NORTHWEST MESOAMERICA

INTERSOCIETAL INTERACTION

ON THE

NORTHWEST MESOAMERICAN FRONTIER.

By

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A Thesis

Submitted to the School of Graduate Studies

in Partial Fulfilment of the Requirements

for the Degree

Master of Arts

McMaster University

MASTER OF ARTS (1998) McMaster University
(Archaeology) Hamilton, Ontario

TITLE: Intersocietal Interaction on the Northwest Mesoamerican Frontier.

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NUMBER OF PAGES: vii, 125

ABSTRACT.

Various hypotheses concerning macroregional spheres of interaction affecting La Quemada's place in Mesoamerican history are evaluated. Pottery and human bone from the 1987-89 La Quemada project are analysed for information on intersocietal interaction. The hypothesis that La Quemada was involved in turquoise trade with the American Southwest (Chaco Canyon) in the Early Postclassic is also examined. The results of these analyses indicate that La Quemada had limited contacts outside its neighbouring valleys. None of the materials necessarily represent trade and there is no suggestion that a formally organised system existed. Attempts to find archaeological evidence for the ethnohistorical myths that relate the migration of Nahua speakers northward and the return of the Tolteca-Chichimeca to Tula fail to consider the difficulties with associating material remains with ethnic identity. It is not yet possible to explain how La Quemada was integrated into regional and macroregional scales of interaction.

ACKNOWLEDGEMENTS.

The La Quemada Project (1987-1989) fieldwork was conducted by Christopher Neill with a crew of 15 local workers and two student helpers from the Universidad Autónoma de Gaudalajara. Laboratory analyses were done by Christopher Neill with the assistance of four unskilled workers and two undergraduate students from the Universidad Autónoma de Guadalajara. All drawings were professionally retraced and lettered by Jaime Castrellón Esparza. Funding for this project came from private sources and from the State Government of Zacatecas.

I wish to thank my supervisor, Dr. Laura Finsten and committee members, Dr. Michael Spence and Dr. Charles D. Trombold, for their comments and suggestions in preparing this thesis.

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CHAPTER 1.

INTRODUCTION.

Research Objectives.

The La Quemada project began in 1987 as an intervention by the State Government of Zacatecas, Mexico to consolidate and reconstruct the monumental architecture and major accesses on the site's eastern flank in order to improve its aspect as a tourist attraction (Figure 1). The immediate archaeological objectives were limited to questions of chronological sequences, artefact typologies and culture history. The primary goal was to assess the extent of La Quemada's participation in macroregional spheres of interaction based on type-frequency distributions. The temporal and spatial occurrence of object categories and traits were analysed for information on interaction..

Over the course of the investigations from 1987 to 1992, it became evident that the existing interpretations concerning the culture-history of the region were flawed with respect to chronology and interacting partners. This suggested that there were also some serious problems with the theoretical models that had been developed to explain the formation of this frontier region, its sociopolitical organization and integration with "greater Mesoamerica". The vast majority of the

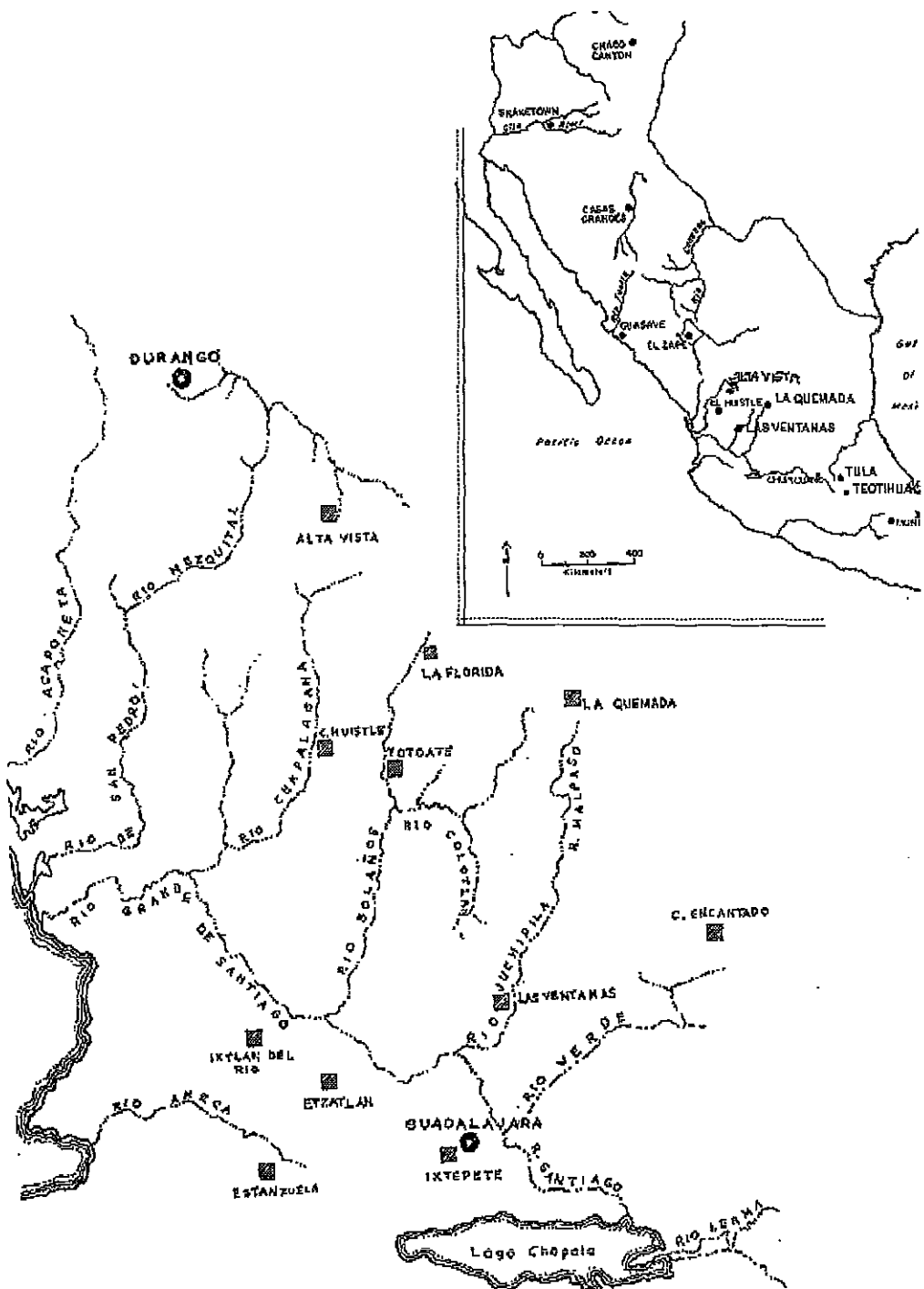

Figure 1. Sites mentioned in the text.

