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The Aztec Silent Majority: William T. Sanders and the Study of the Aztec Peasantry

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Peasants in ancient civilizations far outnumbered elites, urbanites, and any other social category. Their contribution to society was fundamental, for their labor supported the entire society through farming, construction, and other kinds of work. Yet peasants remain the most poorly-known members of ancient societies. They were not usually literate, and most written texts produced in early states have little to say about rural peoples. Similarly, descriptions of early states by outsiders (such as the accounts of the Spanish *conquistadores* in Latin America) generally ignore the peasantry.

Early archaeological fieldwork on the ancient civilizations focused almost exclusively on urban settlements, not rural sites. It is only in the past few decades that archaeologists have shifted their attention to the remains of peasant houses and villages to shed some light on the "silent majority" of the ancient civilizations. The archaeological and ethnohistorical study of ancient peasants is a recent phenomenon, and we are only now gaining significant insight into this important sector of the early states (see studies in Schwartz and Falconer, 1994).

In the case of the Aztecs of central Mexico, rural peoples have only recently become a topic of research in spite of the fact that scholars have acknowledged the existence and importance of peasants since the sixteenth century (Figure 1). Since, 1960, surveys have illuminated settlement and land use in rural areas (*e.g.*, Sanders, 1965; Sanders *et al.*, 1979), mapping and excavations are bringing rural villages to light (*e.g.*, Evans, 1988; M. Smith, 1992a), and research on Nahuatl-language written sources is clarifying the nature of rural social organization (*e.g.*, Cline, 1993; Lockhart, 1992). But this line of study has a shallow time depth. The modern study of the Aztec peasantry was initiated by William T. Sanders. In the late 1950's and the early 1960's Sanders produced some of the first solid data, both archaeological and ethnohistoric, on Aztec peasants. This research was presented in his dissertation, *Tierra y Agua* (Sanders, 1957), in the preliminary report on the Teotihuacan Valley Project, *The Cultural Ecology of the*

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Figure 1. Sixteenth-century drawing of Aztec peasants planting maize. (After Sahagún 1950-82:bk.10: fig. 70; drawing by Ellen Cesarski.)

Teotihuacan Valley (Sanders, 1965), and in various articles and papers (*e.g.*, Sanders, 1970, 1971).

Sanders recognized the importance of the rural sector before most archaeologists. He isolated a number of issues that needed to be studied in order to gain an adequate understanding of the Aztec peasantry, and he established methods and analytical approaches to study those issues. Three of the most important issues singled out by Sanders are demography, intensive agriculture, and rural community organization. These are still major topics of research in Aztec studies, and Sanders's empirical contributions and approach defined a program of research that continues to the present day. Some of his empirical results still stand as definitive treatments of the issues, many have been extended and clarified by his successors, while other interpretations have been superseded by later research. In this paper I review the state of our knowledge of Aztec peasants, comparing Sanders's early work with subsequent research. I will show that current researchers are still pursuing lines of inquiry defined by Sanders, and that we owe much of our recent success to the prescience of his early work on Aztec peasants.

Aztec Central Mexico

At the time of the Spanish conquest, the Nahuatl-speaking peoples of highland central Mexico constituted a single culture known as Aztec. In the

words of ethnohistorian James Lockhart: "the central Mexicans at the time of European contact were united, to the extent that they were, not by politics or even by an assertive consciousness of unity, but by a shared culture carried in the vocabulary of their common language" (Lockhart, 1992:1). Lockhart, whose focus is on the post-conquest period, calls these peoples the Nahuas. For the pre-conquest period, the term Aztecs is more common. This usage of "Aztec" is different from that of many scholars. Some equate the "Aztecs" with the Mexica people of Tenochtitlan, while others use the term for the inhabitants of the Basin of Mexico but not the surrounding highland valleys. Nevertheless, the wider use of the term advocated here is appropriate for a number of reasons. All of these peoples spoke Nahuatl, they all traced their origin to the wandering groups from Aztlan, and the area was characterized by a single religion and common principles of social organization, from the *altepetl* (city-state) down to the household (Lockhart, 1992). This characterization is supported by archaeological research that has documented widespread similarities in material categories such as ritual objects, temples, and palaces (Smith, 1996).

