S. level candidate with excellent qualifications can be considered. Especially important are reliable and cautious working habits. Prior training and experience must include inorganic chemistry, handling and maintenance of vacuum systems, preferably some experience in glass blowing, use of computer systems for processing laboratory data, and ability to provide firm but stimulating leadership for assistants in a university environment. An asset but not a condition for employment is familiarity with liquid scintillation counting of low-level natural radioactivity, knowledge of electronic circuitry and microprocessors, and experience with the operation of mass spectrometers.

Opportunities. To develop a position with responsibility, interaction with other research laboratories in the departments of Geological Sciences and Anthropology, and participation in research and publication.

Salary level in the upper teens with excellent employment benefits. Starting date: 1 December, or shortly thereafter. Qualified applicants should send résumé by 31 October 1982 with the names of three references to:

**Research Associate
Personnel Services Department
Southern Methodist University
Box 232
Dallas, Texas 75275**

By prior arrangement, by calling 1-214-692-2424, interviews can be arranged during GSA meetings in New Orleans, 18-21 October 1982.

Affirmative Action/Equal Opportunity Employer

**MEMORIAL UNIVERSITY OF
NEWFOUNDLAND
ST. JOHN'S, NEWFOUNDLAND, CANADA
HEAD**

DEPARTMENT OF COMPUTER SCIENCE

Applications are invited for the position of Head, Department of Computer Science in the Faculty of Science, Memorial University of Newfoundland. Position to be filled as soon as possible.

Candidates should have demonstrated teaching and scholarly research abilities indicative of senior rank, with a fairly broad background in computer science and the capabilities of exercising academic and administrative leadership.

The department wishes to develop a graduate program of great distinction, including the introduction of a Ph.D. program, for which the Head would be responsible as well as the development of group research programs. An M.Sc. program already exists. The undergraduate program is well established and is rapidly expanding with approximately 400 full-time majors. At present there are nine full-time faculty members with additional posts to be created. There are also several part-time sessional lecturers appointed each semester.

Departmental computing facilities include a VAX 11/780 currently running under VMUNIX Berkeley 4.1 Operating System, a PDP 11/34, and an 11/10 also under UNIX. A large number of terminals and graphics facilities are available.

Salary is negotiable.

Further information will be supplied upon request. If interested in being considered for this position, please send curriculum vitae and the names of three references to:

**Dr. P. J. Heald, Dean of Science
Chemistry-Physics Building, C-335
Memorial University of Newfoundland
St. John's, Newfoundland A1B 3X7
Canada**

DIRECTOR, TOXIC HAZARDS DIVISION, AIR FORCE AEROSPACE MEDICAL RESEARCH LABORATORY. Air Force Aerospace Medical Research Laboratory is seeking candidates for this position, who have broad technical, managerial, and administrative experience in planning, directing, and conducting toxicological and occupational medicine research and development programs. The director is responsible for the in-house and contractual program of a research division with many teams of scientists, professional engineers, physicians, pharmacologists, and other specialists with diverse backgrounds and experience. Position requires B.S. degree with major study in a field related to health sciences or toxicology. Degree of doctor of medicine is preferred. A D.V.M. or Ph.D. with appropriate background and experience is acceptable. Plans, organizes, and directs basic and applied research to determine the metabolic, physiologic, and performance effects of toxicants; develops diagnostic and therapeutic methodology, and evaluates the toxic hazards aspects chemical materials to obtain improved procedures for prevention and treatment of accidental toxic exposures. Candidates must have pertinent experience in toxicological/biological research and occupational medicine and significant managerial experience in the planning, conducting, control, and evaluation of multidisciplinary R & D programs, including planning and utilization of human and financial resources. Position is senior executive service, salary \$54,755 to \$61,300 (currently, ceiling frozen by Congress at \$58,500). Position vacancy announcement may be requested from: **Civilian Personnel, Headquarters Aeronautical Systems Division, Air Force Systems Command, ASD/DPCEC, Wright-Patterson Air Force Base, Ohio 45433**, or telephone: 513-255-6974/5. Please send résumé to the same address. *Equal Opportunity Employer, M/F.* Closing date for résumé is 12 November 1982.

PLANT PHYSIOLOGIST

We are seeking applicants for a research position in a new and innovative research program in the area of plant physiology and biochemistry.

Applicants should have strong formal training in plant biology, biochemistry, or enzymology at the PhD level. Experience in one or more of these areas is required: plant genetics, stress physiology, microbiology, protein chemistry, modern analytical techniques.

This is an excellent opportunity with a Fortune 100 Corporation in the midwest. If you can answer yes to the challenge, please send your resume in confidence to:

BOX 270, SCIENCE

An Equal Opportunity Employer

NRL

RESEARCH PHYSICIST

GM-1310-13

(\$33,586 to \$43,666 salary dependent on qualifications)

NAVAL RESEARCH LABORATORY OPTICAL SCIENCES DIVISION

As Head of the Optical Sensor Section organizes, directs, and participates in a basic and applied research program for the development of fiber optic sensors. Program includes fiber propagation studies, measurement and noise effects, development of fiber couplers and interferometric sensors for measuring acoustic pressure, rotation rate, acceleration. Provides consultation on related projects and reports on work to the scientific and technical community.

QUALIFICATIONS: Ph.D or equivalent experience in Physics with at least three years specialized experience in the areas listed above.

Interested applicants should submit a Personal Qualifications Statement (SF-171) or detailed resume by 8 November 1982 to:

**NAVAL RESEARCH LABORATORY
Civilian Personnel Division
Attention: 65-026-11.2; EL; S
4555 Overlook Avenue, S.W.
Washington, D.C. 20375**

An Equal Opportunity Employer

U.S. Citizenship Required

POSITIONS OPEN

CELL PHYSIOLOGIST OR BIOLOGIST— RESEARCH ASSOCIATE

Candidate with proven ability to collaborate in ongoing project to study growth regulation in epithelial cells. Tissue culture experience required. Salary: \$18,000 depending upon qualifications. Send curriculum vitae and names of three references to **F. Gary Toback, M.D., Ph.D., Department of Medicine, The University of Chicago, 950 East 59 Street, Chicago, Illinois 60637. Telephone: 312-947-6918.**

An Equal Opportunity/Affirmative Action Employer

CHAIRPERSON BIOCHEMISTRY DEPARTMENT

The University of Utah School of Medicine is recruiting a chairperson with a strong research background in some aspect of biochemistry. The person sought should be dedicated to excellence in teaching and research and should have ability to create and lead an effective biochemistry program at the University. *The University is an Equal Opportunity/Affirmative Action Employer.* Interested individuals should send their curriculum vitae to: **Walter Stevens, Ph.D., Chairman, Biochemistry Search Committee, Dean's Office, School of Medicine, University of Utah, Salt Lake City, Utah, 84132, before 1 November 1982.**

CHIEF ILLINOIS STATE GEOLOGICAL SURVEY

Inquiries and nominations are invited for the position of Chief, Illinois State Geological Survey, available September 1, 1983. The Illinois State Geological Survey, a division of the Illinois Department of Energy and Natural Resources, is guided by the Board of Natural Resources and Conservation. The Survey staff, about 200 scientists and technical support personnel, conducts research programs in many areas of geology and related areas of chemistry and engineering.

