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7. THE FORMATIVE IN CENTRAL PACIFIC PANAMA: LA MULA-SARIGUA

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INTRODUCTION

When the Spanish entered Central Panama early in the sixteenth century, they found—and described—a flourishing society of considerable complexity (e.g., Espinosa 1864, 1873; Oviedo 1944). Archeological investigations at Sitio Conte (Lothrop 1937, 1942; Mason 1942), El Cano (Verrill 1927), and Tonosi (Ichon 1980) have made it clear that this pattern was established well before contact. In fact, Cooke's (1975) excavation at Sitio Sierra demonstrated that by the end of the first millennium BC large (over 40 ha) nucleated settlements already existed along the floodplains of major Central Panama river systems. Moreover, excavations at Monagrillo (Willey and McGimsey 1954; Ranere and Hansell 1978) and at contemporary inland rockshelters (Bird and Cooke 1978; Ranere and Hansell 1978; Piperno 1979) documented the presence of ceramics and agriculture early in the third millennium BC. Nonetheless, these early ceramic occupations, like the late preceramic occupations before them, were small, perhaps seasonal, and displayed none of the elaboration which would foreshadow the emergence of the large complex societies of the first millennium AD.

At the beginning of this decade, there still remained a hiatus of nearly 1000 years in the archeological record between ca 1200 or 1000 BC (the end of Period IIIa characterized by Monagrillo ceramics) and 200 BC (the beginning of Period IV characterized by nucleated floodplain settlements of maize agriculturalists). The few looted tombs and sparse surface assemblages of incised pottery ascribed to this period did little to further our understanding of cultural development in the Central Panama Formative. However, in 1982 a reexamination of the La Mula-Sarigua site complex, initially reported by Willey and McGimsey (1954), led to its identification as a large permanent settlement which dated from this first millennium BC hiatus. During 1983 and 1984 I initiated field investigations at La Mula-Sarigua in order to examine questions about the emergence of complex societies in Central Panama. The purpose of this paper is to describe the salient features of La Mula-Sarigua, the earliest large nucleated settlement in Panama, and to examine their implications for cultural development in the Panama Formative.

ARCHEOLOGICAL BACKGROUND

A major survey of the Santa María River Basin of Central Pacific Panama has recently been completed as part of the Proyecto Santa María (hereafter referred to as PSM). Results of this survey clearly demonstrate that prior to 1000 BC, Central Pacific Panama was occupied by human groups living in coastal and inland positions in encampments and hamlets less than 2 ha in size (Cooke and Ranere 1984; Weiland 1984). Faunal assemblages indicate that hunting and fishing were major subsistence activities and that site occupation took place on a seasonal basis (Hansell 1979; Ranere, Cooke and Hansell 1980; Cooke 1984). Pollen, phytolith and macrobotanical analyses indicate that the collecting of wild plants was important even though some plants, specifically maize, were cultivated (Piperno 1979; Piperno and Clary 1984; Piperno et al. 1985). Burial information suggests that social differences were minimal to non-existent (McGimsey, Collin and McKern 1966; Norr 1983).

Shortly after 200 BC, many of the region's occupants were living in large (over 40 ha) sedentary, nucleated agricultural villages in the alluvial floodplains (Cooke 1975). Throughout the period of 200 BC-500 AD there is an increase in the number and size of such villages occupying this biotope (Cooke 1979, 1984; Cooke and Ranere 1984). After 200 BC coastal settlements are either abandoned or become specialized fishing/shell collecting stations (Cooke and Ranere 1984). Aquatic and terrestrial fauna continue to be exploited but agricultural products, particularly maize, become a significant component of the diet (Cooke et al. 1985).

Dating to the earliest part of this period—that is, 200 BC—there is evidence for a division of labor unlike that present prior to 1000 BC; specifically, craft specialization occurs by village as well as by individuals within a village (Cooke 1978, 1984; cf. Ladd 1964; Ichon 1980). Although several exotics, such as a trophy head, a small set of stingray spines and pyrite beads, exist as funerary objects in a few sites, ascribed status cannot be positively identified for the early to mid-portion of this period (Cooke 1984). This may well be a sampling problem reflecting the fact that no Period IV cemeteries which are spatially isolated from habitation areas have been excavated. By 500 AD, however, it is clear that a social transformation has occurred. Burial/artifact associations, particularly in the form of gold objects with some individuals in some sites, provide evidence for significant differences in social status (or differential access to goods among individuals) (Lothrop 1937, 1942; Linares 1977; Ichon 1980). Further, common conventions in the production of gold objects, bone artifacts and precious stone and a common ceramic tradition have led at least one researcher (Linares 1977) to the opinion that this regional pattern represents an interaction sphere where historically related groups fought and were allied with each other in a fission/fusion process; certainly warfare and competition appear to be in full force. This was the situation at the time of contact (Linares et al. 1975; Linares 1977; Helms 1979; Ichon 1980; Linares and Ranere 1980; Cooke 1984). To define the conditions that brought about the social and economic transformation that was in progress by 200 BC and essentially in place by 500 AD, it is necessary to focus on the antecedent period (1000 BC-200 BC).

