

Chieftdoms in Northern South America

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The multiple and varied trajectories of chiefdom development in northern South America (and adjacent Central America) offer a rich opportunity for evaluating generalizations about the processes of chiefdom development. Sequences of the south coast of Ecuador, the Alto Magdalena, Calima, the Muisca region, Barinas, and the Tairona region are well enough documented to attempt to use in this way. Although centralized hierarchical societies develop in all these regions, there are many differences in the character of centralization and hierarchy and in the pacing of the development, and none of the traditionally proposed forces of social change is entirely adequate to account for these cases. Attention to the role played by competition between aspiring chiefs and their factions offers promise for more satisfactory generalizations that could be evaluated through further comparative study.

KEY WORDS: northern South America; chiefdoms; complex society; competition.

INTRODUCTION

Northern South America presents one of the world's richest opportunities for studying the dynamics of chiefdoms. Although of global distribution, chiefdoms have been especially difficult to capture even for synchronic study, and the difficulty is compounded when processes of chiefdom development through time are at issue. Unlike many states, chiefdoms did not leave their own written records, and their structures were quite brittle in the face of expanding colonial empires. The ethnohistoric documentation for the chiefdoms of northern South America provides vivid and useful snapshots of a considerable number of different chiefdoms as they existed

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in the sixteenth century, but only archaeology has the requisite time depth for investigating the long-term dynamics of chiefdoms. The ethnohistoric record for northern South America gives such archaeological study an especially sound starting point. Northern South America gave unusually free reign to chiefdom development for several millennia, providing us with the opportunity and the challenge of studying patterned variation in a large number of long trajectories of chiefdom development (Drennan, 1991, 1993, 1995b).

WHY STUDY CHIEFDOMS?

The term *chiefdom* is associated in many people's minds with an approach that takes for granted a package of characteristics, usually derived from comparative ethnography, often going back to some of the classic literature of cultural evolution from the 1960s (e.g., Fried, 1967; Service, 1962). The archaeological application of the notion has often consisted largely of establishing a list of "archaeological correlates" of chiefdoms, and taking this list to the archaeological evidence for a particular society to see whether it was a chiefdom or not. Such an approach has been practiced around the world, including northern South America (Alcina, 1988) and adjacent lower Central America (Creamer and Haas, 1985; Snarskis, 1987, 1992). The social archaeology approach is considerably more elaborate, lays much heavier emphasis on the causal dynamics of chiefdom emergence, and uses a different vocabulary, but it is founded on a similar logic (Fonseca, 1992; Marcos, 1988a; Sanoja and Vargas, 1978; Vargas, 1990).

Such approaches have spurred enormous progress in the archaeology of northern South America. In particular, they have raised the sights and broadened the horizons of a substantial cadre of archaeologists by providing concepts that can be used for two important tasks: first, reconstructing human social behavior in more reliable and meaningful ways than by leaps of faith from descriptions of sherds and, second, using this reconstructed social behavior rather than characterizations of artifact style (phase, culture, tradition, horizon, etc.) as the basis of comparing different regions (Drennan, 1996). These advances, however, have not come without cost. The hunt for chiefdoms has been faulted for reifying a series of stages; for railroading cultural or social evolution onto a single track when many different paths are possible; for failing to do justice to the richness of human social behavior; for fostering sterile debate over *which* definition of "chiefdom" was really *correct*; for channeling energy into a futile quest for a better label than "chiefdom," or "rank society," or "middle-range society," or "hierarchical chiefly way of life," or whatever; and for other reasons. All these

costs are more than outweighed by the benefits of the effort to recognize in the archaeological record a kind of society known ethnographically. Some of the critiques have been red herrings; others have amounted to throwing the baby out with the bath water [see Spencer (1987), for example, for a rebuttal].

Several of the critiques, however, are symptomatic of a limitation of this kind of approach that it is essential to overcome if archaeological study of chiefdoms is to contribute to greater understanding of them (as opposed to deriving from such understandings developed elsewhere). As long as the characteristics of chiefdoms are determined on the basis of ethnographic and ethnohistoric sources and then simply applied to archaeology, the conclusions to archaeological studies inevitably take one of two forms: "Aha! This society was a chiefdom," or (much more rarely, to no one's surprise) "Aha! This society was *not* a chiefdom." Such conclusions do indeed represent a great advance over conclusions about material culture affiliations, but they do not teach us anything about chiefdoms in general. Instead of using knowledge gained from the archaeological record to understand chiefdoms better, understandings of how chiefdoms work (derived from ethnographic or ethnohistoric description and/or from untested theory) are taken for granted and used to help us understand the archaeological record (Drennan, 1992).

In the process, the archaeologist becomes engineer rather than scientist, putting the general principles of science to work in a particular setting rather than using particular facts to help formulate and evaluate general principles of some kind. There is, of course, nothing really wrong with this, but we can be more ambitious and seek to augment social scientific understandings of chiefdoms by expanding upon ethnographic description and by evaluating theory rather than simply assuming its validity. If archaeologists are not willing to be this ambitious, then the long-term developmental dynamics of chiefdoms will never be understood, because information about change in chiefdoms over long or even moderate lengths of time is simply not available except from the archaeological record. I take it for granted in this essay that we do have such ambitions in studying the chiefdoms of northern South America.

WHAT ARE CHIEFDOMS?

As should be clear from the previous section, I do not see belaboring the definition of *chiefdom* as a very productive endeavor, whether it takes the form of arguing for the validity of one of the existing definitions, seeking a new and better definition, or discarding the term and replacing it

with one of the many substitutes that have been suggested. All three of these “solutions” to the “problem” amount to the same thing, because they are all solutions to the wrong problem. The problem is not that we have failed to define the concept well enough; the problem is in the way the concept (or whatever other concept we put in its place) has been put to work. Sharpening the tool will not help; we need to swing it differently. *Chieftdom* needs to be the starting point, not the ending point, of archaeological study. If we do not imagine final archaeological conclusions like “This society was a chieftdom,” then just what kind of conclusions are we after? We can continue to advance beyond the considerable achievements of the approaches discussed in the previous section if we begin to imagine archaeological studies whose conclusions take the form “This chieftdom had characteristics A, B, and C, while that chieftdom had characteristics A, D, and F because of the similarities and differences in the way forces X, Y, and Z played themselves out in the two trajectories of development.”

Clearly, any meaning that the conclusion “This society was a chieftdom” may have depends on consensus about what a chieftdom is. Not without reason, then, have archaeologists attempting to make such conclusions focused so much attention on definitions. If we think of our ultimate objectives differently, though, in terms of the second kind of imaginary conclusion stated above, then general agreement on a precise definition of the term *chieftdom* is not a prerequisite. It is not even particularly helpful. Implicit in such a conclusion is that chieftdoms may share some features and differ in others. Just how and why is what we aim to find out. To get started, all we need is a very rough way of sketching in the boundaries of a comparative territory so that it encompasses a set of things useful to compare and helps us avoid fruitless comparisons of apples and oranges.

The comparison attempted here is of prehispanic chieftdoms found in northern South America, with additional consideration of neighboring chieftdoms in lower Central America. These chieftdoms all have some degree of social hierarchy, and none shows any evidence of political administration as a specialized activity (cf. Drennan and Uribe, 1987; Drennan, 1991). Their development is, in one respect, the story of the emergence of substantial inequality, but it has a number of other aspects as well, such as spatial and demographic scale, centralization, economic specialization, exchange, supralocal political organization, and others. Very broadly speaking, these aspects are known to be correlated with each other. That is, in general, societies with a great deal of inequality have larger populations in larger territories, greater centralization, more economic specialization, larger volumes of exchange, and larger-scale and more complex political organization than societies with very little inequality—just as, in general, tall people weigh more than short people. That said, however, there is still

a lot to be learned by investigating the forces that produce the substantial departures from this general pattern that are also known to exist—in effect, studying why some people weigh a great deal more or less than we would expect, given their height.

For this essay, then, *chieftom* is a rough category of moderately hierarchical societies that we wish to investigate further in the fullest sense of comparative anthropological study. If our general anthropological aim is to understand better how particular social forces relate to others and produce the effects they produce, comparison represents the only way to distinguish just-so stories from useful models. Useful models must provide accurate accounts of a number of individual instances of social change, giving us to understand how or why similar forces operating under similar constraints in similar historical circumstances produce similar trajectories of social change repeatedly, and how varying the forces or the constraints or the historical circumstances alters the trajectory. Comparative study provides our only laboratory for evaluating different models' abilities to do this.

WHAT FORCES OPERATE IN CHIEFTOMS?