The Chief directs the research and service programs of the Survey and interacts regularly with governmental, industrial, and public sectors.

A candidate for Chief must be an established scientist with proven capabilities in leadership and administration of a research group, have a background in geology or a related discipline, and be able to attract funding for research.

Applications should be submitted by January 1, 1983, to: Search Committee Chairman, Illinois State Geological Survey, 615 E. Peabody Drive, Champaign, IL 61820. Phone: (217) 344-1481.

an Affirmative Action/Equal Opportunity employer

ECOLOGIST or ECOLOGICAL PHYSIOLOGIST

Tenure-track Assistant Professorship, requires setting up active research program and teaching graduate and undergraduate courses. Preference will be given to field-oriented individuals in the areas of plant-animal interactions, population ecology, community ecology, or ecological physiology. Solicit three or more letters of recommendation to be sent, and send curriculum vitae (including both home and business telephone numbers), a summary of current and/or anticipated research, reprints, and a brief statement of teaching interests to: **Dr. Frank M. Sulzman, Department of Biological Sciences, State University of New York at Binghamton, Binghamton, New York 13901. Deadline is 1 December 1982.** *Equal Opportunity/Affirmative Action Employer.*

ELECTRON MICROSCOPIST-ANATOMIST. A position is available currently for a neuroscientist with research skills in transmission electron microscopy at the level of either Assistant Professor (research track) or Research Associate, depending on qualifications. Responsibilities involve the ultrastructural analysis of chemically identified neuron interactions in a variety of experimental paradigms, including neuronal development and aging with a particular focus on catecholamine-peptide interactions. Experience with EM immunohistochemistry is particularly desirable. Please send a curriculum vitae, representative publications, and the names of three references by 5 November 1982 to: **Dr. John R. Sladek, Jr., Professor and Chairman, Department of Anatomy, Box 603, University of Rochester School of Medicine and Dentistry, 601 Elmwood Avenue, Rochester, N.Y. 14642.** *Equal Opportunity Employer. Male/Female.*

POSITIONS OPEN

DIRECTOR, BIOSTATISTICS/ EPIDEMIOLOGY THE UNIVERSITY OF TENNESSEE CENTER FOR THE HEALTH SCIENCES

Opportunity to establish a new division at a major health sciences center.

Minimum qualifications include doctoral degree, experience in teaching, published research, and academic/clinical service sufficient to qualify for Associate or Full Professorship. Must establish budget, determine faculty needs, develop academic courses at professional and graduate levels and provide epidemiological support for patient care programs. Administrative experience required.

Excellent salary, opportunity for growth, comprehensive benefits and challenging biomedical problems. Send resume to: **Dr. Raymond L. Tanner, Assistant Dean, Graduate School of Medical Sciences, UTCHS, 800 Madison Ave., Memphis, TN 38163, (901) 528-5711.**

An Equal Employment Opportunity/Affirmative Action Employer

EVOLUTIONARY PLANT ECOLOGIST

Assistant Professor, tenure-leading, August 1983. Requires Ph.D. All research programs emphasizing a strong theoretical perspective in plant ecology/plant population biology will be carefully considered. Particular consideration will be given to applicants with research programs concerning life history adaptations and demography, pollination biology, general ecology, physiological ecology, or plant/animal interactions (plant perspective). Responsibilities include development of a productive research program, advising M.S. and Ph.D. students, and participation in the teaching program. Salary competitive. Submit curriculum vitae, three letters of reference, and a statement of research goals by 1 November to: **Dr. Anthony Joern, School of Life Sciences, University of Nebraska-Lincoln, Lincoln, Nebraska, 68588-0118.** *Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS IN VIROLOGY

The Department of Microbiology and Immunology, Tulane Medical School, invites applications for two tenure-track faculty positions at the Assistant Professor level available January 1983. For one of these positions we are reopening a search for an individual with experience in medical aspects of virology. The second position is a newly available position to which we would like to attract an individual with interests and ability in molecular virology. For both positions, an interest in and ability to teach medical and graduate students is required, as is a desire for career development in a medical school/university setting. Applicants should submit a curriculum vitae, bibliography, and names of three references to: **A. Arthur Gottlieb, M.D., Professor and Chairman, Department of Microbiology and Immunology, Tulane Medical School, 1430 Tulane Avenue, New Orleans, Louisiana 70112.** All responses must be received by 1 November 1982. *Tulane is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION IN EXPERIMENTAL ROCK MECHANICS

Tenure-track assistant/associate professor faculty position is available in the Department of Earth and Planetary Sciences, Massachusetts Institute of Technology (M.I.T.). Applicants should have a B.S. in Physics or Materials Sciences, a Ph.D. in the earth sciences, and 1 to 5 years of postdoctoral experience. Experience should include high-temperature and pressure systems with gas pressure media. Knowledge of transmission electron microscopy, the microprobe, and computers would be useful. Teaching responsibilities will include a graduate course in area of specialization as well as a more general senior/graduate course in solid earth geophysics relevant to seismology, tectonics, or structural geology. Individual must have a strong interest in teaching graduate and undergraduate students how to conduct laboratory experiments.

Applicants should submit curriculum vitae, a brief statement of research interests, selected reprints, and names of four references to:

**Dr. William F. Brace
Chairman, Department of Earth and
Planetary Sciences
54-918, M.I.T.
Cambridge, Mass. 02139**

Closing date: 31 December 1982

An Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

DIRECTOR BIOMEDICAL ENGINEERING

Position available for individual with Ph.D. and/or M.D. who has at least one engineering degree. Position offers challenge and opportunity to expand biomedical engineering research program involving the University, area hospitals, and the medical school. It is desirable that applicants have experience in biomedical engineering research and teaching.

The University of Akron, the third largest state university in Ohio, is located within a culturally rich region of concentrated industrial and research activities as well as outstanding health care facilities.

Salary is competitive, fringe benefits are outstanding, and housing is attractively priced.

Send résumé and names of three references by 15 November 1982 to:

**Dean Louis A. Hill Jr.
College of Engineering
The University of Akron
Akron, Ohio 44325**

All materials, including letters from references, transcripts, and so forth will be considered for the position available as early as January 1983. *The University of Akron is an Equal Education/Employment Institution.*

FACULTY POSITION IN BIOCHEMISTRY UNIVERSITY OF ILLINOIS, Urbana-Champaign

The Department of Biochemistry at the University of Illinois at Urbana-Champaign invites applications for a tenure-track position at the ASSISTANT PROFESSOR level. Candidates should have demonstrated exceptional ability in research and be prepared to establish an active research program in biochemistry or molecular biology. A commitment to excellence in undergraduate and graduate education is also an important prerequisite for consideration. A Ph.D. and postdoctoral experience in biochemistry or a related area is required. Salary is dependent upon the qualifications of the candidate. For full consideration, candidates should submit a curriculum vitae including a brief summary of their research interest and three letters of reference by 1 January 1983 to:

**Biochemistry Search Committee
Department of Biochemistry
University of Illinois
1209 West California
Urbana, Illinois 61801**

The University of Illinois is an Affirmative Action Equal Opportunity Employer.

