

psychologist Donald Campbell. Such a model, along with the case studies, provides important insights into the distinctiveness and complexity of engineering knowledge.

DAVID F. CHANNELL
Program in Historical Studies,
University of Texas at Dallas,
Richardson, TX 75083

Some Other Books of Interest

Psychology at Iowa. Centennial Essays. JOAN H. CANTOR, Ed. Erlbaum, Hillsdale, NJ, 1991. xii, 178 pp., illus. \$34.50. Based on a symposium, Iowa City, Oct. 1988.

Among the early developments important in establishing psychology as a discipline in the United States was the founding of the Psychology Laboratory at the University of Iowa. Associated with the laboratory and other institutional arrangements that succeeded it have been such eminent figures in the field as Carl Seashore, Kurt Lewin, and Kenneth Spence. In the opening chapter of this collection celebrating the laboratory's centennial Howard Kendler traces the intellectual lineages and orientations of these and other principal figures and describes the interplay of ideas and approaches that have gone into "the Iowa tradition" in psychology, which he sums up as representing "the strivings for a mutually beneficial relationship between experimental and applied psychology, a close and intimate bond between research and comprehensive theorizing, and a constant concern with the methodological foundations of psychology." After this introduction ten other Iowa alumni or former faculty further expound matters bearing on the tradition. I. E. Farber discusses the course "History and systems of psychology" taught by Gustav Bergmann at Iowa for over 30 years and Bergmann's assessments of British associationism, Gestalt theory, Freudianism, and various forms of behaviorism. Ernest Hilgard then presents recollections of faculty, students, and facilities up to about 1938, and Leonard Goodstein of the American Psychological Association takes note of roles Iowa faculty and graduates have played in that organization. The remaining papers deal with more specific research areas within psychology. Judson Brown, chairman of the Iowa department from 1965 to 1972, discusses definitional and experimental issues that have emerged in his studies of motivation, and Leonard Eron describes laboratory studies of aggression he conducted there. Research in developmental psychology at Iowa dates back to the establishment of the Iowa Child Welfare Research Station in 1917, and Tracy Kend-

ler gives a "retrospective and prospective view" of that field. Norman Garnezy then offers some observations bearing on research in psychopathology; Albert Bandura discusses "the changing icons in personality psychology"; and Abram Amsel discusses the study of frustration ("experimental neurosis" in one formulation) as related to stimulus-response theory and learning theory more broadly. In a more broadly focused paper Janet Spence offers some observations on current directions, including organizational issues, in psychology generally, concluding that "the challenge we currently face is to resist the balkanizing tendencies that have come with" the advances that have been made. The book ends with subject and author indexes.—K.L.

Science, American Style. NATHAN REINGOLD. Rutgers University Press, New Brunswick, NJ, 1991. x, 429 pp. \$42; paper, \$18.

In this volume Nathan Reingold, one of the first historians trained to take American science as his research subject, presents a collection of his essays published between 1958 and 1987. After an introduction in which he distinguishes his approach to the subject from the once-conventional "top-only" fixation on great ideas, great scientists, and great revolutionary events" and expresses his avocation for analyzing archival collections as material for "detective stories," Reingold presents a total of 17 essays under five headings. The group headed The National Stage includes a bicentennial assessment (De Tocqueville to Gerald Ford) and discussion of the professionalization of American science up to about 1900 and the supposed initial "American indifference to basic research." There follow five papers specifically focused on the 19th century, dealing with the Navy Department in the Civil War, activities in Russia of the meteorologist Cleveland Abbe, the influence of Alexander Dallas Bache, a "founder of the American scientific community," and the concerns of Joseph Henry. A further three papers consider institutions—the relations between American graduate schools and their European models and the early days of the Carnegie Institution of Washington, the National Academy of Sciences, and the Rockefeller Institute. The group headed The Perils of Maturity is a miscellany considering refugee mathematicians from Nazi Germany, Vannevar Bush's "new deal for research," and a Hollywood representation of the atomic bomb program. A final trio deals with historiographic issues: the relation of the history of science to the other disciplines—sociology and philosophy—

concerned with science, a 1980 indictment of trends in the field by Charles Gillispie (relevant references here being *Science* 207, 389 and 934), and the formulations of Thomas Kuhn. The essays have not been updated for the collection; rather, the author provides for each an introduction expounding the concerns that motivated him at the time of writing. A 19-page index concludes the volume.—K.L.