Attention paid to the forces that produced the chieftoms of northern South America in their varied forms can be divided into several categories. These are worth considering before we turn our attention to specific chieftoms so that, when we do finally look at the empirical evidence, we have an idea what it is that we are looking *for*.

Warfare

The importance of warfare in complex centralized societies has long been championed by Carneiro, not only in the context of state emergence (Carneiro, 1970), but also in the dynamics of chieftoms (Carneiro, 1981, 1991). The ethnographic and ethnohistoric record for northern South America has provided especially abundant accounts of vicious and perpetual warring among small scale sociopolitical units, including ones both with and without much social hierarchy (Trimborn, 1949; Carneiro, 1991; Redmond, 1994b). One of the most important roles often described for northern South American chiefs is mobilization for and leadership in warfare, especially offensive warfare. And one of the principal results of warfare in northern South American chieftoms is the enhancement of the prestige and power of chiefs whose forces are victorious. Indeed, the enhancement of personal prestige of warriors and of war leaders is easy to see as the

principal motivation for much warfare in indigenous northern South America, among both tribes and chiefdoms (Redmond, 1994a, b). It is a short step from these observations to the notion that warfare is the forge on which chiefdoms are hammered out—that in its absence there would be no sound basis for the leadership position of the chief and that variation in the nature and conditions of warfare might account for some of the organizational differences to be observed between chiefdoms.

Agricultural Production

Chiefdoms, by and large, have larger and denser populations than do simpler societies, and these populations, like all others, must be fed. In addition, chiefs are seen to manipulate food supplies in various ways related to their positions as chiefs. In northern South America, and adjacent Central America, this basic notion has been expressed as an emphasis on maize-based agriculture. Chiefly manipulation of food supplies requires some ability to store food and to centralize that storage. Maize has been taken as ideal for such purposes, because of the strong seasonality of sowing and harvesting in many regions and because of the relative ease with which it can be stored. A subsistence system focused heavily on maize is particularly beholden to this dynamic compared, for example, to some of the other readily available alternatives for northern South America (agriculture focused on manioc or other starchy tubers, or highly diversified agriculture perhaps substantially supplemented by wild or only partially domesticated species). The appearance of chiefdoms has, then, often been attributed to the appearance of maize since, without it, the accumulation of the central food stores or the denser populations on which chiefly activities depend in one way or another would not be possible (Fonseca, 1992; Reichel-Dolmatoff, 1973; Roosevelt, 1980; Sanoja and Vargas, 1978; Snarskis, 1984, 1987, 1992; Vargas, 1990).

The archaeological evidence from northern South America has also made it necessary to discuss not just the establishment of agricultural subsistence systems based on maize but also their intensification through the investment of large amounts of labor in such constructions as raised fields (Darch, 1983; Denevan *et al.*, 1987; Muse, 1991; Plazas and Falchetti, 1990; Plazas *et al.*, 1993; Spencer *et al.*, 1994; Stemper, 1993). Although such intensive agricultural works were once thought to be the unique province not only of states but of the largest and most complex of premodern states, it is now clear that they occurred as well in societies that lacked the administrative structures previously thought by some to be necessary to their construction and maintenance. The implications that such agricultural systems

have for chiefly manipulation of food supplies have, accordingly, become fodder for accounts of chieftom development.

Centralized Storage and Local Exchange

The notion that some degree of centralization of food storage and its manipulation by chiefs serves to pool subsistence risk is deeply embedded in the literature on chieftoms and on states as well. This pooling of risk is seen to work to the benefit of all members of a society where centralized storage has such an effect because of the hedge against subsistence failure that it provides. At least some of the Spanish conquest period documents for northern South America and Central America do speak of chiefly stores of some magnitude, but this aspect of centralization has attracted less attention in connection with northern South American chieftoms than among those working on complex societies in North America, Mesoamerica, the Central Andes, and Europe. Central storage and redistribution of goods might also facilitate craft specialization with attendant advantages from economies of scale and expertise and attendant opportunities for chiefs to manipulate goods needed or desired by their subject populations.

By a logic related to that underlying the perceived advantages of centralized storage, exchange between fairly closely related sociopolitical units in an area of modest size has been seen to have economic advantages—viewed alternatively as benefits to the populations of chieftoms or opportunities for chiefly manipulation. These could arise from environmental diversity in terms of either varied agricultural production or varied raw materials for craft production. In the Andes, this approach has taken on its own very special flavor based on the environmental variation produced by wide ranges in elevation and the development of vertical economies. Such vertical economies in northern South America are sometimes seen as internal to single communities that individually control a wide range of altitudes (Groot, 1990; Langebaek, 1987b, 1992; Lleras and Langebaek, 1987; Mora, 1993). Exchange with neighboring sociopolitical units can also be involved (Cárdenas, 1988; Langebaek, 1987a, b, 1991, 1992; Oyuela-Caycedo, 1990; Salomon, 1986).

Long-Distance Exchange

At longer distances, the goods involved are less likely to be agricultural staples, if only because of the transportation economics involved (Drennan, 1984a, b), but the distances can be truly long. Notions of long-distance exchange current in northern South America do not have

the uniquely Andean character that verticality does, and are more clearly seen as manifestations of theoretical concerns current in other parts of the world. The goods providing archaeological evidence of long-distance exchange in northern South America and adjacent Central America are overwhelmingly luxuries, as opposed to utilitarian items, and are often argued to have primarily symbolic importance. The importance of such exchange to the development of chiefdoms can be seen either in terms of belief systems and legitimation (Helms, 1979, 1987, 1992b) or in terms of the direct economic impact of demand for exotic materials on the regions that produce them (e.g., Zeidler, 1991).

Demography

The fact that chiefdoms are partly defined as larger-scale societies than their predecessors makes it unsurprising that the development of chiefdoms is broadly correlated with demographic growth. Whether that demographic growth, however, is cause or effect of the development of chiefly organization is much debated (e.g., Carneiro, 1981; Drennan, 1987; Feinman, 1991). It is probably Carneiro's familiar linkage of population growth with warfare via notions of circumscription that has the greatest currency in northern South America among models that make population growth a cause, and the ethnohistoric descriptions of chiefly warfare have given great encouragement to this view (Carneiro, 1991; Redmond, 1994a, b).

HOW DO THE FORCES OPERATE?

While there are those who still advocate one or another of the categories discussed above as the locus of the essential forces that produce chiefdoms whenever and wherever they occur, such a single-minded reliance on monocausal explanations is no longer very common. I hasten to add that the current unfashionability of universal monocausal models is not a valid argument against them. It may well be that most archaeologists interested in chiefdoms are currently wrong. (It wouldn't be the first time.) In this paper at least, though, I will try not to spend time beating a horse that most already take for dead. Flannery (1972) urged us more than two decades ago to go beyond "prime mover" explanations, and there is widespread agreement with this position in the literature.

Two broadly contrasting frameworks in which to view the operation of specific forces in chiefdom development have long been recognized. Carneiro (1970, pp. 733-734) dubbed them "voluntaristic" and "coercive;"

more recently Earle (1987, pp. 292–297) has talked about the same dichotomy in terms of “management” and “control.” A “voluntaristic” or “management” framework concentrates on the general benefits of forms of social organization—that is, on the broad problems to which the organizational features we are interested in are the solutions. The focus is ordinarily on entire sociopolitical units often treated as internally undifferentiated “problem-solving” entities. At the opposite end of the spectrum, a “coercive” or “control” perspective concentrates on the internal dynamics of sociopolitical units and stresses conflict of interest and competition between individuals or groups within them—especially individuals or groups in similar structural positions competing for ascendancy (Brumfiel, 1994). Whether either of these perspectives really represents a framework in which the important forces can be productively characterized as they interact within the constraints of a particular situation remains to be seen. While some are ready to dismiss the “voluntaristic” or “management” approach (and have been for decades), it continues to have its supporters, and actual empirical evidence applied to this level of discourse is rare. The remainder of this paper is an effort to use the empirical information available for several trajectories of chieftom development in northern South America to help inform the ongoing discussion of these issues (cf. Drennan, 1996).

