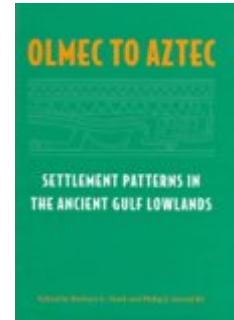


Barbara L. Stark, Philip J. Arnold III, eds.. *Olmec to Aztec: Settlement Patterns in the Ancient Gulf Lowlands*. Tucson: University of Arizona Press, 1997. x + 383 pp. \$50.00, cloth, ISBN 978-0-8165-1689-6.



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This review is divided into three components: 1) background and general analysis of the volume, 2) specific chapter-by-chapter summaries and analyses, and 3) overall assessment of this book as a contribution to Mesoamerican studies.

Background and General Analysis:

Geographically, Mesoamerica includes most of present-day Mexico south of the Panuco-Lerma drainage system, as well as the Yucatan Peninsula, Belize, Guatemala, El Salvador, western Honduras, and a portion of Nicaragua. This environmentally and culturally complex area witnessed the rise of many New World civilizations. In the southeastern portion of Mesoamerica, the Highland and Lowland Classic Maya and, later, the Postclassic Maya resided, while in Mexico north and northwest of the Isthmus of Tehuantepec were the highland civilizations of the Valley of Oaxaca and the Meseta Central, including the Basin of Mexico. The latter was the location of the rise of Classic period Teotihuacan culture, a pan-Mesoamerican city-state polity dating A.D. 50-750 that was centered at Teotihuacan, situated northeast of present-day Mexico City. At its apogee, the

urban center encompassed an area of 22.5 square kilometers, had a major ceremonial center, over 2,000 apartment complexes, and a population in excess of 125,000 (some believe up to 200,000). The subsequent Postclassic period saw the rise and decline of the Toltecs, centered at Tula, Hidalgo, and from ca. A.D. 1200-1520, Aztec civilization. The Aztec city-state with its urban center at Tenochtitlan (present-day Mexico City) had a population more than 200,000. The Aztec empire included nearly two dozen allied, subject, and conquered polities located in central Mexico and extending from the Pacific to the Gulf coasts.

However, before these "high cultures" arose, unusual cultural developments had begun previously in the Gulf of Mexico lowlands at locales such as La Venta and San Lorenzo—sites of the Preclassic Olmec culture, what Yale archaeologist Michael Coe once termed "America's first civilization." The volume being reviewed focuses upon a portion of the Gulf lowlands that, after the Olmec, has sometimes been thought to be peripheral to the mainstream of Mesoamerican archaeology. Both the highland Classic Teotihuacan and Post-

classic Aztec city-states are believed to have exercised significant influence on the peoples of the Gulf lowlands. In *Olmec to Aztec* a dozen authors relate the results of the latest archaeological reconnaissance and some of the excavations recently conducted in this important region and challenge some ideas held regarding highland-lowland interactions.

Mesoamerican archaeologists recognize Barbara Stark and Philip Arnold as respected scholar-colleagues, meticulous field archaeologists, and anthropologists who have a cultural ecological orientation. As the editors of *Olmec to Aztec*, Stark and Arnold have assembled ten topical papers on the region. They have also prepared a compelling synthesis of the prehistoric settlement patterns of a portion of the Gulf of Mexico coastal lowlands for the archaeological periods from the Archaic through the Late Postclassic, the latter the era of Aztec hegemony. Their goal is to explicate what anthropologists call "settlement patterns," that is, how peoples distributed themselves across the natural and cultural landscape at given points in time and through time (a synchronic and diachronic perspective). Settlement pattern studies were pioneered in Peru by Gordon R. Willey; see his seminal work *Prehistoric Settlement Patterns in the Viru Valley, Peru* (Washington, D.C.: Smithsonian Institution, Bureau of American Ethnology, Bulletin 155, 1953)--and then by Willey's student, William T. Sanders, first in the Gulf lowlands and beginning in the 1960s in central Mexico. The latter research is exemplified in a volume entitled *The Basin of Mexico: Ecological Processes in the Evolution of a Civilization* by William T. Sanders, Jeffrey R. Parsons, and Robert S. Santley (New York: Academic Press, 1979). The ecological approach to Mesoamerican anthropology is seen in broad context in *Mesoamerica: The Evolution of a Civilization* (New York: Random House, 1968) by Sanders and Barbara J. Price.

Olmec to Aztec emphasizes the region encompassing central and southern Veracruz and west-

ern Tabasco rather than the entire Gulf of Mexico lowlands, which also includes portions of the states of Tamaulipas to the north and Yucatan to the east. The chronological coverage is holistic, from the earliest known human occupation (ca. 7,600 B.C.), but details particularly the periods from the Preclassic and Gulf Coast Olmec (ca. 1700 B.C.) through the Late Postclassic Aztec polity and empire (A.D. 1519), prior to European incursions. Stark points out that interest and research on the Olmec has "virtually hypnotized researchers with the result that elites [rather than commoners] have been the chief object of investigation" (p. 307). The editors seek to balance this art historical interest in elite architecture and sculpture by examining the archaeological evidence of the farmers and craftspersons who inhabited hamlets and villages and formed the rural "backbone" of Gulf Coast societies.