Another justification for using a single term to describe the conquest-period peoples of highland central Mexico was provided by Sanders' concept of the "Central Mexican symbiotic region" (Sanders, 1957). In the words of Sanders *et al.* (1979:4): "This area included the Basin of Mexico, together with adjacent areas of southern Hidalgo, western Tlaxcala-Puebla, and Morelos. This region, containing a diversity of natural environments, was seen as the nuclear region in which would evolve a complex Meso-american civilization founded on high productivity, dense population, and intensive specialization and exchange."

Sanders' original definition of the Central Mexican symbiotic region was based on ethnohistoric and archaeological evidence from the conquest period when all of the diverse environments of the region supported dense populations, intensive agriculture, and complex sociopolitical institutions centered on the city-state. This situation promoted widespread economic exchange among the diverse central Mexican city-states in the form of marketplace trade, long-distance exchange, and tribute payments (Berdan 1988). These economic interactions were a major force in the creation and maintenance of the cultural similarity described above by Lockhart (1992). They were also a significant factor in shaping the nature of Aztec peasant society throughout central Mexico.

Rural Demography

One of the most remarkable things about the Aztec peasantry was its size. The central Mexican countryside was more densely settled in A.D. 1519 than at any other time in history before the late twentieth century. Although

not the first to pursue demographic research in central Mexico, William Sanders was the first to produce reasonable population estimates from historical data, and the first to produce population estimates from archaeological data. Most research on rural population levels since 1970 have built on the foundation established by Sanders' work.

The first modern population estimates for Aztec central Mexico were made by historians of the "Berkeley school" of historical demography, Woodrow Borah, Sherburne Cook, and Leslie Simpson. In a series of monographs, these scholars used a variety of documentary sources from the sixteenth century (including Spanish census documents, tribute lists, and statements of the conquerors) to reconstruct the size of the Aztec population (*e.g.*, Borah and Cook 1963; Cook and Simpson 1948). They arrived at estimates of nearly 3 million people for the Basin of Mexico and 6.4 million for the Central Mexican symbiotic region. In a detailed analysis of Aztec historical demography, Sanders (1970) concluded that these numbers were unreasonably high given the nature of the environment, technology, and agricultural resources of the Aztecs. Sanders examined the data, assumptions, and methods of the Berkeley historians and pointed out a number of serious problems.

Sanders went back to the sixteenth-century census figures, estimated the central Mexican population in A.D. 1568, and then extrapolated back to A.D. 1519 to account for population decline due to epidemic disease. His results were considerably lower than those of the Berkeley historians, with 1.16 million people in the Basin of Mexico. This is still a very high figure; the regional population density, 160 persons per square kilometer, is a very high level for a preindustrial society. The only other comprehensive study of Aztec demography using documentary sources is Whitmore's (1991, 1992) quantitative simulation of sixteenth-century population decline, which produced results closer to those of Sanders than to the Berkeley figures.

Sanders was also instrumental in establishing rigorous methods of archaeological demography (*e.g.*, Sanders, 1965, 1971; Sanders *et al.*, 1979). The Basin of Mexico archaeological survey project included the first large-scale archaeological demographic reconstruction anywhere in Mesoamerica (Sanders *et al.*, 1979). The population estimates for the Late Aztec period, 0.9 million inhabitants in the Basin alone, are quite close to the figures derived from historical documents. One notable finding of the survey project was the rapid population growth from Early Aztec (A.D. 1150-1350) to Late Aztec (A.D. 1350-1550) times (Figure 2). The high Late Aztec population was not the result of a long-term gradual rise over many centuries but resulted from a single sustained growth surge at the end of the Prehispanic epoch.[1]

[1] The most likely cause of the Postclassic population explosion was a significant increase in rainfall A.D. 1100. New limnological research in central Mexico (Metcalfe *et al.*, 1989, 1994; O'Hara *et al.*,

