We may count the cost of credit hours produced, juggle faculty-student ratios, and computerize our registration ceremonies. But the reality of the teaching-learning process defies analysis. It is quite possible—and not infrequent—for an institution to pass the efficiency tests with high marks and yet provide a poor environment for learning. We know little about how to construct what the British architects call "a continuous learning environment." Dormitories that are efficiency motels, student unions with the flavor of penny arcades, campus architecture that crowds and depresses the human spirit—are these not hostile to learning itself? No scoreboard tallies such gross and debilitating inefficiencies.

The challenges to education are as massive and staggering as those facing the American people. The "revolution of rising expectations"—for clean air and pure water, for job opportunity, for "people renewal" as well as urban renewal, for a decent social order—applies not only to the world's poverty belt but to our own developing society as well. Only a strong and vital educational system can give us handholds to a better future. This is the essence of the challenge to public policy. The challenge of change is too great for modest efforts, patchworks, and simplistic shortcuts to economy and efficiency. Our high-achieving society expects much more of American education.

Johns Hopkins Oceanographic Studies

The pages of the Johns Hopkins Oceanographic Studies continue to be devoted to Pacific investigations. However, since the phenomena studied and published in splendor are concerned with general processes in all oceans, exemplified on Pacific data, the trend can be considered an excellent one. We are also indebted to Johns Hopkins Press for making available the critical treatment of data collected over a long period of time, starting with the *Challenger* expedition and culminating in the large survey expeditions organized by Scripps Institution of Oceanography and the Institute of Oceanography in Moscow.

In the introduction to this volume, **Intermediate Waters of the Pacific Ocean** (Johns Hopkins Press, Baltimore, 1965. 85 pp., $8.50), the author, Joseph L. Reid, Jr., covers the history of the description of intermediate waters in the oceans and particularly in the Pacific Ocean. The literature survey, which is arranged according to processes that affect the distribution of water masses as characterized by their parameters (salinity, temperature, oxygen, and phosphate), indicates clearly the slow and cumbersome way toward comprehension of the acting processes on the basis of often doubtful data collected from different ships in different years and different seasons. The author has selected the best or the most consistent data and these are clearly indicated in the tables and the plates.

The data are analyzed by giving the distribution of properties on surfaces of constant potential specific volume, together with an investigation of the geostrophic flow in these surfaces. Two surfaces are chosen on the basis of the fact that they best coincide with the subsurface salinity minimum. They are characterized by an isosteric anomaly of 125 cl/ton and 80 cl/ton. Because none of these layers penetrates the surface in the North Pacific, it is concluded that the water masses of these layers assume their properties by vertical and lateral exchange processes. This conclusion is further substantiated by an intense study of the water masses in the subarctic gyro. The final chapter critically compares the studies in the Atlantic with the treatment of the Pacific data which the author had given in the previous chapter.

The monograph provides the best available bibliography of all original data. The pages that describe the vertical distribution of seawater properties are most instructive, and so are the pages that describe the horizontal distribution of parameters. It is difficult to avoid errors, but I noted only one—in Figure 4 an oxygen content of less than 0.5 ml/liter is not indicated with the correct shade of yellow. Otherwise, the printing and editorial work reflect the same excellent standards that we are accustomed to encountering in "The Johns Hopkins Oceanographic Studies."

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Cultural Anthropology

Ethel Nurge's **Life in a Leyte Village** (University of Washington Press, Seattle, 1965. 167 pp., $5) is a welcome addition to a recent series of monographs and books which furnish information on communities studies and provide, as well, guides to field techniques and the collection of data.

Miss Nurge's straightforward discussion of the circumstances involved in choosing the particular village she studied is refreshing: "The choice came about through one of those accidents that guide our choices more frequently than we recognize." She goes on to say that an American-Filipino student friend residing in a nearby village was the primary reason for the selection of "Guinhangdan." So often anthropologists fail to mention such ordinary or incidental reasons for choosing a research project or research area. Methodologically cogent reasons for selecting this Leyte village are also given, however. A village in Visayan Islands was chosen because no systematic anthropological investigation had been undertaken in this island group. Guinhangdan was small yet large enough for adequate quantitative analysis of the data. Homes were in close proximity to one another and thus gave access to detailed observation of daily life.

The amount of information packed into this small volume is remarkable. A short section on reasons for selecting the village studied precedes a short but penetrating history of the dim beginnings of the community through a vivid description of the Japanese occupation to the time of the study in 1956. Short sections then follow on the political organization and the types of housing and clothing. Subsequent sections on the socioeconomic structure, household composition, mother-child relationships, and dyadic relations in the family present the basic materials of the study. I found the sections on household composition and the patterns of kinship relationships especially significant. Anthropologists will want to examine closely Nurge's delineation of eight types of nuclear households. Meaningful classifications of household types long have been a nagging problem to ethnographers. Nurge examines the literature on this subject, reports that household composition is far more complicated than has been generally assumed, and offers her own classification as a suggested solution. Her purpose in

these classifications is not so much to highlight significant structural features of household composition, but to understand the kind of environment in which the child is raised. Like household composition, kinship relations are discussed primarily with the view of how the individual is socialized rather than the structural relationships exhibited by the terminology and the interpersonal relationships. Nurge's analysis and interpretations are provocative and present insights into the way households and kinship systems are organized.

