

nitive neuroscience" suggests a new approach to the old puzzles of mind and brain. Problems of mind at the cognitive level become problems of brain for neurobiology. A quantitative transition from one level to another replaces the old mind-brain dichotomy. In this interpretation, experience becomes a functional adjunct to some of the higher levels of behavioral integration.

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## Yeasts

**Yeast Cell Biology.** JAMES HICKS, Ed. Liss, New York, 1986. xxii, 671 pp., illus. \$125. UCLA Symposia on Molecular and Cellular Biology, New Series, vol. 33. From a symposium, Keystone, CO, April 1985.

During the past 10 years research on yeasts has undergone rapid progress on several fronts. This progress stems from the development of molecular genetic techniques for isolating genes and for changing any chosen nucleotide in the yeast genome. The phenotypic effects of mutations thus produced, including even lethal ones, can be determined readily by various biochemical, immunochemical, and genetic selection techniques. Data collection is also facilitated by a short (two hours) life cycle and simple growth conditions. In addition, improvements in cellular fraction techniques now allow nearly all types of organelles to be purified in large quantities.

This collection of papers provides a clear indication that our understanding of cell biology at the molecular level will expand at an explosive rate in the next decade. It offers glimpses into several areas of cell biology in which yeasts, primarily *Saccharomyces cerevisiae*, are being used to dissect fundamental cellular processes. One cannot help sensing the aura of excitement that surrounds this research.

Topics covered include the cytoskeleton, control of the cell cycle, DNA replication and chromosome structure, nuclear organization, macromolecular traffic (proteins localized in the nucleus; secretion, endocytosis, and the cell surface; import of proteins into mitochondria), and models for development.

Several contributions provide sufficient background material to allow beginning and advanced researchers whose expertise lies elsewhere to comprehend not only the experimental details presented but also how they fit into the larger scheme of the cell. Papers in this vein include those by Pillus

and Solomon and Thomas *et al.* on the cytoskeleton, by Ng *et al.* on centromeres, by Guthrie *et al.* on small RNA's and RNA processing, and by Gross *et al.* on chromatin structure and gene expression. The final chapter, by Herskowitz, on yeast as a model for development, lucidly describes how yeast cells "make it possible to learn about several important areas of cell biology, in particular, the cell cycle and growth control, protein localization, chromosome structure, meiosis, and morphogenesis."

This book should appeal to a wide audience including graduate students and senior researchers who want to survey selected areas of cell biology. Although one can profitably read a few papers, I highly recommend reading the entire book because it provides a global view of current and future research directions in cell biology.

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## Books Received

**African Iron Working.** Ancient and Traditional. Randi Haaland and Peter Shinnie, Eds. Norwegian University Press, Oslo, 1985 (U.S. distributor, Oxford University Press, New York). 211 pp., illus. \$42.

**The Air Controllers' Controversy.** Lessons from the PATCO Strike. Arthur B. Shostak and David Skocik. Human Sciences Press, New York, 1986. 274 pp., illus. \$34.95; paper, \$15.95.

**Air Pollution.** Arthur C. Stern, Ed. 3rd ed. Academic Press, Orlando, FL, 1986. Vol. 6, Supplement to Air Pollutants, Their Transformation, Transport, and Effects. xii, 483 pp., illus. \$70. Vol. 7, Supplement to Measurements, Monitoring, Surveillance, and Engineering Control. xiv, 523 pp., illus. \$69.50. Vol. 8, Supplement to Management of Air Quality. xii, 206 pp., illus. \$43.50. Environmental Sciences.

**Alfred Wegener.** The Father of Continental Drift. Martin Schwarzbach. Science Tech, Madison, WI, 1986. xx, 241 pp., illus. \$35. Scientific Revolutionaries. Translated from the German edition (Stuttgart, 1980). Original edition reviewed in *Science* 209, 681 (1980).

**Boundary Value Problems for Higher Order Differential Equations.** Ravi P. Agarwal. World Scientific, Philadelphia, 1986. xii, 307 pp., illus. \$35.

**Brain and Blood Pressure Control.** Keiji Nakamura, Ed. Excerpta Medica (Elsevier), New York, 1986. xii, 455 pp., illus. \$92.50. International Congress Series, no. 695. From a symposium, Tokyo, Oct. 1985.

**The Brain, Cognition, and Education.** Sarah L. Friedman, Kenneth A. Klivington, and Rita W. Peterson, Eds. Academic Press, Orlando, FL, 1986. xiv, 385 pp., illus. \$34.95.

**The Conscious Mind.** A Developmental Theory. A. J. Malerstein. Human Sciences Press, New York, 1986. 163 pp., illus. \$24.95.

**Contemporary Classics in Plant, Animal, and Environmental Sciences.** Compiled by James T. Barrett. ISI Press, Philadelphia, 1986. xv, 371 pp. \$39.95. Contemporary Classics in Science.

**Contemporary Theory of Chemical Isomerism.** Zdeněk Slanina. Reidel, Dordrecht, 1986 (U.S. distributor, Kluwer, Norwell, MA). viii, 254 pp., illus. \$59. Understanding Chemical Reactivity. Translated from the Czechoslovakian edition (Prague, 1986).

**Control and Dynamic Systems.** Advances in Theory and Applications. C. T. Leonides, Ed. Academic Press, Orlando, FL, 1986. Vol. 23, Decentralized/Distributed Control and Dynamic Systems. Part 2 of 3. xii, 323 pp., illus. \$49.50. Vol. 24, Decentralized/Distributed Control and Dynamic Systems. Part 3 of 3. x, 362 pp., illus. \$57.50.