literature on the development of the northwest Mesoamerican frontier, Mesoamerican-Southwest contact and core Mesoamerica - peripheral mesoamerican relations utilizes the comparative method for deriving social meaning from frequency distributions (Kelley 1974; 1991; Betts 1986; Weigand 1978) . This method has been applied to materials other than pottery such as architectural styles, turquoise and human bone. The primary research question of this thesis is what comparative analyses of frequency distributions can tell us about the nature of intersocietal interaction.

Theoretical Antecedents.

Past research has focused on four major aspects of sociopolitical development on the mesoamerican frontier. These include the direct historical approach, the imperial model, the ecological model and world systems. At the time the project began (1987), the culture history of this frontier was conceptualized as a sequence of imperial expansions from major central Mesoamerican polities (Chupicuaro, Teotihuacan, and Tula) and from the Tarascan core, postulated as influencing and directing the development of the peripheral areas (Kelley 1966; 1979; 1991; Kelley and Kelley, 1975; Braniff 1974; Weigand 1978; 1979; 1991; Harbottle and Weigand, 1992; Betts 1986; 1989; 1990). This expansionary dynamic was construed as the process giving rise to contact with the American Southwest, where these influences ostensibly formed the basis for the nature of the sociopolitical and economic organization of early Southwestern societies (Kelley 1986; 1993; Kelley and Kelley

1975; 1980; Braniff 1993; Foster 1986; 1993). Studies conducted by other archaeologists (Braniff 1974; 1993; Diehl 1983; Cabrero 1989; Turner 1992) have tended to reiterate the "imperial" model for explaining development of this frontier, without adequate reference to existing data bases.

Armillas (1964; 1969) looked at modern and historical weather patterns and palynological data from central Mexico, the Gulf coast and the American southwest to study the effects of climate on sociopolitcal development of La Quemada. He suggested that warm, wet conditions occuring at about A.D. 600 favoured expansion northward of agricultural societies. He saw Teotihuacan as one of the major social forces in this expansion. With a possible change to cold, dry conditions at about A.D. 1000, the agricultural boundary retracted. Armillas suggested that nomadic groups may have begun to invade central Mesoamerica as a consequence of climatic deterioration. He cited ethnographic accounts of the legendary invasion of Tula by Mixcoatl as a possible historical reference to these events. The direct historical approach has been espoused by several authors (Kelley 1979; Weigand 1994; Betts 1989; Hers 1989; Braniff 1993) and has been developed in depth by Hers (1989). Hers (1989) has postulated the strictly military function and organization of La Quemada, based on her interpretation of architectural patterning and aesthetics at La Quemada and the analysis of selected materials excavated from El Huistle, Huejuquilla, 200kms to the west. She postulates that the entire northwest region was "Mesoamericanized" by a single, mass migration from central Mexico at the

beginning of the Christian era. The development was centred at La Quemada and continued in essential isolation from the rest of Mesoamerica until the abandonment of La Quemada which Hers (1989) associates with the mythical migration of the Tolteca-Chichimeca to Tula at about A.D. 900. Wallerstein's (1974) World Systems Model has also been employed in the analysis of intersocietal interaction on the mesoamerican frontier (Pailes 1980; Weigand 1982; Betts 1989). However, there has been no analysis of material remains in the Northwest region that would permit the recognition of the structures required by Wallerstein's model. Important to this question is the role played by the small communities that may have existed in this region before the presence of mesoamerican settlements. Foster (1986; 1995) pursued the question of the temporal placement of several small sites along the eastern flank of the western Sierra Madre collectively called the Loma San Gabriel culture. He further explored their possible relationships with neighbouring mesoamerican societies. Foster (1986; 1995) and Kelley (1966; 1971) believe that Loma San Gabriel sites represent a separate, submesoamerican culture that was important in transmitting goods and ideas between Mesoamerica and the American Southwest. Hers (1989) suggested that Loma San Gabriel sites were simply farming villages of the same Chalchihuites culture of northwestern Zacatecas and southern Durango. There is, as yet, no data to confirm the relationship of the Loma San Gabriel sites to the larger mesoamerican sites in the region.

Recent research has begun to stress local factors in the development of the

Mesoamerican frontier. Nelson (1989; 1993; et al. 1992) offers an explanation for the Epiclassic apogee period growth of the La Quemada and Chalchihuites areas based on the concept of structural underdevelopment borrowed from dependency theory. The northern periphery was, according to the application of this model, hindered in its economic and political development until after the decline of Teotihuacan, which would have controlled important aspects of peripheral exchange and organization. With their "liberation" from the core area, they were able to develop their own interactions and political institutions. The model requires that the La Quemada region was initially dependent on Teotihuacan's economic system such that it could not develop on its own. This idea necessitates demonstration of dependency on Teotihuacan, perhaps through stylistic or architectural similarities, during the "pre-liberation" period. Nelson et al.(1992) do not believe there is sufficient evidence to support this contention, which contradicts their proposal.

Trombold (1985; 1991a) has published the only systematic survey and excavation of the smaller sites and interconnecting roadways in the Malpaso Valley surrounding La Quemada. He has concentrated on the internal organization of the sites and region, employing central place theory (Trombold, 1976) and a detailed analysis of the roadway system and possible connections to special function sites (Trombold, 1991a). He sees La Quemada's growth as part of the expansion of west Mexican communities northward, based on pottery similarities with northern Jalisco, western Aguascalientes, Guanajuato and southern Zacatecas.