Books Received

The Analysis, Communication, and Perception of Risk. B. John Garrick *et al.*, Eds. Plenum, New York, 1991. xii, 713 pp., illus. \$145. *Advances in Risk Analysis*, vol. 9. From a meeting, San Francisco, CA, Oct. 1989.

The Anatomy of Philosophical Style. Literary Philosophy and the Philosophy of Literature. Berel Lang. Blackwell, Cambridge, MA, 1990. viii, 277 pp. \$44.95; paper, \$16.95.

Ancient North America. The Archaeology of a Continent. Brian M. Fagan. Thames and Hudson, New York, 1991. 480 pp., illus. Paper, \$29.95.

Bioactive Compounds from Plants. Derek J. Chadwick and Joan Marsh, Eds. Wiley, New York, 1990. xii, 242 pp., illus. \$63.50. Ciba Foundation Symposium 154. A Wiley-Interscience Publication. From a symposium, Bangkok, Thailand, Feb. 1990.

A Celebration of Colour in Astronomy. David Malin. Current Science Association, Bangalore, India, 1991. ii, 32 pp., illus., + plates. Paper, \$15. *Current Science*, A Special Issue. Vol. 60, no. 1.

Dry Etching for VLSI. A. J. van Roosmalen, J. A. G. Baggerman, and S. J. H. Brader. Plenum, New York, 1991. xviii, 237 pp., illus. \$69.50. *Updates in Applied and Electrical Technology*.

Earthwatch. The Climate from Space. John E. Harries. Horwood (Prentice Hall), Englewood Cliffs, NJ, 1991. 216 pp., illus., + plates. \$32. *Ellis Horwood Series in Atmospheric Science*.

Fundamentals of Ocean Acoustics. L. M. Brekhovskikh and Yu. P. Lysanov. 2nd ed. Springer-Verlag, New York, 1991. xii, 270 pp., illus. Paper, \$45. *Springer Series on Wave Phenomena*, vol. 8.

Genetic Algorithms and Robotics. A Heuristic Strategy for Optimization. Yuval Davidor. World Scientific, Teaneck, NJ, 1991. xvi, 164 pp., illus. \$29. *World Scientific Series in Robotics and Automated Systems*, vol. 1.

Genetically Engineered Organisms. Benefits and Risks. J. R. S. Fincham and J. R. Ravetz. University of Toronto Press, Buffalo, NY, 1991. xiv, 158 pp., illus. \$50; paper, \$15.95.

A Geostatistical Primer. Peter I. Brooker. World Scientific, Teaneck, NJ, 1991. vi, 95 pp., illus. \$32.

Global Change and Relevant Space Observations. J. L. Fellous, Ed. Published for the Committee on Space Research by Pergamon, New York, 1991. vi, 270 pp., illus. Paper, \$130. *Advances in Space Research*, vol. 11, no. 3. From a symposium, The Hague, The Netherlands, June 1990.

Glycogen Phosphorylase b. Description of the Protein Structure. K. R. Acharya *et al.*, Eds. World Scientific, Teaneck, NJ, 1991. viii, 123 pp., illus. \$38; paper, \$18.

Gossamer Odyssey. The Triumph of Human-Powered Flight. Morton Grosser. Dover, New York, 1991. xxii, 298 pp., illus., + plates. Paper, \$9.95. Reprint, 1981 ed.

Governmental Management of Chemical Risk. Regulatory Processes for Environmental Health. Rae Zimmerman. Lewis (CRC Press), Boca Raton, FL, 1990. xxii, 345 pp., illus. \$65. *Technology and Environmental Health Series*.

Gradient HPLC of Copolymers and Chromatographic Cross-Fractionation. Gottfried Glockner. Springer-Verlag, New York, 1991. xvi, 210 pp., illus. \$69.

Greek Astronomy. Sir Thomas L. Heath. Dover, New York, 1991. lviii, 192 pp. Paper, \$6.95. Dover Books on Astronomy. Reprint, 1932 ed.

Guide to Yeast Genetics and Molecular Biology. Christine Guthrie and Gerald R. Fink, Eds. Academic

Press, San Diego, CA, 1990. xxxviii, 933 pp., illus. \$95. Methods in Enzymology, vol. 194.