**The Dynamics of Physiologically Structured Populations.** J. A. J. Metz and O. Diekmann, Eds. Springer-Verlag, New York, 1986. xii, 511 pp., illus. Paper, \$47.70. Lecture Notes in Biomathematics, 68. Based on a colloquium, Amsterdam, 1983.

**Dynamics of Wave Packets in Molecular and Nuclear Physics.** Jan Broeckhove, Luc Lathouwers and Piet van Leuven, Eds. Springer-Verlag, New York, 1986. viii, 187 pp., illus. \$20. Lecture Notes in Physics, 256. From a meeting, Priorij Corsendonck, Belgium, July 1985.

**Einstein's Dream.** The Search for a Unified Theory of the Universe. Barry Parker. Plenum, New York, 1986. x, 287 pp., illus. \$18.95.

**Electromyography for Experimentalists.** Gerald E. Loeb and Carl Gans. University of Chicago Press, Chicago, 1986. xx, 373 pp., illus. \$60; paper, \$22.

**Fundamentals of the Theory of Operator Algebras.** Vol. 2, Advanced Theory. Richard V. Kadison and John R. Ringrose. Academic Press, Orlando, FL, 1986. xiv pp. + pp. 399-1074. \$79.50; paper, \$39.50. Pure and Applied Mathematics.

**GABA and Endocrine Function.** Giorgio Racagni and Alfredo O. Donoso, Eds. Raven, New York, 1986. xviii, 302 pp., illus. \$55. Advances in Biochemical Psychopharmacology, vol. 42. From a symposium, Buenos Aires, Nov. 1985.

**Galaxy Distances and Deviations from Universal Expansion.** Barry F. Madore and R. Brent Tully, Eds. Reidel, Dordrecht, 1986 (U.S. distributor, Kluwer, Norwell, MA). xviii, 301 pp., illus. \$64. NATO Advanced Science Institutes Series C, vol. 180. From a workshop, Kona, HI, Jan. 1986.

**Ion-Exchange Sorption and Preparative Chromatography of Biologically Active Molecules.** G. V. Samsonov. D. C. Sherrington, transl. ed. Consultants Bureau (Plenum), New York, 1986. xiv, 163 pp., illus. \$45. Macromolecular Compounds. Translated from the Russian by R. N. Hainsworth.

**Justice in Social Relations.** Hans Werner Bierhoff, Ronald L. Cohen, and Jerald Greenberg, Eds. Plenum, New York, 1986. xvi, 364 pp., illus. \$39.50. Critical Issues in Social Justice. Based on a meeting, Marburg, FRG, July 1984.

**Knotted Doughnuts and Other Mathematical Entertainments.** Martin Gardner. Freeman, New York, 1986. xvi, 278 pp., illus. \$16.95; paper, \$10.95.

**Language and Production.** A Critique of the Paradigms. Gyorgy Markus. Reidel, Dordrecht, 1986 (U.S. distributor, Kluwer, Norwell, MA). xvi, 190 pp. \$49.50. Boston Studies in the Philosophy of Science, vol. 96. Translated from the French edition (Paris, 1982).

**Like Engend'ring Like.** Heredity and Animal Breeding in Early Modern England. Nicholas Russell. Cambridge University Press, New York, 1986. x, 271 pp., illus. \$42.50.

**The Mollusca.** Vol. 9, Neurobiology and Behavior, Part 2. A. O. Dennis Willows, Ed. Academic Press, Orlando, FL, 1986. xii, 499 pp., illus. \$85.

**MPTP.** A Neurotoxin Producing a Parkinson Syndrome. Sanford P. Markey *et al.*, Eds. Academic Press, Orlando, FL, 1986. xiv, 722 pp., illus. \$55. From a symposium, Bethesda, MD, June 1985.

**Multiple Cropping Systems.** Charles A. Francis, Ed. Macmillan, New York, 1986. xvi, 383 pp., illus. \$37.50.

**Namias Symposium.** (La Jolla, CA, Oct. 1985.) John O. Roads, Ed. Scripps Institution of Oceanography, University of California at San Diego, La Jolla, 1986 (available from UCSD Bookstore, c/o E. Florence, La Jolla, CA 92093). vi, 202 pp., illus. Paper, \$6.75. Scripps Institution of Oceanography Reference Series, 86-17.

**Neurobiology of Central D<sub>1</sub>-Dopamine Receptors.** George R. Breese and Ian Creese, Eds. Plenum, New York, 1986. viii, 219 pp., illus. \$45. Advances in Experimental Medicine and Biology, vol. 204.

**Receptors in Cellular Recognition and Developmental Processes.** Reginald M. Gorczynski, Ed. Academic Press, Orlando, FL, 1986. xx, 337 pp., illus. \$54.95. Cell Biology.

**Risk Evaluation and Management.** Vincent T. Covello, Joshua Menkes, and Jeryl Mumpower, Eds. Plenum, New York, 1986. xii, 544 pp., illus. \$79.50. Contemporary Issues in Risk Analysis, vol. 1.

**Sampling for Microbiological Analysis.** Principles and Specific Applications. 2nd ed. University of Toronto Press, Buffalo, NY, 1986. xxiv, 293 pp., illus. \$37.50. Microorganisms in Food, vol. 2. Sponsored by the International Commission on Microbiological Specifications for Foods (ICMSF) of the International Union of Microbiological Societies.

**Science Trivia.** From Anteaters to Zeppelins. Charles J. Cazeau. Plenum, New York, 1986. x, 285 pp. \$17.95.