Barbara Stark, who earned her doctorate from Yale University and is Professor and Chairman of the Department of Anthropology at Arizona State University, has a research focus on the archaeology and complex societies of Mesoamerica with emphasis on the Gulf lowlands. Her field research in the lower Papaloapan Basin, La Mixtequilla area, and at the sites of Patarata and Cerro de las Mesas, Veracruz, is esteemed by her peers. Stark is the author of *Prehistoric Ecology at Patarata 52, Veracruz, Mexico* (Nashville: Vanderbilt University Publications in Anthropology 18, 1977) and *Patarata Pottery: Classic Period Ceramics of the South-central Gulf Coast, Veracruz, Mexico* (Tucson: University of Arizona Anthropological Paper 51, 1987). She is also the editor of the volume entitled *Settlement Archaeology of Cerro de las Mesas, Veracruz, Mexico* (Los Angeles: University of California at Los Angeles Institute of Archaeology Monograph 34, 1991). Philip (Flip) Arnold, has a Ph.D. from the University of New Mexico, and is Associate Professor of Anthropology at Loyola University of Chicago, where he specializes in archaeology, complex societies, and craft production in Mesoamerica. A Research As-

sociate at Chicago's Field Museum of Natural History, Arnold is also the author of a landmark analysis of Gulf Coast pottery manufacture, *Domestic Ceramic Production and Spatial Organization: A Mexican Case Study in Ethnoarchaeology* (Cambridge: Cambridge University Press, 1991). He is well-known for his research at Matacapán and Sierra de los Tuxtlas, Veracruz.

Therefore, the editors have the appropriate credentials to prepare a synthesis and interpretation of Gulf lowlands archaeology. Stark and Arnold's compendium is the first attempt since two Mexican archaeologists, Ignacio Bernal and Eusebio Dávalos Hurtado, collaborated in the editing of a single volume entitled *Huastecos, Totonaecos, y sus vecinos* (Mexico, D.F.: Sociedad Mexicana de Antropología, *Revista Mexicana de Estudios Antropológicos* 13[2-3], 1953). There have been only two more recent (but rather limited) syntheses, one by Jose García Payón, "Archaeology of Central Veracruz," and the other by Guy Stresser-Péan, "Ancient Sources on the Huasteca." Both of these contributions appear in the *Handbook of Middle American Indians, Volume 11: Archaeology of Northern Mesoamerica, Part 2* (edited by Gordon F. Ekholm and Ignacio Bernal; Austin: University of Texas Press, 1971) and were the most recent summaries until *Olmec to Aztec*.

The Gulf Coast Olmec dating to the Preclassic period are best known for their spectacular lithic sculpture, especially for creating and transporting massive carved stone heads and for constructing elaborate ceremonial centers—including artificial mountain-pyramids and ceremonial precincts—at sites such as La Venta and San Lorenzo Tenochtitlán. Interest in the Olmec was enhanced in recent years by two major museum exhibitions and accompanying catalogues which contain essays on topics in archaeology and art history. Curiously neither of these exhibitions or the volumes are mentioned or referenced by Stark and Arnold or their colleagues. I believe that these publications should not be regarded as primarily "art history"

exhibition catalogs—although they serve that function—but also convey the results of the latest archaeological thought about the Olmec. Michael D. Coe and Richard A. Diehl were among the contributors to *The Olmec World: Ritual and Rulership* (Princeton, N.J.: Art Museum of Princeton University [distributed by Abrams], 1995), the publication associated with an exhibition with the same name. This exhibit was initially at Princeton (December 15, 1995–February 25, 1996) and then in Houston (April 14–June 9, 1996). A major symposium on the Olmec was held in Princeton at the opening of the exhibition. A volume entitled *Olmec Art of Ancient Mexico*, edited by Elizabeth P. Benson and Beatriz de la Fuente (Washington, D.C.: National Gallery of Art [distributed by Abrams], 1996), accompanied the NGA's exhibition of Olmec sculpture and artifacts (June 30–October 20, 1996). There were scholarly papers presented at this inaugural as well. Only a few objects appeared in both exhibits, therefore making 1996 a "year of the Olmec" for Mesoamerican archaeologists and art historians. Because the artifacts and sculptures were selected from private collections and from museums around the world, it is plausible that we shall not see an assemblage of unique objects like this ever again.

A significant amount of high-quality archaeological research has been conducted in the Gulf lowlands during the past several decades. Because of the new investigations and due to the development of new analytical techniques and paradigms, the landmark Bernal and Dávalos volume and the two *Handbook* contributions are now relegated to the status of historic documents rather than state-of-the-art syntheses. A number of site reports and interpretive articles have appeared in the journal *Ancient Mesoamerica* during the past five years, for example, a series of papers by Arnold, Grove, Gillespie, Santley, and Stark and Curet—organized by Philip Arnold—(*Ancient Mesoamerica* 5[2]:213–287, 1994). However, a holistic, book-length synthesis has been needed

for some time and this is precisely what the contributors to *Olmec to Aztec* set out to accomplish.