The Heart. Physiology and Metabolism. Lionel H. Opie. 2nd ed. Raven, New York, 1991. xiv, 513 pp., illus. \$68.

The Hedonics of Taste. Robert C. Bolles, Ed. Erlbaum, Hillsdale, NJ, 1991. xii, 233 pp., illus. \$36.

Heliconia. An Identification Guide. Fred Berry and W. John Kress. Smithsonian Institution Press, Washington, DC, 1991. x, 334 pp., illus. \$35; paper, \$16.95.

Hidden Dangers. Environmental Consequences of Preparing for War. Anne H. Ehrlich and John W. Birks, Eds. Sierra Club, San Francisco, CA, 1991. x, 246 pp., illus. Paper, \$19.

High-Tech Fibrous Materials. Composites, Biomedical Materials, Protective Clothing, and Geotextiles. Tyrone L. Vigo and Albin F. Turbak, Eds. American Chemical Society, Washington, DC, 1991. x, 398 pp., illus. \$84.95. ACS Symposium Series, 457. From a symposium, Miami Beach, FL, Sept. 1989.

The History of the Study of Landforms or The Development of Geomorphology. Vol. 3, Historical and Regional Geomorphology 1890-1950. Robert P. Beckinsale and Richard J. Chorley. Routledge, New York, 1991. xxiv, 496 pp., illus. \$149.95.

The Holographic Universe. Michael Talbot. Harper-Collins, New York, 1991. xiv, 338 pp., illus. \$19.95.

The Hour of Our Delight. Cosmic Evolution, Order, and Complexity. Hubert Reeves. Freeman, New York, 1991. x, 246 pp., illus. \$17.95. Translated from the French edition (Paris, 1986).

Infectious Diseases of Humans. Dynamics and Control. Roy M. Anderson and Robert M. May. Oxford University Press, New York, 1991. viii, 757 pp., illus. \$115.

Informal Reasoning and Education. James F. Voss, David N. Perkins, and Judith W. Segal, Eds. Erlbaum, Hillsdale, NJ, 1991. xviii, 498 pp., illus. \$74.50; paper \$39.95.

Instrumental Realism. The Interface between Philosophy of Science and Philosophy of Technology. Don Ihde. Indiana University Press, Bloomington, 1991. xiv, 159 pp., illus. \$29.95; paper, \$12.50. Indiana Series in the Philosophy of Technology.

Intelligent Tutoring Systems. Evolutions in Design. Hugh Burns, James W. Parlett, and Carol Luckhardt Redfield, Eds. Erlbaum, Hillsdale, NJ, 1991. xiv, 297 pp., illus. \$49.95; paper, \$27.50.

The International Classification of Sleep Disorders. Diagnostic and Coding Manual. Diagnostic Classification Steering Committee, American Sleep Disorders Association. American Sleep Disorders Association, Rochester, MN, 1990. xii, 396 pp., illus. \$59.95; paper, \$49.95.

Interval Methods for Systems of Equations. Arnold Neumaier. Cambridge University Press, New York, 1991. xvi, 255 pp., illus. \$59.50. Encyclopedia of Mathematics and Its Applications, 37.

Intraplate Volcanism in Eastern Australia and New Zealand. R. W. Johnson, J. Knutson, and S. R. Taylor, Eds. Cambridge University Press, New York, 1991. xxiv, 408 pp., illus., + plates. \$85.

Introduction to Applied Psychology. I. Akatsuka, Ed. SPB Academic Publishing, The Hague, The Netherlands, 1990. vi, 683 pp., illus. \$140.

Introduction to Optical Mineralogy. William D. Nesse. 2nd ed. Oxford University Press, New York, 1991. xii, 335 pp., illus. \$45.

Iron Biomaterials. Richard B. Frankel and Richard P. Blakemore, Eds. Plenum, New York, 1991. x, 435 pp., illus. \$95. From a conference, Durham, NH, July 1989.

Is Our Future Limited By Our Past? L. Freedman. Published for the Australasian Society for Human Biology by Centre for Human Biology, University of Western Australia, Nedlands, xvi, 322 pp., illus. \$A46; paper, \$A26. Proceedings of the Australasian Society for Human Biology, no. 3. From a conference, Canberra, Australia, Dec. 1989.

Knowledge-Based Systems in Agriculture. Richard E. Plant and Nicholas D. Stone. McGraw-Hill, New York, 1991. xvi, 365 pp., illus. \$59.95. Biological Resource Management.