Detailed comparisons with other studies of Philippine villages are not made, an omission that scholars concerned with the Philippines will miss. Perhaps this is a subject for a future study because it is important to know how typical, or atypical, "Guinhangdan" is to other Philippine communities.

In the initial chapter Nurge credits the work of Fred Eggan and his students in the Philippines. Nurge, who is one of Eggan's students, has made an important contribution to this series of significant studies.

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Polymer Technology

The scope of volume 1 of **Testing of Polymers** [Interscience (Wiley), New York, 1965. 493 pp., $19.50], the first volume of a projected series on the testing of polymers, is much narrower than its title might lead one to expect. As the editor, John V. Schmitz, points out in his preface, the series was originally planned as a multivolume *organized* treatise to cover various aspects of testing polymeric products, with emphasis on laboratory procedures for evaluating end-use performance attributes. This would have been a unique contribution to the field, markedly different in coverage from the well-known treatises on basic physical measurements and on analytical procedures for determination of chemical structure and composition. Apparently it was not possible to get the cooperation of testing engineers or management in industrial laboratories to disclose their simulated service and processability tests. Therefore, midway through the project, the format was changed to include individual articles, with no systematic attempt to maintain a rigid organization.

Two introductory chapters that give background information on standardization activities and conditioning equipment for polymer testing precede two chapters that present the theory and mathematical relationships involved in static and dynamic mechanical testing. The next five chapters, approximately one-third of the text, deal with electrical property tests. This portion of the volume appears to be part of the original outline, although here again the emphasis is on the standard electrical parameters rather than on unique evaluation tests. The chapters by Warfield (U.S. Naval Ordnance Laboratory) and Dakin (Westinghouse Electric Corporation) do introduce some discussion of the application of electrical tests to end-use problems. The final four chapters on testing procedures cover such diverse topics as cavitation erosion, odor and taste transfer, indentation and compression of floor coverings, and permeability measurements. The book is concluded with a bibliography of sources of information on properties and test methods relating to polymers, supplementing the general and special topic references cited at the end of each chapter. The author and subject indexes are adequate.

The authors have handled their assignments well. The editor and the publisher are to be commended for initiating this effort to fill a gap in the literature on the practice and application of testing of polymeric products. It will be interesting to see whether, in the subsequent volumes, the editor is successful in persuading testing engineers and their management to contribute chapters that deal with testing technology as applied to "research, development, engineering, and manufacturing objectives."

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Textbook of Geology

In planning and preparing **Geology: A Survey of Earth Science** (Crowell, New York, 1965. 653 pp. $9.50), the author, Edgar Winston Spencer, has attempted to provide a volume in geology and related earth sciences that will fulfill the textbook needs in several different types of elementary courses offered at the college level. No background in science is assumed. The volume's primary use is intended to be in the one-semester survey courses in earth science that are offered liberal arts students or in courses designed to train secondary school teachers of earth science.

Approximately 80 percent of the subject matter is within the scope of elementary physical and historical geology, with the coverage weighted slightly toward historical geology. The remainder of the material covers topics within the fields of meteorology and astronomy.

Spencer's treatment of historical geology is an improvement over that given in many texts. He has eliminated the pedestrian period-by-period approach to the subject and has supplanted it with what might be called a topic-by-topic approach. After developing the basic concepts and techniques pertinent to the unraveling of the record in the rocks, the author presents a series entitled "Sketches from Geologic History." The "sketches" are a series of selected topics (for example, the Appalachian Mountains) by which the philosophy and methods used in determining the effect of many interrelated physical, chemical, and biological processes during long periods of geologic time are illustrated. The material covering the history of life and the evolution of organisms, for example, is also well organized and well presented.

Considerable space throughout the text is devoted to tracing the historical development of various scientific concepts, a desirable feature in that it provides background material. It also allows students to become acquainted with the evolutionary nature of the growth of scientific ideas.

The treatment of physical geology is similar to that in most other elementary texts of this kind. However, the author's decision to rigorously avoid even simple arithmetic or chemical equations seems to have led, in many instances, to statements that are confusing. For example, the only two chemical equations that appear in the text are only partially balanced, and the three short paragraphs devoted to the first and second laws of thermodynamics will contribute very little, if anything, to a student's background information. In this portion of the text the coverage seems to be a case of too much material spread too thinly.

The book is well illustrated, although some of the photographs, particularly the close-up photographs of rocks, are poor. A list of selected references that may be used for parallel reading in a