MARINE/POLLUTION ECOLOGIST: Postdoctoral Research Associate

To assist the director of a new multidisciplinary research facility in conducting research in progress as well as in the development of new projects. The person would also be required to teach a laboratory section of Pollution Ecology, a graduate-level course in the Department of Biological Sciences. Preference will be given to individuals with a broad ecological background who also have had at least some training in applied instrumental analytical techniques. Applications and three letters of recommendation should be sent by 22 October 1982 to: **Dr. R. Alden, Dean's Office, School of Sciences and Health Professions, Old Dominion University, Norfolk, Va. 23508.** Position available immediately. *Affirmative Action/Equal Opportunity Employer.*

Microbial Physiology/Ecology

Postdoctoral position. To work in heavy metal/organometal interactions with aquatic microorganisms. Available immediately. Send curriculum vitae and names of three references to **Joseph J. Cooney, Director, Environmental Sciences Program, University of Massachusetts at Boston, Harbor Campus, Boston, Mass. 02125.** *An Equal Opportunity/Affirmative Action Employer.*

MARKETING DIRECTOR

INTOX LABORATORIES, located in **Little Rock, Arkansas**, is pleased to announce a major expansion of its toxicology laboratories. The expansion will be completed in early 1983 and will increase the INTOX facilities to over 75,000 square feet.

Available programs currently include:

**Teratology/Reproduction
Acute, Subchronic & Chronic Studies
Behavioral Toxicology
Genetic Toxicology
Neurotoxicology**

The expansion has stimulated the need for an individual to coordinate a major national/international marketing effort.

Positive attributes of a candidate will be:

- extensive experience and a record of accomplishments in marketing toxicology in the chemical or pharmaceutical industry
- thorough knowledge in the field of toxicology
- demonstrated interpersonal skills and capabilities for independent operation

Relocation to Arkansas is not required and a major corporate position including stock options is available for the suitable individual.

Please write in confidence to:



INTOX LABORATORIES
P.O. Box 3397
Little Rock, AR 72203
Attn: Karl P. Baetcke, Ph.D.

BASIC AND APPLIED BIOMEDICAL SCIENTISTS

Litton Bionetics, Inc. is launching a new initiative in research and development in advanced biotechnologies as related to research, diagnostics and therapeutic products, and we want you. You should have a Ph.D. or M.D. with postdoctoral experience applicable to one of the following areas:

- **HYBRIDOMA-MONOCLONAL ANTIBODY** research and technological development, either in fusion, screening or antibody characterization.
- **BIOCHEMISTRY** in protein characterization, amino acid sequencing, fragmentation bioactivity or synthesis of active peptides.
- **IMMUNOCHEMISTRY** and serological assays with emphasis on new assay development.

This is an attractive opportunity for scientists interested in basic research, biotechnology development and technology transfer. This new research initiative will work closely with our established and rapidly growing laboratory and diagnostics production area.

Attractive compensation package and high visibility. Please send your resume including salary history in confidence to:



Don Loker
Director, Personnel
Litton Bionetics, Inc.
5516 Nicholson Lane
Kensington, Maryland 20895

An Equal Opportunity Employer

DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE NATIONAL INSTITUTES OF HEALTH NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

Opening Date: October 1, 1982 Closing Date: November 12, 1982

(All applications must be post-marked by the closing date.)

DIRECTOR...DIVISION OF LUNG DISEASES

The National Heart, Lung, and Blood Institute is recruiting a Director for its Division of Lung Diseases. The Director will coordinate the planning, management, and evaluation of a major program of basic and targeted research, cooperative clinical trials, education and demonstration projects, and national lung centers. The Division itself is divided into six major programs, with a staff of approximately 30 employees and a current annual budget in excess of \$80 million.

This is a Civil Service position in the Senior Executive Service (SES), with base salary from \$54,755 to \$61,300 per year depending on qualification. Currently, the payable salary is limited to \$58,500. Physicians may be eligible for a comparability allowance up to \$10,000 per year. (Alternatively, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service). The SES individual selected, if not presently in the Senior Executive Service, must serve a one year probationary period. Mandatory professional/technical qualifications are a medical degree, or education in biomedical science and research and/or clinical experience in the field of lung diseases. Further information on these qualifications available by contacting Kathryn Osbourn, Personnel Management Specialist, National Institutes of Health, National Heart, Lung, and Blood Institute, Building 31, Room 5A-32, Bethesda, MD 20205, (301) 496-6477.

Mandatory managerial/executive qualifications include evidence of management of a basic or clinical research program, demonstrating ability to assume leadership responsibilities in developing program goals; representing the program to outside groups; directing program planning, execution, and evaluation; and conducting a fair and equitable employment program, including the attainment of EEO objectives.

Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the degree to which they exceed the mandatory managerial/executive qualifications, and on the following desirable qualifications: scientific reputation/peer recognition; training and education in lung diseases; leadership of a basic or clinical research, or research administration program, and honors and awards indicative of outstanding contributions to the field of lung diseases.

Applications (Personnel Statement of Qualification—SF-171) should be sent to Dr. Jay Moskowitz, Chairman, DLD Director Search Committee, Building 31, Room 5A03, National Institutes of Health, Bethesda, MD 20205, telephone (301) 496-6331.

A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited.

**THE NATIONAL INSTITUTES OF HEALTH IS AN
EQUAL OPPORTUNITY EMPLOYER.**

POSITIONS OPEN

HEAD DEPARTMENT OF BOTANY UNIVERSITY OF WYOMING

The University of Wyoming invites applications or nominations for the Head position, Department of Botany. Applicants must have the Ph.D. in a botanical discipline, a distinguished record in teaching and research, and leadership abilities capable of developing the department to its fullest potential. A continued involvement in teaching and research will be expected. The department currently consists of seven faculty and 18 graduate students (M.S. and Ph.D.), and occupies a three-story building with well-equipped laboratories and the Rocky Mountain Herbarium. A letter of application, curriculum vitae, and the names of four references must be received before 1 December 1982 and should be sent to: **Search Committee, Department of Botany, University of Wyoming, Laramie, Wyoming 82071 (telephone: 307-766-2380).** *The University of Wyoming is an Equal Opportunity/Affirmative Action Employer.*

POSITION IN ICHTHYOLOGY HARVARD UNIVERSITY

The Museum of Comparative Zoology and the Department of Organismic and Evolutionary Biology invite applications for a joint appointment as an **Assistant Professor** in the Department of Organismic and Evolutionary Biology and Assistant Curator of Fishes in the Museum of Comparative Zoology beginning 1 July 1983. The candidate must have a Ph.D. in systematic ichthyology and postdoctoral experience is highly desirable. It is expected that the appointee has a commitment to systematic biology research, teaching in systematic and vertebrate biology, and curatorial work in a world-wide fish collection. Names of four references, curriculum vitae, statement of career objectives, and copies of publications should be sent to: **Dr. Karel F. Liem, Museum of Comparative Zoology, Harvard University, Cambridge, Mass. 02138**, by 30 November 1982.