This thesis assesses a number of questions using the pottery, turquoise and human bone available from La Quemada. The adequacy of comparative frequency-distribution analysis for studies of intersocietal interaction is addressed. Specifically, relations with postulated interaction partners based on pottery type and other artefact distributions and mortuary practices are examined. The chronological placement of La Quemada is reviewed and the relevance of ethnohistorical accounts to the archaeology of Zacatecas is explored.

The pottery analysis considers the validity of defining social relationships and boundaries based on type-frequency distributions, identifying social structures and actors by frequency distributions, and the possibility of associating types with specific social groups to suggest exclusive interactions. The specific relationship, suggested by the presence of turquoise, between La Quemada, Tula and the American Southwest is critically examined. The relationship between turquoise and high status display and control over production and distribution is questioned.

The human bone from La Quemada is examined for evidence for social stratification and internal organization. Data are examined that might provide evidence for human sacrifice and intersocietal warfare. Certain shared customs and mortuary practices that may suggest intersocietal interaction are analysed and the relevance of ethnohistorical accounts of mortuary practices from the western Sierra Madre to the explanation of mortuary variability at La Quemada is evaluated.

CHAPTER 2:

SITE DESCRIPTION, DATA AND CHRONOLOGY.

Site Description.

La Quemada is located 57 kms south of the modern city of Zacatecas. Geographically, the site is located on the northwest Mesoamerican frontier (Figure 1), and dates to the period from A.D.500 to 900. The materials recovered and recorded for this thesis are attributed to the final 150 years of the site's occupational history.

The total site area is approximately 36 hectares, stretching 1.5 kms south-north over a hill in the middle of the Malpaso Valley (Nelson et al. 1992). Its visible architecture is of stone slab masonry constrcuted on natural rock outcroppings and artificial terraces. Several roadways connect La Quemada to over 200 smaller sites in the valley, the majority concentrated toward the southern end (Trombold 1991a). The second largest centre in the valley appears to be Los Pilarillos, about 5 kms southwest of La Quemada and measuring an area of 8-10 ha. Most of the surveyed sites are less than one hectare (Trombold 1991a).

There are at least four major levels of construction at La Quemada, contoured by the restrictions of the hill itself. Nelson (1997:90; Nelson et al. 1992) mapped 56 terraces over the extent of the site and suggests that a similar number of patio complexes exist. At least ten major square patio complexes with central altar

and temple-pyramid occur across the site. Four have contiguous structures but none have been excavated. Three ballcourts have been identified to date. The first measures 75 metres long on the first level. The second is smaller, measuring 11 metres on Terrace 18 (Nelson et al. 1992; Nelson 1997), and a third discovered by Trombold in 1985 near the upper northern ceremonial precinct has not been measured. The estimated apogee period population for the site is between 3,000 to 6,000 people based on mortuary analysis (O'Neill, 1995).

The Sample and Analytical Methods.

The architectural units excavated for this thesis (1987-1989) include passageways and stairways covering 100 by 60 meters of the second level on the eastern flank of the site. This encompasses earlier habitations and a ceremonial precinct (Figure 2). Archaeological excavations at La Quemada to date comprise less than 10% of the built area. Deep excavations, down to the earliest levels, account for less than 2% of the excavated area. Intrasite temporal comparisons (rates of growth) are therefore quite tentative and cannot be assumed to have statistical significance with respect to the total site archaeological assemblage. A total of 46,889 sherds were recovered from 34 units of excavation. Ten architectural features did not produce pottery material.

Pottery has been used to address questions of intersocietal interaction through the determination of the degree to which stylistic and formal similarities reflect the nature of the contact. The pottery classification method used for this

analysis was based on vessel form and design elements described in Chapter 3. This kind of classificatory scheme necessitated the restriction of the analysis to one of type distributions and frequencies.

The mortuary data at La Quemada are compared to other finds in the Malpaso Valley as well as to Alta Vista, El Huistle and Las Ventanas. The purpose of this comparison is to determine similarities and differences in the mortuary programs as indicators of the degree of shared customs in northwest Mesoamerica during the Epiclassic period (AD 700-900) (Hers 1989; Pijoan and Mansilla 1990; Nelson et al. 1992).

Nonlocal lithic materials such as obsidian and turquoise occur in the La Quemada region. These constitute a very minor part of the lithic assemblage at La Quemada. Recent studies have successfully concentrated on obsidian sourcing (Darling, 1993; Trombold, et al. 1993). This is important when addressing the question of La Quemada's integration into macroregional exchange systems.

The hypothesis put forth by Weigand (1968; 1978; 1991; Weigand, Harbottle and Sayre, 1977; Harbottle and Weigand, 1992) that La Quemada was involved in a long-distance exchange network moving green stone (chalcedony, malachite, "chalchihuitl" and turquoise) during the Early Postclassic period between Chaco Canyon and Tula is examined.

