

society that is becoming actively enmeshed in the modern world.

The book will be difficult for the nonspecialist, but reading it will be extremely worthwhile nevertheless. If possible, it should be read along with Barton's monograph, which presents a different approach, detailing many aspects of Kalinga social organization which Dozier refers to superficially or treats as background material which the reader is assumed to know.

Dozier summarizes basic economic, demographic, and ethnographic details of contemporary Kalinga society and poses as the general purpose of the study an understanding of the "nature of social and cultural differences between those Kalinga who subsist primarily on wet rice and those who are predominantly dry rice cultivators." He gives us considerable detail on kinship, religious system, and the "peace pact" institution (important in what was formerly an area of headhunters). Throughout, he contrasts the social patterns of the Northern Kalinga, who at the time of his study in 1958 were still subsisting "largely on rice grown on hill and mountain sides by slash and burn techniques," with the Southern Kalinga, who have recently become predominantly wet-rice cultivators with a complicated system of irrigated terracing. His original hypothesis "postulated that important social and cultural differences would be correlated with differences in the basic economy. . . . Field work has demonstrated the validity of this hypothesis, but with certain reservations . . . differences between the two groups were also profoundly affected by historical circumstances"—the northerners by Spanish penetration, with its civil and religious administrative attributes, the southern group by close contact with the irrigated-rice cultivators of Bontoc and Ifugao.

The description and analysis Dozier presents of the functional differences between the two groups are worth serious consideration both by theorists in the various social sciences and by those actively committed to working with the peoples of Southeast Asia. They are based not on historical reconstructions of an isolated, homogeneous "folk" society, but on ethnographic realities observed by him in a fully contemporary society in dynamic interaction with mid-20th-century forces.

CHARLES KAUT

*Department of Sociology and  
Anthropology, University of  
Virginia, Charlottesville*

## Hormone Action

**Endocrine Genetics.** Proceedings of a symposium held in Cambridge, England, March 1966. S. G. SPICKETT and J. G. M. SHIRE, Eds. Cambridge University Press, New York, 1967. 341 pp., illus. \$13.50. Memoirs of the Society for Endocrinology, No. 15.

This volume appears to represent an effort of the Society for Endocrinology (Great Britain) to place current research in endocrinology in the context of molecular biology. The conference began auspiciously with a discussion by Sidney Brenner, unfortunately presented in the volume only in abstract form. This is followed by a section of seven articles on the mechanism of action of hormones. Several points emerge from these presentations. First, the actual mechanism by which hormones produce their effects is a long way from being understood in even the most general way, and second, different hormones may act by very different mechanisms. Korner quite lucidly reviews the effect of insulin and growth hormone and concludes, "The messenger hypothesis set out to explain the mechanism of control of the kinds of enzymes produced in bacteria, not the amount of enzyme produced. It is true that the power of the messenger hypothesis hypnotized many into believing that all control including that of rate of protein synthesis, might be exercised at the genetic level, but soon evidence was produced to show that this was by no means always or even sometimes, the case."

If this view is not satisfactory, a few pages further on Karlson concludes that "hormones appear as general inducers and may be in higher organisms of far greater importance than substrates which are of primary importance to bacteria." Or as Kroeger wishes to phrase it, "At any rate it does not seem impossible that the unitary concept 'hormones act by regulating gene activities' may be in the near future expanded to encompass a second unitary concept 'they do so by changing intracellular ion concentrations.'" Perhaps considering all hormones together is misleading, for those that affect metamorphic changes (Karlson has studied ecdysone) may be very different indeed from those that are constantly present during the life of an animal (such as growth hormone or insulin).

The remaining two-thirds of the volume is concerned with hormones and the genetic process in a somewhat dif-

ferent way—namely, genetic control of hormone production. *Inter alia*, the interesting history of the congenital hormone deficiencies found in dwarf mice is presented by U. J. Lewis and A. Bartke. One of the most informative discussions (to me at least) was a summing up by J. M. Thoday of the use of genetics in physiologic studies. Thoday is distressed by the lack of specificity that is inherent in present models of hormone action. He also makes the very germane point that whereas bacterial molecular biology is a very sophisticated mixture of genetic and chemical arguments, investigation of hormone action seems rarely to employ any genetic methods.

As a review of the action of hormones, this volume is seriously incomplete. As a review (though somewhat incomplete) of the mechanisms by which hormones may affect genetic control of protein synthesis, and for some stimulating ideas of how genetic analysis may aid in the investigation of hormone action, it is worth reading.

J. E. RALL

*National Institute of Arthritis  
and Metabolic Diseases,  
Bethesda, Maryland*

## Fieldwork in Micronesia

**The Archaeology of the Palau Islands.** An Intensive Survey. DOUGLAS OSBORNE. Bernice P. Bishop Museum Bulletin 230. Bishop Museum Press, Honolulu, 1966. 509 pp., illus. Paper, \$14.

This is essentially a compendium of archeological site descriptions in which an attempt has been made to order the sites historically on the basis of seriated sherd collections. As such, it stands as an exceedingly valuable contribution, especially for those future archeologists who wish to conduct problem-oriented excavations in the Palau Islands. Descriptions of archeological localities are adequate—at times even verbose. The fact that over 150 sites in this scattered island world were surveyed is remarkable, for the author was largely dependent upon unscheduled water transport.