Stark and Arnold and eleven colleagues from universities and research centers in Mexico, the United States, and Belgium have collaborated in preparing *Olmec to Aztec*. Early in this decade, two symposia were devoted to bringing together colleagues to synthesize current archaeological research and interpretations in the Gulf lowlands. The initial symposium, at which Stark and her research associates summarized their archaeological results, was held at the Congreso Internacional de Antropología e Historia in August 1992, hosted by the state and city of Veracruz and by the Universidad Veracruzana. A second symposium, held at the 58th annual meeting of the Society for American Archaeology in St. Louis, Missouri, in April 1993, was co-organized by Stark and Arnold. The current volume is an outgrowth of these sessions, although, as the editors note, not all of the presenters from these symposia were able to contribute their papers to the book.

The editors provide an appropriate introductory chapter and organize the contributions into two major groups, each with a prefatory essay: 1) local scales (four chapters), and 2) regional scales (six chapters). The chapters document various specialized topics—domestic residences, rituals, "urban" community architecture, cotton production, paleodemography, settlement systems, and ceramics. The final chapter, co-authored by the editors, provides a compelling summary and analysis, rather than a synthesis of the presentations. I have found that edited publications often omit this important contribution, so that Stark and Arnold are to be applauded for their effort.

Therefore, this volume begins with the valuable introductory essay and ends with a useful subject and proper noun index. Structurally, the book is divided into eleven chapters (varying in length from 19 to 46 pages) and has a common "References Cited" (634 entries in 43 pages). Most of the essays are accompanied by endnotes (a to-

tal of eleven, with five in Chapter Seven) and tables (12, half of which are in Chapter Six). There are a total of 79 illustrations with only Chapter Eleven having none.

Chapter-by-Chapter Analyses:

The editors begin with a synthesis and overview entitled "Introduction to the Archaeology of the Gulf Lowlands" (pp. 3-32) in which they summarize the ecology of the region, the chronological periods, the history of research, "developmental highlights," and observe dominant, recurring themes in Gulf archaeology. This chapter is extremely useful for purposes of orienting the reader and for its pedagogical value, and I shall elucidate several components from their essay. In a section titled appropriately "Dividing the Landscape," Stark and Arnold discuss the physical geography, ecological and cultural divisions, and resources. This section is brief but adequate and is based upon data from the 1960s. For the Gulf Coast and other regions of Mesoamerica as well, there has been a lack of adequate or detailed assessments of the geology, lithography, and soils for more than three decades. Apparently Jorge L. Tamayo's *Geografía General de México*, 2nd ed., 4 vols. (Mexico, D.F.: Instituto Mexicana de Investigaciones Económicas, 1962) was not consulted. In "Dividing Time," the editors review chronological terminology and subdivisions of the Formative or Preclassic (synonymous terms), Classic, and Postclassic periods. The analysis of the history of past research begins with a review of institutions and individual scholars, settlement pattern studies, subsistence activities, and cultural ecology. They note that early research emphasized the inventories of cultural traits and neglected to synthesize sociopolitical perspectives, and they place emphasis on the need to interpret political and economic organization. The editors point out that "highland-lowland interactions constitute an important issue, because resource complementarity and geographic positioning made the Gulf lowlands an attractive, relatively accessible target for Central

Mexican states desirous of tropical products" (p. 15). Stark and Arnold also note that "one oddity of Veracruz research is the tenacious adherence, on the part of some UV [Universidad Veracruzana] scholars, to the idea that Preclassic Olmec remains date to the Classic period ... its persistence in some quarters can only be viewed as quixotic" (p. 23).

In "Developmental Highlights," Stark and Arnold assess six chronological units which taken together span the period 7600 B.C. to A.D. 1519. For each unit, they mention major sites, review subsistence and settlement patterns, and comment upon research problems and questions. The Paleoindian and Archaic periods (there is no evidence of the former in the Gulf region) and the Initial period are poorly represented in the Gulf Lowlands. The Early and Middle Preclassic periods--the time of Olmec chiefdoms, the "epi-Olmec" Late and Terminal Preclassic periods, and the resurgent Classic period, and finally the Postclassic period are also characterized. Lastly, the editors point out that problems of discerning ethnicity, migrations or population movements, and space-time systematics as major research concerns. Overall, the leitmotifs of the Gulf lowlands are the synchronic and diachronic interrelationships of environmental and cultural diversity, "Maya" characteristics of settlements and political relations, and intense external contacts that did not result in a loss of political diversity.

Each of the ten remaining chapters is a study worthy of a detailed assessment, but I shall abstract the major points made by each contribution and comment briefly upon each essay. "Part One: Local Scales --Residence, Shrine, and Community," contains an introduction by Stark, and includes four chapters. These contributions emphasize ethnoarchaeological models, including the "household" level of analysis emphasized by a Canadian archaeologist, Michael Deal, in 1985.