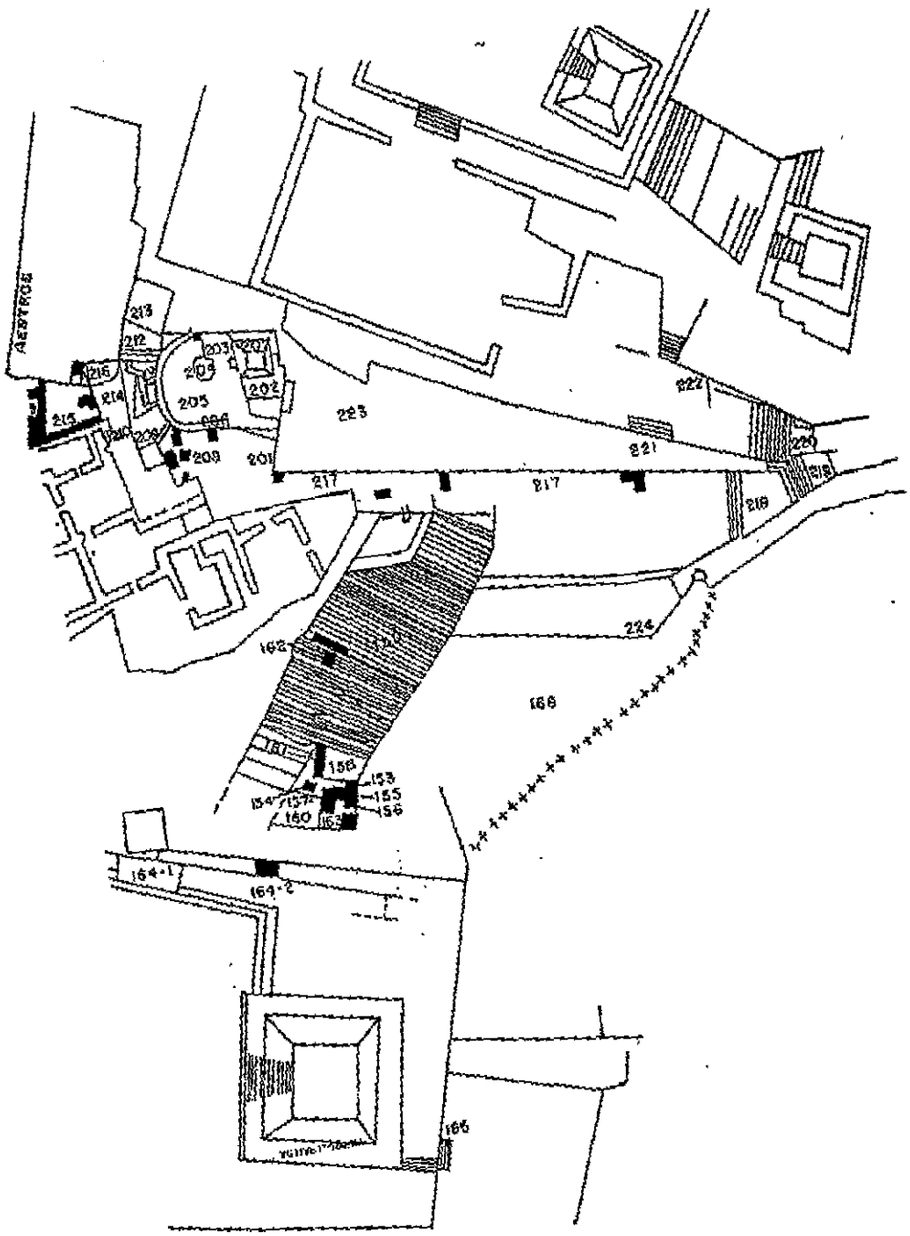

Figure 2. Excavation units from the 1987-89 project.

CHRONOLOGICAL CONSIDERATIONS.

Until recently (Trombold 1987; Nelson et al. 1992; Nelson 1997), the only series of radiocarbon dates for the site of La Quemada was published by Radiocarbon (Crane and Griffin 1958) and Armillas (1963; 1965). Based on this series, Weigand (1978) placed the apogee of La Quemada in the Early Postclassic (AD900-1200) and related it to Tula. He saw a reduced occupation at La Quemada after the fall of Tula until AD1350.

Weigand (1978) identified La Quemada's northern neighbour - Alta Vista, Chalchihuites as a Classic period site controlling mining and ceremonial activities on the northern frontier of Teotihuacan's economic system (Weigand 1982). He suggested that La Quemada followed Alta Vista as a northern outpost serving as a fortress-emporium in the Toltec procurement system. Weigand (1978; 1982) suggested that La Quemada played a role in bringing turquoise from the American Southwest and managing the redistribution of other goods such as obsidian, salt, textiles, copper, feathers, shells, and slaves. Diehl (1983) cites this thesis when discussing Tula's relations with greater Mesoamerica, thereby amplifying an apparently erroneous assumption.

Since 1985 there have been major excavations at La Quemada and environs (O'Neill 1985; 1986; 1989; 1995; 1996; Trombold 1985; 1987; 1991a; Nelson 1989). The recalibration of the first series of dates from La Quemada, and new dates from both the Valley (Trombold 1987; 1990) and from La Quemada (Nelson et al.

1992; Nelson 1997) have radically changed our perceptions about the site and its development.

Despite the lack of supporting radiocarbon evidence, Weigand and Harbottle (1993; Harbottle and Weigand 1992) continue to argue for an important Early Postclassic occupation at La Quemada: "*...it seems no coincidence that the implosion occurred* [in Chaco Canyon] *at the very time of the expansion of the Toltecs and the elaboration of a great fortification, supported by a road system to outlying villages, at La Quemada, Zacatecas*" (Weigand and Harbottle 1993:21-22).

It appears that Weigand continues to rely on the early series of 14C dates from La Quemada. The first three carbon samples from La Quemada were collected by Griffin in 1955 (Appendix 1). The next series of seven samples from La Quemada were collected by Armillas' team in 1963. Trombold (1990) cites these dates with the early correction factors, set at one sigma equals ± 100 years, 2 sigma = 200 years. Griffin (1965) and Foster (1986) cite them with an early recalibration by Klein et al (1982 in Foster, 1986) and Nelson (1997:101) cites the uncalibrated dates. The dates are reproduced in Appendix I with Armillas' (1963-64) and Griffins' (1965) descriptions of their archaeological contexts (ISOTRACE, 1990).

Sample M-430 (Appendix 1) was protruding from of the ground and may, therefore, have been contaminated. I have, nevertheless, accepted the chronological range indicated by ISOTRACE (1990). Samples LQW-13/28 and LQW-25 were described as samples from the same excavation block but in different areas.

Armillas notes the possibility that the carbon might be from the roof beam instead of a post-collapse event but the carbon lies over adobes most likely from a fallen wall, and the two dates barely overlap even at the 2-sigma range. Thus, I believe that the earlier date is a construction event and the later date belongs to a post-construction event. Fortunately, other dates in the series help to clarify the temporal dividing line.