Prior to 1980, this 800-year period was represented in the Central Panama archeological record by surface collections of incised ceramics (Willey and McGimsey 1954), one cemetery (Harte 1958) and several isolated burials (Cooke, personal communication), all consisting of shaft-tomb burials associated with funerary goods. It was not until the initiation of the PSM survey in 1982 that habitation sites dating to this period were identified and tested. By far the largest of these first millennium BC sites was La Mula-Sarigua.

PRESENT ENVIRONMENTAL SETTING AND PREVIOUS RESEARCH

La Mula-Sarigua (Fig. 7.1) is presently located 2 km from the Parita Bay coastline and .5 km from the Parita River on an eroded fluvial terrace overlooking the Sarigua *albina* (salt flat). Textural analysis of sediments extracted from cores and surface samples, however, indicates that: (1) the Parita River probably flowed alongside the site at the time it was most intensively occupied, and (2) the sea was once closer to the site (Hansell and Adams 1980; Dere 1981; Hansell, Dere and Adams 1982; Clary et al. 1984; Cedeno, personal communication). More specifically, the following progradational sequence has been documented for the site environs (Clary et al. 1984). At about 3000 BP a mangrove-covered active strandline existed at the seaward boundary of the site. By 2000 BP the active strandline had migrated seaward several hundred meters but the site remained surrounded by mangrove. Bare *albina* surfaces evolved around the site after 1200 BP. This progradational sequence is of some importance in terms of the attractiveness of the area for settlement and for resource accessability. Given the high productivity of the coastline and mangroves for fish and molluscs (Hansell 1979), it should not be surprising that the major occupation at La Mula-Sarigua dates from 3000 to 2000 BP or at a time when coastal resources would have been adjacent to the site and easily exploitable by man. Landward of the site is a broad band of old alluvium which presently supports the growth of large amounts of sorghum and smaller amounts of peppers, beans, manioc and maize. This alluvium was presumably cultivated in the past as well. Also incorporated into the site is a Pleistocene beach ridge which is composed of an enormous quantity of chert cobbles.

La Mula-Sarigua was initially discovered in 1948 by Willey and McGimsey (1954). At that time a small sample was collected from the site's surface. Based on an analysis of that material, the site has been interpreted as a layover station for ocean travelers from South America (Coe 1960) and as a fishing camp (Willey 1971). The site's real archeological significance was not realized until 1982 when it was reassessed by PSM personnel (Cooke 1984; Cooke and Ranere 1984; Cooke et al. 1985). This reassessment indicated that: (1) agriculture, hunting, fishing and shell collecting were constituent parts of the subsistence economy, (2) the lithic quarry was an important economic resource, and (3) the site minimally covered an area of 65 ha. Given site size, a radiocarbon date of 870 BC, and the above economic resources, La Mula-

Sarigua became the earliest large agricultural community, and perhaps regional center, recognized in Panama.

RESEARCH DESIGN

In an attempt to more fully identify and analyze the socioeconomic aspects of La Mula-Sarigua, a survey and testing program was designed and implemen-

