

Garó Social Organization

Rengsanggri. Family and kinship in a Garó village. Robbins Burling. University of Pennsylvania Press, Philadelphia, 1963. 377 pp. Illus. \$8.

Rengsanggri is a Garó village in the Assam hills where the author, a cultural anthropologist, lived from 1954 to 1956. The book, an illuminating description of Garó social organization, contains information on continuity and change in religious belief, kinship, village organization and leadership, the settlement of disputes, the village and market economy, and on the assimilation of new ideas from outside administration (British, then Indian) and Christianity. A village of 60 households is the focus of the study; however, information on cultural variations in other Garó areas is given, in both the text and an appendix.

Students of non-Hindu groups of India or of the hill peoples of southeast Asia will find this book valuable, for the Garós, together with other Assam hill peoples, "form the last western outpost of the type of culture found in much of the mountain area of southeast Asia" (p. 16). The general reader will gain an insight into such a society and into the difficult relations between mountain-dwellers and lowlanders, a general characteristic of southeast Asia and a vital factor in contemporary political conflicts that range from the Naga Hills through Burma and Laos to Vietnam. *Rengsanggri* is written lucidly and illustrated with excellent photos and adequate maps; village census data is included in appendixes.

The sociological contribution of this book rests in its description and analysis of Garó matrilineal descent groups and matrilineal affinal alliance, work which supplements the author's articles. Burling criticizes Homans and Schneider's theory that matrilineal cross-cousin marriage is unlikely in a society with avuncular authority because it is the familiar quality of the mother's brother which makes such a marriage sentimentally appropriate. He points out that avuncular authority in Garó society is precisely what encourages matrilineal cross-cousin marriage, and he illuminates the important authoritarian quality in affinity where alliance is practiced. Burling understands that a system of descent and affinal alliance is rooted in a system of ordered categories, not in particular

kin relationships or groupings, but he also assesses carefully the socioeconomic concerns of individuals in maintaining alliances between particular groupings. Affinal alliance is common among southeast Asian hill peoples, and anthropologists may wish that Burling had discussed the related writings of Lévi-Strauss, Dumont, Needham, and others. Greater attention to the use of symbolism in myth, ritual, and religion might have elucidated the link between the social and symbolic order, which one expects to find in such a society and which Burling's tantalizing bits on house structure and prestations indicate. Also, the author might have been more careful to distinguish aspects of matrilineality from those of matrifocality—for example, in the holding of purse-strings (p. 131). Matrifocality also characterizes many bilateral or patrilineal societies in southeast Asia.

CLARK E. CUNNINGHAM
Yale University

History of Technology

The Ancient Engineers. L. Sprague de Camp. Doubleday, Garden City, N.Y., 1963. 408 pp. Illus. \$4.95.

One characteristic of the "Gee whiz" school of historical popularizers (those writers who marvel at past and present engineering developments) is their tendency to credit technology with all advances in civilization. To de Camp, the early engineers, "much more than the soldiers, politicians, prophets, and priests, have built civilization." This stimulating proposition leads him to some curious conclusions; for example, he says that Sergius Orata, who devised the technique of central heating, "has affected our daily lives far more than Caesar ever did." He makes this claim despite the fact that the use of central heating disappeared in the West and was later redeveloped.

Another characteristic of this school is a tendency to regard the history of technology as one of constant progress. De Camp's own evidence, particularly with respect to Byzantium, India, and China, would seem to contradict his assertion that technology moves "with increasing sureness and speed" through the centuries.

Although de Camp's glib generalizations might be suspect, his breezy style and anecdotal flair provide an interest-

ing travelogue of the architectural monuments of antiquity. Unfortunately, his interest in colorful trivia and historical curiosities frequently takes precedence over accounts of the technologists and their methods. The peccadilloes of Nero, for example, receive twice as much space as Vitruvius and Frontinus together—this in a book that purports to give the "neglected early engineers" their due!

There are some serious omissions. The Sumerians, who gave us the potter's wheel, the seed plow, the brick mold, and the sailboat, and who devised methods of engraving and of copper and bronze casting, are given but a few pages. Cretan technology of the Minoan Age is dismissed in a few paragraphs, and nothing is said about the Temple in Jerusalem, one of our best-documented technological stories of antiquity. On the other hand, de Camp gives us material on China and India, which most Occidental authors overlook. Furthermore, he is thorough and accurate in his discussions of poliorcetics, the art of building and besieging fortifications.

The final chapter (almost one-sixth of the book) begins with Charlemagne and goes through Leonardo and Galileo. Surely this is a bit far for a work on *ancient* engineers.

But this recital of its shortcomings does an injustice to the book. Actually, de Camp has written a colorful account of the human side of engineering; he thereby complements Albert Neuburger's older and more sober study, *The Technical Arts and Sciences of the Ancients*.

MELVIN KRANZBERG
Case Institute of Technology

Zoology

Traité de Zoologie. vol. 4, part 1. Plathelminthes, Mésozoaires, Acanthocéphales, Némertiens. Pierre-P. Grassé, Ed. Masson, Paris, 1961. 944 pp., Illus. Plates. NF. 212.

This volume begins with a short essay by P. de Beauchamp on the triploblastic level of organization, in which he emphasizes the various types of coelom and the evolution of the nervous system. The Turbellaria are also treated by this author. The Temnocephalida are treated by Jean Baer, the Monogenea by Baer and L. Euzet, cestodes by

Ch. Joyeux and Baer, and the trematodes by Baer and Joyeux. The material on the Mesozoa was prepared by P.-P. Grassé; this includes a section on Orthonectida by the late M. Caullery (probably this remarkable zoologist's last contribution). Acanthocephala were prepared by Baer, and the nemertean by Marie Gontcharoff. The book as a whole is remarkably up to date, with only a short addendum of loose ends.