There are several assumptions made in interpreting these dates. First, that these dates do represent the general chronological sequence from early to late for the entire site, even though 90% (9/10) of the samples come from the same complex (the "cuartel"). Second, that the recalibration (ISOTRACE, 1990) covers any possible contamination of the exposed and near-surface samples by more recent organic substances (small organisms, molds, animal and human excrement, solar cariated micro-organisms, etc., and third, that those individuals building fires over the rubble did not introduce construction material that might be confused with the original occupation Thus, for example, the wood beam with the latest date of AD1124±157 can be assumed to belong to the original habitation and not a later construction.

Nelson (1997:100-105) explores a contraction-expansion hypothesis based on the probability distributions of the dates from Terrace 18, Midden 11 and Armillas' "Cuartel". This essentially compares the rate of growth of various parts of the site by dates from the core of the site contrasting with those from its successive

outer margins. At present, the three sampling areas (Terrace 18-western margin, Midden 11-edge of the monumental core and the Cuartel, middle level of monumental core) do not vary significantly, suggesting relatively simultaneous growth between these sectors of the site (Appendix 2).

However, Nelson (1997:101) reports the peak of the distribution for the "cuartel" dates at AD 650. But one of the dates (M1652) may be too early, perhaps an example of the "old wood" problem. As stated above, sample M430 is much later but it was on the exposed surface and could have been contaminated. Eliminating these two dates would give a peak at about AD 820. This would suggest that this upper level was a later addition. It should also be noted that Armillas never excavated beneath the floors in the "cuartel", so any earlier construction in this area of the site is as yet undiscovered.

It will help to consider the following summary of the construction and post-construction dates (specific contexts can be seen in Appendix 1).

Keeping in mind the above assumptions, I have accepted the dates as they are, with one exception. As stated above, samples M-1655/57 and M-1656 actually came from the same stratigraphic position but I have separated them as two distinct temporal events based on the doubt expressed by Armillas (1963-4) that the wood may have belonged to the structural elements (Appendix 1).

TABLE 1. SUMMARY OF THE CONSTRUCTIONAL AND POST-CONSTRUCTIONAL DATES (95.5% C.I.) FROM LA QUEMADA (ISOTRACE, 1990).

CONSTRUCTIONAL (CAL A.D.)	POST-CONSTRUCTIONAL (CAL A.D.)
(M-1652): 237-679	
(M-1651): 599-1021	
(M-1653): 599-1021	
(M-432): 642-1015	
(M-1655/57: 636-1037	(M-1658): 765-1258
(M-1654): 671-1215	(M-1656):1014-1409
(M-430): 967-1281	(M-431): 1023-1325

Since these two dates barely overlap in range at the two sigma confidence interval, I have made the additional assumption that M-1656 does indeed date a post-occupational episode while M-1655/57 dates to within the original occupation period.

Three general observations can be. First, most of the occupation dates fall between AD 600-1000, with the post-construction dates largely corroborating this range. Second, some occupation did occur by, and probably before, AD 600 and third, some occupation must have occurred after AD 900. The C-14 and C-13 dates reported by Trombold (1990) from a small site (MV-138) four kilometers west of La Quemada are important. The site was undoubtedly connected to La Quemada by a

nearby roadway (Trombold, 1975; 1990) and shows similar architecture and ceramic styles. The four dates obtained from excavations at this site range between AD 550 to AD 850. These dates have been interpreted as representing the apogee period for the Malpaso valley since they are primarily from the latest excavation levels (Trombold, 1987) but excavation of more sites in the valley is required.

Trombold (1985:247-248) had first proposed an initial occupation for La Quemada by AD600 and placed its apogee period between AD 850-1000. At this time, with very little other than the Armillas dates to go on, he had already conceived of a terminal date for the site by AD1100 (Trombold 1985). Corroborating this chronology are the recent dates by Nelson, et al.(1992) and Nelson (1997), from the terraced portion of the western flank of La Quemada and Midden 11, ranging from AD550-850. These dates also relate to the apogee period of La Quemada. It is interesting to note that none of these recent dates have ranges falling after AD 900 for La Quemada, which makes the exposed wood beam sampled by Griffin on the Acropolis (M-430), with a range beginning at AD967 all the more suspect. A reduced occupation at La Quemada in the Early Postclassic would seriously challenge Weigand's (1978; 1991; Weigand and Harbottle, 1993) contention that this site was involved in the redistribution of chemical turquoise from the American Southwest to Tula at this time.

Several dates for sites in the Malpaso valley may fall within the Early Postclassic. Two dates from Presa Ambosco collected by Armillas (1963-64) range

from AD 665-1173 and AD 796-1274. Certain artefacts have been seen as representing Early Postclassic interactions with central Mesoamerica, West Mexico or the American Southwest. Trombold (1990:321) discussed the question of Postclassic "horizon markers" for the La Quemada area and indicated that many of the artefacts identified as Postclassic "horizon markers" such as pipes and pseudo-cloisonné wares were present earlier. Other examples of Postclassic markers mentioned by Trombold (1990) include biconical spindle whorls, mold-made figurines, molcajetes and metal objects. All of these have been identified in Classic period contexts elsewhere in Mesoamerica (Sejourné 1966; Caso, Acosta and Bernal 1967:fig. 391; Bell 1974; O'Neill 1985). The same has been shown for the psuedo-cloisonné wares (Holien 1977; Weigand 1985).

The simple line designs of the White-on-Red wares from La Quemada are not the same as the more elaborate designs and effigies of the Nayar White-on-Red wares from the Late Chalchihuites culture (Epiclassic to Early Postclassic) (Kelley and Kelley 1971). The simple line designs of this rare type at La Quemada are more similar to the White-on-Red variety from southern Zacatecas and northern Jalisco which also occurs in Ixtalán del Río, Nayarit. There is no stratigraphic information to suggest that this type is temporally late at La Quemada and fragments from within a small temple at La Quemada indicate the presence of this type from the initial construction of this sector of the site (O'Neill 1989). Reports of Mazapa-style pottery at La Quemada from the Armillas' collections have not been confirmed.