Chapter Two, "The Spatial Structure of Formative Houselots at Bezuapan," written by Christo-

pher A. Pool (Department of Anthropology, University of Kentucky), concerns household archaeology at Bezuapan, a site comprising 8.5 hectares, located in west-central Veracruz, and dated to the Late Formative. From his excavation of three houselots, Pool infers household and community structures (wattle-and-daub construction and earth floors), storage pits, refuse disposal, and horticultural activities. Obsidian tools were obtained by inter-regional exchange but pottery was produced in the households. Household activities were undertaken in cleared open-air "patio" areas as well as roofed-over space, the locus of work in domestic residences in temperate and hot climates. It is not known if the Bezuapan residences are "typical" so that the author calls for the collection of comparative data. A good starting point for the analysis of roofed and unroofed domestic space is an uncited article by C. C. Kolb, "Demographic Estimates in Archaeology: Contributions from Ethnoarchaeology on Mesoamerican Peasants" (*Current Anthropology* 26: 581-599, 1985), which includes Gulf Coast data collected by ethnographers Philip L. Kilbride and John Warner. Not assessed is the potential use of lofts for sleeping and for storage that mitigates "floor" area and, therefore, demographic calculations. Pool's household study is another example of the resurgence of interest in domestic residential archaeology, witness *Prehispanic Domestic Units in Western Mesoamerica: Studies of the Household, Compound, and Residence*, edited by Robert S. Santley and Kenneth G. Hirth (Boca Raton, FL: CRC Press, 1993).

In Chapter Three, entitled "Olmec Ritual and Sacred Geography at Manati," authors Maria del Carmen Rodriguez (Centro Regional de Veracruz, Instituto Nacional de Antropología e Historia, Veracruz) and Ponciano Ortiz Ceballos (Instituto de Antropología, Universidad Veracruzana, Xalapa, Veracruz), discuss the results of fieldwork begun in 1988 at a Formative site where unique organic artifacts have been preserved. The authors describe Macayal, a freshwater spring at Manati,

located on the Coatzacoalcos River southeast of San Lorenzo, Veracruz, where twenty uniquely-carved wood anthropomorphic busts, interpreted as magico-religious offerings associated with an ancestor cult, were recovered. Unfortunately, "specialist studies of associated organic materials are not yet available" (p. 84); these include rubber balls, wooden artifacts, and reeds, as well as neonatal human skeletal remains. Ground stone objects and seventeen pottery types are described, the latter based on the "type-variety system and modes or attributes." Although the nature of the offerings changed through time (1760-1040 B.C. radiocarbon dates), the busts share a common in situ burial orientation and other attributes. Mesoamerican archaeologists and art historians anticipate the completion of the specialized studies and the full publication of the data and interpretations regarding this unique, important archaeological site and its organic artifacts.

Ann Cyphers (Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, México, D.F.) has prepared Chapter Four, "Olmec Architecture at San Lorenzo," in which she considers construction materials (bentonite, clay, wood, and volcanic stone), landscape modification, and monument architecture for the Early and Middle Preclassic Olmec (1200-900 and 800-400 B.C.). Cyphers evaluates an hypothesis suggested by Michael D. Coe and Richard A. Diehl regarding the modification of the landscape in order to create a 1200 x 700 meter raised plateau within the 52.9 hectare San Lorenzo site. The full explanation appears in Coe and Diehl's *In the Land of the Olmecs, Vol. 1: The Archaeology of San Lorenzo Tenochtitlan* and *Vol. 2: People of the River* (Austin, University of Texas Press, 1980). Social complexity and labor investment are also examined. Cyphers's major contribution is her assessment of *lagunas* (reservoirs) and causeways (also used as dikes and docks) from which she concludes that several of the lagunas are not Preclassic in construction chronology but date to the colonial or modern eras. Based on the testing of

twenty of about 200 low mounds, she also observes that a majority of the mounds are not Preclassic. These are very significant results of field research and necessitate a rethinking of the nature of the San Lorenzo site, paleodemography, and the sequence of monumental construction.

The subsequent contribution, Chapter Five, shifts to the Classic period but the analysis and results have implications for the entire Gulf Coast and for Mesoamerican studies in general. In her contribution entitled "Spindle Whorls and Cotton Production at Middle Classic Maticapan and in the Gulf Lowlands," Barbara Ann Hall (Department of Behavioral Sciences, Riverside Community College, Riverside, C.A.) employs a variety of research methods. Hall uses archaeological research, Late Postclassic ethnohistoric sources, and archival data in her analysis of cotton cloth production at Maticapan, a site known to have Classic period Teotihuacan highland influence. She assesses the artifactual evidence for cloth production (maguey, cotton, etc.) and presents an analysis of seventy-five spindle whorls (devices used to spin fibers into thread) recovered at Maticapan. Weights, hole diameters, types, decoration, distribution in domestic residences and other attributes are assessed, and she hypothesizes that the ideology of the elite inhabitants of Maticapan involved the used exotic fabrics or textiles in basic exchange but also for political motives and economic gain, especially in inter-regional commodity commerce. Archaeologists have published very few studies of perishable material culture from any locale in Mesoamerica, therefore Hall's compelling analysis is important to our knowledge and understanding of craft specialization and cultural ecology.