Harvard is an Affirmative Action/Equal Opportunity Employer

INTERFERON BIOLOGY MECHANISM OF ANTITUMOR EFFECTS

Postdoctoral fellow (M.D. or Ph.D.) appointments for individuals interested in *in vitro* and *in vivo* effects of human interferons. Research laboratories collaborating on the program are investigating effects of interferons on immune function, cell proliferation, enzyme induction, and cell surface alterations. Participating faculty includes L. Andrew Ball, Ph.D. (2-5A synthetase), E. C. Borden, M.D. (NK cells), Paul M. Sondel, M.D., Ph.D. (T cells), J. Willson, M.D. (antiproliferative effects), M. Gould, Ph.D. (radiation effects), and G. T. Bryan, M.D., Ph.D. (chemical carcinogenesis). Participants will work with individual faculty on common research interests and participate in core seminars. Résumés and letters of reference to **Ernest C. Borden, M.D., University of Wisconsin Clinical Cancer Center, K4/414, 600 Highland Avenue, Madison, Wisconsin 53792.** *The University of Wisconsin-Madison is an Equal Opportunity/Affirmative Action Employer.*

PLANT CELL GENETICIST John A. Hannah Distinguished Professorship

The John A. Hannah Distinguished Professorships are intended to expand and maintain excellence in faculty at Michigan State University. This endowed chair is established to promote outstanding research in Plant Genetics with an emphasis in cellular and molecular techniques in cultivated plant species. Examples of areas for research interest include: (i) analysis of genetic regulation of important physiological processes, including stress responses; (ii) analysis of cell totipotency; (iii) development of vector systems for genetic manipulation; (iv) characterization of genetic control of natural products produced in cell culture; and (v) development of strategies for the creation and selection of useful genetic traits of plant cells. The position will carry a research appointment in the MSU-DOE Plant Research Laboratory and a tenured faculty appointment in an academic department in the College of Agriculture. The salary level and research funding to be provided for this position are negotiable. Applicants should send curriculum vitae and names of three references to: **Dr. Charles J. Arntzen, Director, MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, Michigan 48824.** Inquiries for further information may be directed to the same address. Closing date for receipt of applications shall be 1 December 1982 or until a suitable applicant is identified. *MSU is an Affirmative Action/Equal Opportunity Institution.*

POSITIONS OPEN

ICHTHYOLOGIST

The Academy of Natural Sciences has an endowed research opening for an ichthyologist, preferably at the level of associate curator or curator. Preference will be given to candidates with a demonstrated commitment to collection-oriented research on the systematics of fish; superb library and laboratory facilities and NSF-supported collections of fish come with the position. Experience in program development is desirable. Salary negotiable in relation to rank and experience.

Please send letter of research interest, curriculum vitae, and names of three references to:

**Dr. Frank B. Gill
Chairman, Fish Search Committee
The Academy of Natural Sciences
19th and the Parkway
Philadelphia, Pa. 19103**

Closing date: 31 December 1982.

An Equal Opportunity Employer; women and minorities encouraged to apply.

POSTDOCTORAL POSITION is available to study the molecular genetics, biosynthesis, and assembly of myosin and C-protein in embryonic muscle. A Ph.D. or M.D. with training in RNA and DNA biochemistry, gene cloning and cell culture techniques is desired. Send résumé and three letters of reference to: **Dr. Donald A. Fischman, Department of Cell Biology and Anatomy, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available to study the biosynthesis of calcitonin and somatostatin by cultured rat medullary thyroid carcinoma cells. Possible projects include investigating the enzymatic steps involved in such posttranslational events as glycosylation and carboxyl-terminal amidation. Background in protein biochemistry preferred. Send curriculum vitae and names of references to: **Dr. Roger S. Birnbaum, Mineral Metabolism Research, Cleveland VA Medical Center, 10701 East Boulevard, Cleveland, Ohio 44106.**

POSTDOCTORAL POSITION IN MICROBIAL ECOLOGY

Available immediately to study bacterial attachment to marine surfaces and bacterial cues for development in marine invertebrates. Must have experience working with invertebrates. Apply to **Professor Ralph Mitchell, Laboratory of Microbial Ecology, Pierce Hall, Harvard University, Cambridge, Massachusetts 02138.**

Harvard University is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION available for recent Ph.D. to work on the regulation and properties of glycogen synthase and changes in its regulation in diabetes. The project utilizes monoclonal antibodies, protein chemistry, and recombinant DNA techniques. Laboratories of both Thomas B. Miller and Gary L. Johnson are involved in the research project. Send inquiries to: **Dr. Gary L. Johnson, Department of Biochemistry, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately (or as desired) for research on mechanisms of hormone action on brown and white fat cells. These studies involve hormonal regulation of (i) respiration, (ii) lipolysis, and (iii) adenylate cyclase activity. Salary: \$15,000 to \$17,000 per year plus benefits. Send curriculum vitae and references to: **Dr. Richard Schimmel, Department of Physiology, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY-New Jersey School of Osteopathic Medicine, P.O. Box 101, Piscataway, New Jersey 08854.** *An Equal Opportunity/Affirmative Action Employer, M/F.*

POSTDOCTORAL POSITION IN CHEMICAL CARCINOGENESIS/TOXICOLOGY. Available 1 January 1983 for a toxicologist, pharmacologist, biochemist, or related field. Research involves the development of an *in vivo* mouse lung tumor model for investigations of initiation and promotion in lung carcinogenesis. Project also includes pharmacokinetic and metabolism studies of selected carcinogens in mouse tissues. Salary competitive. Send curriculum vitae and names of three references to: **Dr. Gary Stoner, Department of Pathology, Medical College of Ohio, 3000 Arlington Avenue, Toledo, Ohio 43614.** *An Equal Opportunity Employer, M/F.*

POSITIONS OPEN

POSTDOCTORAL POSITIONS IN REPRODUCTIVE BIOLOGY

Postdoctoral positions in reproductive biology are available immediately in a NIH-funded interdisciplinary program. Research interests include ovarian, testicular, adrenal, and uterine physiology; neuroendocrinology; steroid receptors; fertilization. Only U.S. citizens and residents are eligible for appointment. Standard NIH stipend. Send statement of research interests, résumé, and three letters of recommendation to **Dr. Gary L. Jackson, College of Veterinary Medicine, University of Illinois, 2001 South Lincoln, Urbana, Illinois 61801; telephone 217-333-0745.** *The University of Illinois is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available for electrophysiologist or physiological psychologist to work on ongoing projects in olfactory and nasal trigeminal chemoreception. Salary commensurate with qualifications. Submit curriculum vitae and four references with résumé to **Richard L. Doty, Ph.D., Director, Smell and Taste Center, 5 Ravdin Building, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, Pa. 19104.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available for research in enzymatic lipid peroxidation. Background in biochemistry and experience with gc/ms preferred. Send curriculum vitae to **Dr. John B. Schenckman, Department of Pharmacology, University of Connecticut Health Center, Farmington, Conn. 06032.**

An Affirmative Action/Equal Opportunity Employer, M/W/H.