They would not, in themselves, indicate that Tula established the town as an emporium or fortress. Indeed, the identification of La Quemada as a "fortress" requires justification.

Harbottle and Weigand (1992; Weigand and Harbottle, 1993:171-172) point to the architectural similarity between La Quemada and the Chaco Canyon Great Houses. They refer to the La Quemada "fortress", with architecture "strongly reminiscent of Chaco Canyon" (Weigand and Harbottle, 1993:22), and reiterate the thesis that La Quemada took over from Alta Vista as the connection between the Southwest and Central Mesoamerica (Tula) by AD900. Nelson (1990; 1993) studied residential patterns at La Quemada and concluded that there were no specific central Mesoamerican architectural patterns or artefacts that might lead to the conclusion that the site had been established by a central Mexican polity. Lekson *et al.* (1988:154-155) describe big, multistoried, D-shaped complexes in Chaco canyon, made of limestone slabs cut from the surrounding hills. Several works on Chacoan architecture display the same styles, layout and materials (e.g. Doyel 1992). These complexes include kivas and multistoried houses of three to five tiers in a semi-circular pattern. These are clearly distinct from La Quemada which is organized around square, sunken patios with central altars, in traditional Mesoamerican fashion, with complexes of rooms off to one side in some cases. There is nothing like a Kiva or Great House at La Quemada. The similarity lies only in the use of slab stone masonry. The masonry construction techniques of La Quemada are different

from those in the Chaco canyon. Lekson *et al.* (1988:156) describe four main types for the major Chaco Canyon sites. The last style, built in the AD1000's, which consists of flat, highly regular pieces of sandstone is most like the La Quemada construction technique but is 500 years later. The Chaco canyon form probably developed out of the earlier local Chaco styles. There is currently little evidence to support the idea that La Quemada was a major player in any sphere of macroregional interaction in the 11th century (Trombold 1990; Nelson et al. 1992; O'Neill 1993).

In sum, although some reduced early Postclassic occupation may still be found at La Quemada, it is apparent that little or no contact affecting artefact production or procurement occurred. This implies that the Early Postclassic inhabitants of the Malpaso valley were not participating in activities involving central Mesoamerica or the Southwest at this time.

CHAPTER 3.

LA QUEMADA POTTERY ANALYSIS: INTERSOCIETAL INTERACTION.

Almost all of the stylistic or formal types of pottery at La Quemada have been related in some way to varying kinds of intersocietal interaction (Braniff 1974; 1993; Betts 1986; 1989; Weigand 1978). I will present an evaluation of the macroregional interaction hypothesis based on the most frequently cited types. The principal objective of this evaluation is to underline the difficulty with relating the distribution of similar pottery types or pottery attributes to any specific mechanism for interaction. Discrete, geographical clusters of design styles may be apparent when a portion of the assemblage is compared interregionally, but the question as to what social mechanism produced these selective expressions has not been resolved by the concepts of culture area, interaction spheres or diffusion. There are insufficient data on who transmitted objects and information, the purpose of the interactions or their consequences other than recognition of similarities in earthen wares.

It has also been suggested that gravity models, identifying the greatest concentration of a stylistic pottery type as its place of primary production are not always correct. Pottery style spatial distributions may approximate the regional

limits of certain social interactions or diverge widely from the spheres of contact (McGuire 1993:99;102). More specific data are needed on production and distribution variables (Rice 1987; Arnold 1991:91-95; Sinopoli 1991).

Ethnoarchaeological studies of production, design and use of pottery in relation to social boundaries (Longacre and Skibo, 1994; Deetz 1965; Longacre 1970; Hill 1970) often distinguish fairly discrete clusters of designs representing the maintainance of pottery traditions by women in distinct communities who inherited the craft from other women and are influenced to show their regional identity (Graves 1994:45). However, not all potters learn from their matriline (Stanislawski 1973; see also Arnold 1991) and the distribution of styles is affected by many other factors (Kolb 1984:214-217; Graves 1994). Furthermore, changes in the structure of pottery exchange may occur quite rapidly (Stark 1994:171-175).

These studies indicate that a much broader sample with stricter control of provenience data is required for the Northwest Mesoamerican assemblages. The existence of discrete pottery distributions that Kelley (1974) called "culture areas", or "ceramic provinces", suggests that potters were producing and exchanging within a given area (within about a one-two day walk) and maintained a distinct identity in their production. The distinctiveness of the pottery styles cannot be assumed outright to pertain to ethnic or cultural groups. It is possible that what is being expressed are the learned skills and mechanisms of production and distribution (Shennan 1989:xvi). While ethnicity is not clearly delimited by material culture,

regional affiliation may be more discernible. However, determining where a style originated does not indicate how it diffused or what the mechanism of diffusion was, much less the purpose of the interaction or social actors involved (Shennan 1989:2; Champion 1989).

Definitions of discrete pottery regions have been offered for the Zacatecan area but rely on limited data sets from very few sites. There is still little data for the variables pertaining to production and social identity described above. Stylistic typologies have nevertheless formed the basis for defining the boundaries of interacting entities in northwest Mesoamerica. As such, these ceramic provinces or culture areas (Kelley 1971) have been seen as representative of the myriad levels and activities of roughly identified societies.

Kelley (1971; Kelley and Kelley 1966) defined four "culture areas" in the northwest region of Mesoamerica: 1) Chalchihuites, which includes most of the modern municipality with the archaeological settlements concentrated along the branches of the Colorado river in Zacatecas and the Guadiana river in Durango, 2) The Malpaso valley with the "fortress" of La Quemada as the principal centre, 3) the string of sites along the Bolaños drainage together with the southern part of the state of Zacatecas, related to the Bolaños cultural area, named Juchipila-Bolaños (Kelley 1971:769; Kelley and Abbott Kelley, 1971)and 4) the culture area extending north from Chalchihuites to the Durango-Chihuahua border, described as "aberrant" and "submesoamerican" to reflect the mix of simple architecture and ceramics with

elements similar to the Chalchihuites cultural expression. Elements resembling the early Mogollon-Hohokam cultures of the American Southwest were also claimed to be present in this latter area (Kelley 1971; Kelley and Abbott Kelley 1971). These four culture areas were defined on the basis of their architectural and ceramic styles and referred to as "ceramic cultures", thus assuming that ceramic types were valid expressions of socio-cultural identity.