Learning to Read. Basic Research and Its implications. Laurence Rieben and Charles A. Perfetti, Eds. Erlbaum, Hillsdale, NJ, 1991. xiv, 213 pp., illus. \$39.95.

The Legacy of Erich Fromm. Daniel Burston. Harvard University Press, Cambridge, MA, 1991. xvi, 260 pp., illus. \$29.95.

Light, Lasers, and Synchrotron Radiation. A Health Risk Assessment. M. Grandolfo, A. Rindi, and D. H. Sliney, Eds. Plenum, New York, 1991. x, 426 pp., illus. \$105. NATO Advanced Science Institutes Series, vol. 242. Series B, Physics. From an advanced study institute, Sicily, Italy, May 1989.

Major Advances in Human Female Reproduction. E. Y. Adashi *et al.*, Eds. Raven, New York, 1991. xvi, 410 pp., illus. \$98. Sero Symposium Publications, vol. 73. From a Symposium, Rome, Italy, May 1990.

The Marine Fauna of the British Isles and North-West Europe. P. J. Hayward and J. S. Ryland, Eds. Clarendon (Oxford University Press), New York, 1990. 2 vols. Vol. 1, Introduction and Protozoans to Arthropods. xvi pp. + 1-628 pp., illus., + appendix. \$195. Vol. 2, Molluscs to Chordates. xviii pp. + pp. 629-996, illus. \$185.

Mass Spectrometry. James A. McCloskey, Ed. Academic Press, San Diego, CA, 1990. xxx, 960 pp., illus. \$99. Methods in Enzymology, vol. 193.

Materials for Nonlinear Optics. Chemical Perspectives. Seth R. Marder, John E. Sohn, and Galen D. Stucky, Eds. American Chemical Society, Washington, DC, 1991. xvi, 750 pp., illus. \$129.95. ACS Symposium Series, 455. From a symposium, Boston, MA, April 1990.

Mathematics and Science. Ronald E. Mickens, Ed. World Scientific, Teaneck, NJ, 1990. x, 342 pp., illus. \$67.

Mathematica in Action. Stan Wagon. Freeman, New York, 1991. xvi, 419 pp., illus. \$39.95; paper, \$29.95.

Mating and Marriage. Vernon Reynolds and John Kellett, Eds. Oxford University Press, New York, 1991. xii, 164 pp., illus. \$53. Biosocial Society Series, 3. From a workshop, Oxford, U.K., May 1988.

Melanie Klein. Vol. 2, The Ego and the Good Object, 1932-1960. Jean-Michel Petot. International Universities Press, Madison, CT, 1991. xii, 281 pp. \$40. Translated from the French edition (Paris, 1982) by Christine Trollope.

Memories, Thoughts, and Emotions. Essays in Honor of George Mandler. William Kessen, Andrew Ortony, and Fergus Craik, Eds. Erlbaum, Hillsdale, NJ, 1991. x, 353 pp., illus. \$69.95.

Mental Imagery. Robert G. Kunzendorf, Ed. Plenum, New York, 1991. xii, 277 pp., illus. \$79.50. From conferences, Washington, DC, June 1989, Boston, and Lowell, MA, June 1990.

Methods for Social Analysis in Developing Countries. Kurt Finsterbusch, Jasper Ingersoll, and Lynn Llewellyn, Eds. Westview, Boulder, CO, 1990. viii, 225 pp., illus. Paper, \$34.95. Recent Titles in the Social Impact Assessment Series.

Methods in Enzymology. Vol. 196, Molecular Motors and the Cytoskeleton. Richard B. Vallee, Ed. Academic Press, San Diego, CA, 1991, xxx, 559 pp., illus. \$75.

Methods in Enzymology. Vol. 197, Phospholipases. Edward A. Dennis, Ed. Academic Press, San Diego, CA, 1991. xxxiv, 640 pp., illus. \$79.

Microscopic Anatomy of Invertebrates. Vol. 1, Protozoa. Frederick W. Harrison and John O. Corliss, Eds. Liss (Wiley), New York, 1990. xiv, 493 pp., illus. \$150.

Microscopic Anatomy of Invertebrates. Vol. 2, Placozoa, Porifera, Cnidaria, and Ctenophora. Frederick W. Harrison and Jane A. Westfall, Eds. Liss (Wiley), New York, 1990. xiv, 436 pp., illus. \$150.

