that are driven in one case by hydraulic forces and in the other by buoyancy forces.

The book's intended audience is graduate-level geologists. To gain full advantage of the material one should be familiar with partial differential equations. Though an overview of the principles governing fluid flow and heat and mass transfer is given in chapter 2, those not familiar with the concepts and notation of the fundamental balance equations may find it difficult to follow the development. The order in which some concepts are presented could also make for rough reading for the uninitiated. For example, modern concepts of dispersion in porous media are introduced before Darcy's law and the hydraulic potential. Equations of state are given as linear approximations, reflecting the author's focus on models that apply at shallow depths. Most of the discussion deals with steady-state fluid flow systems; there is little coverage of processes in which hydraulic transients are a key feature of system evolution.

This book is appropriate for a graduate course that examines the role of ground water flow in geologic media. It sets the quantitative framework. It does not stand alone, however—additional material would be needed to cover field examples and numerical simulation. Unfortunately, this aspect points to a major weakness of the book: the reference list is short and selective, with many relevant papers omitted.

LESLIE SMITH
Department of Geological Sciences, University of British Columbia, Vancouver, BC V6T 2B4, Canada

Some Other Books of Interest

Tsunami Hazard. A Practical Guide for Tsunami Hazard Reduction. E. N. BERNARD, Ed. iv, 213 pp., illus. $94. From a symposium, Novosibirsk, U.S.S.R., July 1989. Reprinted from *Natural Hazards*, vol. 4, nos. 2 and 3.

Since 1960 the International Union of Geodesy and Geophysics has sponsored 14 symposia focused on tsunamis—the destructive coastal inundations often associated with earthquakes, particularly in the Pacific. Looking back on the efforts of the past 30 years, Bernard, in his preface to this most recent proceedings volume, characterizes the 1960s as "an exciting time in tsunami research," during which "the tsunami phenomenon" was analyzed and defined, and the 1970s as a decade of experiments in computer modeling. The 1980s saw efforts to turn the results to practical use, particularly the development of a local warning system using satellites, and Bernard expresses the hope that the 1990s will prove to have been the Decade of Hazard Reduction, the major challenge being to marshal the necessary resources on an international level.

Though readers will not find in the remainder of the book the full-fledged "practical guide" that the subtitle seems to promise, steps that are being taken toward that end are indicated in what it does contain—13 papers by authors from seven countries that constitute the "highlights" of "Tsunami 89."

The three opening contributions are observational in character—Gonzalez *et al.* comparing numerical models and deep-ocean data for two recent tsunamis generated in the Alaskan bight, Kovalev *et al.* reporting on measurements made by cable bottom pressure stations on the southwestern shelf of Kamchatka, and Papazachos and Dimitriu examining the 70 major tsunamis known to have occurred in the vicinity of Greece since antiquity in the light of recent data on earthquake processes in the area. There follow six papers on numerical simulation of tsunamis, beginning with an overview by Shuto, who notes that "hindcasting" within a 15% error is now possible and sees improvement as depending most urgently on further observational data. Other simulation papers deal with tsunamis in relation to earthquake sources, aspects of bore formation and runup, and damage to aquaculture. The final four papers in the book are concerned directly with tsunamis as hazards to humans, Tinti with tsunami potential in the "Italian seas," where the phenomenon is relatively rare, both Bernard and Lorca with Project THRUST (Tsunami Hazards Reduction Utilizing Systems Technology) and its prototype enterprise, the Chilean Tsunami Warning System, and Farreras and Sanchez with efforts focused on the west coast of Mexico. The volume ends with brief reports of several meetings or workshops held in conjunction with the main symposium, including a series of recommendations that emerged. No index is provided, but each paper has an abstract.

—K.L.

Body Composition in Biological Anthropology. ROY J. SHEPHARD. Cambridge University Press, New York, 1991. x, 345 pp., illus. $69.50. Cambridge Studies in Biological Anthropology.

The body components this volume is concerned with are not the 87 cents' worth of chemical elements that folklore has it we could all be broken down into but such more organized ingredients as fat, water, muscle, and bone, measured in terms of mass or density. Before taking up the more technical aspects of the subject, the author provides an introduction beginning historically with an account of the work of Santorio Santorio (1561–1636)—who "apparently spent much of his life eating and sleeping in a specially constructed weighing chair . . . , accumulating valuable data on the mass of his ingested food and excreta over a period of some 30 years"—and ending with a consideration of issues of standardization in which somewhat arbitrary "reference" standards are contrasted with "normal" or "ideal" standards such as are espoused by insurance companies. After a chapter discussing problems with inferences based on cadavers, the author turns his attention, in successive chapters, to methodology for determination of body fat, body water, lean tissue mass, and bone mass, emphasizing not techniques as such but conceptual and interpretative problems. A similar approach is then applied to variations in body composition with body region, developmental stage or age, heredity, and environment. Final chapters are devoted to pathological disturbances that affect body composition and to issues of adaptability. The volume, engagingly written even in its most technical parts, closes with a brief glossary, an 82-page section of references, and an index.—K.L.

Books Received

Bonding and Structure of Solids. R. Haydock, J. E. Inglesfield, and J. B. Pendry, Eds. Royal Society, London, 1991. viii, 164 pp., illus. £32. From a meeting, London, Sept. 1990. Reprinted from *Philosophical Transactions of the Royal Society,* series A, vol. 334, no. 1635 (1991).

Brazil Gold '91. The Economics, Geology, Geochemistry and Genesis of Gold Deposits. E. A. Ladeira, Ed. Published for the Associaçao Organizadora do Brazil Gold by Balkema, Brookfield, VT, 1991. xviii, 823 pp., illus. $95. From a symposium, Belo Horizonte, Brazil, May 1991.

Cognition and the Symbolic Processes. Applied and Ecological Perspectives. Robert R. Hoffman and David S. Palermo, Eds. Erlbaum, Hillsdale, NJ, 1991. xviii, 545 pp., illus. $79.95; paper, $39.95.

Cognition through Color. Jules Davidoff. MIT Press, Cambridge, MA, 1991. xiv, 217 pp., illus., + plates. $32.50. Issues in the Biology of Language and Cognition. A Bradford Book.

Communicating Science. A Handbook. Michael Shortland and Jane Gregory. Longman, Essex, U.K., and Wiley, New York, 1991. xii, 186 pp., illus. Paper, $27.95.

Comparative Animal Physiology. C. Ladd Prosser, Ed. 4th ed. Liss (Wiley), New York, 1991. 2 parts. Environmental and Metabolic Animal Physiology. xii, 578 pp., illus. $44.95. Neural and Integrative Animal Physiology. x, 776 pp., illus. $44.95.

Comparison of Statistical Experiments. Erik Torgersen. Cambridge University Press, New York, 1991. xx, 675 pp., illus. $99.50. Encyclopedia of Mathematics and Its Applications, 36.

Computational Nuclear Physics 1. Nuclear Structure. K. Langanke, J. A. Maruhn, and S. E. Koonin, Eds. Springer-Verlag, New York, 1991. xii, 209 pp., illus., + disk.

Computerization and Controversy. Value Conflicts and Social Choices. Charles Dunlop and Rob Kling, Eds. Academic Press, San Diego, CA, 1991. xviii, 758 pp., illus. Paper, $34.95.

Computing for Psychologists. Statistical Analysis Using SPSS and MINITAB. Robert West. Harwood, New York, 1991. x, 234 pp., illus. $40; paper, $18.