clearly ought to know what they are talking about. Notable for their clarity, depth, and intelligence are the chapters by Davidson and McCoy. Frost's story of the Fijians is flawed by the facile assumption that they are a "mixture" of Melanesian and Polynesian elements. This old-fashioned idea prejudices him to look more for "ceramic intrusions from Melanesia" in "the [*sic*] Fijian archaeological sequence" than for patterns of local cultural evolution and local variability from one part of the archipelago to another, patterns that are certainly observable in the biological and most recent linguistic evidence.

The final six chapters are synoptic reviews treating the origins and interrelationships of the Polynesian-speaking peoples from different specialist perspectives: linguistics (Ross Clark), physical anthropology (William Howells), ecology (Patrick Kirch), settlement patterns (Bellwood), sailing (Ben Finney), and Melanesian archeology (Peter White). For many, these will be the most exciting chapters, because they deal with themes of broad interest. Howells comes to the spirited defense of an idea codified 150 years ago by Dumont d'Urville, long before the great antiquity of mankind in the Pacific region or the complexities and uncertainties of human population biology were recognized. This idea is the popular belief that modern Polynesian-speaking peoples belong to an ancient race that had "no important gene exchange with Melanesians before or enroute to their colonization of Polynesia proper." In truth, however, we don't know if precisely the opposite interpretation of current biological differences within and among "Polynesians" and so-called "Melanesians" is not just as likely. Indeed, deriving modern Polynesian-speaking peoples from a paleo-population living somewhere in Melanesia from whom at least some present-day Melanesian peoples are also similarly derived makes much better sense of more data from linguistics, biological anthropology, archeology, and other fields than does the interpretation Howells champions. In any case, as Bellwood says earlier in this volume, "One is forced to conclude that the original relations between Polynesians and Melanesians are obscure, to say the least."

What is missing from this volume is a strong sense of intellectual excitement and scientific purpose. As the chapters by Kirch and Finney in particular reveal, all the ingredients are there. Regrettably, the editor has not been able to serve them up in a gourmet meal of provocative delights. This collection is a worthy and useful addition to any Pacific specialist's library. Lay persons and students, however, will find that dollar for dollar there is more value in Peter Bellwood's *Man's Conquest of the Pacific* (Oxford University Press, 1979), however squarely that monumental survey falls into the "culture-historical" tradition justly criticized by anthropologists.

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Inhibitory Neurotransmitter

GABA. Biochemistry and CNS Functions. Proceedings of a symposium, Strasbourg, France, July 1978. PAUL MANDEL and FRANCIS V. DEFEUDIS, Eds. Plenum, New York, 1979. xii, 506 pp., illus. $42.50. Advances in Experimental Medicine and Biology, vol. 123.

Gamma-aminobutyric acid (GABA) is an inhibitory neurotransmitter that appears to be involved in a greater number of central neuronal synapses (and therefore in a greater number of complex functions) than any other transmitter candidate. It has also become increasingly implicated, through its apparent role in the action of anxiolytic, anticonvulsant, and convulsant drugs, in such disorders as seizures and anxiety.

This book contains short papers on the enzymology, metabolism, uptake and release, receptors, and behavioral correlates of GABA. Also included are reports of recent advances in some technically difficult aspects of neurochemistry: measurement of neurotransmitter release following sensory stimulation (no GABA release could be demonstrated, according to Abdul-Ghani *et al.*), brain circuitry and neurotransmitter interactions, and the relationship of GABA to behavior and neurological disorders (a subject deserving greater treatment). For most of these subjects, the book contains neither a comprehensive review nor many major new contributions. It does provide a forum for many European workers in the field, notably the Strasbourg people (nine papers), who may have been underrepresented in other books on GABA.

The papers on the GABA-metabolizing enzymes—L-glutamate decarboxylase (Sze; Blindermann *et al.*), GABA-transaminase (Maitre *et al.*; Schecter *et al.*), and succinic semialdehyde dehydrogenase (Cash *et al.*)—are informative, and those on GABA uptake (Schousboe; Hösli and Hösli) and turnover (Moroni) are quite well done. But the section on GABA receptors is certainly best.

The excellent discussion of pre- and postsynaptic inhibition (Krnjević) provides the only instance in the book of an informative and cogent review of the field. Certainly more neurophysiogical studies on the action of GABA ought to have been included; the only other contribution on the subject is an erudite analysis (of previously published data) by Werman. GABA-receptor binding studies are well covered, with complete discussions of drug specificity (Krogsgaard-Larsen and Arnt; Bowery *et al.*), brain regional differences (Enna), and assay techniques (Möhler; Maurer; Costa and Guidotti; and others). The paper by Costa and Guidotti provides the only treatment (and a very short one) of GABA-benzodiazepine receptor interactions, a subject dominating more recent GABA symposia and probably future GABA meetings as well.