"Part 2: Regional Scales--Patterns in Settlement and Style," begins with an illuminating introductory essay by Arnold in which he traces briefly the early history of regional scale approaches—for example, the pioneering efforts by Willey, Sanders, and Drucker. He summarizes the

thrust of the six chapters comprising Part Two, and notes the increased appreciation of occupation outside of the ceremonial centers, concern with sociopolitical correlates of settlement systems, and "environmental dynamics" (p. 142) (the latter should not be inferred by the reader as environmental determinism).

In Chapter Six, "Settlement System and Population Development at San Lorenzo," co-authored by Stacey C. Symonds (Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, México, D.F.) and Roberto Lunagomez (Facultad de Antropología, Universidad Veracruzana, Xalapa, Veracruz), the reader finds materials complementing Cyphers's study (Chapter Four). Symonds and Lunagomez summarize archaeological research in the Olmec area since 1939 prior to their presentation of the results of the first systematic regional survey conducted in the Olmec heartland. The "San Lorenzo Regional Survey" covered four ecological zones in an area of 403 square kilometers, identifying 271 sites that were categorized within twelve site types. A majority of the sites were multicomponent (that is, were occupied during two or more major periods or chronological phases within the Preclassic, Classic, and Postclassic periods). Early Preclassic phase sites (1500-900 B.C.) clustered in the vicinity of the ritual center at San Lorenzo, a time when land modification and the exploitation of different microenvironments were notable features of sociopolitical and subsistence organization. The Middle Preclassic (900-600 B.C.) witnessed a dramatic decrease in the numbers of sites, and only two sites were identified for the subsequent Late Preclassic (600 B.C.-A.D. 200). In the Classic period (A.D. 200-1000; divided into Early, Middle, Late, and Terminal phases), there was a change in the settlement of the region and a gradual increase in the numbers of sites, with a total of 44 by the Terminal Classic phase. There was no evidence that any regional center evolved in the survey area during the Classic period, but during the Early Postclassic (A.D. 1000-1200) a regional center was

established in the northern area at Ahuatepec. A demographic resurgence, changes in social complexity, and a new settlement system are discerned at the same time river courses also altered. To identify Classic period occupation, the authors used the presence of Thin Orange ceramics, an imported highland ware, as a diagnostic (p. 162). However, the reader should not assume that "... Thin Orange from the Basin of Mexico ..." necessarily connotes fabrication in the Basin rather than the control of Thin Orange distribution from the urban center of the pan-Mesoamerican polity of Teotihuacan (A.D. 50-750). For clarification about the production and distribution of this important ceramic, used by Mesoamericanists as a "Classic period marker," the reader is directed to two publications: a book chapter by C. C. Kolb entitled "Commercial Aspects of Classic Teotihuacan Period 'Thin Orange' Wares" which appears in *Research in Economic Anthropology: Economic Aspects of Prehispanic Highland Mexico* (edited by Barry L. Isaac; Greenwich, CT: JAI Press, pp. 155-205, 1985), and an article "New Findings on the Origin of Thin Orange Ceramics," by E. C. Ratray (*Ancient Mesoamerica* 1:181-195, 1990).

The subsequent contribution, Chapter Seven, "Formative Period Settlement Patterns in the Tuxtla Mountains," written by Robert S. Santley (Department of Anthropology, University of New Mexico), Philip J. Arnold III, and Thomas P. Barrett (Department of Anthropology, University of New Mexico), complements Cyphers's essay (Chapter Four). Santley and his colleagues observe that Formative period archaeological evidence confirms the rise of more complex sociopolitical systems, art styles, and iconography, but that the Tuxtla region was dissimilar in level of complexity in comparison with the La Venta site which they comment is "the exception rather than the rule." The archaeological survey begun in 1979 produced evidence on 182 sites (577 components), of which 119 of these sites date to the Formative and incipient Early Classic periods. In a detailed presentation, the authors characterize four phases: Early

Formative (1400-1000 B.C., 24 sites and 1700 inhabitants), Middle Formative (1000-400 B.C., 42 sites and 3200 people), Late Formative (400 B.C.-A.D. 100, 43 sites and 3200+ persons), and Early Classic (A.D. 100 ff., with only 10 sites). The method for estimating Tuxtla tropical lowland demography is a "potsherds to people" approach developed by William Sanders (Santley's mentor) for the arid Basin of Mexico, and is based upon site size and the density of surface occupation. I am uneasy about employing this method of demographic assessment in regions with heavy vegetation. Small villages are found in each phase but a Regional Center developed by the Late Formative. Because of the quality of their data, the authors discuss convincingly social differentiation, economic specialization, and craft activities (ground-stone tool, chipped-stone obsidian, pottery, and salt making). During the Formative period the socioeconomic scene varies diachronically only by degree. The authors consider the lack of Olmec evidence in the Tuxtlas and hypothesize that the term "Olmec" encompasses a wide range of socio-cultural variability. David Braun's North American Hopewellian stylistic model (1986), Santley and his colleagues suggest, is a paradigm that parallels the Gulf Coast Olmec.