REGIONAL STUDIES

That chieftoms are regional in scale has sometimes been made a central element in their definition, and northern South American chieftoms are no exception in this regard. They certainly transcend the scale of a single village. Sometimes this takes the form of incorporating a number of villages; sometimes of a single village with a more rural hinterland; and sometimes other forms. Archaeological study limited to a single site, in any event, provides an inadequate basis for characterizing such regional societies. Regions, ranging in size from a few hundred to a few thousand square kilometers, are the essential analytical units. Much archaeological research in northern South America continues to be very fragmented—studies of a single site, perhaps including its immediate environs, but not systematically related to a larger context, including other sites and a complete chronological sequence, except through artifact comparisons. There are several regions, however, for which we are beginning to have the critical mass of information necessary to deal with the course of chieftom development. The following capsule accounts of several regions rely primarily on relatively recent research, and citations of recent work are emphasized over older studies. Dating of the sequences is not very precise—it does not need

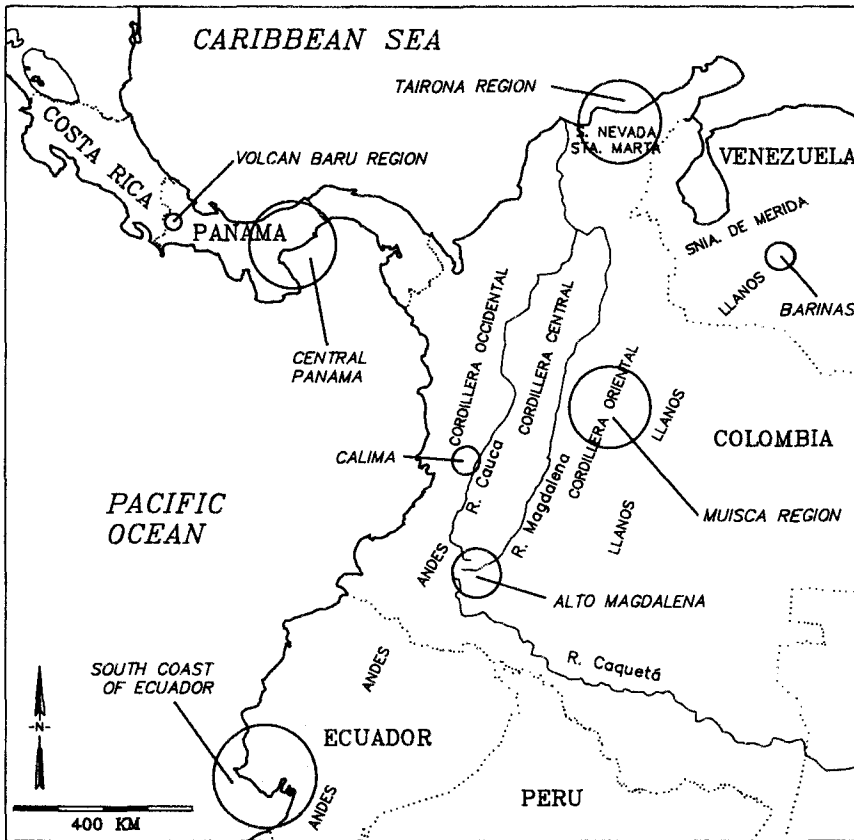


Fig. 1. Northern South America with regions mentioned in the text.

to be for the comparative purposes of this essay—and time is referred to in the B.C./A.D. system most commonly used by those who work in northern South America. Even though the regional chronologies are ultimately based on uncalibrated radiocarbon dates, their periods have not been converted here into B.P. form.

The South Coast of Ecuador

The south coast of Ecuador, including the Santa Elena Peninsula and the Guayas Basin (Fig. 1), is a somewhat larger and more diffuse region

than the others discussed. It has, of course, provided some of northern South America's most abundant evidence for early cultivation and ceramics, and in recent years some of this evidence has been published in greater detail than before. For the 2000 years or more of the Valdivia and Machalilla phases, beginning around 3200 B.C., Ecuador's south coast appears to stand out from neighboring regions for the importance of cultivars in its subsistence systems, for the sedentism of its settlement patterns, and for the complexity of its social organization.

During Early Formative (Valdivia, 3200–1600 B.C.) times, maize phytoliths or macroremains occur at most excavated sites, but other species are more abundant (Pearsall, 1988a, b). By the Middle Formative (Machalilla), maize was apparently quite important to the inhabitants of some but not all villages, to judge by its abundance in the archaeological record. The specific relationship of maize cultivation to the planting of several tubers that could have been grown cannot be delineated precisely because these tubers are far more difficult to detect reliably in archaeological remains. This very persistent unevenness within a single region of modest size in the adoption of maize-focused agriculture casts considerable doubt on the notion that when maize becomes available in a region it necessarily removes a limitation to agricultural development imposed by other cultivars. Maize had been present on the Santa Elena peninsula since at least 5000 B.C. (Stoother, 1988), and a variety of races was in use by Valdivia times (Pearsall and Piperno, 1990). Despite the unequivocal presence of maize, and its abundance in some sites, Pearsall (1992) is not willing to brand either Valdivia or Machalilla subsistence as "fully agricultural" because of the continued importance of a number of wild species.

The site of Real Alto was a focus of population nucleation and regional centralization during Valdivia times. At the beginning of the Valdivia phase, Real Alto was likely a small circular village similar to other documented early Valdivia communities. Of the seven excavated houses that have been described in print, the most complete (Structure 2-77) was oval, 4.50 × 3.20 m, and built of wattle and daub with a concave packed earth floor (Damp, 1988). The construction is substantial enough to suggest considerable permanence of occupation. Such small houses (of the order of 10 m² of floor space) seem likely to have been nuclear family residences, but later houses were much larger (also elliptical, averaging 50 to 70 m²) and recall the extended family *malocas* of ethnographically documented groups in northern South America (Zeidler, 1984). The houses were surrounded by midden deposits and assorted features, including hearths, burials, and pits. The house floors themselves, not surprisingly, were quite clean of artifacts, but Stahl and Zeidler (1988, 1990) have had success recon-

structing the spatial organization of some activities within them from the distribution of microdebris.

In Valdivia II, about 3000 B.C., there was a large structure on a low mound, labeled the Charnel House because of the number of burials associated with it. It was complemented by another mound whose structure has been called the Fiesta House because of refuse pits containing food remains. These two mounds and structures were remodeled and rebuilt numerous times, and continued to be used through the full sequence of occupation. At this early time neither burials nor household remains testify convincingly to social hierarchy. In Valdivia III, around 2800 B.C., the overall village plan was transformed into a much larger rectangular shape with the two structures on mounds facing on a large open plaza in the center that has been taken to be a ceremonial precinct. Marcos (1988b) sees some evidence of social hierarchy at this time, although the evidence is said to be much clearer in Valdivia VI and VII.

Taking a broader focus than the area immediately around Real Alto, Valdivia I and II sites are known to be widely scattered along the southern coastal lowlands, with no two known sites less than a day's walk from each other. In the Chanduy Valley, the two known sites, Real Alto and Centinela, were both of unusually large size (Damp, 1988). Even though the Valdivia type site is in a coastal location, both Real Alto (about 3 km from the coast on the Río Verde) and Centinela (about 30 km from the coast on the Río Azúcar) were in inland riverine settings. By Valdivia IV, Real Alto spread over as much as 6 or 7 ha, and a few smaller villages appeared as well, but they lacked the "public" or communal structures present at Real Alto (Marcos, 1988b). By late in Valdivia times, the number of "satellite" settlements within 1.5 km of Real Alto had grown to four, and Real Alto's population was shrinking as those of its satellites grew. There is still no indication that any of these small villages contained communal structures, and the Charnel House and the Fiesta House at Real Alto continued to be enlarged. Large bell-shaped pits at Real Alto that were not associated with houses suggest storage organized in some suprahousehold manner. Real Alto probably represents but one of several very small-scale regional social units of more or less similar character on the southern Ecuadorean coast at this time. Another seems to have occurred in the Valdivia Valley, with Loma Alta as the central settlement (Raymond, 1988).

Damp (1988) sees this demographic growth in the Chanduy Valley reaching the saturation point by the end of the Valdivia phase, and creating enough pressure earlier to make ritual activities carried out at the communal structures in Real Alto serve an important function in conflict resolution. In comparison with other regions where chiefdoms emerged, however, the settlement maps for the Chanduy Valley look very sparse: the clusters of

occupation are anywhere between 7 and 14 km apart, and the entire area of some 600 km² contained only 12 known settlements. Pearsall (1988b) has calculated that it would be possible to produce enough maize on only the best soils in a 5-km catchment radius around Real Alto to sustain between 1500 and 3000 people, which is to say the entire estimated maximum population of Real Alto. The same catchment could produce enough manioc to sustain 5600 to 12,500 people. The subsistence strategies apparently in use at Real Alto (planting both maize and tubers, gathering a variety of wild plants in substantial quantity, hunting, fishing, and shellfishing) would, of course, have yielded considerably more food than either maize or manioc alone. All this makes it difficult to credit a picture of either resource scarcity or conflict arising from crowding as an endemic condition of Valdivia times. To the extent that crowding engendered conflict which was resolved through ritual at Real Alto, the crowding would seem itself to be the result of the centripetal social forces that drew regional population into a small area around Real Alto rather than a result of the bumping and jostling of large regional populations with nowhere to go to escape each other.

