or, if with an avowed purpose, failing to achieve it through use of an improper vehicle. Most non-books intruding upon our libraries today have resulted from unsuccessful attempts to transcribe into book form successful experiences in oral communication. Also making their appearance, however, are non-books that are based on the frank eschewal of both oral and literary traditions. Such a printer's exercise as *Marine Biology I: Proceedings of the First International Interdisciplinary Conference* (American Institute of Biological Sciences, 1963) skillfully transmutes dubious verbal communication into noncommunicable verbiage.

The foregoing criticism should not be construed as a blanket denial of the merits of the volume at hand. On the contrary, in this particular instance the components redeem the whole. Some of the contributions are unusually fresh in approach and in content, and a few are excellent. But the reader should not expect to find here an integrated account of the interrelationships of algae and man. Rather, he will puzzle over a review of the cytology of the Phaeophyta—irrelevant, however worthy in another context; he will discover that the ecology of plankton algae is treated by at least eight authors; he will find only four pages devoted to the role of algae in the purification of wastes and no mention of the fact that algae form an important part of the diet of more than a hundred million persons or that algal extracts enter the lives of hundreds of millions more through numerous industrial applications. The role of algae in agriculture and fisheries is barely noted. There is no index.

Of particular interest and value to me are G. W. Prescott's synthesis of the contributions of current research to algal systematics; C. van den Hoek's examples of modern taxonomy as practiced in two traditionally difficult groups, the Ulvaceae and *Cladophora*; Clyde Eyster's summary of micronutrient requirements; Ruth Patrick's discussion of natural and abnormal diatom communities; Olav M. Skulberg's account of the eutrophication of European water supplies; and Marcel Lefèvre's review of extracellular products. Algal toxicity is well covered in separate chapters by Paul R. Gorham and by David Schwimmer and Morton Schwimmer. The closing paper, "The future of phycology," by F. Evens, is disappointing. After some sophomoric observations, the author proposes the establishment of international cooperative programs, such as the regular compilation and dissemination of phycological bibliographies. Comprehensive literature lists have been published annually since 1954 and are widely used by phycologists, more than 600 of whom from 56 nations belong to the International Phycological Society, an organization apparently unknown to Evens.

PAUL C. SILVA
Department of Botany,
University of California, Berkeley

Statistical Methods

Methodes Statistiques dan les Sciences Humaines. P. Pèpe and M. Tisserand-Perrier. Masson, Paris, 1962. vi + 361 pp. Illus. F. 55.

This book is designed as a substantial introduction to statistical methods for practitioners in the "human" sciences, including demography, economics, sociology, psychology, biology, and anthropometry. In style, content, and mathematical level required of the reader, it is best described as a mixture of the better American textbooks, usually intended for use in only one field of application, and the British textbook by Yule and Kendall. Considering its level and universality of appeal, the book is quite concisely written and remarkably extensive in its coverage.

The first two parts of the book, consisting of 134 pages, are devoted to statistical description and can easily be read as required by the student. The next three parts contain the meat of the book and could form the basis of a one-semester course at upper college or beginning graduate level. The third part, on statistical probability, starts with a discussion of the basis of the calculus of probability and a fairly complete discussion of the ordinary binomial, Poisson, and normal distributions. It then continues with estimation problems, a brief but not very general discussion of testing of hypotheses, and concludes with a discussion of the χ^2 test. Part 4, a discussion of association, starts with a treatment of dependence of two quantitative variables in explicit geometrical fashion. Such an extremely intuitive approach could be very useful in developing a feeling for the meaning of dependence and of independence. The section continues with specialization to the case of linear dependence, developing the idea of the correlation coefficient as an estimate of the strength of relationship and developing also tests of significance for the coefficients. The last chapter of this part includes discussion of rank correlation and of association among variables described qualitatively, a brief introduction to factor analysis, and a discussion of covariation in time series. Part 5 is given over to sampling, under the principal headings of survey sampling and of analysis of variance as applied to statistical experimentation.

The sixth and final part of the book is unique in that it provides examples of statistical work in French government agencies and elsewhere. Five chapters present, respectively, discussions of work in the Ministry of Education on medical and educational statistics, on social security statistics, on epidemiological and other work of the National Institutes of Health, on the statistics of causes of death, and on population shifts in the National Institute of Demographic Studies. The construction of mortality tables and their use as basis for life insurance contracts is discussed in the last chapter.

LEO KATZ
Department of Statistics,
Michigan State University,
East Lansing

Ceramic Engineering

The Technology of Ceramics and Refractories. P. P. Budnikov. Translated from the Russian edition by Scripta Technica. M.I.T. Press, Cambridge, Mass., 1964. viii + 647 pp. Illus. $15.

The Western reader may consider the title of this book unusual because it implies division between ceramics and refractories and does not include glass as a ceramic material. The book was written as a textbook for students of ceramics and refractory technology in the U.S.S.R., but, as is mentioned in the preface, it could be useful to engineers and technical personnel working in ceramic industries. The author, P. P. Budnikov, professor at the Mendeleev Institute of Chemical Technology and a member of the Academy of Sciences of the U.S.S.R.,