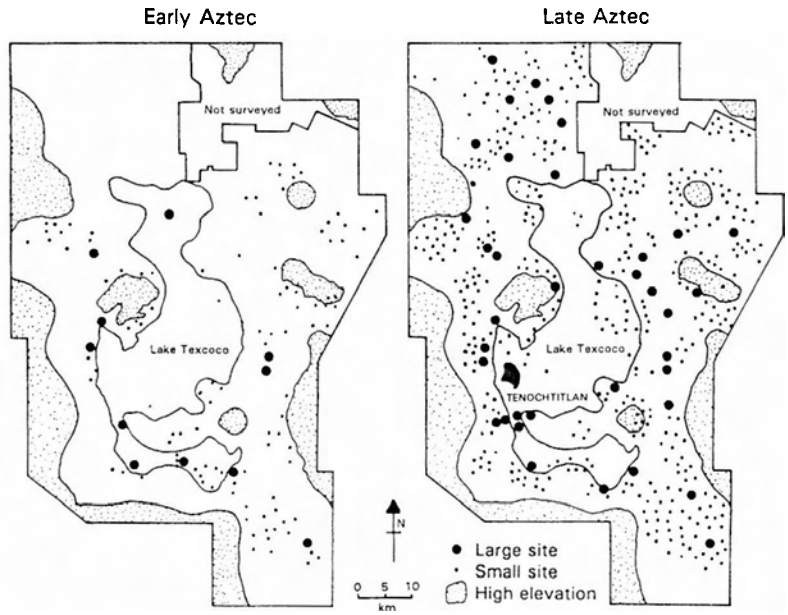

Figure 2. Population growth in the Basin of Mexico between the Early Aztec (A.D. 1150-1350) and the Late Aztec (A.D. 1350-1550) periods. The dots labelled "small sites" show areas where such sites are numerous; there are far too many Late Aztec small sites to mark each one on a map of this scale. (After Sanders *et al.*, 1979: maps 17, 18; drawing by Ellen Cesarski.)

One reason for the greater success of Sanders' estimates compared to those of the Berkeley historians was his anthropological approach. From the start Sanders grounded demographic data in their socioeconomic context. Rather than viewing population and demography in isolation, Sanders took into account the natural environment, crops and agricultural technology, and settlement patterns in his interpretations of demographic methods and results. A major component here was the modern rural population of central Mexico. In his dissertation, Sanders (1957) studied demography, settlement, agriculture, and land use in the modern Teotihuacan Valley, and the results of this research were used in subsequent work on demography and settlement patterns. He also encouraged follow-up studies of modern settlement patterns and agriculture in the Teotihuacan Valley by Thomas Charlton (1970a, 1970b) and Richard Diehl (1970). These projects were ethnographic studies dedicated to recovering material culture patterns relevant to archaeological interpretations. In other words, Sanders, Charlton, and

1994) reveals this trend, which was the opposite of that proposed previously by Armillas (1969) on the basis of a faulty extrapolation of North American paleoclimatic conditions to central Mexico.

Diehl were conducting ethnoarchaeological fieldwork before that term was defined in the 1980's.

Subsequent research on Aztec historical demography has continued to draw upon the work of Sanders (1970). For example, in my estimates of population for Aztec polities and settlements in Morelos I relied heavily on Sanders' methods and approach, which gave results similar to those derived from using Whitmore's simulation methods (Smith, 1994a). Dobyns (1993), on the other hand, ignored Sanders (1970) and consequently produced an unreasonable demographic argument that was easily refuted (Smith 1994b). Dobyns argued for the use of city size estimates by the conquerors as evidence for high Aztec population levels, when in fact Sanders (1970) had earlier demonstrated the contradictory and inflated nature of such estimates.

The large size of the central Mexican population raises a number of questions concerning Aztec socioeconomic organization; most notably, how did all of these people feed themselves? Again, we find that Sanders was one of the first scholars to address this issue.

Intensive Agriculture

All ancient states required intensive agricultural methods to produce sufficient food for their populations, and the Aztecs were no exception (the term intensive here refers to farming methods that use elevated energy inputs in order to produce high yields). Ethnohistoric sources contain only limited information on intensive agricultural methods, however, and early studies of the Aztecs relying upon ethnohistory tended to ignore this important topic (*e.g.*, Vaillant, 1941; Gibson, 1964). As an ecologically-minded anthropologist, Sanders was aware of the importance of agriculture generally, and intensive agriculture in particular, among ancient societies.