The Valdivia phase on Ecuador's south coast clearly represents a regionally centralized society with some degree of social hierarchy. All of these characteristics, while present, are weak enough that Zeidler (1991) prefers to classify these as big-man societies rather than chieftdoms. It is at the very end of Valdivia times that *Spondylus* shell comes to be a widely used luxury material, not only along the Ecuadorean coast, where it can be obtained locally, but also along the Peruvian coast, where its users presumably obtained it from the south coast of Ecuador. Zeidler sees substantially more developed social hierarchies in coastal Peruvian societies of this period and argues that the demand for *Spondylus* originated with the elites farther south. This external "market" was, for Zeidler, the impetus to continued development of hierarchical patterns of organization on Ecuador's south coast in Machalilla times. The second millennium B.C., however, is not as thoroughly documented as the third. Occupation at Real Alto came to an end following Valdivia VII, but settlement continued to spread through the southern coastal plain during Machalilla times. Even though the number of settlements continued to increase, it is still impossible to describe the zone as crowded even as late as 1000 B.C.

By 500 B.C., the focus of settlement in the coastal plain was much more strongly inland than before, and extensive areas of the Guayas Basin had been converted from swampland into raised agricultural fields (Marcos, 1987; Martínez, 1987; Muse and Quintero, 1987). Buys and Muse (1987) describe a regional settlement hierarchy ranging from large center to small center to village to individual household in association with the Peñón del Río complex of raised fields. For this same raised field complex,

Mathewson (1987) elaborates a demographic model that imagines slow but inexorable regional population growth as the driving force from initial colonization through steady filling-in of the landscape with human settlement to construction and eventual expansion of raised field systems made necessary to satisfy the regional demand for food. He finds this model consistent with approximations of the labor requirements and yields of the Peñón del Río raised field complex, but the lack of comprehensive, systematic archaeological survey results makes it impossible to see whether it is consistent with actual population estimates for different periods.

Along the Río Daule, Stemper (1993) sees the emergence about 500 B.C. of chiefs distinguished by their possession of large quantities of gold, silver, or elaborate copper jewelry and by the burial of their remains with extensive offerings in mounds. The raised field complexes of the Río Daule also date from about 500 B.C. Stemper attributes the wealth and power of these chiefs to two principal factors: control of the agricultural production of the raised field systems and utilization of the agricultural surplus from the raised fields in the riverine trade that brought the precious metals to them. Stemper's analysis of raised field yields, compared with regional population estimates based on archaeological survey, suggests excess productive capacity, and this leads one to imagine that the construction of the raised fields was driven less by regional population growth than by chiefly demands for "surplus" production. Indeed, the labor requirements of raised field agriculture to meet chiefly demands for surplus production may have been the circumstance favorable to population growth rather than the other way around. Stemper sees the chiefly politics of the Río Daule in continual flux as chiefs won and lost in competition with each other, but the overall structure of political organization and chiefly competition remained largely unchanged for some 2000 years prior to the sixteenth century.

Political patterns in the Peñón del Río zone of the Guayas Basin may have been similarly persistent. Here, too, chiefs stimulated the construction of raised field systems, and Muse (1991) attributes the development of Peñón del Río as a regional center after 900 A.D. to its role as an entrepôt, or bulking center of the agricultural produce of its raised field complex. Chiefs (and aspiring chiefs) increased the surplus production under their control by expanding their own households, sometimes to hundreds of people. Such kin-based means of producing surplus are seen as an alternative to force and domination and came eventually to create intense economic integration at Peñón del Río and expand the variety and quantity of goods brought from the Andean zone beyond the precious metals for sumptuary use seen by Stemper in the Río Daule.

Ecuador's south coast, then, shows an especially long chiefdom trajectory beginning in the third millennium B.C. with the very modest regional

centralization and social hierarchy of Valdivia societies, for which communal ritual activities are among the easiest aspects to document. The second millennium is not so completely documented, making it difficult to describe the social setting from which a much steeper economic hierarchy develops around 500 B.C. in the Guayas Basin. Although some further intensification of production, trade, and exchange may occur, many of the characteristics of the social situation encountered by the Spanish had apparently been stable for a long period of time. On Ecuador's north coast and in the highlands, sedentary living has a somewhat later start than on the south coast, and the earliest documented periods are often contemporaneous with the Machalilla phase that has been somewhat overshadowed by earlier and later developments on the south coast. This period is better documented in some of these other regions—at sites such as Cotocollao, for example, where particularly careful attention has been devoted to reconstructing community structure (Villalba, 1988). It is tempting to try to graft some of these contemporaneous data together with those from the south coast to make a more complete synthetic sequence for Ecuador. Ecuador, however, is not a region but several dozen regions where chieftom development appears to have varied, and homogenizing the information for all these regions would defeat the purposes of the present comparison.

The Alto Magdalena

The headwaters of Colombia's Magdalena River (Fig. 1) have been one of Colombia's most studied archaeological regions for decades. Only the tiniest hint of preceramic occupation exists, but sedentary occupation was established by about 1000 B.C. Subsistence remains from the early sedentary occupation include maize and beans, but a variety of wild species is also represented (Quattrin, 1995). The artifacts of this and subsequent phases of the "San Agustín culture" are spread through a zone some 150 km long and ranging from hot dry environments at 600 m above sea level to very wet, cold zones close to 3000 m (Duque Gómez, 1964; Duque Gómez and Cubillos, 1988; Drennan *et al.*, 1993; Llanos, 1988, 1990b, 1993; Llanos and Durán, 1983; Moreno, 1991; Sánchez, 1991).

The earliest sedentary occupation tended to concentrate into several regional clusters which intensified markedly as population grew dramatically early in the first millennium A.D. (Drennan *et al.*, 1989b, 1991). Although population grew substantially, considerable areas of uncleared forest are indicated by the pollen record (Drennan *et al.*, 1989a), which suggests that population levels were not high enough to create serious pressure on agricultural resources. There is no evidence of especially intensive

forms of cultivation. Neither the extremely dispersed settlement pattern nor the numerous undefensible locations selected for settlement suggest high levels of warfare, although the stone sculptures of the region do include weapons and apparent trophy heads. The settlement concentrations have been taken to be small regional polities focused on complexes of slab tombs in earthen mounds associated with stone sculptures dating mostly between 1 and 800 A.D. (Cubillos, 1991; Drennan *et al.*, 1989b, 1991; Duque Gómez and Cubillos, 1988, 1993; Llanos, 1990a; Sotomayor and Uribe, 1987). With its monumental remains, this "Regional Classic" period has traditionally been taken as the apogee of social development in the region. The extremely elaborate burials of a few individuals are unmistakable evidence of social hierarchy. The architectural and sculptural elaboration of the tombs, however, is not matched by the richness of the objects included as offerings. I have argued elsewhere that this suggests a hierarchy more of social and/or ritual prestige than of wealth (Drennan, 1995a). The rarity of gold sumptuary objects, which are the epitome of elite goods in other Colombian chiefdoms, is especially striking, but other potentially imported or locally manufactured luxury items are included in these tombs in quite modest quantities, compared to elite tombs in other regions.

The sample of households excavated for the period is small, but thus far architecture and artifact assemblages indicate only the scantest economic differentiation (Blick, 1993; Jaramillo, 1994). As an example of potential craft specialization, pottery production was scattered and small-scale, with no indication of centralized control (Taft, 1993). Although the cultivars present in the pollen record for this period [maize, potatoes, sweet potatoes, quinoa, beans, manioc, and coca (Drennan *et al.*, 1989a)] make it possible to think of the ecological complementarity of a vertical economy, the settlement pattern evidence does not support such a reconstruction (Drennan and Quattrin, 1995). For the earliest sedentary occupation, when settlement distribution seems more favorable to such notions, excavation fails to confirm it (Quattrin, 1995). Drennan and Quattrin (1995) have argued that the regional settlement pattern evidence does not indicate control over prime agricultural land.