POSTDOCTORAL POSITION now open to study one or more aspects of mitochondrial DNA: its enzymatic replication and role of topoisomerases, evolutionary studies, control of its replication, and mechanism of maternal inheritance. Techniques: enzyme isolation, cloning, sequencing, and electron microscopy. Write **Dr. M. V. Simpson, Department of Biochemistry, State University of New York, Stony Brook, N.Y. 11794.** *An Equal Opportunity/Affirmative Action Employer. Telephone: 516-246-7617.*

POSTDOCTORAL/RESEARCH ASSOCIATE position to study phenylketonuria (PKU) by analysis of the phenylalanine hydroxylase gene. The study involves the use of a cloned cDNA probe to isolate mutant genes from deficient individuals. DNA sequence analysis, and gene transfer into cells and embryos. Background or experience in molecular biology/biochemistry preferred. Send curriculum vitae and three letters to **Dr. Savio L. C. Woo, Department of Cell Biology, Baylor College of Medicine, Houston, Texas 77030.** *Baylor is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION AT MAYO CLINIC to study carcinogenesis and the integrated control of cell proliferation and cell differentiation beginning summer 1983. For Project Focus see: *Proceedings of National Academy of Science* 79, 845 (1982); *Journal of Cell Biology* 94, 394 and 400 (1982); and *American Journal of Pathology* 107, 342 (1982). Send curriculum vitae and the names of three references to: **Robert E. Scott, M.D., Head, Section of Experimental Pathology, Departments of Pathology and Cell Biology, Mayo Clinic, Rochester, Minn. 55905.** *An Equal Opportunity/Affirmative Action Institution.*

UNIVERSITY OF CALIFORNIA, IRVINE

POSTDOCTORAL RESEARCH POSITION. To work on the isolation and genetic regulation of human genes of clinical significance. Experience in recombinant DNA methodology desirable. Send curriculum vitae and names/addresses of three references to **Dr. M. Smith, Departments of Pediatrics and Microbiology, College of Medicine, University of California, Irvine, Irvine, Calif. 92717.** *An Affirmative Action/Equal Opportunity Employer. Closing date 15 November 1982.*

POSTDOCTORAL TRAINING IN NEUROBIOCHEMISTRY. Position to study the effects of psychotropic drugs upon metabolism in cell culture. Interest and/or experience in two-dimensional electrophoresis, EM, RIA, HPLC, protein and peptide metabolism desired. Stipends determined by NIH training grant. Qualified individuals should apply to **Dr. Dale Deutsch, Department of Pathology, Stat University of New York Stony Brook, Stony Brook N.Y. 11794.** *SUNY Stony Brook is an Equal Opportunity/Affirmative Action Employer. AK No. 438.*

New England Biolabs, Inc. will be expanding its staff during 1982-1983 with positions available at the following levels:

POSTDOCTORAL POSITIONS

Available in October, 1982 to individuals experienced in cloning either eukaryotic or prokaryotic genes.

B.S. or M.S. LEVEL

Positions are immediately available to individuals with several years experience in various areas of molecular biology such as protein purification, viral DNA isolation, DNA sequencing, enzymology and microbiology.

Applicant should send curriculum vitae to: Personnel Director, New England Biolabs, Inc., 32 Tozer Road, Beverly, MA. 01915, USA.



UNIVERSIDAD AUTONOMA

DE CD. JUAREZ

ESCUELA DE MEDICINA

ADVANCED STANDING ADMISSION PROGRAM

The University of Ciudad Juárez, School of Medicine has established a procedure for individuals possessing certain doctoral degree, whereby these individuals may be considered for admission into the medical curriculum at an advanced level as students in the regular five-year program.

It is possible for successful students to complete the core clinical courses and clinical training for the M.D. degree within 32 months.

To be considered for admission an individual must possess credentials in one of the following categories:

- 1.-A Ph. D. in a basic medical science.
- 2.-A doctoral degree from certain professional school of Dentistry or Veterinary Medicine where the basic sciences is equivalent in content to that of the medical school.
- 3.-A Ph. D. in a (Non-Basic) science are where the transcript can demonstrate appropriate scientific training.

Individuals with a professional degree in Chiropractic Medicine, Optometry, Osteopathy, Podiatry or Stomatology are not eligible for advanced standing.

Applications must be completed by Dec. 31 of the year prior beginning study in Cd. Juarez.

DIRECT INQUIRES TO:

LUIS RAUL ABBUD ABBUD, M.H.A.
ADMINISTRATOR.

UNIVERSIDAD AUTONOMA DE CD. JUAREZ
APDO. POSTAL 231
CD. JUAREZ, CHIH., MEXICO

Senior Information Scientist

Smith Kline & French Laboratories, an ethical pharmaceutical company, is seeking a Senior Information Scientist for our R & D Information Center.

The selected candidate will be required to: conduct manual and computerized literature and patent searches; supervise other information scientists; maintain current knowledge of information retrieval technology and recommend equipment/system changes; keep abreast of scientific aspects of ongoing SK&F projects.

Candidates should have a Ph.D. with strong background in biological and chemical sciences. Industrial experience conducting retrospective literature searches including formal training/experience in commercial on-line data bases required; patent prior art experience preferred.

We offer an excellent opportunity for professional growth coupled with an inviting benefit package. If interested, please send resume to Ms. Andrea Southall, SmithKline Beckman Corporation, 1554 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

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LEICESTER UNIVERSITY

THE LEICESTER BIOCENTRE POSTDOCTORAL POSITIONS

The Leicester Biocentre is being established as a Research Institute to develop the application of recombinant DNA technology to fundamental problems in Biology and to related industrial processes. The Centre, sponsored by several industrial companies and supported by a grant from the Science and Engineering Research Council, will be situated in close proximity to the School of Biological Sciences with which it will have strong links. The initial research programme will involve the study of several aspects of the structure, replication and expression of genes in yeast and in plants.

Several postdoctoral positions are now available for both junior fellows and for more senior, project leaders. Posts will initially be funded for up to 5 years and persons with postgraduate and postdoctoral experience in molecular genetics, molecular biology and in particular with knowledge of gene manipulation techniques should now apply for further details to the **Registrar (Biological Sciences), University of Leicester, Leicester LE1 7RH**, giving brief career details and the names of two referees.

Suitable applicants will be appointed as soon as possible with recruitment expected to be completed by December 1982. For this first announcement the closing date for applications is **October 31**.