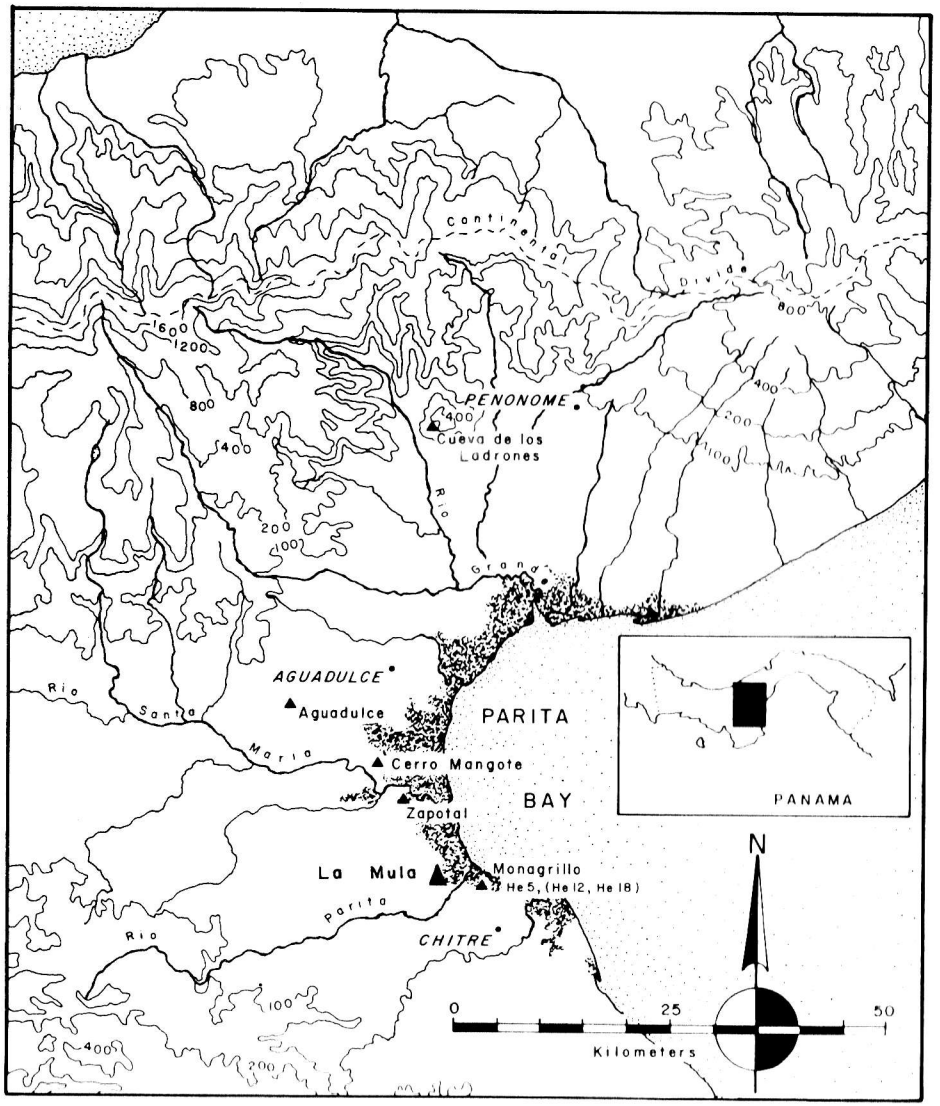

Fig. 7.1: Map of central provinces, Panama, with site placement.

ted under my direction in 1983 and 1984 (Hansell 1984). Baseline data were collected to ascertain: (1) site size, (2) site chronology, (3) internal site layout, (4) resources utilized, their location, density and seasonal availability (if applicable), and (5) technology.

The field research design employed probabilistic (systematic aligned) and purposeful sampling strategies (Mueller 1975; Flannery 1976; Plog 1976; Plog et al. 1978; Schiffer et al. 1978). These strategies were designed to cope with the size and complexity of the site (Fig. 7.2). Two clearly definable surface conditions are recognizable: eroded and uneroded. A large part of the site consists of exposed and/or deflated surfaces upon which large amounts of cultural material have been left behind as a "lag" deposit. There are numerous intact features on this surface, such as shell dumps, trash heaps, possible house locations and lithic workshops. In contrast, there still remain large uneroded portions of the site where no archeological materials are exposed on the surface. Additionally, small uneroded pedestals containing stratified cultural deposits below 50 cm of sterile sediments occur in some portions of the site dominated by eroded surfaces. Unfortunately, the noneroded zone is heavily covered with vegetation, including pockets of dense scrub forest, stinging nettle, prickly pear cactus and cholla. In addition, the area has been declared ecologically fragile and the clear-cutting of vegetation is prohibited.

The sampling strategy chosen to evaluate the site involved the use of parallel transects. These transects were oriented north to south and were established every 100 m along an east to west baseline (Fig. 7.2); a stake was put in every 25 m along each 100 m line as well as along the baseline. Each 25 m stake became a collecting station reference point. At stations with exposed surface materials, two pickup strategies were implemented: (1) at the stake a 1 m^2 surface pickup was made; (2) within a 25 m radius of the stake the first five time-diagnostic ceramics (e.g., rim and decorated sherds and appendages) and lithics (e.g., chipped stone tools, celts, and ground stone tools) were picked up and their proveniences recorded. At noneroded surface stations, a 30 cm^2 shovel test was dug and its residues sieved through a 1/4" mesh. Results of surface mapping and shovel testing guided the placement of areas to hand excavate and areas to surface collect more intensively.