It is gratifying to see the inclusion of a preliminary report from the Belgian research project, "Exploraciones en el Centro de Veracruz," funded by the Belgian National Foundation for Scientific Research. In Chapter Eight, "Settlement History in the Lower Cotaxtla Basin," Annick Daneels (Belgian Archaeological Mission, El Tejar, Veracruz), states that for the Basin of Veracruz "Prehispanic settlement was definitely influenced by the character of the natural habitat, with some surprising exceptions ..." (p. 209). The intent of Daneels's essay is to show the "crucial link between geomorphological process, landscape change, and settlement" (p. 254). Project methods and initial results (a total of 374 sites in a 1,470 square kilometer region) are considered from 1981-1995. Data and interpretations are presented for the Preceramic

(2600 B.C.), Preclassic and Protoclassic (1200 B.C.-A.D. 100), Classic (A.D. 100-900), and Postclassic (900-1519) periods. A riverine and farming subsistence pattern and the absence of monumental architecture and sculpture characterizes the Cotaxtla region through A.D. 100. The Classic period is delineated by the introduction of obsidian prismatic blade production, ceramic types that develop from earlier local ones, and major sites that dominate resource areas. This may be an example of the Central Place paradigm, but Daneels does not suggest this possibility. Cultural contact from Cotaxtla to the highlands was through the "Teotihuacan Corridor" into Tlaxcala to the Basin of Mexico and the urban metropolis and pan-Mesoamerican polity of Teotihuacan. The number of archaeological sites changes through time, initially increasing and then dropping precipitously, the latter accompanied by a decline in the quality of pottery manufacture. Strikingly, the reduction in numbers of sites, the demographic decline, and the dissolution of the ceramic quality parallel Teotihuacan itself ca. A.D. 700-750. Following a hiatus, a major break in the settlement system and material culture production is thought to correlate with the immigration of Nahuatl peoples from the highlands after A.D. 900 and again during the Late Postclassic. Thirty-three sites, including newly built settlements in defensible locations, characterize the Toltec-Aztec era. The author reviews data and comments on the need for future research; in particular stressing the need to map a 300 square kilometer region situated to the south of Cotaxtla which leads to Mixtequilla and Cerro de las Mesas.

Chapter Nine, "The Geoarchaeology of Settlement in the Grijalva Delta," prepared by Christopher von Nagy (Department of Anthropology, Tulane University), links geomorphological environmental change and settlement location. Shifting riverine and delta landforms, coastal modifications, and occasional volcanic activity are considered for the 11,600 square kilometer coastal plain of the State of Tabasco. Von Nagy's "Pajonal

Project" documents archaeologically a 275 square kilometer region and 180 sites located by ground survey, aerial photogrammetry, and Landsat imaging. Prior Olmec research is reviewed and 83 Early and Middle Preclassic sites are documented, but the author notes that there is "almost a 50 per cent chance of missing a site due to burial" by alluviation, landform subsidence, or channel meandering (p. 269). Classic and Postclassic sites in the dynamic landscape are also considered. This is a very difficult environment in which to conduct archaeological reconnaissance, so that von Nagy's efforts are to be applauded. However, the reader may wish to know more about the results of the analysis of the core samples that he made in the river channel sediments and have an assessment of the efficacy of this field technique,

Barbara Stark contributes a unique analysis of local pottery motifs in Chapter Ten, entitled "Gulf Lowland Ceramic Styles and Political Geography in Ancient Veracruz." She defines political geography as "the disposition and characteristics of polities on the landscape," and observes that sources for archaeological information can be derived from ecology, settlement patterns, epigraphy, or style zones. Stark employs ceramic decorative motif data derived from her own research area located on the west side of the lower Papaloapan Basin, the locus of her "Proyecto Arqueológico La Mixtequilla" (PALM). She seeks to define diachronically ceramic style zones that through time may expand, contract, be restricted, or crosscut other zones. In addition, she desires to test the postulate proposed in 1971 by William Sanders that the Gulf lowlands were "organized into small states." To do so she borrows an analytical stylistic paradigm developed by David Braun and Steven Plog in 1982 for the Midwestern and Southwestern United States. Nonetheless, her analysis concerns interactions among the general population (e.g. the "non-elite") in terms of exchange systems that she contends are molded by political parameters. Over twenty pages of data (including five figures and a six-page table detail-

