kian adaptation. I fully agree. However, historical analysis is not the fundamental way to understand human adaptation to the environment when populations are there to be studied in situ. Third, I have a sense that there is considerable interpretation based on limited data. Perhaps the major problem is that whether the book was to be a regional study, in which the basis is sociological and historical, or a local study, in which the data base is anthropological and it is the small population groups that are of primary interest, was not resolved. My bias is in favor of the small population unit to resolve questions of human adaptation, and it is at the local population level that this volume is deficient. On balance, however, and at the regional level of analysis, the volume is a rich source of information on the lives of Northern Algonkian hunters.

MICHAEL A. LITTLE
Department of Anthropology, University Center at Binghamton, State University of New York, Binghamton 13901

An Organization of Engineers

75 Years of Progress. A History of the American Institute of Chemical Engineers, 1908–1983. TERRY S. REYNOLDS. American Institute of Chemical Engineers, New York, 1983. vii, 200 pp., illus. $20; paper, $15.

The American Institute of Chemical Engineers (AIChE) was organized in June 1908 at a meeting attended by 19 persons of diverse background. Chemical engineering was not yet a professional category well recognized by industry. Many chemical plants were designed by mechanical engineers, and industrial functions that demanded a knowledge of chemistry were generally handled by analytical or industrial chemists. Few universities had programs for training chemical engineers; where programs existed, they were usually loosely knit—the student was taught some mechanical engineering, some chemistry, and some practical information about production processes in particular industries. By electing to call themselves chemical engineers, the founders were expressing more an ambition than a fact; by setting up an autonomous professional organization, they were anticipating rather than responding to the emergence of a discipline.

In 1983, membership in the AIChE exceeded 50,000, and those 50,000 chemical engineers no longer faced acute problems of self-definition. The concept of unit operations, introduced by Arthur D. Little in 1915, gave chemical engineering an integrity that, despite recent challenges, has never been lost. Academic programs have proliferated and become far more rigorous and systematic. Opportunities for chemical engineers in industry have multiplied as the chemical and chemical-process industries prospered. Industry and academe have recognized chemical engineering as a profession.

Terry Reynolds's craftsmanlike and well-balanced history sets the development of the AIChE against the backdrop of these larger changes in the nature of chemical engineering. Eschewing a detailed year-by-year chronology, Reynolds focuses on a series of major events in the development of the Institute: its foundation, its efforts to develop educational standards for chemical engineers, its transition from a small and selective club to a mass-membership organization, and its efforts to strike a balance between narrowly professional programs and activities of a broader social nature. Especially valuable is his account of the 1970's, a period when unemployment intensified economic conflicts within the membership and when environmental regulation of the chemical industry became a matter of political controversy.

Reynolds fairly observes that outside of its immediate areas of professional concern, such as publications and education, the AIChE has been exceedingly cautious. When it has joined debate on political and social issues, it has generally adopted conservative positions. It lobbied for the maintenance of the Chemical Warfare Service during the 1920's and against the National Industrial Recovery Act during the 1930's. More recently, it has steadfastly opposed the unionization of chemical engineers and has refrained from condemning actions by members that violate environmental standards.

It may seem paradoxical to some readers that Reynolds should define the AIChE as a success, whatever its membership statistics, when its record on social and political issues has been so consistently timid or conservative. But to condemn the organization for its social and political stance is to imply that it was free to pursue other policies. Reynolds repeatedly stresses that a voluntary association, such as the AIChE, is constrained by its very nature to work within narrow limits. If it is to retain the loyalty of its membership, it must not adopt policies that provoke internal controversy. Consensus serves as the basis of action. Educational reform had broad support among the membership, hence the AIChE pursued a vigorous program in this area; unionization and environmental regulations, though supported by some, were anathema to other constituencies within the organization, and hence progressive action was blocked.

Readers of this book who expect more of a professional association will be disappointed by Reynolds's gentle treatment of the AIChE. But they would do well to ask themselves whether an organization that has done so much to promote excellence in the practice of engineering should have been jeopardized in the interest of pursuing social or political goals.

JOHN W. SERVOS
Department of History, Amherst College, Amherst, Massachusetts 01002

Audition

Hearing. Physiological Bases and Psychophysics. R. KLINKE and R. HARTMANN, Eds. Springer-Verlag, New York, 1983. xvi, 399 pp., illus. $27. From a symposium, Bad Nauheim, Germany, April 1983.

This book is the proceedings of the Sixth International Symposium on Hearing. This series of symposiums, held every three years since 1969, is intended to foster cross-fertilization of auditory physiology and psychoacoustics. The book contains 57 papers (circulated prior to the symposium) organized into six sections. Most of the papers are followed by discussion by symposium participants. Three of the six sections begin with invited review papers. Inasmuch as most of the authors are European, the papers tend to reflect the "European school" of auditory science.

Section 1, Inner Ear Mechanisms and Cochlear Emissions, begins with a brief review of hair-cell mechanisms (Flock). In an especially lucid paper, Lewis and Hudspeth present evidence that hair cells isolated from the bullfrog sacculus are electrically resonant and that a calcium-activated potassium channel contributes to this resonance. Other papers concern the effect on hair-cell receptor potentials of transient asphyxia (Russell and Ashmore) and efferent stimulation (Fuchs *et al.*); electrical properties of hair cells (Dallos); basilar-membrane, hair-cell, and neural responses (Johnstone *et al.*); stochastic (Bialek) and electrochemical (Konishi and Salt) properties of the cochlea; cochlear potentials in homozygous and heterozygous mice (Bock); primary neuron properties in anurans (Lewis; Narins and Hillery); and acoustic emissions (Fritze; Kemp and