The purpose of the above research design was threefold: (1) to systematically and intensively map and collect samples from the site's surface in order to delineate the density and distribution of surface features and materials, as well as to determine the function and age of these materials; (2) to shovel test uneroded portions of the site in order to determine site boundaries, the location and nature of buried deposits and the presence/absence of buried cultural deposits in surface features; and (3) to excavate a small number of units in order to delineate subsurface features and site stratigraphy, to collect samples in datable contexts, and to collect samples for the analyses of artifacts, floral and faunal remains, human remains, phytoliths, pollen and sediments.

In total, a 1 km by 2 km area was systematically examined; 1054 surface stations were collected, 766 shovel probes completed, 7 surface features mapped and materials collected by 1 m^2 grids as well as diagnostics within a 25 m

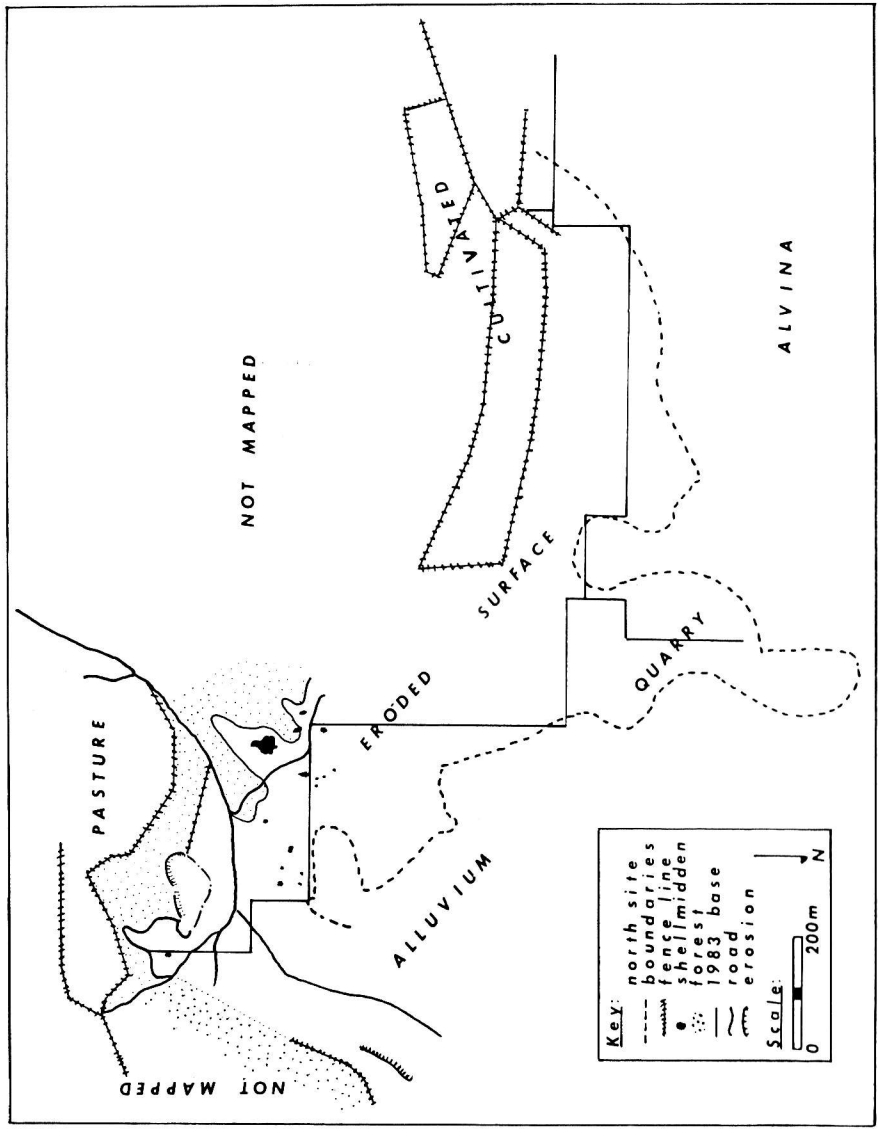

Fig. 7.2: Partial site map of La Mula-Sarigua (based on 1982 and 1983 field work).

radius of each feature collected and their locations recorded, and 19 (1 m^2) units excavated. Eleven excavated units were placed through 5 of the surface features, 3 through eroded slopes and 5 in the noneroded zone where shovel probes revealed stratified subsurface deposits containing first millennium BC materials. Although much of the material remains have yet to be fully analyzed, a number of site characteristics can already be identified.