POSITIONS OPEN

POSTDOCTORAL POSITIONS AVAILABLE

Postdoctoral positions for 2 to 3 years are available for individuals interested in studying macrophage-tumor cell interactions, macrophage regulation by prostaglandins and MAF, and liposome-macrophage delivery systems. These studies will involve both in vitro human macrophage-tumor cell interaction and animal tumor models. The project will be undertaken in laboratories directed by John Rinehart, Bruce Zwilling and Carol Whitacre at the Ohio State University. Please send curriculum vitae to **Dr. John Rinehart, N1035 University Hospital, 410 West 10 Avenue, Columbus, Ohio 43210. Equal Opportunity Employer.**

POSTDOCTORAL POSITION for recent Ph.D. or M.D., U.S. citizen or permanent resident, available immediately, supported by NIH training grant (National Research Service Awards), in the area of basic cancer chemotherapy, clinical cancer chemotherapy, cancer biology, or cancer drug development (organic synthesis). Application deadline: One month. Send résumé, indicating area(s) of interest and two or more letters of reference, to **Dr. Sungman Cha, Brown University, Box G, Providence, R.I. 02912. Telephone: 401-863-3114. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL-RESEARCH ASSOCIATE POSITION

Available now to investigate mechanisms of regulation of lipoprotein lipase and hepatic lipase protein synthesis and catalytic activities. Cell culture (liver, adipocyte, and endothelial) and molecular biology and immunochemical (monoclonal antibodies) approaches are employed. Applicants should have training in biochemistry or molecular biology. Send résumé and names of three references to **Dr. Andre Bensadoun, Division of Biological Sciences and Nutritional Biochemistry, 242 Savage Hall, Cornell University, Ithaca, New York 14853.**

PROFESSOR OF NEUROBIOLOGY. The Department of Neurobiology at Harvard Medical School has a tenured position available in the area of molecular genetics as applied to the study of neuronal function and development. An important goal of this appointment is to complement current work in the department and provide opportunities for collaboration. The person who fills this position will participate in the teaching of medical and graduate students; excellence in teaching and a concern for teaching are essential. This person will also participate in the affairs of the department and of the Medical School. Applicants should send a curriculum vitae and résumé of current and planned research, preferably by 15 November, to: **Dr. David D. Potter, Chairman, Search Committee, Department of Neurobiology, Harvard Medical School, 25 Shattuck Street, Boston, Mass. 02115. Harvard Medical School is an Affirmative Action/Equal Employment Opportunity Employer.**

PULMONARY PHYSIOLOGIST (Ph.D.) wanted to direct a clinical pulmonary function laboratory. Must have familiarity with standard pulmonary function testing equipment. Applicants must have a strong interest in teaching and the ability to conduct an independent research program. Salary is hard money. Send curriculum vitae to **Harry Steinberg, M.D., Chief, Division of Pulmonary Medicine, LONG ISLAND JEWISH-HILLSIDE MEDICAL CENTER, New Hyde Park, N.Y. 11042. An Equal Opportunity Employer.**

The University of Michigan Medical School, Department of Biological Chemistry, is inviting applications for a position at the rank of **RESEARCH ASSISTANT OR ASSOCIATE**, depending upon experience. Candidates should have a B.S. degree in biochemistry or related field plus direct experience in protein chemistry. Will be expected to work in Protein Sequencing Facility under direction of Dr. George E. Tarr. Send résumé to: **Dr. M. J. Coon, Chairman, Department of Biological Chemistry, The University of Michigan Medical School, Ann Arbor, Michigan 48109. A nondiscriminatory, Affirmative Action Employer.**

RESEARCH ASSOCIATE at the level of instructor to work on embryo transplantation experiments in genetically hypertensive rats. Appropriate backgrounds for applicants could be genetics or physiology, but these specific disciplines are not necessarily required. The work will be part of ongoing projects on the biochemical-genetics of hypertension. The position is available immediately. Send curriculum vitae to **Dr. John Rapp, Department of Medicine, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699. An Equal Opportunity Employer, M/F.**

POSITIONS OPEN

RESEARCH ASSOCIATE. Available immediately for studies on genetic regulation of β -galactosidase in yeast, including mutant isolation and characterization, gene cloning, DNA sequencing, and in vitro transcription. Experience in genetics or biochemistry essential. Faculty position possible. Salary: \$14,000 to \$20,000 depending upon experience. Please send résumé and three letters of reference to: **Dr. Robert Dickson, Department of Biochemistry, University of Kentucky College of Medicine, Lexington, Ky. 40536-0084. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE—MOLECULAR GENETICIST. Available immediately for Ph.D. to develop cloning systems for *Zymomonas*. Two-year position; \$17,000. Please submit curriculum vitae and three letters of recommendation to **Douglas Eveleigh, Department of Biochemistry and Microbiology, Cook College, Rutgers University, New Brunswick, N.J. 08903. An Affirmative Action/Equal Opportunity Employer.**

RESEARCH ASSOCIATE/POSTDOCTORAL ASSOCIATE. Immediate opening to work on a cloned thermophilic endocellulase gene. Experience in protein chemistry and recombinant DNA research desired. Salary: \$13,000 to \$15,000. Send curriculum vitae and name of three references to: **Dr. David B. Wilson, Department of Biochemistry, Cornell University, Ithaca, N.Y. 14853. An Equal Opportunity/Affirmative Action Employer**

RESEARCH ASSOCIATE (ADJUNCT INSTRUCTOR) BIOCHEMISTRY. Challenging opportunity to work with energetic team of biochemists to do research on new recombinant DNA techniques. Successful candidate should have Ph.D. degree in biochemistry or chemistry with strong background in analytical biochemistry. Background in DNA helpful. Project offers opportunity to develop career in recombinant DNA technologies. Salary: \$26,311 to \$29,764 depending on qualifications. Initial appointment for 1 year with reappointment probable. Please send curriculum vitae and names of three individuals who may be contacted for references to: **Department of Biochemistry, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY—Rutgers Medical School, P.O. Box 101, Piscataway, New Jersey 08854. An Equal Opportunity/Affirmative Action Employer M/F.**

RESEARCH ASSOCIATE. Use biochemical fractionation techniques to isolate particular membrane fractions from rabbit hearts. Electron microscopic examination of heart muscle structure, for the immunochemical and immunocytological study of normal and abnormal heart muscles. Forty hours per week at \$20,000 salary per year. *Requires:* Ph.D. degree in biochemistry. Send résumé to:

**Joan Haight
Illinois Job Service
910 South Michigan Avenue
Room 400
Chicago, Illinois 60605
Reference #9810-H**

RESEARCH ASSOCIATE

Ph.D. in plant cytogenetics with special training in chromosome engineering in linkage mapping by trisomic analysis. Take part in maintenance of barley genetic stocks including all trisomics. Good knowledge of Giemsa-banding technique and photomicroscopy. Excellent cytological technique for handling both mitotic and meiotic chromosomes. Salary \$15,000 per year. Send résumé and three references by 27 October to:

**Dr. T. Tsuchiya
Department of Agronomy
Colorado State University
Fort Collins, Colorado 80523**

CSU is Equal Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Service Building.

RESEARCH FELLOW position at the level of \$16,000 per year for 2 to 3 years is available immediately for Ph.D. in microbiology and biochemistry with strong background in biochemistry, microbial genetics, and hybridoma technology. Emphasis will be on identification, isolation and characterization of *Pasteurella multocida* immunogens and virulence factors of *P. multocida* rabbit isolates.