ing eleven design motifs) are employed to explicate four eras: 1) Initial, Early Preclassic and Middle Preclassic (collectively 2000-600 B.C.), 2) Late (600-100 B.C.) and Terminal Preclassic (100 B.C.-A.D. 300), 3) Classic period (300-900), and 4) Postclassic (900-1519). Olmec influences are seen in design motifs dating to 1200 B.C. but further evaluations, she believes, are "premature" given the quality of the data. However, there was a reduction in numbers of stylistic regions during the Late Formative, probably due to demographic and political changes, and minute incision style disappeared by the Terminal Formative. For the Classic, despite a paucity of published motifs, the Patarata and Maticapan site areas are well defined. Stylistic patterns and products from the Gulf Coast have been recovered in the city of Teotihuacan, while Teotihuacan-style ceramics (copas, floreros, and candeleros) were imitated by local artisans in the Gulf area. Notably, only a dozen rim sherds of Thin Orange ware were noted among 100,000 Gulf lowlands specimens analyzed, suggesting to Stark that highland peoples at Teotihuacan and in the Meseta Central were importers of Gulf Coast wares rather than exporters of Basin of Mexico ceramics to the lowlands. In the Postclassic period stylistic and political fragmentation are discerned until the advent of the Aztec Triple Alliance ca. A.D. 1300, when highland Aztec III pottery styles were introduced into the Gulf resulting in a Late Postclassic stylistic constriction. While Stark's emphasis is on political geography and stylistic analysis, she also recognizes the role of ecological factors and the interactions between the lowlands and the highlands (the "vertical ties" suggested by Sanders in 1956). A number of chapters in a book entitled *The Archaeology of City-States: Cross-Cultural Approaches*, edited by Deborah L. Nichols and Thomas H. Charlton (Washington, D.C.: Smithsonian Institution Press, 1997), document this phenomenon in regions both inside and outside of Latin America.

The final contribution, Chapter Eleven, "Gulf Lowland Settlement in Perspective," is co-au-

thored by Arnold and Stark. They state that "we eschew the role of synthesizers" (p. 311) and instead chose to emphasize three themes in Gulf Coast archaeology: 1) the historical context, 2) the formation processes (using ethnoarchaeology and taphonomy), and, 3) the region as pivotal—rather than peripheral—in location between the Mexican highlands and the Maya lowlands. Next, the editors review the history of settlement pattern research, noting the differences between arid highland and tropical lowland archaeological survey strategies. They suggest that Gulf lowland settlement archaeological research combines the strengths of both approaches: full-coverage surveys, a site-based and architectural approach, the use of aerial photography and remote sensing, and demographic reconstruction. Arnold and Stark also review the basic parameters differentiating local-scale and regional-scale studies. Michael Deal's important "Coxoh Ethnoarchaeology Project" in the Maya area is noted, but Deal's most recent publication, *Pottery Ethnoarchaeology in the Central Maya Highlands* (Salt Lake City: University of Utah Press, 1998) [published in June 1998] can now be added to local-scale analyses.

An excellent synthesis of three intraregional settlement patterns found in the Gulf lowlands is presented using cultural, geographic, and chronological data. To the north (the Huasteca), Late Postclassic archaeological sites (Cempoala and Castillo de Teayo) dominate the region, while in the central lowlands (the Totonac area), Classic sites (such as Cerro de las Mesas, El Tajin, and El Zopotel) are significant. In the southern lowlands (the Olmec area), Preclassic settlements (San Lorenzo and La Venta) dominate the scene. Arnold and Stark develop a compelling assessment to demonstrate that in-situ development rather than extraregional influence or contact lies at the foundation of Gulf Coast societies. Rather than being a Teotihuacan "outpost" or colony, for example, Matacapán has an apparent indigenous prehistory prior to highland contact. The authors also state that "the association of certain styles

with the Maya may have more to do with the history of archaeological research in Mesoamerica than with the Maya as proprietors [of cultural traits]" (p. 323). Each major settlement study presented in *Olmec to Aztec* is reviewed by Arnold and Stark who conclude that the lower Coxcatla (Daneels's chapter) and La Mixtequilla (Stark's research) areas are closely related. Likewise, the Tuxtla Mountain region (presentations by Santley, Arnold, Pool, Hall, and colleagues) and the Coatzacoalcas River Basin (Rodriguez and Ortiz, Cyphers, and von Nagy's contributions) have marked cultural affinities. Nonetheless, intraregional variation is a characteristic of settlement organization in the central and south Gulf lowlands and different spheres of sociopolitical interaction are suggested. Lastly, the authors place Gulf lowland settlement pattern studies in perspective, noting differences in lowland field research approaches versus highland Mexican studies (e.g., the Basin of Mexico and Valley of Oaxaca). Unlike the Meseta Central, there is, they observe, "no unified consensus or long-term plan that drives Gulf lowland settlement studies" (p. 328); individual researchers employ diverse field methods tailored to different conditions (in the main, ecological and financial), and have different objectives. Lastly, Arnold and Stark call for Gulf lowland settlement studies that are comparable at basic levels of analysis.

Overall Assessment:

I have commented on each of the eleven chapters and, therefore, will not reiterate those points. Overall, each of the presentations has uniform excellence in terms of presentation of background information, data, analysis, and interpretation—quite an achievement given several nationalities, varied research agendas, and different theoretical orientations, field methods, etc. This excellence is testimony to the diligence and goals of Stark and Arnold as the editors of this volume and to the University of Arizona Press's editors. The book also seems to have no typographical er-

rors or misprints (an exception being in author-prepared illustrations in which the term "baston" is used for "baton," p. 86). It appears that the chapter manuscripts were submitted in late 1996 since there are no references to publications after that date (some entries for 1996 are listed as "in press" but have not yet appeared).