After 800 A.D. no more tomb and statue complexes were built, but regional population remained high and its distribution indicates even more centralization than before (Drennan *et al.*, 1989b, 1991). It can be suggested that the social hierarchy became one less focused on ritual or ideologically based prestige and more on wealth (Drennan, 1995a), but there is simply very little evidence at present with which to evaluate this suggestion one way or the other. Unlike many sequences of chiefdom development in northern South America, this one does not end with rich ethnohistoric descriptions of powerful chiefs competing with each other for prestige. Con-

quest period accounts for the Alto Magdalena are not as abundant as for other regions, and they do not suggest such powerful chiefs as existed elsewhere. The archaeological evidence at least very tentatively indicates rapid pre-Conquest population decline in some of the areas that had been most densely occupied earlier, and modest population increases in zones that had previously been only very sparsely occupied, but the cultural, social, economic, political, or ideological concomitants of this possible shift are not known at present.

In sum, in sharp contrast to the late chiefdoms of Ecuador's south coast, Regional Classic chiefdoms in the Alto Magdalena show very little evidence of intensification of or centralized control over productive activities or accumulation of wealth by elites. They are not like the earlier Valdivia societies either, though, because of their strongly developed prestige hierarchy and the focusing of ritual areas on the burials of these few individuals as opposed to activities of a more communal nature (Drennan, 1991). Instead of the relative continuity in patterns of organization suggested for two millennia prior to the Conquest by those working in the Guayas Basin, the chiefdoms of the Alto Magdalena seem to have undergone one and perhaps two major reorganizations whose nature is poorly understood in the 600 or 700 years before the arrival of the Spanish.

Calima

The trajectory of chiefdoms in the Calima region, astride a saddle in Colombia's Cordillera Occidental (Fig. 1), parallels that in the Alto Magdalena in some respects (Bray *et al.*, 1983, 1985, 1988; Cardale *et al.*, 1992; Salgado *et al.*, 1993; Rodríguez, 1992). Maize appears in the pollen record after 5000 B.C., and sedentary occupation based on cultivation of maize, beans, and squash began about 1000 B.C. As in the Alto Magdalena, strong population growth apparently occurred early in the first millennium A.D.; in Calima, though, increased land clearance and numerous ridges and ditches in an assortment of forms indicate widespread efforts to intensify agricultural production (Herrera *et al.*, 1990). Tombs were not made into permanently visible monuments with mounds and statues as they were in the Alto Magdalena, but they were provided with lavish offerings including spectacular goldwork (e.g., Legast, 1993). Social hierarchy, then, may be based on wealth accumulation to a greater degree than in the Alto Magdalena. It is speculated that a regional center may have emerged in the central part of the valley, but since this area is flooded by the lake impounded behind a dam on the Río Calima, this will be difficult to document. (To take the existence of such a center for granted because chiefdoms

are thought to have regional centers, of course, is to invert the logic of this essay and make its task impossible, as discussed above.) After 1000 A.D., tomb offerings became less lavish and ceramics and goldwork less elaborate, but regional population levels continued to be high, and agricultural modification of the landscape reached a peak.

It is intriguing that the Alto Magdalena sequence and the Calima sequence move in tandem to some extent but that some approximately contemporaneous major changes differ in character between the two regions. Sedentary occupation involving some degree of maize cultivation was established in both regions about 1000 B.C. Population and social hierarchy surged early in the first millennium A.D. in both regions, but social hierarchy was expressed quite differently. Toward the end of the first millennium A.D., the signs of social hierarchy weaken somewhat in Calima while a change in the underlying basis (but not a weakening) of social hierarchy has been proposed for the Alto Magdalena.

The Muisca Region

The Muisca region in Colombia's Cordillera Oriental (Fig. 1), enjoys extraordinarily full ethnohistoric documentation that has been taken to indicate extremely large-scale, complex chiefdoms on the threshold of statehood if not, indeed, across it (Fowler, 1992; Reichel-Dolmatoff, 1973), although Langebaek (1990a) has cautioned that a careful reading of the documents does not always support interpretations that have been widely repeated.

Langebaek (1991, 1992) has most explicitly attempted to convert the ethnohistoric descriptions of how the Muisca chiefdoms functioned into accounts of how they developed. His account begins with Muisca communities that were self-sufficient in agricultural production, despite relying on the products of a range of altitude zones. This was possible because each community directly controlled territory in the full range of zones it utilized and produced the basic foodstuffs it relied upon. Exchange with other communities was not involved. At the opposite extreme, Langebaek sees little importance to the Muisca of their sporadic exchanges with relatively distant groups.

It was at medium distances that exchange, in finished craft goods and the raw materials of which they were made, was critical to the Muisca political economy. The Muisca, centered at elevations of 2000 to 3000 m above sea level, depended on other groups in the eastern foothills of the Andes for two materials in particular that were unavailable in their own territory: gold and cotton. The great productivity of maize agriculture in

the Muisca's highland domain is seen by Langebaek as giving the highland groups a permanent advantage over the foothill groups in this exchange. The highland groups could invest some of the substantial maize surplus they were capable of producing in the support of full-time craft specialists producing finished goods of cotton and gold which they traded to the foothill groups for more raw material. Highland Muisca chiefs thus accumulated large quantities of gold jewelry and cotton mantles which figured prominently in the wealth and prestige competition between Muisca chiefs. Although highly competitive, like other ethnohistorically documented chiefs in northern South America, Muisca chiefs are pictured as competing through exchange and wealth accumulation generated through exchange much more than through warfare.

This account of how Muisca chiefdoms developed is derived from accounts of how Muisca chiefs competed with each other in the fundamentally stable system of the sixteenth century. Only a few elements of its archaeological evaluation are available despite the enormous amount of archaeological research carried out in the Muisca area. Just why this is so has been debated in print (Boada *et al.*, 1988; Castillo, 1988; Lleras, 1988). The agricultural self-sufficiency and nutritional status of Muisca communities has also been argued pro and con from archaeological evidence (Boada, 1990; Cárdenas, 1990; Langebaek, 1990b; Mora, 1990), with the conclusion that the most directly relevant kinds of archaeological evidence are simply not available. Despite the wealth described for Muisca chiefs in the sixteenth century, Muisca archaeology is not especially known for rich burial offerings or elaborate tombs, although social differentiation can be found (e.g., Boada, 1989). Most difficult of all, the Muisca period consists of only the last few centuries before the Spanish Conquest, and archaeological reconstructions of social organization for the preceding Herrera period (some 2000 years long) are almost nonexistent, leaving the antecedents of Muisca chiefdoms unclear. Isotopic analysis of human skeletal remains does suggest that maize was the major staple from 1000 B.C. onward (van der Hammen *et al.*, 1990; Cárdenas, 1993), and regional settlement pattern study has begun to document differences in population size and distribution between Herrera and Muisca times (Langebaek, 1995).

It may well turn out to be the case that the Muisca chiefdoms, widely regarded as among northern South America's most highly developed—even considered "incipient states" by some—were the product of a trajectory consisting of two millennia of minimally developed chiefdoms (or even egalitarian societies) followed by exceedingly rapid emergence of great wealth and power differentials and a high degree of chiefly but not warlike competition.

Barinas

The Llanos of Colombia and Venezuela are the low-elevation plains at the base of the Andes, crossed by many rivers carrying Andean runoff to the Amazon and Orinoco systems (Fig. 1). In the state of Barinas, in the western Venezuelan Llanos, the very rapid development and decline of a chiefdom are documented (Redmond and Spencer, 1990, 1994; Spencer, 1991, 1993, 1994; Spencer and Redmond, 1992; Spencer *et al.*, 1994). Sedentary occupation began about 300 A.D. with a handful of small egalitarian villages. Very soon thereafter the population grew rapidly, and by 500 or 600 A.D. a three-level settlement hierarchy had emerged with a 33-ha regional center at the apex.

The regional center at the Gaván site had two large mounds, 10 and 12 m high, respectively, of apparently ceremonial function. They were situated in an oval plaza some 500 m across, completely surrounded by a raised causeway several meters wide, on the top of which was a palisade. Lower mounds supporting residential structures numbered 130, and Gaván's population is estimated at 1000. Variation in residential mound size and height suggests very modest social differentiation. This suggestion is also supported by variation in the offerings included with the four burials excavated in household areas (from no offerings to three ceramic vessels). There are, however, no known tombs of the elaborateness that all have come to think of in connection with northern South American chiefs. Luxury items found in residential contexts were made of materials not available in the Llanos (or even very close to the Llanos). Partial, disarticulated human skeletal remains encountered in Gaván's public or ceremonial areas are taken to be the remains of sacrificed war captives. Raised causeways extended across the often low and swampy landscape from Gaván toward five subsidiary centers with smaller ceremonial mounds and populations on the order of 200. About 25 small villages with no ceremonial mounds and populations on the order of 50 inhabitants form the lowest level in the settlement hierarchy. Raised fields were constructed to enhance the agricultural productivity of some low-lying, poorly drained areas.

