

typically British thread of speculation on the unity of nature's forces which originated in the works of Isaac Newton.

The author illustrates the problems during this period in the development of a theory of affinity relating chemical and electrical force by a statement of W. R. Grove in 1874, "CHEMICAL AFFINITY . . . is that mode of force of which the human mind has hitherto formed the least definite idea." Unfortunately, this could also be the lament of the historian concerning the state of understanding of the history of chemistry during the first half of the 19th century. This book is but a modest contribution to this understanding.

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Salvage Archeology

Introduction to Middle Missouri Archeology. DONALD J. LEHMER. National Park Service, Washington, D.C., 1971 (available from the Superintendent of Documents, Washington). xiv, 206 pp., illus. \$3.75. Anthropological Papers, 1.

To many young North American archeologists the accomplishments of the large-scale archeological salvage programs of the 1940's, '50's, and '60's have seemed questionable. Now we have a detailed summary of some of the work and its results by an archeologist intimately involved in both the field and the laboratory research. The Missouri River trough in North and South Dakota was the focus of the most extensive of these programs, and the administrative structure, the funding, and the organization of personnel and resources, together with the physical and intellectual accomplishments of this salvage effort, are the subject of Lehmer's *Introduction to Middle Missouri Archeology*. The volume should dispel some of the myths about the salvage program and make some of its inadequacies understandable.

The first part of the book deals with the history of the research and the second summarizes the results. The contents of the first section, however, avoid (and perhaps rightly) many of the emotion-laden issues raised by salvage. Lehmer notes the lack of problem orientation and the inadequacies of pre-excavation survey and site evaluation but does not attempt to explain them. For example, the chapters on the origin

of the program, its organizational, personnel, and funding problems (pp. 1-21, 35-38), provide a sketch of who did what and where and when, but there is little in the way of an analysis of the powerful social, political, and economic forces that relentlessly propelled the dam building program and made salvage a necessary nightmare. The book does not detail the mad scramble for money, equipment, and bureaucratic power typical of the world of salvage, a world in which the scientific merit of archeological research was measured by dam construction schedules and cubic yards of excavated dirt and debris and in which systematic research was an act of heroism in the face of overriding political necessity.

In the second, or synthetic, portion of his treatise, Lehmer uses a modified version of the Willey and Phillips phase, tradition, horizon system to "pigeon-hole" (p. 25) the masses of data produced by salvage. In Lehmer's modification (i) the Willey and Phillips tradition is subdivided by introducing a new taxon, the variant, (ii) the horizon is considered an inappropriate integrative device and is discarded, and (iii) phase identifications, though deemed desirable, are restricted to the terminal end of the archeological sequence. Hence the variant is the taxon of greatest use. According to Lehmer a variant is "a unique and reasonably uniform expression of a cultural tradition which has a greater order of magnitude than a phase, and which is distinguished from other variants of the same tradition by its geographic distribution, age, and/or cultural content" (p. 32). This modification makes good taxonomic sense; it does not violate the logical structure of the Willey and Phillips formulation, and through its use Lehmer provides a lucid and useful diachronic comparison of artifact complexes, settlement patterns, and village types.

In sum, Lehmer's attempt to create taxonomic order from the extant data is the best one currently available. Nevertheless, this accomplishment must be viewed in the perspective of broader research aims and goals. The comparison of artifact inventories, settlement patterns, and village types and the construction of taxonomic orders do not in and of themselves provide testable propositions about the social phenomena with which they purport to deal. Nor do they serve to provide incentives for developing new research strategies. I do not mean to imply that rigorous artifact comparisons or well-

designed taxonomic orders are not important—they most certainly are, but as one of several alternative means to the end of explicating prehistoric human behavior. Lehmer has provided a useful beginning from which we can proceed—it is to be hoped in a systematic manner.

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Plants in the Tropics

Introduction à la Phytogéographie des Pays Tropicaux. Les Problèmes Généraux. R. SCHNELL. 2 vols. Vol. 1, Les Flores, les Structures. xvi pp. + pp. 1-500. 180 F. Vol. 2, Les Milieux, les Groupements Végétaux. viii pp. + pp. 501-952. 165 F. Gauthier-Villars, Paris, 1971. Géobiologie, Ecologie, Aménagement.

For many years, major contributions to the understanding of West African ecology have been made by French biologists, particularly through the agency of the Institut Français d'Afrique Noire. The names of August Chevalier, Theodore Monod, André Aubréville, Paul Jaeger, and Raymond Schnell come to mind readily. *La Forêt Dense* by the last author has been particularly influential on thinking about rain forests in that area. Now Schnell, who began his studies of tropical botany 31 years ago, has taken on a larger task. In two volumes—almost a thousand pages—he reviews the phytogeography of tropical lands in general. The book was 19 years in the writing (1950-69) and is based on a course given by the author at the Sorbonne. It is no mere account of the distributions of the plants; the treatment is a synthesis of geographical material with detailed morphological, environmental, vegetational, and historical information (together with a few physiological data), so that it merits the adjective ecological.

The first volume contains two parts, devoted respectively to the historical geography of the tropics (11 chapters) and the structures and "biology" (autecology) of tropical plants (12 chapters). The second volume's first part deals with interactions between tropical plants and their environments (8 chapters) and its second is concerned with types of tropical vegetation and their dynamics (11 chapters).

The importance of this work is accentuated by our desperate need for information on which to base the com-