Considering the general excellence of fieldwork, reportage, and pottery analysis, the range in quality of line illustrations is regrettable. The maps of islands are generally good, but site maps and drawings of architectural features are inexcusably crude and amateurish. Some have no scale at all, while others are cluttered with measure-

ment figures and innumerable arrows. The use of printed symbol patterns would have clarified many of them.

As a volume entitled *The Archaeology of the Palau Islands: An Intensive Survey* the monograph falls short of expectations. While pottery is given ample description and analysis, other artifacts were too scarce to treat in like manner. The numerous architectural and sculptural manifestations, however, are given only cursory descriptive treatment. The best that is offered is an inadequate two-page summary of terrace and earthwork features followed by three and one-half pages theorizing on their origin and use. Obviously the author was working under limitations of time, and survey equipment required for a thorough study, especially of architecture, was not available to him, and no one can condemn him for that. To have undertaken such a study in the allotted time would have meant sacrificing the immediately more important range of his site survey. For what this volume is, that is, a basic survey for all future archeological research planning in the Palaus, the author has done a commendable job. It is the title that is at fault, for it misleads the potential reader into expecting more than the volume was intended to give.

EDWIN N. FERDON, JR.  
*Arizona State Museum,  
University of Arizona, Tucson*

## Surfactant Science

**Nonionic Surfactants.** MARTIN J. SCHICK, Ed. Dekker, New York, 1967. 1111 pp., illus. \$43.50.

Nonionic surface-active substances were invented in 1930 by C. Schöller. The industrial production of these substances has shown a remarkable growth, accompanied by widespread acceptance in commercial and household formulations, and concomitant with this commercial development there has been a surge of applied and basic research on their preparation, properties, and uses. The present volume, the first of Dekker's Surfactant Science Series, undertakes to review this rapidly developing field.

Thirty-one authors have contributed 29 chapters in a largely successful attempt to provide the research worker with critical and authoritative reviews. A partial indication of their success is given by the almost 2900 references

in the book to patents, original research papers, and other sources. In addition someone has done an extraordinary job of indexing; there are 83 pages of indices.

Nonionic surfactants are usually prepared by reacting ethylene oxide with hydrophobes such as fatty amides, fatty acids, fatty alcohols, alkyl phenols, fatty amines, or polypropylene glycols. A remarkable flexibility in surface properties, solubility, and performance may be achieved by suitable modification of the reactants. Thus, variation in the number of ethylene oxide groups will yield products with different solubilities in water; on the other hand, the solubility in organic solvents will be determined primarily by the nature of the hydrocarbon group or groups on the hydrophobe.

The first portion of the book is concerned with the organic chemistry of nonionic surfactants, with the methods for the preparation of the different types, with their properties, and with their commercial applications. The research worker interested in the synthesis of these substances should find the chapter on the mechanisms of ethylene oxide condensation under acidic and basic conditions a helpful introduction to the field.

Ten chapters are concerned with various physical chemical aspects such as surface films, micelle formation, solubilization, emulsification, stability of dispersions, detergency, foaming, and configuration of the polyoxyethylene chain in bulk material and in solution. A section on analytical chemistry discusses some of the problems unique to the analyst concerned with the identification and determination of nonionic surfactants. A thorough review of the physiological activity of these substances and a chapter on their degradation by microorganisms complete the book.

On the whole, the editor has done a remarkable job of maintaining a high standard from the many authors. In particular, the reviews on the mechanism of ethylene oxide condensation, on the thermodynamics of micelle formation, on solubilization, on stability of dispersions, and on physiological activity should appeal to those interested in fundamental research in this field.

It is unfortunate that the publisher has fixed the price of the book at a level which will keep it out of the personal libraries of many chemists. Since the book has been organized into four parts, each representing a different discipline, it would seem that it could have

been published as four separate volumes, some of which could perhaps have found a wider distribution among graduate students and research workers.

HORST W. HOYER  
*Department of Chemistry,  
Hunter College, New York City*

## A Dream As Yet Unfulfilled

**The National University.** Enduring Dream of the U.S.A. DAVID MADSEN. Wayne State University Press, Detroit, 1966. 178 pp., \$7.50.

Efforts to found a federally supported national university in Washington, though intermittent, have persisted since the founding of the Republic. Although Presidents Washington, Jefferson, and Madison, and others proposed congressional action, the Congress has consistently failed to bring any of the numerous bills to a vote.

The history of these efforts has been recorded a number of times; this volume, however, adds significantly to the record. The author discusses and compares the various plans in more detail than has been done in any earlier treatment. He reviews briefly the congressional history of the principal plans. He makes the story interesting and provides the most complete account yet to appear of the national-university movement. Yet the efforts since 1900 are reported less fully than the evidence would permit. In particular, the recent efforts to arouse congressional interest in a federal university, or in other specialized academies or research centers, are sketched only briefly if at all. Even the current efforts of Oscar H. Steiner of Cleveland to promote the realization of President Washington's dreams are not brought up to date.

From the first, the sponsors of a national university have talked vaguely of the advantages of having such an institution in Washington, but few have attempted to analyze the need, or to appraise realistically what could be reasonably expected of a federally financed institution. Until analysis replaces imaginative rhetoric the case for a federal university is likely to remain unconvincing. For historical background this is a useful book, but to evaluate current proposals more will be needed.

ROBERT D. CALKINS  
*Brookings Institution,  
Washington, D.C.*