Please send curriculum vitae and names of three references to **Dr. Robert Lu, Division of Comparative Medicine, University of Texas Health Science Center at Dallas, Dallas Texas 75235. An Affirmative Action/Equal Opportunity Employer**

POSITIONS OPEN

RESEARCH ASSOCIATE. Ph.D. Immediate position available to set up laboratory for neuropsychopharmacological drug assays for research involving biochemical and behavioral influences of catecholamines and related neurotransmitters in human and nonhuman primates. Academic appointment possible. Send curriculum vitae and three references to **Daniel E. Casey, M.D., Psychiatry Service, VA Medical Center, Portland, Ore. 97207. Affirmative Action/Equal Opportunity Employer.**

RUMINANT NUTRITIONIST POSITION. The Department of Animal Sciences at Washington State University seeks a faculty member for a research/teaching position. This is a tenure-track position. Research involving basic ruminant nutrition and metabolism is preferred. For more information write: **Dr. R. L. Kincaid, Department of Animal Sciences, Washington State University, Pullman, Wash. 99164-6320.** Review of applications will begin 1 November 1982.

Washington State University is an Equal Opportunity/Affirmative Action Employer.

SOIL SCIENTIST. To determine mechanisms of reactions of toxic organic compounds with inorganic and organic components in soil and lake sediments. Requirements: Undergraduate degree (B.A., B.S., B.Sc.) in organic chemistry; graduate degree (Ph.D.) in organic chemistry of soils; 2 years of postdoctoral experience, with proven ability in research including publications. Must be proficient in advanced instrumental techniques including visible, ultraviolet, infrared and AA spectroscopy; GC/MS and HPLC; gravimetric and differential thermal analysis; and x-ray diffraction. Must be proficient in computer programming and have proven ability to work with toxic, explosive, and carcinogenic organic compounds without endangering self or others. Conditions of work: 35-hour week, salary \$21,753 per annum, and fringe benefits. Send résumé to: **Job Service Technical Unit, Connecticut Department of Labor, Wethersfield, Conn. 06109. Job Order No. 262292. An Equal Opportunity/Affirmative Action Employer.**

WOMEN'S STUDIES. Openings for one or more tenure-track faculty positions jointly appointed by the Women's Studies Program and a second appropriate department to start in fall 1983. Rank of the appointment is open. Applications welcome from candidates in law, behavioral sciences, humanities, biological sciences, and African and Third World Studies whose major research focus is in Women's Studies. Submit curriculum vitae (including statement of research and teaching interests), samples of best published or unpublished scholarly work, and letters of recommendation sent directly from three referees to: **Search Committee, Women's Studies Program, 332E Uris Hall, Cornell University, Ithaca, N.Y., 14853. Cornell University is an Equal Opportunity/Affirmative Action Employer.**

ASSISTANTSHIP

RESEARCH ASSISTANTSHIP. M.S. or Ph.D. degree program. Ultrastructural and immunochemical studies of myelin development in normal and genetically abnormal dogs. Applications should include résumé, three references, and all university transcripts. Qualifications: D.V.M. or equivalent or B.S. Apply to: **Dr. I. D. Duncan, School of Veterinary Medicine, University of Wisconsin-Madison, 333 North Randall Avenue, Madison, Wis. 53715. An Equal Opportunity/Affirmative Action Employer.**

PROGRAMS

W. ALTON JONES CELL SCIENCE CENTER, INC. ANNOUNCEMENT OF VISITING SCIENTIST PROGRAM

The W. Alton Jones Cell Science Center, of Lake Placid, New York, invites persons interested in receiving advanced training in the latest aspects of cell biology to apply for appointment as a visiting scientist. A summary of experience is requested along with a 100-word statement setting forth the candidate's aspirations in science. Written inquiries and applications are to be addressed to:

**Dr. Gordon H. Sato
Director-elect
W. Alton Jones Cell Science Center, Inc.
Old Barn Road
Lake Placid, N.Y. 12946**

An Affirmative Action/Equal Opportunity Employer

MEDICAL HISTORY IN THE MAKING

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THE CHALLENGE: INNOVATIONS IN CHEMISTRY ANALYSIS

Innovation took us to \$2+ billion and innovation will take us to new heights in the future. If you're a professional who is tuned into new product development and you're a competitor at heart, consider Abbott for maximum career growth.

Our new venture group will encompass a diverse professional team. The following opening is still available.

BIOCHEMIST

This is an outstanding opportunity for an individual with a Ph.D. in Biochemistry, Bio-Analytical Chemistry, or Physical Chemistry. 0-5 years experience with a background in reagent R&D, reagent development, blood chemistry, enzymology and protein chemistry. Knowledge of clinical laboratory procedures is also a plus.

We provide a truly competitive salary and benefits package that includes profit sharing and relocation assistance. Abbott Park, Abbott's headquarters, is located in an attractive suburban area on the Lake Michigan shoreline, 30 miles north of Chicago. Send a resume including salary history in confidence to: **Sue Hart-Wadley/Corporate Placement.**



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DNA Sequencing/ In Vitro Mutagenesis

Genex Corporation, an innovative biotechnology company located in Rockville and Gaithersburg, Maryland is seeking an experienced Ph.D. to direct its DNA Sequencing Group. Your major responsibilities will include further development of techniques for in vitro mutagenesis and DNA sequencing, and their application to a variety of challenging genetic engineering problems. Extensive experience with both Maxam-Gilbert and dideoxy sequencing is required.

Genex offers a stimulating, cooperative research and business environment, competitive salaries and fringe benefits and excellent facilities. A curriculum vitae describing your scientific background, publications and containing three references should be submitted prior to October 15, in confidence to:



Department R

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Rockville, Maryland 20852

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SCIENCE Introduces "The Four-Day Close"

We now offer our recruitment advertisers the convenience formerly found only in daily newspapers. We call it "**The Four-Day Close.**" Instead of reserving space a month or more in advance, you now have until just four days before the issue is mailed to its 160,000-plus subscribers.

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For further information, telephone **Dick Charles at SCIENCE: 212-730-1050**, or write: **1515 Broadway, New York, N.Y. 10036.**

*At a 15% premium.

PROGRAMS

W. ALTON JONES CELL SCIENCE CENTER, INC. ANNOUNCEMENT OF RESEARCH DEVELOPMENT AWARD PROGRAM IN BIOLOGY

The W. Alton Jones Cell Science Center, of Lake Placid, New York, announces a program for scientists in the early stages of their careers with unusually innovative plans for research. Exceptionally qualified persons with M.D. or Ph.D. degrees are invited to apply. A one-page plan of the proposed research is requested along with a statement of 100 words listing the candidate's most important scientific discoveries to date. The awards include salary and long-term laboratory support at: The W. Alton Jones Cell Science Center, Inc., Old Barn Road, Lake Placid, New York 12946. Candidates are invited to send their application to: Dr. Gordon H. Sato, Director-elect, at the above address.