The book deserves a place on library shelves along with the several other recent treatises on GABA. The coverage of the field is relatively incomplete, and advances since the papers were presented in July 1978 are of course not included, so interest in the volume will probably be limited to GABA specialists (of which, however, there are now quite a few).

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Disordered Materials

Electronic Processes in Non-Crystalline Materials. N. F. MOTT and E. A. DAVIS. Second edition. Clarendon (Oxford University Press), New York, 1979. xiv, 590 pp., illus. $65. The International Series of Monographs on Physics.

There are several branches of physics in which the first definitive textbook was by Mott and someone, and these books served for many years as the best introduction to their subjects. In a sense, this book by Mott and Davis stands with these earlier works because, although many comprehensive reviews of particular aspects of the subject have appeared since the first edition came out in 1971, there has been no one else bold enough to attempt an overall view of the subject of disordered materials—in fact, there

are very few people who would be capable of it. On the other hand, it is different from the earlier books because its subject is one in which there are large areas of theoretical and experimental uncertainty. Some of these are exposed in the book, but others are left hidden. As a result, parts of the book are controversial and other parts may need fundamental revision. For example, the concept of "minimum metallic conductivity," which is basic to several sections of the book, has never been accepted by some people and is currently under attack by P. W. Anderson and his collaborators. However, a book that avoided all controversial material in this field would be of little value, for the subject is not one that contains many certainties.

I find this a much more satisfying book than the first edition. A number of confusions have been removed, and it now flows reasonably smoothly. It has not grown in size in proportion to the growth of the subject, for the reader is referred to reviews or conference proceedings for many of the details. The book is still heavy, but not impossible, going, and I shall be much less worried about asking students to read it than I was with the first edition.

The book consists of three parts. After a brief introductory chapter two chapters on the theoretical background cover the basic concepts of transport theory, hopping conductivity, minimum metallic conductivity, the Anderson transition, and the effects of phonons and polarons. Three chapters then relate this theory to the experimental situation in rather broad terms. These chapters are "The Fermi glass and the Anderson transition," "Liquid metals and semimetals," and "Non-crystalline semiconductors." I think it is the first and third of these three chapters to which people will refer most frequently when looking for formulas applicable to particular situations. The last four chapters of the book are devoted to detailed discussions of particular classes of materials, amorphous germanium and silicon, amorphous arsenic and related materials, chalcogenide glasses, and amorphous selenium and tellurium. The most detailed of these chapters are those on germanium and silicon and on the chalcogenides.

The coverage of the book is perhaps somewhat less than the title might suggest. The main interest is in semiconductors and in metals that are almost semiconductors. There is little said about good liquid metals and metallic glasses on the one hand and about good insulating glasses on the other. Amorphous bismuth is mentioned, but superconductivity does not even appear in the index.

The book is a welcome replacement for the first edition, and no one who works on this subject can afford not to have it at hand.

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Books Received

Applied Inverse Problems. Papers from a meeting. P. C. Sabatier, Ed. Springer-Verlag, New York, 1978, vi, 426 pp., illus. Paper, $19.50. Lecture Notes in Physics, vol. 85.

Applied Nonlinear Analysis. Proceedings of a conference, Arlington, Tex., Apr. 1978. V. Lakshmikantham, Ed. Academic Press, New York, 1979. xx, 726 pp. $38.50.

Archaeological Survey and Settlement Pattern Models in Central Illinois. Donna C. Roper. Published for the Illinois State Museum by Kent State University Press, Kent, Ohio, 1979. 156 pp., illus. Paper, $4.50. Illinois State Museum Scientific Papers, vol. 16. *Mid-continental Journal of Archaeology* Special Papers, No. 2.

Archaeology of the Grand Canyon. The Bright Angel Site. Douglas W. Schwartz, Michael P. Marshall, and Jane Kepp. School of American Research Press, Santa Fe, N.M., 1979. xii, 110 pp., illus. Paper, $4.95. Grand Canyon Archaeological Series, vol. 1.

Bifurcation Theory and Applications in Scientific Disciplines. Papers from a conference, New York, Oct. 1977. Okan Gurel and Otto E. Rössler, Eds. New York Academy of Sciences, New York, 1979. viii, 708 pp., illus. Paper, $85. *Annals of the New York Academy of Sciences*, vol. 316.

Biochemical Actions of Hormones. Vol. 6. Gerald Litwack, Ed. Academic Press, New York, 1979. xviii, 530 pp., illus. $39.50.

Biochemical Mechanisms of Liver Injury. T. F. Slater, Ed. Academic Press, New York, 1978. xii, 822 pp., illus. $82.75.