In the chapters of his dissertation devoted to central Mexico, Sanders (1957:38-160) focused heavily on two types of cultivation that were particularly suitable to intensified production, irrigation and raised fields. In later discussions, he also discussed terracing and kitchen gardens (Sanders 1965, 1976b). These four methods are commonly used by farmers in the Basin of Mexico today, and Sanders' dissertation remains one of the best ethnographic descriptions of modern peasant agriculture in central Mexico and Mesoamerica in general. Particularly noteworthy is his attention to quantitative data on crop yields and the energetics of cultivation. Sanders' descriptions were augmented by Charlton's ethnographic study (1970a), and Wilken's (1987) fieldwork in Puebla and other areas helped set the Basin of Mexico data into a wider context.

In his ethnographic research, Sanders focused on relationships between agricultural methods and both the natural environment and the social lands-

cape. These functional patterns were then used as analogies to interpret the results of the regional surveys, first in the Teotihuacan Valley (Sanders, 1965) and then throughout the Basin of Mexico (Sanders *et al.*, 1979). Although this method was applied to all of the Prehispanic time periods, it was most successful for the Late Aztec period. Major reasons for this success are the existence of ethnohistoric documents on settlement and agriculture for that era and the higher population levels of the Late Aztec period, which led to greater construction of terraces, canals, and dams.

Sanders' early work did not include much excavation of Aztec sites, and it was up to later researchers to provide data on the technology, construction, stratigraphic context, and local distributions of Aztec agricultural features. Thomas Charlton (1977b) and Deborah Nichols (1988), for example, provided some of the first archaeological data on Aztec irrigation canals, and William Doolittle (1990) reconstructed the technology of Aztec irrigation in relation to wider Mesoamerican patterns (see also Wilken, 1987). Donkin (1979) studied New World agricultural terracing and expanded Sanders' distributional research. In addition, Smith and Price (1994) excavated Aztec hillslope terraces and check dams (Figure 3) at Cuexcomate and Capilco in Morelos (see also T. Price 1988), and Evans (1990) provided energetic reconstructions of maguey terrace cultivation.

Aztec *chinampas* or raised fields have been studied more intensively than either irrigation or terracing. Important fieldwork has been done by Armillas (1971), Parsons (1976b), Parsons *et al.* (1982), Ávila (1991), and Nichols and Frederick (1993). Work by Wilken (1987) and Sluyter (1994) examines Aztec *chinampas* in comparison with Mesoamerican raised field agriculture in general. Recent research has illuminated the Aztec use of house gardens (Evans 1990; Williams 1994), although to date no direct evidence has been reported. For all four Aztec techniques of intensive agriculture —irrigation, terracing, raised fields, and house gardens— Sanders' early work described the methods and their functional significance for modern peasants, pointed out their importance to the Aztecs, and defined the major research issues that guided much of the subsequent fieldwork mentioned above.

Sanders' work on Aztec intensive agriculture has contributed to a number of important theoretical debates. He focused attention on the strong functional linkages that intensive agriculture has with both demography and political centralization. His early interest in Wittfogel's (1957) hydraulic theory of early state development (Sanders 1957, 1965) provided a major impetus for his ethnographic and archaeological fieldwork on central Mexican irrigation. Subsequent debates over the applicability of Wittfogel's theory to Mesoamerica (*e.g.*, Millon *et al.*, 1962; Palerm and Wolf, 1957; Sanders, 1965; Sanders and Price, 1968) provided strong stimuli to further fieldwork and comparative research (*e.g.*, E. Hunt, 1972; R. Hunt, 1994; Lees, 1973; Woodbury and Neely, 1972). Although few scholars today still