An Affirmative Action/Equal Opportunity Employer

FELLOWSHIPS

RESEARCH FELLOWSHIP. Postdoctoral research traineeship available immediately for 1, 2, or 3 years in the area of neural control of the circulation and neurogenic mechanisms of systemic hypertension. Ph.D. in physiology or biochemistry. Must have experience in neurochemistry, radioimmunoassay of peptide hormones and neurotransmitters, radioenzymatic and HPLC assays for catecholamines and metabolites, use of stereotaxic instruments for invasive brain study, and experience with in vitro superfusion techniques for quantifying hormone and neurotransmitter release from hypothalamus and pituitary. Contact Suzanne Oparil, M.D., University of Alabama in Birmingham, 1012 Zeigler Building, University Station, Birmingham, Alabama 35294. *An Affirmative Action/Equal Opportunity Employer.*



UNIVERSITY OF CAPE TOWN Postdoctoral Research Fellowships in Cancer Research

From time to time the University invites applications for Postdoctoral Fellowships in Cancer Research, tenable at the University of Cape Town.

Fellowships are awarded for twelve months in the first instance, the stipend being R16 000. Successful candidates from abroad may receive, in addition, a travel grant of up to R1 500.

The Fellowships are available as from 1 January 1983. Applications are invited from persons in possession of a doctorate or equivalent qualification, and with interests in clinical or basic cancer research.

Applications must include details of the applicant's envisaged research programme, a full curriculum vitae and the names of two referees whom the University may contact. The policy of the University is not to discriminate in the appointment of staff on the grounds of sex, religion, race, colour or national origin.

The dates at which candidates will be expected to take up duties are flexible, although starting dates close to 1 January 1983 would be preferred.

Applications should be submitted as soon as possible to the Head, Research Administration, University of Cape Town, Private Bag, Rondebosch, 7700, South Africa.

FELLOWSHIPS

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In diabetes research, molecular endocrinology, molecular biology, differentiation, immunology, structure and function of membranes or lipid metabolism. Tenable for 2 years after 1 July 1983 with a competitive stipend. Available to new Ph.D.'s or candidates with less than 2 years of postdoctoral training by 30 June 1983. Send curriculum vitae, transcripts, and three letters of reference, preferably before 15 November 1982, to: Dr. C.-H. Siu, Search Committee Chairman, Banting and Best Department of Medical Research, University of Toronto, Toronto, Ontario, Canada M5G 1L6.

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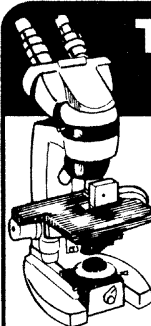
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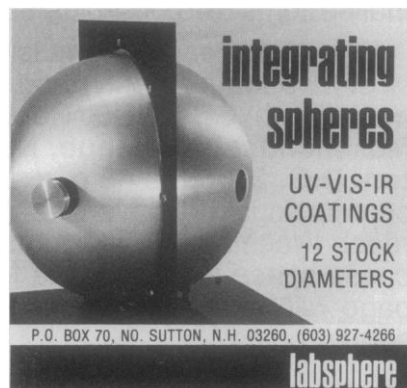
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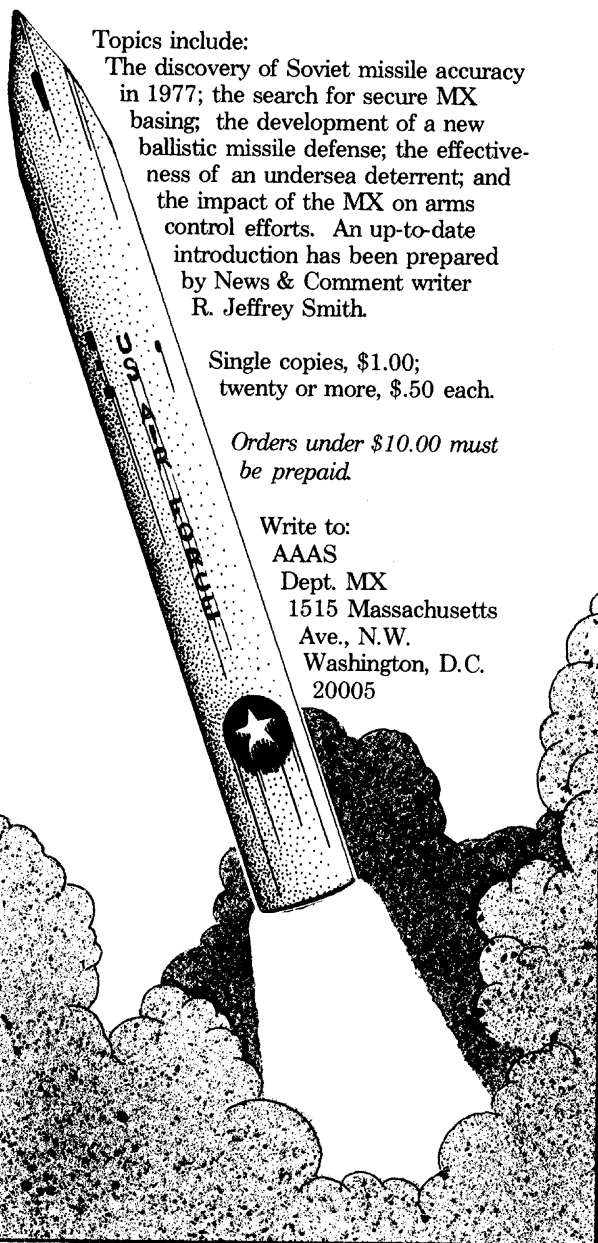
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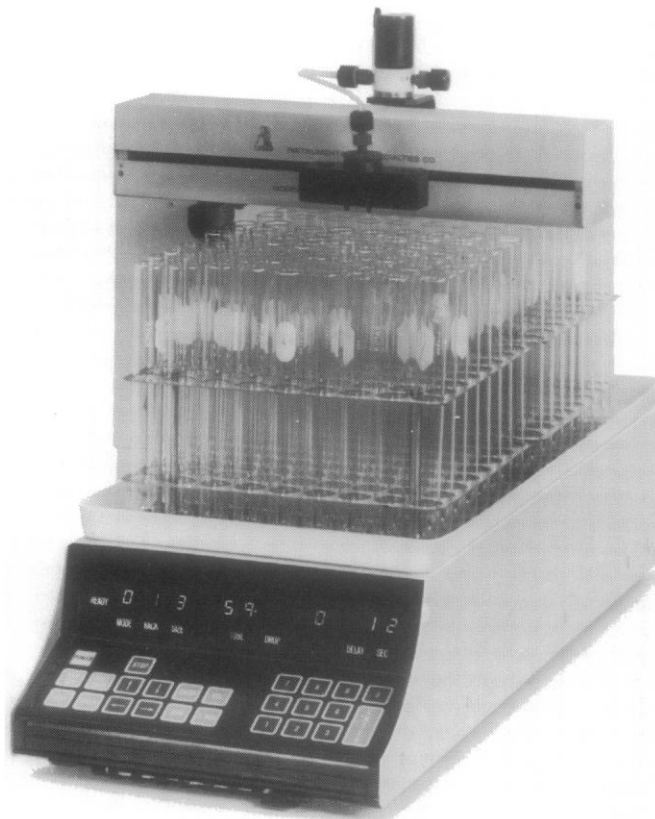
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