Biological Paths to Self-Reliance. A Guide to Biological Solar Energy Conversion. Russell E. Anderson. Van Nostrand Reinhold, New York, 1979. xxiv, 368 pp., illus. $18.95. Van Nostrand Reinhold Environmental Engineering Series.

Biology of the Lymphokines. Stanley Cohen, Edgar Pick, and Joost J. Oppenheim, Eds. Academic Press, New York, 1979. xviii, 626 pp., illus. $42.50.

The COBOL Environment. Robert T. Grauer and Marshal A. Crawford. Prentice-Hall, Englewood Cliffs, N.J., 1979. xvi, 464 pp. $19.95. Prentice-Hall Software Series.

Cognition. Arnold Lewis Glass, Keith James Holyoak, and John Lester Santa. Addison-Wesley, Reading, Mass., 1979. xx, 522 pp., illus. Paper, $9.95.

Collagen in the Physiology and Pathology of Connective Tissue. Steffen Gay and Edward J. Miller. Gustav Fischer, New York, 1978. viii, 110 pp., illus. Paper, $23.

Collective Ion Acceleration. Contributions by C. L. Olson and U. Schumacher. Springer-Verlag, New York, 1979. viii, 234 pp., illus. $32. Springer Tracts in Modern Physics, vol. 84.

A Color Atlas of the Rat. Dissection Guide. Ronald J. Olds and Joan R. Olds. Halsted (Wiley), New York, 1979. 112 pp. $10.95.

Emerging Strategies in Social Psychological Research. Papers from a workshop, Oxford, England, Nov. 1975. G. P. Ginsburg, Ed. Wiley, New York, 1979. viii, 320 pp. $26.

Empirical Clinical Practice. Srinika Jayaratne and Rona L. Levy. Columbia University Press, New York, 1979. xviii, 340 pp., illus. $17.50.

Encyclopaedia of Antibiotics. John S. Glasby. Wiley-Interscience, New York, ed. 2, 1979. vi, 468 pp., illus. $60.

Encyclopedia of Pediatric Psychology. Logan Wright, Arlene B. Schaefer, and Gerald Solomons. University Park Press, Baltimore, 1979. xx, 934 pp. $39.50.

The Encyclopedia of Soil Science. Part 1, Physics, Chemistry, Biology, Fertility, and Technology. Rhodes W. Fairbridge and Charles W. Finkl, Jr. Dowden, Hutchinson and Ross, Stroudsburg, Pa., 1979 (distributor, Academic Press, New York). xxii, 646 pp., illus. $59.50. Encyclopedia of Earth Sciences, vol. 12.

Forming Multimodal Transportation Companies. Barriers, Benefits, and Problems. Papers from a conference, Washington, D.C., Feb. 1978. Clinton H. Whitehurst, Jr., Ed. American Enterprise Institute for Public Policy Research, Washington, D.C., 1978. xiv, 182 pp., illus. Cloth, $10.75; paper, $4.75.

From Physical Concept to Mathematical Structure. An Introduction to Theoretical Physics. Lynn E. H. Trainor and Mark B. Wise. University of Toronto Press, Buffalo, N.Y., 1979. xviii, 400 pp. $20. Mathematical Expositions No. 22.

Geochemistry of Bismuth. Ernest E. Angino and David T. Long, Eds. Dowden, Hutchinson and Ross, Stroudsburg, Pa., 1979 (distributor, Academic Press, New York). xviii, 426 pp., illus. $37.50. Benchmark Papers in Geology, vol. 49.

Geometry and Convexity. A Study in Mathematical Methods. Paul J. Kelly and Max L. Weiss, Wiley-Interscience, New York, 1979. x, 262 pp., illus. $21.95. Pure and Applied Mathematics.

Handbook of U.S. Colorants for Foods, Drugs, and Cosmetics. Daniel M. Marmion. Wiley-Interscience, New York, 1979. x, 350 pp., illus. $21.50.

Histological Typing of Upper Respiratory Tract Tumours. K. Shanmugaratnam in collaboration with L. H. Sobin. World Health Organization, Geneva, 1978 (U.S. distributor, WHO Publications Centre USA, Albany, N.Y.). 56 pp. + plates. Paper, $27.10. International Histological Classification of Tumours, No. 19.

Historic Ingalik Settlements along the Yukon, Innoko, and Anvik Rivers, Alaska. James W. Vanstone. Field Museum of Natural History, Chicago, 1979. x, 100 pp., illus. Paper, $4.75. Fieldiana Anthropology, vol. 72. Publication 1296.

Hybridization. An Evolutionary Perspective. Donald A. Levin, Ed. Dowden, Hutchinson and Ross, Stroudsburg, Pa., 1979 (distributor, Academic Press, New York). xiv, 322 pp., illus. $25. Benchmark Papers in Genetics, vol. 11.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans.

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