SITE SIZE

A map of the distribution of cultural material indicates that the site covers a minimum of 200 ha; materials dating to post 700 AD extend beyond 200 ha. The distribution of lithic and ceramic assemblages generally thought to be diagnostic of the first millennium BC, such as breadboard metates, a Mousterian-like prepared core industry, and pottery with linear plastic decorative techniques, e.g., punctations, fillets, appliques and incisions (Cooke and Ranere 1984), shows site boundaries to be 65-100 ha during this time period.

CHRONOLOGY AND TECHNOLOGY

Five radiocarbon dates on shell and carbon gathered from stratified contexts associated with diagnostic ceramics have been received (870 BC ± 50 [Beta-6016], 390 BC ± 75 [Beta-12931], 320 BC ± 90 [Beta-12729], 270 BC ± 70 [Beta-12728] and 20 BC ± 45 [SI-5689]; shell dates have been C13/12 corrected. Such associations will provide absolute dates for the on-site ceramic and lithic chronologies being developed. Such a development is essential if we are to temporally place and associate the tremendous amount of surface materials collected.

There is much greater variability in ceramic and lithic assemblages at La Mula-Sarigua than at sites which predate 1000 BC. For example, the Monagrillo ceramics found at earlier sites are represented by very few vessel shapes, lack appendages, and are rarely decorated (Willey and McGimsey 1954; Cooke 1976). During the first millennium BC there is a dramatic change in the ceramic inventory with an increase in vessel forms, the appearance of appendages and a greater variety in the interior and exterior treatment of vessels. Based on style, the ceramics recovered from La Mula-Sarigua are predominately those dating from the first millennium BC. This assemblage includes decorative techniques which have not been described for earlier periods and which are either extremely rare or absent from sites which post-date the first millennium BC (R. Cooke, personal communication). This assemblage also contains ceramics with black line painting which was once thought to be *the* chronological marker for the 200 BC-500 AD period (Cooke 1984).

There are both continuities and changes in the lithic inventory at La Mula-Sarigua when compared to earlier assemblages. Pre-first millennium BC sites in Central Panama are dominated by simple chipped stone industries. Lithic reduction strategies consist of little more than the production of flakes suitable

for use without much post-detachment modification (Ranere 1984). Flakes are utilized at or near their manufacturing location and are almost entirely of locally available material. Co-occurring with this industry are edge-ground cobbles which are used against cobble or boulder bases presumably to pound or mash plant foods (Ranere 1975, 1980). Edge-ground cobbles continue to be important components of La Mula-Sarigua but disappear from Central Panama lithic inventories by 200 BC. In contrast, chipped stone technology changes after 1000 BC in important ways. Cores are carefully prepared for the production of long, pointed flakes. The end product is a pointed and tanged flake/point (Ranere 1984). These flake/points are particularly abundant at La Mula-Sarigua and at other first millennium BC sites in Central Panama; they are extemely rare in pre-1000 BC contexts (cf. Bird and Cooke 1978) but do persist in sites dating between 200 BC-500 AD. All are made of locally available cryptocrystalline silica. Although a few hafted polished stone implements—that is, celts and chisels—have been recovered in earlier dated contexts in the Central Panama archeological record, they appear in great quantities for the first time at La Mula-Sarigua. In addition to the flake/points and celts, there are a number of other tool types, not found in pre-1000 BC contexts, which are found in some numbers at the site, most notably legless metates with "breadboard" rims and cylindrical manos.

While the major focus of the present research is on Period III (1000 BC-200 BC), the discovery of a much earlier workshop for manufacturing bifaces in the La Mula-Sarigua quarry should be noted. The workshop has yielded several hundred thinning flakes, a number of bifaces (complete and fragmented) and 5 notched points. It was in operation sometime before 5000 BC since bifacial points and bifacial thinning as a lithic reduction strategy disappear from the archeological record in Central Panama after this date (Ranere 1985). The recovery of a broken biface unifacially retouched to produce a stemmed point characteristic of the first millennium BC emphasizes the fact that this workshop predates the major occupation at La Mula-Sarigua.

RESOURCES

Well-preserved faunal samples (both shell and bone) have been recovered from the site. In the bone examined thus far, fish predominates, specifically estuarine species such as marine catfish, puffer and jack (Cooke, personal communication). All shell species represented are from estuary-mangrove contexts. The only terrestrial fauna identified to date is white-tailed deer.

Carbonized plant remains, pollen and phytoliths have also been recovered from La Mula-Sarigua. Carbonized plant fragments recovered from the flotation of bulk sediment samples have not yet been analyzed, but palm nut fragments have been noted in the preliminary sorting. Maize pollen has been identified by Karen Clary (personal communication) from sediment cores taken in the *albina* just in front of the site and from occupational layers of the site which date to the first millennium BC.