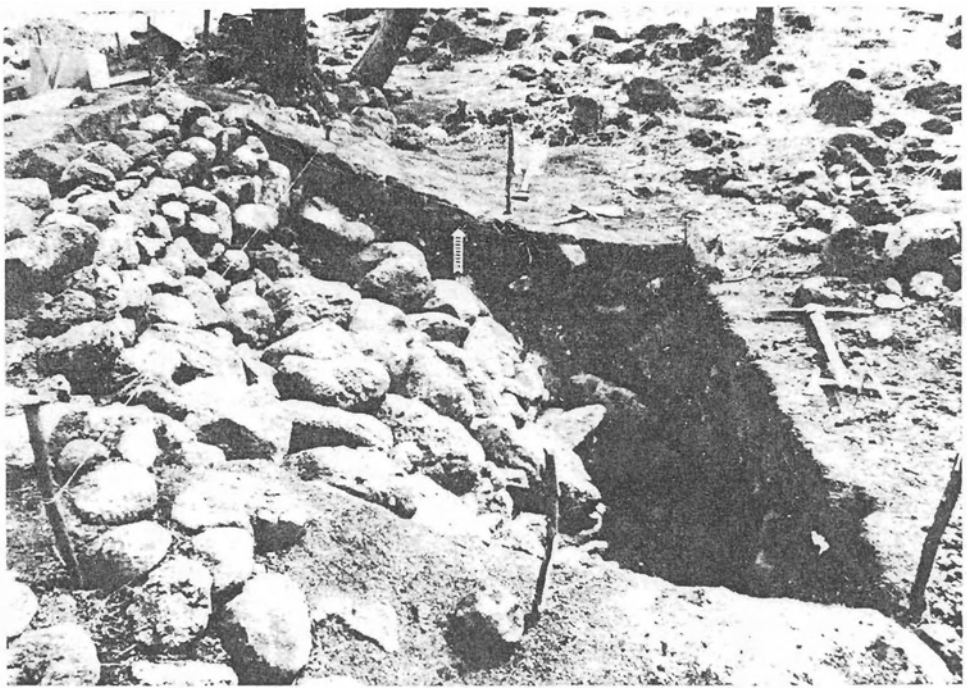

Figure 3. Late Aztec check-dam at the site of Cuexcomate. (Photo by Michael E. Smith.)

accept Wittfogel's theory in its original causal form, most do acknowledge the close functional relationship between irrigation agriculture and centralized political power (see Smith, 1993:8).

In a similar manner, Sanders' early insistence on the connections between demography and intensive agriculture stimulated a debate that continues to the present (*e.g.*, Blanton, 1983; Cowgill, 1975; Sanders, 1965, 1972; Sanders and Nichols, 1988). Today, the most extreme form of the population pressure model —that population pressure caused the rise of the state— has few adherents. Sanders' original argument, however, was the more limited proposition that agricultural intensification was causally related to population size and density (Sanders, 1965:201-205). Boserup (1965) systematized this model, and subsequent work has largely confirmed it (*e.g.*, Turner *et al.*, 1977; Netting, 1993).

Fieldwork on Aztec demography and intensive agriculture provides strong empirical evidence of the relationship between population growth and agricultural intensification. The well-documented population surge between the Early Aztec and Late Aztec periods was accompanied by a massive program of agricultural intensification through irrigation, terracing, and raised field construction (Sanders, 1976b; Sanders *et al.*, 1979:236-281; Smith and Price, 1994; Smith, 1996). These two forces of change —population growth and intensification— had major impacts on rural life in

central Mexico, and some of the results are revealed in archaeological and ethnohistoric research on rural community organization.

Rural Community Organization

Very early Sanders recognized the importance of the household and the *calpulli* in Aztec society, and his discussions of these units contributed to our knowledge of Aztec rural social organization. His research in historical demography pointed out the prevalence of extended family units (Sanders 1970), and subsequent analyses of Nahuatl documents confirmed this and filled in many details (*e.g.*, Carrasco, 1976a, 1976b; Cline, 1993; Kellogg, 1995; Lockhart, 1992). Only one Aztec house was excavated by the Teotihuacan Valley Project (Charlton, 1979a), but subsequent work by Susan Evans (1988) and myself (Smith, 1992a, 1993a) uncovered a number of the structures inhabited by Aztec peasant households. For the most part these were small adobe-walled houses with stone foundations. Rural houses in Morelos (Figure 4) were generally smaller than those excavated in the Teotihuacan Valley.