Hers (1989), using Mason's preliminary impressions of 1937, defined a single cultural region covering all of north-central Durango down to northeast Jalisco and the Malpaso valley. La Quemada sat at the head of this vast region which Hers (1989) equated with the legendary "Place of the Seven Caves" or "Chicomoztoc". Southern Zacatecas was defined as another, distinct expression more related in its ceramic design to West Mexican cultures.

Trombold (1991a,b) presented the first analysis of decorative types for the La Quemada region and compared them to the decorative typology established for Chalchihuites (Kelley and Kelley 1971). Trombold sees these two regions as local expressions of essentially the same culture. The southern Juchipila region of Zacatecas was clearly distinct while the Bolaños drainage showed many elements in common with Chalchihuites and La Quemada, as well as with west Mexico. These broad areal comparisons do not indicate the nature of interactions or what role pottery production and exchange may have played in political, or other economic strategies. This underlines the problem of validating the definition of cultural

boundaries based on pottery and architecture styles.

Data on the scale, intensity, volume, direction magnitude and other variables of production and distribution are not available for La Quemada or other regions of the Northwest. While Trombold (1996:69-71) has initiated analyses of the scale of pottery production in the La Quemada region, there are not enough technical data from these finds to derive conclusions about the process of pottery manufacture (see Strazicich). The data from the 1987-89 exacavations at La Quemada suggest a general tendency toward a standardized decorative technique; use of local soil sources and firing in open or semi-covered hearths is indicated. But we do not know how the work was organized, where the workshops were located, on what the distribution system was focused or other aspects of the local economy in earthenware vessels. Strazicich (1996) studied the clay sources and pottery clays using INAA and petrographic analysis, respectively, and found that local (household) manufacture was the norm, with little exchange of wares between sites in the region. She also determined that the more elaborate negative wares and pseudo-cloissonné wares were also locally manufactured. Trombold's (1985) analysis of the materials recovered from the surface of the hinterland sites around La Quemada in 1974, showed no signs of specialization or clustering, suggesting that these communities were largely self-sufficient. An apparent low level of pottery specialization in the small sites around La Quemada is suggested by the equivalent distribution of the pottery styles. The generally unstandardized techniques and

finishes of the La Quemada vessels fall well short of "industrial" production, which would more likely involve mold-made and repetitive, almost identical, forms. Even a workshop industry would present a more uniform finish and more limited formal and decorative types with a greater geographic distribution of the vessels (Sinopoli 1991; Arnold 1991). Trombold (1996:69-71) describes the production level of one of the valley sites (MV-138) as a household industry with a chiefdom or ranked socio-political organization. How the level of pottery production relates to political organization is not presently understood.

Intersocietal Interaction Represented By Pottery Categories.

The interpretations that have been presented over the years, which form the basis for much of the culture history of the Northwest, are difficult to substantiate because there is little or no quantification of the varied types, contextual data are largely absent, sampling biases have not been calculated, and some misidentification of types has occurred. The following types have all been related to spheres of extralocal interaction based solely on stylistic or formal similarities.

1)THE TYPE I FIGURINE:

This figurine type was first described by Williams (1974) based on examples from the Los Altos region of Jalisco (Figure 3). There is some variation in the details of eye form, mouth form and adornments but all examples share the hand made flat body (when preserved) and head with aquiline nose cut away to hold a nose

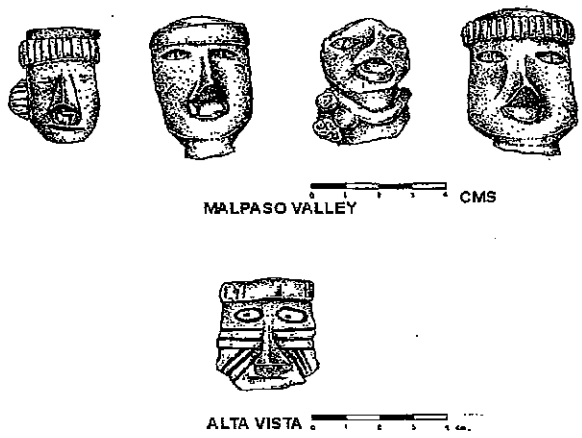

Figure 3. The Type 1 Figurine.

plug, always green when the paint has been preserved. The forehead is elongated with a headband of variable design, and I believe the forehead form represents cranial deformation (and see Gill 1985:212). There are usually green earplugs and a collar or necklace.

The geographic distribution of this type is quite wide: from Alta Vista to northeast Jalisco and over to the Bajío of Mexico (Guanajuato, northern Michoacán), although it is most frequent in the northwest section of Mesoamerica (Batres 1903; Seler 1908; Williams 1974; Saenz 1966; Betts 1986; O'Neill 1993). Williams (1974) related the formal attributes predominantly to certain Late

Preclassic types from the Valley of Mexico (the prognathism, double eyes or rhomboid eye form, the cut nose and noseplug), but also cited some similarities with Middle Preclassic types from central Mexico (the "Cholula complex", 600BC - 300BC), although he did not specify which traits in this case. Furthermore, Williams (1974) compared the seated posture with outstretched feet, the flat body and arched feet to types from west Mexico (Jalisco and Nayarit). But he also thought certain unspecified details of the body form were similar to those from the valley of Mexico. Williams could not categorize this type within any specific Valley of Mexico group, nor with defined types from west Mexico. He concluded that it was particular to west-northwest Mesoamerica.

Williams' (1974) comparisons were based on Vaillant's preliminary classification of figurines from the Valley of Mexico which was not intended to be used to establish cultural relations between sites. However, subsequent archaeologists have employed the tentative classifications and relationships as fixed standards (Betts 1986). In turn, Williams' (1974) cursory conclusions about cultural relationships, implied by the similarities in formal attributes, have been utilized as a basis to tie Central Mesoamerica to the northwest frontier (Betts 1989).