The classification of Turbellaria is extensively revised, and those accustomed to acoels and rhabdocoels will have trouble finding them in a maze of unfamiliar orders and suborders, to say nothing of the unfamiliar new creatures that have come to notice in the last few years. As for the speculations about the affinities of the Mesozoa, the inimitable P.-P. Grassé remarks that they are not very serious—they are based on "simple jeu de l'esprit. Les véritables affinités des Mésozoaires sont à découvrir."

Among the illustrations are four color plates, one of free-living Turbellaria, the others of nemerteans (one of these resembles a dish of discolored spaghetti and hardly seems worth the considerable cost of printing). Although the section on the cestodes is illustrated with at least 15 drawings of life cycles, with hosts and all, reminiscent of a yearbook of agriculture, there are no diagrams of life cycles for trematodes. The text figures are clear and abundant, except that a fresher diagram of the general anatomy of a nemertean should have been prepared.

In all, this is a well-organized, substantial contribution to this standard and now essential series.

J. W. HEDGPETH

*Pacific Marine Station,
Dillon Beach, California*

Immunology

Advances in Immunology. vols. 1 and 2.

W. H. Taliaferro and J. H. Humphrey, Eds. Academic Press, New York. vol. 1, 1961, 443 pp., \$14; vol. 2, 1962, 400 pp., \$12. Illus.

Modern immunobiology represents a group of disciplines in the process of rapid development and expansion. Even the professional immunologist is hard pressed to keep abreast. But this field is also the real concern of the general biologist, the microbiologist, the

geneticist, and the clinician. To keep up with advances in this broad field requires summary and analysis. Thus, the initial volume of *Advances in Immunology* seemed a welcome addition to the literature. This reaction was reinforced by the unusually high quality of the reviews in the initial volume. The eight well-chosen critical reviews ranged broadly over the field. For example, immunological tolerance was treated from the viewpoint of the transplantation biologist (by Hasek, Lengerova, and Hraba) and from the viewpoint of the classical immunologist (by Smith) with little overlap.

It was clear from these reviews that, like the positive immunologic response, "specific immunologic negativity" is a phenomenon that must be incorporated into the framework of understanding of the specific adaptation to antigens. The mass of fact in this one area alone reflects the vigor of the current activity in immunology. Osler's review of the complement system holds promise of understanding at both the chemical and the biological level. Perhaps the greatest promise of understanding of immune reactions lies in isolating the responsive system in a test tube. Stavitsky's able consideration of efforts in this direction leaves one convinced that both conceptual and technical progress are needed before adaptive immunity can be produced entirely in vitro. Weigle presents a beautiful succession of experiments that establish the toxicity of soluble antigen-antibody complexes and suggest a pathogenetic mechanism for a variety of experimental and clinical lesions. Gell and Benacerraf most effectively analyze the current knowledge about delayed allergy. Here, it is clear that recent understanding in this area has stemmed from the work of these authors and from that of S. B. Salvin, work in which precisely defined systems were used. The final chapter in the first volume, a masterly consideration of tumor biology, is a posthumously published chapter by P. A. Gorer. Gorer did more than anyone else to keep respectable the use of an immunological approach to the study of cancer, and his review reflects both his vast knowledge and the incisiveness of his theoretical approach to this difficult field.

The second volume of the series has been published, and it is clear that the high standards have been maintained. This volume also contains eight critical reviews of most important areas in immunobiology. Karush's concern with

specificity and its basis in molecular structure and molecular forces is balanced by the presentation (by Miller, Marshall, and White) of an analysis of a hot biological problem—the role of the thymus in immunobiology. Nossal's review of the cellular genetics of immune responses emphasizes the key role of proliferation in immune adaptation.

The contributors to the first two volumes of *Advances in Immunology* have set a lofty goal for those that will follow. If, in the ensuing volumes, this yearly series can approach the standards set in the first two volumes, Taliaferro and Humphrey will have been amply rewarded for the difficult task of keeping eight immunologists in line each year.

Advances in Immunology must find itself among the most active volumes in the libraries of our universities and research institutions, immediately available for immunologists, immunochemists, and transplantation biologists and close at hand for cellular geneticists, pathologists, biologists, and clinicians.

ROBERT A. GOOD

*Department of Pediatrics, Medical
School, University of Minnesota*

Lanthanides

The Chemistry of the Lanthanides.

Therold Moeller. Reinhold, New York; Chapman and Hall, London, 1963. x + 117 pp. Illus. \$1.95.

It is an unfortunate fact that, in inorganic chemistry courses at the lower collegiate level, the so-called rare earths are often completely ignored, or, at best, presented in one lecture as a rather uninteresting breed of elements. As a result, a typical chemist, asked simply to name the lanthanide elements, either shakes his head in dismay or immediately resorts to a memory device—Caesar's (Ce) Prudence (Pr) Needs (Nd) Permanent (Pm) Salvation (Sm), Europe's (Eu) Good (Gd) Tables (Tb) Disperse (Dy) Hoboes (Ho), Errant (Er) Tramps (Tm). Why be (Yb) Ludicrous (Lu)?—in order to fulfill his assignment.

A typical chemist also knows that the 3+ oxidation state is exhibited prominently by the lanthanide elements, that the different 3+ ions are hard to separate quantitatively, and that there is something known as the lanthanide contraction. He does not know that the lanthanides are not rare.