Sanders (1965:64-66) devoted a fair amount of space to the *calpulli* (see also Sanders *et al.*, 1979:159-160). He drew heavily on Zorita's

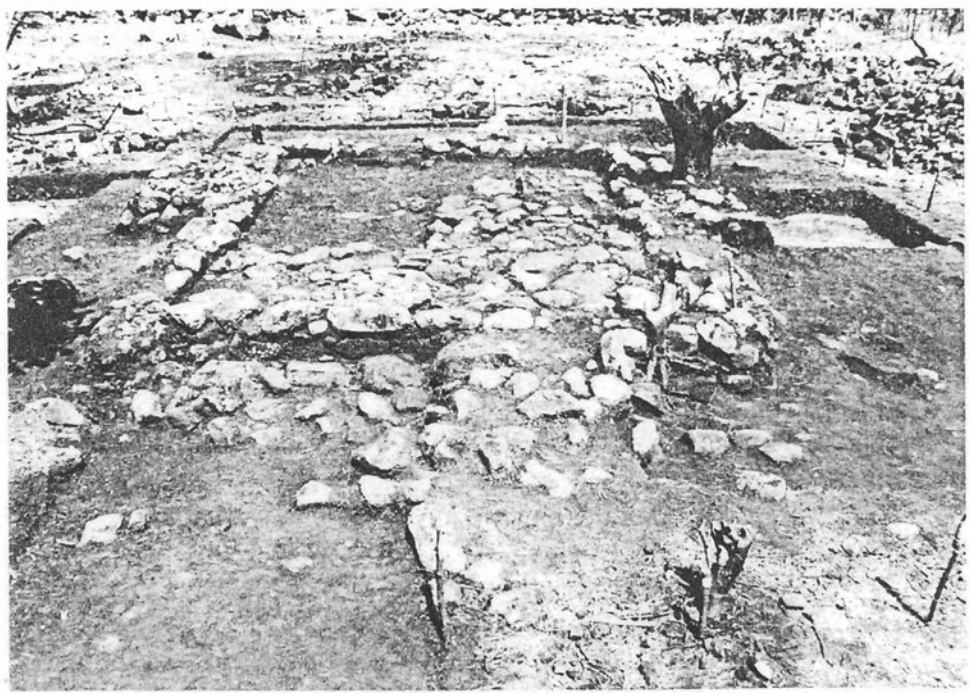

Figure 4. Late Aztec peasant house at the site of Cuexcomate. (Photo by Cynthia Heath-Smith.)

(1963a) account, the major source of information on the *calpulli* prior to the recent publication and study of various Nahuatl-language documentary sources (*e.g.*, Carrasco, 1976a; Cline, 1993; Hinz *et al.*, 1983). These latter sources, however, paint a different picture of *calpulli* organization that largely supersedes the Zorita/Sanders model. Lockhart's (1992:16-18, 96-110, 142-152) synthesis and analysis of the new data point out that the Zorita/Sanders model of the *calpulli* overemphasized the corporate nature of land-holding, underemphasized the role of nobles in the *calpulli*, and made too great a distinction between the commoner categories of *macehualli* and *mayeque* (see also Smith, 1993a).

Although land was ultimately owned or controlled corporately by the *calpulli* or by nobles, Lockhart points out that, "recent scholars have now repeatedly shown that as far as arable land is concerned, in actual practice individuals and households worked it, held it on a long-term basis, and inherited it" (Lockhart, 1992:142). Nobles played a larger role in the *calpulli* than previously acknowledged. In Pedro Carrasco's words, "We find *tecuhtli* inside the organization of the *calpulli*, and as important parts of the *calpulli*" (Carrasco, 1976b:116; author's translation; see Smith, 1993a:199). Sanders' discussion of differences between the commoner categories of *macehualli* and *mayeque* has also been superseded. Lockhart discusses problems with Zorita's discussion of mayeque:

> Skepticism set in, however, as the rarity of the term [mayeque] in Spanish texts and its near total absence in Nahuatl documents became more apparent. We have since learned that there were in fact great numbers of dependent people on the lands of nobles, in some places even constituting the majority, but that the terminology for them varied, and that rather than being something radically distinct from the macehualtin, they were a type of macehualtin. (Lockhart, 1992:97).

Although Sanders' model of *calpulli* organization has been revised heavily, it was historically important for showing archaeologists the importance of this unit as a basic component of Aztec rural society. Recent fieldwork has found that archaeological settlement patterns in Morelos correspond rather closely to the new ethnohistoric data on the *calpulli* and other levels of settlement (Smith, 1993a).