Around 1000 A.D. Gaván was evidently destroyed violently and burned, likely as a result of a successful attack by whomever the palisade was built to defend against. Other sites with public architecture similar to Gaván's are known for adjacent regions in the Llanos, and rival neighboring chiefdoms are taken to be the enemy. Wagner (1992) has suggested that such chiefdoms may have been widespread across the poorly studied Llanos at this time. Drastic regional population decline corresponded with the destruction of the regional center at the Gaván site, and the zone remained largely unoccupied up to the time of the Spanish Conquest.

Spencer (1993, 1994) has emphasized the importance to the development of this chiefdom of what he labels "internal" and "external dimensions of

authority." The internal dimension is concerned with the mobilization of surplus agricultural production within the chiefly domain (in which the development of raised field complexes played a major role). The external dimension is concerned with controlling access to the supply of exotic materials used for luxury goods and with leadership in warfare against competing chiefs. The agricultural surplus generated from the raised fields, of course, is important to the consolidation and perpetuation of the external dimension of leadership. It is the successful combination of the internal and external dimensions that enables an aspiring chief to transcend the status of big man and make his leadership permanent and hereditary, which, for Spencer, is the critical element in the emergence of the chieftom. The intensification of agriculture through raised field construction is explicitly attributed by Spencer *et al.* (1994) to chiefs' needs to create surplus production rather than to regional demographic pressure, and the abandonment of the region after presumed conquest by a neighboring chieftom could be produced only in a situation where agricultural land was not in short supply. Indeed, it is tempting to extend such a line of thinking to a tentative conclusion that one of the dynamics of chiefly warfare in the Llanos was a scarcity of labor (i.e., population) for surplus production rather than a scarcity of land.

The trajectory in this section of Barinas, then, stands out among others discussed thus far for its brevity. The chieftom discussed lasted only about 400 years, and the entire history of sedentary occupation in the region not very much longer. The entire "rise" and "fall" of this chieftom clearly took place in prehispanic times, so interference by a conquering power from outside the region is not involved. Whether this was just a single regional cycle in a much broader and more durable pattern for the Llanos in general remains to be investigated. The Muisca trajectory may also be short, but it follows a very long period of sedentary occupation in the region. Muisca relations of intensive trade with their middle-distance neighbors contrast with the warfare of Barinas, and Spencer places long-distance exchange for luxuries in a much more important role in Barinas than Langebaek does for the Muisca. In Barinas, the monumental architecture for communal public activities and the paucity of evidence for great personal wealth recalls Real Alto, but the well-developed regional settlement hierarchy and intensive agricultural systems seem more akin to much later portions of the trajectory of Ecuador's south coast.

The Tairona Region

Ethnohistoric and ethnographic sources for the Tairona depict a strongly developed vertical economy based on direct control and exploitation by individual communities of a range of altitude zones as well as on

considerable exchange among neighboring polities (e.g., Cárdenas, 1988; Herrera, 1985). The environmental setting for verticality is as promising as any in northern South America, as the Sierra Nevada de Santa Marta (Fig. 1) rises abruptly to over 5500 m within 50 km of Colombia's Caribbean coast. Archaeological documentation of the antecedents of the societies encountered by the Spanish is somewhat scattered (Cadavid and Groot, 1987; Cadavid and Herrera, 1985; Groot, 1985, 1990; Herrera, 1985; Lleras, 1987; Oyuela-Caycedo, 1987a, b, 1990; Serje, 1987; Soto, 1988). Sedentary occupation along the coast adjacent to the Sierra can be dated to early in the first millennium A.D., but substantial occupation of the higher slopes of the Sierra may be as late as the end of the first millennium A.D.

Tairona settlements are given a monumental character by the extensive stone slab construction of roadways, paths, and residential terraces, and variation in the quantity of such construction can be used to delineate a settlement hierarchy of several levels. This monumentality has led to a great deal of use of the word *urban* in connection with these settlements, but even the largest centers probably had populations less than 2000. The somewhat schizophrenic character of interpretations of this archaeological record is epitomized by the popular names of the two largest known centers, which are of similar size: Pueblito and Ciudad Perdida ("little village" and "lost city"). These two sites, however, the former on the coastal plain and the latter well up the slopes of the Sierra, each had something over 200 residential terraces in an area of a few hectares. Stone foundations for circular structures range in area from 6 to 200 m². Nearly 80% are between 12.5 and 50 m², which seems plausible in a mild climate for nuclear families or slightly expanded nuclear families. The larger ones are often taken to be public or ceremonial in function. Smaller settlements are numerous in areas that have been studied, and may represent concentrations of population forming sociopolitical units around centers, but no very large area has been subjected to complete archaeological survey. An extensive network of laboriously constructed stone slab pathways interconnects settlements.

Although the trajectory does have a time depth of around 1500 years prior to the arrival of the Spanish, inadequate chronological placement of the construction of many of the monumental remains makes it difficult to determine how much of the pattern described for the region goes back well before the colonization of the slopes of the Sierra around 1000 A.D. and how much is a product of the last few centuries before the Conquest. In this respect, as well as in the intensity of exchange between neighboring groups, the ethnohistoric documentation for the Tairona sounds similar to that for the Muisca. Warfare between neighboring polities, however, looms much larger in the Tairona sources.

Central America

Central America is, of course, much too large to be a region in the same sense as those described above, and technically it is outside northern South America. It is enlightening in this context, however, at least to mention some regional sequences in Central America.

Central Panama (Fig. 1) provides one of the firmest points of connection between the archaeological record and an ethnohistoric record very strongly emphasizing the wealth and ostentation of sixteenth-century chiefs as well as endemic warfare between neighboring chiefdoms or even chiefly factions within a single polity. The spectacular burials at Sitio Conte (Lothrop, 1937, 1942), for example, contain not only enormous wealth, some of it in materials from distant regions (cf. Helms, 1979, 1992a, b, 1994), but numerous weapons (cf. Redmond, 1994b) and much warrior iconography (cf. Linares, 1977). The patterns described for the sixteenth century can thus be pushed back to 500 A.D. here, and what Spencer has termed the external dimension of leadership seems hyperdeveloped, at least in the form of warfare with neighboring groups and possibly in the form of long-distance exchange as well [although Cooke and Ranere (1992, p. 286) are skeptical of the emphasis most others have placed on long-distance exchange]. Chiefly mobilization of resources through internal production is not so well documented archaeologically, but the ethnohistoric sources mention substantial stores in chiefly centers. Cooke and Ranere (1992, pp. 276–277) tie the advent of heavy reliance on maize cultivation to the initiation (during the first millennium B.C.) of the social changes that culminated in chiefdoms.

The Volcán Barú region in western Panama (Fig. 1) also gives evidence of complex social organization in the middle first millennium A.D. (Haberland, 1984; Linares and Ranere, 1980; Linares *et al.*, 1975). The large dispersed village of Barriles came to have an apparent ceremonial precinct with stone sculpture whose iconography seems to represent social hierarchy. Neither household remains nor burials indicate wide economic differentiation, however, in contrast to central Panama. At least some specialized craft production seems to have occurred in the larger villages of the region. Barriles survived, for a time, a volcanic eruption that devastated part of its territory around 600 A.D. (Linares *et al.*, 1975, p. 144; Linares and Sheets, 1980, pp. 54–55). Between 1000 A.D. and the Spanish Conquest, however, there is no indication of such centralized organization in the region. Thus we do not have ethnohistoric descriptions of chiefdoms directly descended from Barriles to compare with those of central Panama.

Costa Rica is a small country, but archaeological research has been intensive enough to delineate several regions within it which have sequences

that differ somewhat. Chiefdoms are well evidenced in sixteenth-century records for various parts of the country (Ibarra, 1990). In at least the Arenal region, where the beginnings of sedentary agriculture are placed before the middle of the second millennium B.C., there may be two millennia or more of stable, egalitarian organization prior to the emergence of substantial social hierarchy around 500 or 600 A.D. (Sheets *et al.*, 1991; Hoopes, 1991; Sheets and McKee, 1994). In eastern and central Costa Rica (not so far from the Volcán Barú region), there is no evidence of such early sedentary agricultural occupation, but chiefdoms are present by 1 A.D. (Snarskis, 1984, 1987, 1992), although there may be variation from one region to another even within eastern and central Costa Rica. In the Terraba River basin of southern Costa Rica, Drolet (1984, 1988, 1992) is reluctant to come to the conclusion that the first ceramics-using villages at perhaps 1000 B.C. were fully agricultural, and it may not be until 700 A.D. that social hierarchy is present. This variety in regional sequences is probably not a disagreement to be resolved but instead an accurate observation of differences in the timing and nature of social change in different regions and, as such, an important feature of Costa Rican prehistory (Hurtado, 1988).