Cross-shaped phytoliths from maize were also identified in first millennium

BC La Mula-Sarigua deposits (Piperno, personal communciation). Piperno suggests that the La Mula-Sarigua maize is a primitive race since the site contains a phytolith form found in earlier phytolith assemblages (e.g., Cueva de los Ladrones and the Aguadulce Shelter) but never in later assemblages (e.g., Sitio Sierra). The phytolith has been isolated from Chalco teosinte but not from modern races of maize (Piperno et al. 1985). The pollen and phytolith evidence of maize consumption is complemented by the large numbers of breadboard metates and bar manos present on the site.

Phytoliths from La Mula-Sarigua recovered in association with black and red painted ceramics and a radiocarbon date of 270 BC have been identified by Piperno (personal communication) as *Cucurbita* (squash). The earliest record for squash prior to the La Mula-Sarigua discovery was from Sitio Sierra where squash phytoliths were recovered from house floors dating to 65-25 BC (Cooke et al. 1985).

At this stage in the analysis, we can now identify many of the subsistence activities being practiced and the species being utilized. The possible dietary contribution of each, their seasonal availability, methods of capture (where applicable), and labor demands in exploiting these resources cannot be assessed until additional samples collected have been identified and quantified.

INTERNAL SITE LAYOUT

The site's surface and subsurface have been extensively surveyed and collected; 7 large surface features have been intensively mapped and collected; and 19 small units have been carefully excavated. These investigations have yielded evidence for considerable intrasite variation, including discrete shell middens, concentrations of shell tools, lithic workshops, burials, a hearth, trash dumps, and a possible house location. Shell middens, burials and trash dumps are visible both on and below the surface. Shell tools, lithic workshops and possible house locations are found only on the surface. The hearth was a subsurface feature. All subsurface features are in datable contexts. These features are described in more detail below.

Shell Middens

There are a large number of intact shell dumps on the site. They generally contain the remains of only one species, e.g., oyster or clam. None of the shell appears to be modified or utilized as tools and very little cultural material is incorporated within their matrices. These shell middens are interpreted as evidence for the use of molluscs as food.

Shell Tool Concentrations

In contrast, there are small areas where specific species are being used as tools. For example, there are large mangrove clams *Anadara grandis* with use-wear along approximately 1/3 of their edges. These wear patterns are not unlike those seen on modern day *Anadara* which have been used to scrape

barnacles off boat bottoms. Also present on the site are the large mudflat gastropods *Fasciolaria granosa*; they have long, thick spires with short, thick spines. Many of the spines have been ground down and often broken off. The pattern is similar to that found on *Hexaplex* at Cerro Mangote (Ranere, Cooke and Hansell 1980). The wear patterns on both suggest their use as pestles (plant processing tools?).

Lithic Workshops

Manufacturing of chipped stone tools took place at La Mula-Sarigua on a massive scale. This should not be surprising given the large cryptocrystalline (chert) cobble source on the site. Manufacturing is evident in the numerous concentrations of cores, unutilized flakes, hammerstones, and finished products like flake/points. We are presently calculating intrasite flake:tool ratios to determine if at least a part of the finished product was being exported. Clearly the tool types which are so abundant at the site are widely distributed in the region.

In addition to manufacturing workshops, there are several small areas where granitic grinding bases and battered andesite celts co-occur. These locations have been provisionally identified as tool maintenance stations. Grinding bases are nonfunctional once their surfaces become smooth. To extend the use life of such grinding stones their smoothed surfaces are commonly resharpened through pecking. In these La Mula-Sarigua features, the battered celts appeared to function as pecking hammers in the resharpening process.

In marked contrast to the cryptocrystalline silicates, the small andesite outcrops at La Mula-Sarigua appear not to have been exploited; there is no evidence for on-site andesite celt manufacturing. Neither is there evidence for the manufacturing of the granitic manos, the volcanic tuff breadboard metates and the polished stone beads. They are all imported as finished products.

Burials

A variety of burial patterns have been observed at La Mula-Sarigua. The first observed pattern contains a flexed body with the head in an upright position. The skeleton is that of an adult male, approximately 30 years of age. There are no materials directly associated with the burial, but all materials directly above the burial are of first millennium BC origin. The second pattern consists of a bundle of disarticulated bones. The bundle contains the partial remains of at least two individuals (a child and an adult). This bundle is associated with several broken black painted and incised pots and a small shell feature. The shell feature has been radiocarbon dated to 320 ± 90 BC. In addition to the two excavated burials, human remains occur in two surface features and in at least two subsurface trash pits. The combination of looting activity and erosion makes interpretation of the surface human remains difficult. Human phalanges and skull fragments have been recovered from 2 trash pits dated to the first millennium BC on the basis of the associated

pottery. This careless disposal of the dead might be considered yet a third burial pattern.