Sanders was the first to document two important features of Aztec rural community organization. First, some communities (the "dispersed line villages") were very highly dispersed, with households scattered over the landscape in near-continuous fashion (Sanders, 1965:86; Sanders *et al.*, 1979:163-171). In these situations, it becomes difficult to apply the definition of "site" as a discrete area of occupation or activity. This type of settlement occurs on sloping topography where terracing was practiced, and it probably came about because of the continuous nature of labor requirements for terrace cultivation (Netting, 1968; Sanders *et al.*, 1979:240; Smith and Price, 1994; Wilken, 1987). A second feature of rural settlement

was the predominance of dispersed communities ("dispersed radial villages") over nucleated villages in non-terraced zones. In these cases, the open land between houses and house groups was taken up with house gardens (Williams, 1994). Thus, the form of intensive agriculture was a major determinant of the form of rural settlement across the Aztec landscape.

The Aztec Peasantry

The study of Aztec demography, intensive agriculture, and community organization was pioneered by William T. Sanders in his dissertation and in the work of the Teotihuacan Valley Project. The results of research by Sanders and subsequent scholars on these topics conform to Robert McC. Netting's (1993) model of smallholder cultivators. This is a type of agrarian society that cross-cuts traditional evolutionary typologies. It is found in areas with particular demographic, social, and environmental characteristics, and rural central Mexico in Aztec times fits Netting's profile:

> Smallholders practice *intensive agriculture*, [emphasis in original] producing relatively high annual or multicrop yields from permanent fields that are seldom or never rested, with fertility restored and sustained by practices such as thorough tillage, crop diversification and rotation, animal husbandry, fertilization, irrigation, drainage, and terracing. I am not talking here about amber waves of grain but about gardens and orchards, about rice paddies, dairy farms, and *chinampas*... The smallholding householders that I examine in this book are alike in that for all of them land is objectively a scarce good, agrarian production per unit area is relatively high and sustainable, fields are permanent, work takes skill and relatively long periods of time, decisions must be made frequently, and the farm family has some continuing rights to the land and its fruits. (Netting, 1993:3).

In the Aztec countryside, as in Netting's model, the forces of regional demography, agricultural intensification, and social organization on the household and community levels interacted to produce distinctive patterns of social and economic adaptation. In spite of the Late Postclassic population explosion and their exploitation by local and regional elites, Aztec peasants were able to achieve relatively good standards of living. Excavations of peasant houses reveal that households were active participants in both marketplace and long-distance trade, they had rich and varied inventories of domestic posessions, and they engaged in part-time production of textiles and other goods (Brumfiel, 1987b, 1991; Evans, 1988; Smith, 1992a; Smith and Heath-Smith, 1994). Although this is difficult to confirm with existing data, I suggest that the economic success of Aztec peasants came about through the intensification of household agricultural and craft labor beyond the needs of subsistence and tribute in order to participate actively in the market system; this is a common pattern among the ethnographic smallholders described by Netting (1993).

The use of Netting's (1993) work and other contemporary anthropological models to illuminate aspects of society and economy in the Aztec countryside is only possible because we have a solid empirical base of archaeological and ethnohistoric research on key topics such as regional demography, intensive agriculture, and community organization. To William Sanders goes credit for identifying these as important topics, for making substantial empirical and theoretical contributions to each, and for establishing the study of the rural sector as a crucial issue in Aztec studies. Just as Aztec peasants built their adobe houses upon stone foundations, the scholarly study of these peasants over the past three decades builds on the foundation of Sanders' research. The Aztec silent majority is now being heard, and we can thank William Sanders for first awakening that voice.

Acknowledgments

I wish to thank William T. Sanders for providing my first fieldwork experience in Mesoamerica, for establishing a productive approach to the Aztec peasantry that many of us have been pursuing ever since, and for serving as an inspiration to countless students and scholars. He has also been a good colleague and friend over the years. Fieldwork at Cuexcomate and Capilco was supported by the National Science Foundation and Loyola University of Chicago.

ARQUEOLOGÍA MESOAMERICANA

HOMENAJE A WILLIAM T. SANDERS

I

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