DISCUSSION

The Forces

It will come as no surprise to some, at least, that none of the various major forces of chiefdom development that we have considered appears to play the same role in all the trajectories considered here. Warfare clearly played a pervasive role in Tairona chiefdoms and those of Barinas and central Panama, although this cannot be said as confidently for the initial stages of these sequences as for later stages. It was less pivotal in sixteenth-century Muisca political dynamics, and is less abundantly evidenced in the archaeological record for the Volcán Barú region and the Alto Magdalena. Warfare may well have become much more important in later stages of the trajectory of the south coast of Ecuador, but it is not always small-scale or incipient chiefdoms in which the role of warfare is limited.

Demographic processes do not consistently reflect crowding or resource pressure. For at least 2000 years on the south coast of Ecuador and probably in the Muisca region, as well as in the Alto Magdalena and Barinas, overall regional population levels seem well below regional potential agricultural production by the technologies in use. To the extent that there was any pressure on agricultural resources in these regions, it was the product rather than the cause of the more concentrated populations of

chiefdoms and of chiefly demands for surplus production. Substantial capital investments in agricultural intensification were made in some chiefdoms, of varying scales and characters, but not in all. Regional population surges do seem to accompany rapid increases in complexity of organization in the Alto Magdalena, Calima, the Muisca region, Barinas, and possibly the Tairona region. In the Alto Magdalena, Calima, and the Muisca region at least, the population surges followed many centuries of stable, low population levels among sedentary cultivators exploiting the full range of crops available later; in Barinas the population surge and accompanying sociopolitical changes came very soon after initial sedentary occupation. The possibility of population pressure can be seriously entertained only very late in any of the trajectories discussed here, if at all. These observations are all consistent with the view that competing chiefs sought larger populations to increase surplus production by sometimes quite labor intensive means as appropriate. They are not consistent with the notion of inexorable regional population growth leading to a fairly steady filling-in of a region and the creation of ever-greater pressure on resources (either as a "problem" to be "solved" or as a trigger to warfare over scarce agricultural land).

Storage of mobilized surplus, local exchange, and specialized production are very difficult to evaluate in these sequences. All three were clearly highly developed in the Muisca region, but we depend on the ethnohistoric sources entirely for this knowledge. Direct control of production at different elevations and intensive exchange with neighboring polities is also attested to by ethnohistoric sources for the Tairona. Archaeological documentation of these forces is by no means impossible to obtain, but it does require efforts directed specifically to this end. Storage and transport of substantial amounts of agricultural produce are suggested for the Guayas Basin chiefdoms. Of the trajectories discussed here, probably more energy has been directed to archaeological efforts to find evidence of specialized production and systems of local exchange in the Alto Magdalena than in any other, so the scarcity of evidence there for development of local exchange or linkage between social hierarchy and craft specialization is particularly meaningful. As noted at the outset, storage as a means of combating agricultural risk has not received very much attention in northern South America, perhaps because the agricultural risks of many of the regions discussed here are not as easily ameliorated by centralized storage as by other strategies. Long-distance exchange of luxury items is especially conspicuous in the trajectories of Ecuador's south coast, the Muisca region, Barinas, and central Panama, but there is much disagreement about the role such exchange played in the political dynamics of these regions. Such luxury items of exotic materials are conspicuously absent from the archaeological record in the Alto Magdalena.

Problem Solving or Competition?

Empirical evidence about how some recognized social forces of chiefdoms play themselves out in the trajectories discussed here is not initially much more encouraging about “management” or “problem-solving” approaches to chiefdom dynamics than it is about the prospects for identifying a single force underlying all chiefdoms. Agricultural risks vary in the different regions discussed, and they are ameliorated in varying ways, none of them having much to do with centralization or social hierarchy (at least so far as indicated by the relatively limited attention paid to this subject thus far). Neither high regional populations nor the organization of intensive agricultural systems appear to be a problem “solved” or “managed” on behalf of a social group by more complex organization in any of the sequences. Indeed, high populations and agricultural intensification in several regions appear to be problems (to the extent that they were problems) *created* by social hierarchy. Regional populations were more concentrated and people were investing more labor in food production as a consequence of political centralization and mobilization of surplus production for political ends. These features of the northern South American chiefdom trajectories we have considered provide more support for a perspective that emphasizes mobilization of resources to fund chiefly competition as so graphically depicted in the ethnohistoric sources.

Mobilization of resources to compete with other chiefs in the accumulation of power, prestige, and wealth inevitably comes around to increasing levels of production, either by making producers more productive or by increasing the number of producers or both. Both are involved in the patterns of regional population concentration and agricultural intensification that can be seen in varied ways in these northern South American chiefdom trajectories. In terms of labor invested in agricultural production, both regional population concentration and agricultural intensification, however, can impose substantial burdens on the producing population. From the perspective of a family faced with some kind of a choice about which aspiring chief to ally itself with, there would appear to be considerable advantage in affiliation with a chief who would expropriate as little of their production as possible. This might be a chief with a very large subject population across which chiefly demands could be distributed, resulting in a relatively low per-capita burden. Or it might be a chief with very little wealth, since this would also impose a relatively low per-capita burden on the subject population. The lowest surplus production burden of all, of course, would come from affiliation with no chief—that is, simply exiting from the system by emigrating—and this option must be taken into account as well.

What we have come to here, of course, is the question of why subject populations participate in these chiefly competitive games. And this, indeed, is the crux of the issue for approaches that stress elite competition as the central dynamic of chiefdoms. Earle (1991a, p. 5) summarizes the reasons as a list of 10 overlapping "political strategies" that chiefs might follow alternatively or in various combinations. The list emphasizes ways in which chiefs can make escape from affiliation difficult by "seizing control" of means of economic production or social reproduction. Most important of all, in Earle's (1987, 1991a, b) view, is elite control over subsistence production. In all the sequences discussed here, however, establishing control over subsistence production is difficult. Most promising in this regard are the raised field complexes of Ecuador's south coast and Barinas since they represent highly productive systems of limited spatial extent. These complexes evidently existed, however, not because regional populations were so high that people had to cultivate in this way to survive but, instead, because chiefs were already able to control producers well enough to compel their labor and appropriate some of its product in this way. They must be viewed, then, as a product of chiefly power and a way of multiplying it, but not as the fundamental basis of it.

Complementary Approaches?

Elite control of specialized craft production and exchange of various goods including but not limited to subsistence products (at local, regional, inter-regional, or long-distance scale) is another arena of potential chiefly activity dedicated to accumulation of power, prestige, and wealth. Outright control here, however, is difficult unless the sources of the necessary raw materials are restricted enough in distribution to be easy to guard. A more effective chiefly strategy might be vigorous pursuit of the benefits to be derived from specialized production and exchange. If a chief supports craft specialists or foments and assures networks of exchange, both elite and commoner can share in the benefits of economies of scale in craft production, of the higher-quality goods that may be produced by specialists, of access to products not available locally, and so on. The sharing between elite and commoner in these benefits would assuredly be unequal, but benefits to nonelite populations are possible. What this conjures up, of course, is a vision of a traditional ecological-functional account of chiefdoms in which the general economic well-being of the group is enhanced by elite activity. In such an instance the "management" and "control" perspectives are not in conflict but instead are complementary. If the economics of craft production and exchange make it workable, providing benefits to a subject

population in this way can be a successful competitive strategy for a chief. Instead of discouraging escape from affiliation, such a strategy enhances the attractiveness of participation.

It is in the Muisca and Tairona regions where such a dynamic may have been operating most strongly and where future investigation might focus productively on a cost-benefit analysis of craft production and exchange. It is within the reach of archaeology to provide quantitative assessments of craft production and exchange levels, of the potential economic benefits of different forms of organization, and of the distribution of those benefits within a social group. Such research would help move discussion of these issues from a philosophical plane to an empirical one. It would also make possible a detailed consideration of whether there is some particularly promising basis for the development of systems like this in the Muisca and Tairona regions. Is there, for example, something specific about the nature of resources or their distribution that makes such a system attractive here but much less feasible, say, in the Alto Magdalena where craft production and exchange seem so poorly developed?

Competition for What?