The sex, age, and health status of all La Mula-Sarigua skeletal material have yet to be determined following procedures defined by Norr (1983).

Trash Dumps/Pits

Intact, circumscribable dumps are found on the surface; pits are found in all but one of the excavations. All dump/pit remains contain what appear to be nothing more than ordinary household refuse. Such refuse includes broken pots, flake debris, an occasional broken stone tool, and food remains of marine and terrestrial fauna. Imported lithic tools are almost never found in such contexts.

Hearths

Only one subsurface hearth has been encountered. Small bits of charcoal, shell and several rim sherds were found inside and above the hearth. Shell from this context has been radiocarbon dated to 390 BC ± 70.

Other Features

Architectural structures and house living floors have not been positively identified, although the intensive surface mapping and collecting of one surface shell feature is suggestive of such a location. This feature is almost identical to the small elliptical, one-room dwellings found in Formative sites in coastal Ecuador, e.g., Loma Alta (Damp 1984:578).

DISCUSSION

The archeological record from Central Panama indicates that many features which characterized the late "Chiefdom" societies in Panama made their initial appearance during the first millennium BC at La Mula-Sarigua. These features include large site size, unequal distribution of and access to resources, craft specialization, regional exchange and differential treatment of the dead.

The site covered at least 65 ha and possibly 100 ha in the first millennium BC. This is at least two to three times larger than any of the 20 sites recorded by the PSM for this time period (Cooke and Ranere 1984). Pre-first millennium BC sites (which number well over 200) are never larger than 3 ha. This dramatic decrease in site numbers with an equally dramatic increase in the size of some sites during the first millennium BC suggests that not only was there a tremendous spatial reorganization of human groups in Central Panama during this period with much of the population concentrated at La Mula-Sarigua (and perhaps a few other sites) but that there also existed a settlement hierarchy with La Mula-Sarigua being in all probability the largest regional center.

On the basis of site area, population size at La Mula-Sarigua can be conservatively estimated at 650 to 1000. This estimate is based on a density of 10 persons per ha; not an unreasonable figure for Formative settlements (e.g., Marcus 1976; Flannery and Marcus 1983; Damp 1984; cf Renfrew 1973; Roosevelt 1980). The existence of a large aggregated sedentary population at La Mula-Sarigua and differential site size within the region have ramifications for organizational complexity. Both suggest the development of a hierarchically ordered power structure (Mayhew and Levinger 1976; Johnson 1982). Nonhierarchical (egalitarian) societies have a limited ability to deal with stress such that when group size reaches a threshold it tends to fission (Johnson 1982). The alternative to fission is the development of a hierarchy based on the domination of a minority over the majority of the population; this latter type of organization serves to integrate the system through the exercise of control. That group fission did not always take place can be supported by the archeological record from Central Panama. For example, prior to 1000 BC Central Panama is characterized by small, mobile egalitarian groups; by the first millennium BC this pattern has changed and some groups have begun to permanently coalesce in at least one location (La Mula-Sarigua) and perhaps a few other locations as well. Clearly, La Mula-Sarigua appears ripe for the development of differential group control.

La Mula-Sarigua's placement between an agriculturally productive band of alluvium and a highly productive sea, a setting unlike any other first millennium BC site, may well have provided its large population with access to and control of a variety of spatially restricted resources. From the quantity of food processing implements appearing at this time, agriculture, particularly maize, played a major role in subsistence, more so than in previous periods. By La Mula-Sarigua times, squash is added to the agricultural complex. Given the abundance of marine fauna at La Mula-Sarigua it seems likely that they provided the protein necessary to complement the calories provided by maize.

The attractiveness of La Mula-Sarigua was undoubtedly enhanced by the presence of a large chert quarry within the site boundaries. The site was clearly a major manufacturing center for chipped stone tools; polished stone celts, metates and manos were manufactured elsewhere in the region and imported in large quantities at La Mula-Sarigua. The skill and time required to manufacture items such as polished stone celts suggest the possibility that they were produced by specialists. Furthermore, I would argue that the great standardization seen throughout the region in the production of flake/points, celts, and metates also indicates that these products were the work of specialists. If this assumption is true, then specialization occurs not only within sites, as seen in the various activities represented at La Mula-Sarigua, but between sites as well, as seen by the import nature of the celts and metates. Such specialization tends to promote economic disparities within and between groups. Where these disparities exist, social differences are pervasive (e.g., Harris 1979; Price 1982; Friedman 1975; Kohl 1981).