Nonetheless, I have two major caveats. The first is that there is only one general map of the entire Gulf lowlands; additional, more focussed cartographic renderings would be beneficial to the reader's comprehension of cultural and environmental characteristics. Similarly, the chronological concordance (Fig. 7.2, p. 180) presented by Santley and his co-authors was unique among the contributions; the editors might have provided an overall concordance that included the areas and chronologies for each of the essays. I wondered why several authors used older editions of important works rather than the more recent, revised publications. Gordon R. Willey and Jeremy Sabloff's first edition of *A History of American Archaeology* (San Francisco: W. H. Freeman, 1974) is cited rather than the emended third edition (1994). Likewise, Elman R. Service's *Primitive Social Organization* (New York: Random House, 1962) is referenced rather than the revised second edition (1971) in which Service acknowledges the use that scholars such as Sanders and Price (1968) have made using the chiefdom and state paradigms in archaeological contexts (p. 135). Indeed, many of the methodologies employed and the interpretations rendered by the authors of these essays reflect the concept of cultural ecology and settlement pattern analyses used by Sanders and his colleagues. Bob Santley is a student of William Sanders, while Flip Arnold and Chris Pool, among others, are proteges of Santley.

Curiously, no contributor to *Olmec to Aztec* cited any of the studies from another volume that is also concerned with the material culture and settlement pattern from a similar region. This pioneering work, *Pottery of Prehistoric Honduras:*

Regional Classification and Analysis, edited by John S. Henderson and Marilyn Beaudry-Corbett (Los Angeles: University of California at Los Angeles Institute of Archaeology Monograph 35, 1993), is seminal to highland and lowland Honduran archaeology. There are very similar problems and methodological concerns shared by archaeologists working in the Gulf lowlands and in Honduras. Some of the "solutions" proposed by the Honduran researchers might benefit the Gulf lowland investigators, and vice versa.

In terms of field methods, I am concerned about the use of transect surveys (Chapters Six and Eight) rather than full-scale coverage, but I am keenly aware of difficulties of working in dense tropical forest environments as well as "financial concerns" often dictate field methods. (Yes, I myself have conducted both types of reconnaissance.) Archaeological site typologies and criteria for inferring sociocultural and political structure vary from one research project to another (see Chapters Four, Seven, Eight, and Nine). The lack of consistency in terminology should be addressed; for example "small village" connotes different parameters. Arnold and Stark might have correlated descriptively or in tabular form the various site typologies or terms and the definitions of these terms that were used in these contributions. Nonetheless, I am in complete agreement with the editors who stress the need to have comparable survey methods from area to area within the Gulf lowlands so that the results of each reconnaissance can be assessed from a common baseline, such as is found in the Basin of Mexico. The lack of a long-term plan that addresses this issue is a salient issue; a meeting similar to the Basin of Mexico research conference held in 1960 to resolve differences in terminology and methods is needed. Stark and Arnold are precisely the dynamic scholars who should convene such an assembly.

Because of the new data and reinterpretations that appear in *Olmec to Aztec*, even the most

recent textbooks will require revision; for example, see Muriel Porter Weaver's *The Aztecs, Maya and Their Predecessors*, 3rd ed. (San Diego: Academic Press, 1993). Stark and Arnold's *Olmec to Aztec* stands along side the volume that has become a benchmark for the Mexican highlands, *The Basin of Mexico: Ecological Processes in the Evolution of a Civilization* by William T. Sanders, Jeffrey R. Parsons, and Robert S. Santley (New York: Academic Press, 1979). Similarly, a volume entitled *The Archaeology of City-States: Cross-Cultural Approaches*, edited by Deborah L. Nichols and Thomas H. Charlton (Washington, DC: Smithsonian Institution Press, 1997), exemplifies the ecological approach. Two contributions from the latter are relevant to the interrelations between the Gulf lowlands and Mexican highlands: Charlton and Nichols's Chapter Eleven, "Diachronic Studies of City-States: Permutations on a Theme: Central Mexico from 1700 B.C. to A.D. 1600" and the late Mary Hodge's Chapter Twelve, "When is a City-State?: Archaeological Measures of Aztec City States and Aztec City-State Systems."

Olmec to Aztec is an essential resource assembled by able editors and a distinguished group of international scholars and will serve as the primary resource on Gulf lowland prehistory for some time to come. The contributors demonstrate that in situ cultural development continued beyond the Preclassic into the Classic and Postclassic periods with less influence from the highland Mesoamerican and Maya regions than some scholars have assumed previously. The contributors sometimes borrow models from other culture areas, test old hypotheses, present new research results, and revise prior perspectives. There are compelling assessments and thought provoking, sometimes provocative, essays worthy of the attention of Mesoamericanists and students of prehistoric and contemporary Latin American culture.

In addition to anthropologists who are oriented to coastal regions and to Mesoamerican prehis-

torians, scholars whose research focus is on societies residing in lowland or coastal regions societies will find useful materials in *Olmec to Aztec*. This is because the contributions and the editors' essays have value well beyond the Gulf of Mexico lowlands as a geocultural region. Archaeologists working in tropical contexts in any area of the globe would benefit from reading these valuable and enlightening essays.

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