If we take all the chiefdoms discussed here as societies where aspiring chiefs competed with each other for ascendancy, there is still variation from one to another in what a chief who competed successfully won. After 500 B.C. on the south coast of Ecuador, during the first millennium A.D. in Calima, among the Muisca and the Tairona, and after 500 A.D. in central Panama, a successful competitor won a great deal of personal wealth. Much of that wealth had to be used for political purposes, but it seems that chiefs in these regions lived very much better than their ordinary subjects. On present evidence, economic differentiation seems much more limited in the populations of the Ecuadorean south coast before 1000 B.C., of the Alto Magdalena, of Barinas, and of the Volcán Barú region. Great accumulations of individual wealth are simply not evidenced in these instances either by extremely elaborate burials or by great differences in household artifact and ecofact assemblages. It is perhaps clearest for the Alto Magdalena during the first millennium A.D. that individual chiefs accumulated considerable personal prestige, and presumably authority flowed from it; but they do not appear to have been very wealthy individuals or to have possessed the kind of power that accumulated wealth can purchase. For Barinas and the south coast of Ecuador before 1000 B.C., even personal prestige is not as emphatically present in the archaeological record as is community ritual.

None of these observations should be taken as suggestions that any of the societies involved lacked effective leadership, but the leadership roles do seem to have expressed themselves rather differently. If we adopt a focus on chiefly competition, we can frame these differences as variety in the currency of competition, playing off concepts like prestige, wealth, power, and authority against each other. And we can explore whether framing the differences in this way offers us any understanding of how or why they develop. Wealth and the true power it can buy (a.k.a. resource control) can be argued to weigh more heavily in chiefly competition than prestige and authority. If so, is there any way for us to understand why chiefly competition in the Alto Magdalena, say, veered in the latter direction rather than the former?

Superficially at least, the nature of basic resources in the Alto Magdalena does not seem less controllable than in several other regions where very wealthy chiefs occurred (such as Calima or the Muisca region). The chiefdoms of the first millennium A.D. in the Alto Magdalena, however, do seem to be ones in which the burdens on commoners were not excessively heavy. The nonelite portion of the population was apparently not contributing to the formation of great concentrations of wealth; there was no costly agricultural intensification; some warfare may have occurred, but it seems not to have been the costly and burdensome pervasive occurrence that it was in, say, Barinas or central Panama. The principal public works to which Alto Magdalena populations contributed were the funerary monuments of their leaders, and these really were public works on a very modest scale. Social prestige and ideological authority, then, may have provided sufficient integrative glue to bind subjects to their chief if the cost of being so bound was minimal.

In the trajectories discussed here, warfare and the economic benefits of specialized production and intensive exchange have come forward as two forces that might support stronger forms of social integration. Participating in the construction of mounds, causeways, and raised fields in Barinas, for example, represents much greater costs to the nonelite populations than evidently existed in the Alto Magdalena. The intensity of warfare, however, may here have served to largely eliminate the option of escape from the system. An individual family would not seem to have stood much of a chance in such a political system except as a member of one polity or another, and this would enable all of the competing chiefs, in effect, to extract more from their subject populations. Similarly, if the highly developed systems of production and exchange described for Muisca chiefdoms provided considerable benefits to their populations at large (as well as to the chiefs), then willingness to bear burdens as a condition of participating would be correspondingly increased.

As noted earlier, the archaeological record for the south coast of Ecuador up to 1000 B.C. and for Barinas speaks more strongly to community activities than to ones focused strongly on individuals. They appear to be the kind of chiefdoms Renfrew (1974) characterized as "group-oriented" as opposed to "individualizing." If the political dynamic of these societies was focused on personal rivalries between competing leaders, the expression of this personal aspect is at least much more hidden in the archaeological record than for some of the other trajectories. Perhaps in these instances it is especially important to speak of competition between factions rather than between individual aspiring chiefs and to envision factions as varying in the degree to which they are personalized (cf. Brumfiel, 1994, pp. 4-5).

The varied currencies in which competition is played out does not alone neatly order chiefdoms from small and simple to large and complex. That is, the greater integrative power postulated for competition based on warfare does not necessarily lead to larger scale chiefdoms with more complex organization. The warlike chiefdoms of Barinas seem of quite similar spatial and demographic scale to those of the Alto Magdalena. Neither highly personalized nor more communal leadership seems necessarily of greater or lesser integrative power (cf. Drennan, 1991, pp. 284-285). Nevertheless, this aspect of competition seems worthy of further exploration in comparative analysis.

How Can We Generalize?

Placing control and competition at center stage in our study of chiefdoms is appealing in a number of ways and, certainly, has much recent popularity. To some extent this attention has been associated with skepticism about making generalizations that give us broad understandings of processes of development. I take "broad understandings of processes of development" to include things such as understanding what forces drive social change as well as understanding why or how different courses of change vary in the ways that they do. Elsewhere I have argued that the development of chiefdoms cannot be understood simply by studying the ways in which chiefs in developed chiefdoms seek to maintain and increase their power (Drennan, 1991, pp. 280). Any particular competition is carried out according to rules that determine who wins. These rules tend to have a great deal more permanence than the competitors do, and one way to attempt to understand chiefdom development is to attempt to understand how the rules get written. As Brumfiel (1994) points out, each competitive confrontation has the potential to modify the rules. Usually competitors who break the

rules should expect to lose, but *in certain circumstances* breaking the rules can be a dramatically successful competitive strategy. When this happens, the rules may have been permanently changed, and we are likely to perceive this as an important social transformation.

In advocating the study of factional competition as central to understanding political development, Brumfiel (1994, p. 12) nevertheless cautions that "the study of factional competition is unlikely to reveal any universal laws of cultural development Although factional competition provides a common impetus to political development, any particular sequence of development is uniquely complex and contingent." This line of thinking can easily lead to abandonment of the effort to generalize at all and to see the course of social change as dependent largely on unique, idiosyncratic, or stochastic events (cf. Drennan, 1995b). There is an opportunity, however, to generalize about processes of change (whether these generalizations take the form of "universal laws" or not) in the observation of regularities about the circumstances in which the rules of political competition may be changed. Such regularities are not to be observed in a particular sequence but rather in the comparison of a number of sequences. Processes of competition do operate under constraints, and "winning strategies must be fabricated according to the resources available" (Brumfiel, 1994, p. 12).

These constraints and the enumeration of the material, social, and cultural resources available at different stages loom larger in comparing trajectories than they do in studying a particular trajectory. The relevant resources and constraints include features of the physical environment. These seldom change much from one stage to the next, which is one reason why it has been so difficult to understand sociopolitical dynamics exclusively in environmental terms. The relevant constraints and resources also include social and cultural resources both internal and external to the social context within which competition occurs. As neighboring social, political, and cultural contexts at varying distances change, the material and other resources available to political competitors can change.

Spencer (1993, 1994) has argued that consolidation of both internal leadership (e.g., mobilization of surplus from raised fields in Barinas) and external leadership (e.g., organization for warfare and control of luxury items imported from distant regions to Barinas) is essential to establishing the hereditary character of succession that he sees as criterial of chieftdoms. This generalization about the processes of chieftdom emergence is founded on consideration of chiefly competition and amenable to evaluation through comparison of different trajectories to see whether advances in consolidating chiefly leadership are accompanied by markedly greater success in both internal and external spheres. If correct, Spencer's proposition might help us to understand one of the most interesting observations to be made in

comparative analysis: the variations in the pacing of sociopolitical change. In Barinas, in the Muisca region, in Calima, in the Alto Magdalena, and on the south coast of Ecuador, for example, there was at least one major burst of political development. It came at very different times in different regions and with a lag after the establishment of sedentary occupation that varies from as little as 300 to as long as 2500 years. Following Spencer, we might investigate whether the (material, social, and/or cultural) resources necessary to consolidate the internal and external aspects of leadership became available in these different regions at the right time to "spring" this fundamental change in the rules of competition.

We are not now in a position to make such an evaluation convincingly for enough of the chiefdom trajectories of northern South America, but the prospect of evaluating this and other such generalizations gives us a target to aim for as the collection of empirical data continues. It also serves to illustrate one form that generalization about political development can take, incorporating the dynamic of competition between individual aspiring chiefs and their factions. I suspect that virtually every regional specialist who reads these words will have found something to disagree with in the preceding characterizations of different sequences. At least I hope that this will be the case and that, as a consequence, regional specialists will be egged on to document unequivocally with archaeological evidence just how I am wrong about "their" regions. The handful of trajectories discussed here can also be expanded manifold through study of other regions in northern South America (and adjacent Central America), and it will take such an expansion of our empirical knowledge to make it truly adequate to the task of evaluating generalizations about chiefdom development. At the same time, we will have to meet the challenge of continuing to make conceptual advances in the ways we attempt to understand the processes of chiefdom development, in order to be in a position to take full advantage of the opportunity such an expansion of our empirical base would offer us. These empirical and conceptual efforts will, of course, progress most rapidly if they proceed in conjunction so that each can inform the other.

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