Mixed Cultures in Biotechnology. J. Gregory Zeikus and Eric A. Johnson. McGraw-Hill, New York, 1991. x, 438 pp., illus. \$59.95. McGraw-Hill Environmental Biotechnology Series.

Neurotransmitters and Epilepsy. Robert S. Fisher and Joseph T. Coyle, Eds. Liss (Wiley), New York, 1991. x, 260 pp., illus. \$99.95. Frontiers of Clinical Neuroscience, vol. 11.

Neutrinos and Other Matters. Selected Works of Frederick Reines. W. Kropp *et al.*, Eds. World Scientific, Teaneck, NJ, 1991. xxxiv, 580 pp., illus. \$78.

The New Penguin Dictionary of Biology. M. Abecrombie *et al.* 8th ed. Penguin, New York, 1991. viii, 600 pp., illus. Paper, \$9.95.

1990 Emergency Response Guidebook. Guidebook for First Response to Hazardous Materials Incidents. Office of Hazardous Materials Transportation, U.S. Department of Transportation, Washington, DC, 1990. Various pages.

Nitroarenes. Occurrence, Metabolism, and Biological Impact. Paul C. Howard, Stephen S. Hecht, and Frederick A. Beland, Eds. Plenum, New York, 1990. x, 333 pp., illus. \$79.50. Environmental Science Research, vol. 40. From a conference, Cleveland, OH, July 1989.

Nucleic Acids in Chemistry and Biology. G. Michael Blackburn and Michael J. Giat, Eds. IRL (Oxford University Press), New York, 1990. xiv, 447 pp., illus. \$115; paper, \$49.95.

On Death without Dignity. The Human Impact of Technological Dying. David Wendell Moller. Baywood, Amityville, NY, 1990. xviii, 116 pp. \$21.95; paper, \$16.50. Perspectives on Death and Dying.

Peak Learning. A Master Course in Learning How to Learn. Ronald Gross. Tarcher, Los Angeles, CA, 1991. xvi, 280 pp., illus. Paper, \$12.95.

The Penguin Dictionary of Physics. Valerie Illingworth, Ed. 2nd ed. Penguin, New York, 1991. viii, 544 pp., illus. Paper, \$9.95.

Peptide Hormone Action. A Practical Approach. K. Siddle and J. C. Hutton, Eds. IRL (Oxford University Press), New York, 1991. xx, 256 pp., illus. \$78; paper, \$50. Practical Approach Series.

Persistent Poverty. The American Dream Turned Nightmare. Richard H. Ropers. Insight (Plenum), New York, 1991. xvi, 251 pp., illus. \$23.95.

Perspectives in Ethology. Vol. 9, Human Understanding and Animal Awareness. P. P. G. Bateson and Peter H. Klopfer, Eds. Plenum, New York, 1991. xvi, 314 pp., illus. \$69.50.

Pesticide Resistance in Arthropods. Richard T. Roush and Bruce E. Tabashnik, Eds. Chapman and Hall, New York, 1991. x, 303 pp., illus. \$57.50.

Pesticide Transformation Products. Fate and Significance in the Environment. L. Somasundaram and Joel R. Coats, Eds. American Chemical Society, Washington, DC, 1991. xii, 305 pp., illus. \$64.95. ACS Symposium Series, 459. From a meeting, Washington, DC, Aug. 1990.

The Quantum Self. Human Nature and Consciousness Defined by the New Physics. Danah Zohar with I. N. Marshall. Quill (Morrow) New York, 1991. 269 pp., illus. Paper, \$10. Reprint, 1990.

Quantum Theory of the Solid State. Joseph Callaway. 2nd ed. Academic Press, San Diego, CA, 1991. xiv, 954 pp., illus. \$149.95.

Radioactive Waste Disposal and Geology. Konrad B. Krauskopf. Chapman and Hall, New York, 1991. xii, 145 pp., illus. Paper, \$29.50. Topics in the Earth Sciences, vol. 1.

Recent Advances in Chiral Separations. D. Stevenson and I. D. Wilson, Eds. Plenum, New York, 1990. xii, 230 pp., illus. \$69.50. From a symposium, Surrey, U.K., Sept. 1989.



POTAMKIN PRIZE FOR ALZHEIMER'S DISEASE RESEARCH

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