Social differences during the first millennium BC are more difficult to document than those for later periods where mortuary data in the form of burial/artifact associations provide clear evidence for economic inequality, e.g.,

Sitio Conte (Lothrop 1937, 1942). Nonetheless, in contrast to the pre-first millennium BC pattern, it is during the height of occupation at La Mula-Sarigua that burial practices become more variable. Those given the most careful treatment are buried away from habitation sites in formal disposal areas in isolated shaft-tomb cemeteries with grave goods; those given the least careful treatment are buried in habitation sites such as La Mula-Sarigua. Practices at La Mula-Sarigua include bundle burials of disarticulated bones with grave offerings (?), flexed burials with no associated material, and miscellaneous body parts disposed in trash pits. Even though the size of the burial sample is small, it does seem clear that preferential treatment of the dead was practiced. This polarization of mortuary ritual has implications for social differentiation within the region. The use of formal disposal areas is strongly correlated with increasing societal complexity (Saxe 1970; Binford 1971; Brown 1971; Goldstein 1976). Furthermore, ranking within a society can be analyzed by focusing on the amount of energy expended (or labor invested) in the interment ritual (Tainter 1973, 1978). The fact that some individuals were buried at a distance from habitation sites in large shaft-tombs and accompanied by grave goods (sometimes quite elaborate) suggests that they held high social and economic statuses in life. In contrast, the individuals buried within habitation sites in shallow pits without elaborate grave goods must have had significantly lower statuses in life. It would appear, therefore, that social differences were already present in Central Panama by the first millennium BC. Careful mapping of the density and distribution of material collections from habitation areas at La Mula-Sarigua should shed further light on the nature of these differences.

As the first large nucleated settlement known for Central Panama, along with its internal variability and involvement in regional exchange, La Mula-Sarigua has much to tell us about the origins of complex societies. In this paper I have just touched the tip of the iceberg; the completion of my dissertation should be able to reveal the base as well.

ACKNOWLEDGMENTS

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The Proyecto Santa María (PSM) has been referred to a number of times throughout this manuscript. It is a 4-year multidisciplinary study which has been involved in surveying and evaluating sites in the Santa Maria River basin of Central Pacific Panama. It is directed by Anthony J. Ranere, Temple University, and Richard G. Cooke, Smithsonian Tropical Research Institute.

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EL FORMATIVO EN LA COSTA DEL PACIFICO EN PANAMA CENTRAL: LA MULA-SARIGUA

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SUMARIO

Entre 1983 y 1984, un programa de reconocimientos y pruebas intensivas fue realizado en el sitio de La Mula-Sarigua, la comunidad agrícola sedentaria más grande y más temprana hasta ahora registrada en Panamá y un probable centro regional. A pesar de que este sitio de 200 ha fue sólo esporádicamente ocupado por 800 años, su episodio ocupacional más importante tuvo lugar durante el primer milenio antes de Cristo, cuando alcanzó un tamaño mínimo de 65 ha. En este punto aparece la primera evidencia clara en el registro arqueológico de una división del trabajo basada en la especialización artesanal. Aparentemente La Mula-Sarigua fue un centro manufacturero y exportador importante en la producción de herramientas de piedra pulida, manos y metates, y cuentas de piedra (que fueron presumiblemente fabricadas por especialistas) se importaron. El tratamiento diferenciado a los muertos también aparece claro durante el primer milenio antes de Cristo, en la medida que se encuentran cementerios aislados de tumbas de pozo con ofrendas mortuorias para algunos individuos, y enterramientos dentro de los sitios habitacionales sin tales ofrendas para otros.

La Mula-Sarigua difiere de una manera marcada de las pequeñas aldeas (entre 1 y 3 ha) igualitarias y de ocupación estacional que caracterizaron a Panamá central con anterioridad al 1000 aC. La investigación en La Mula-Sarigua se inició precisamente para examinar algunos de los factores y procesos que condujeron al patrón económico y social más complejo que el mayor tamaño del sitio implica. Con el propósito de identificar e interpretar el patrón económico y social de La Mula-Sarigua durante el primer milenio antes de Cristo se examinaron cinco parámetros: (1) el tamaño del sitio; (2) la cronología del sitio; (3) la disposición interna del sitio; (4) en los casos pertinentes, los recursos utilizados, su localización, densidad, y disponibilidad según estaciones; y (5) la tecnología. Este capítulo discute tales parámetros y sus implicaciones para los patrones económicos y sociales del sitio y de la región, y finalmente, discute la naturaleza de la información substantiva generada en esta investigación en el examen de las preguntas relevantes al desarrollo de sociedades complejas en Panamá central en particular, y en los trópicos americanos en general.