In general, however, the variations in the Type I figurine suggest closer stylistic links with west Mexico. But a direct relationship with west Mexico based on the production of this figurine is not indicated. The plethora of variations on the type suggest local production (see Rice 1987; Arnold 1991). Variations are

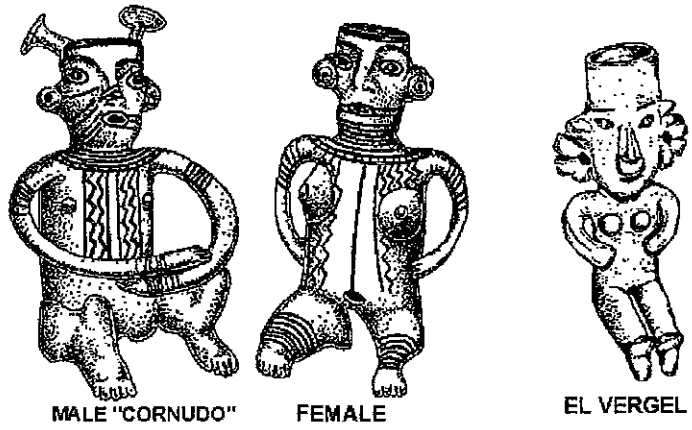

Figure 4. Comparison of "cornudos" figurines to Type 1 variant from El Vergel.

common, even within a single valley, but a complete description is not yet available.

One variant, found in the Malpaso valley, about 4 kilometers northwest of La Quemada, is interesting because it is similar to the female variety of the "cornudos" figurine found in West Mexican shaft tombs of Colima, Nayarit and Jalisco (Figure 4). Dates for these semi-hollow figurines from shaft tombs range between 200BC to AD400 (Galván 1989). A very important variation of this type, discovered from an Alta Vista phase context (AD 750-900)at Alta Vista, Chalchihuites, depicts a woman breast-feeding a baby. Both mother and child show cranial deformation (elongated brow with headband) and wear the green nose plug. The practice of cranial deformation in Chalchihuites and at La Quemada was quite common (O'Neill 1995). Furthermore, the depiction of mother and child with cranial deformation is essentially identical to figurines found in Juchipila and to much larger, hollow figurines from Nayarit and Jalisco, again related to the shaft tomb complex (Figure 5). Unfortunately, most of these examples have been identified

outside their archaeological contexts. Nevertheless, the relationship with west Mexico is evident, on stylistic grounds, and has been largely overlooked.

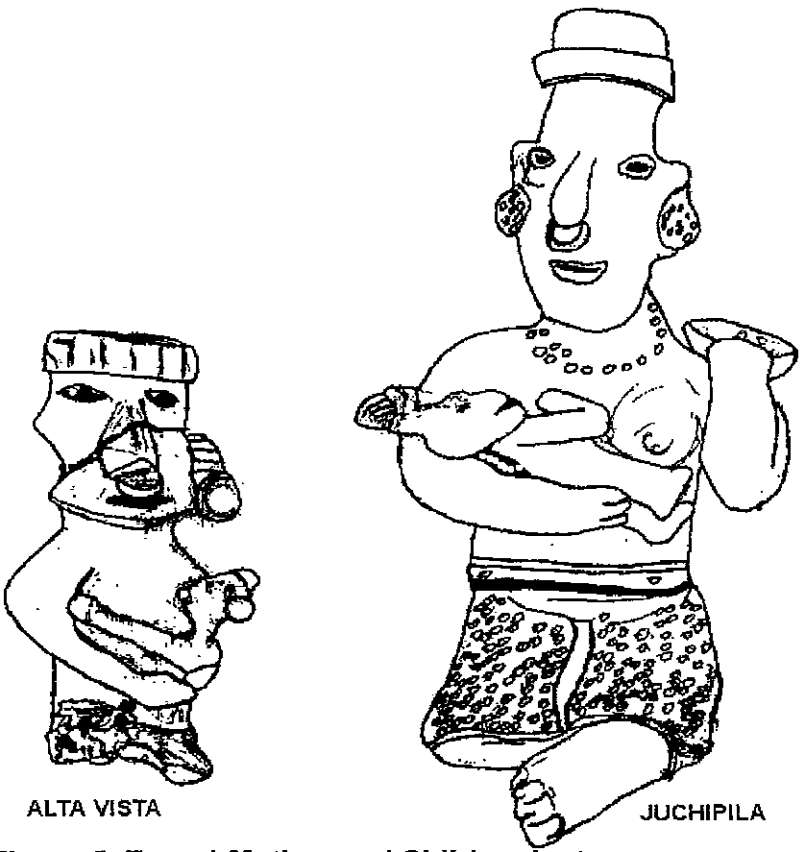

Figure 5. Type 1 Mother and Child variants showing deformation.

Other variations on the Type I figurine include small, solid forms. There are changes in the mouth expression and in the headband, use of clothing and body

painting. These are more common in the La Quemada region and suggest a local style.

Higher status consumption of the figurine is not evident. However, there is a direct tie to the customs of nose piercing, ear piercing, cranial deformation, and perhaps the use of green stone. These practices may not have been restricted to "elite" members of society, or our definition of "elite" may have to be broadened (Chase and Chase 1992). This suggestion is supported by the osteological evidence, as the practice of cranial deformation was present in more than 50% (65/116) of the population studied from La Quemada (O'Neill 1995).

ENGRAVED AND INCISED CERAMICS.

The term engraving refers to cutting lines in baked clay, while incision means cutting lines in leather hard, or softer, clay. The design lines were usually, if not always, filled with red or white pigment (Figure 6).

The red pigment is hematite mixed with an unknown substance and the white is lime. The technique of cutting out the entire background to leave the black surface as the design element ("champleve"), was not used at La Quemada as it was in the Chalchihuites region. There is some question whether the examples from the Chalchihuites area are true "champleve". Engraving/incising does occur, although very rarely, in the Juchipila Canyon (Elizabeth Mozillo, personal communication, 1994).

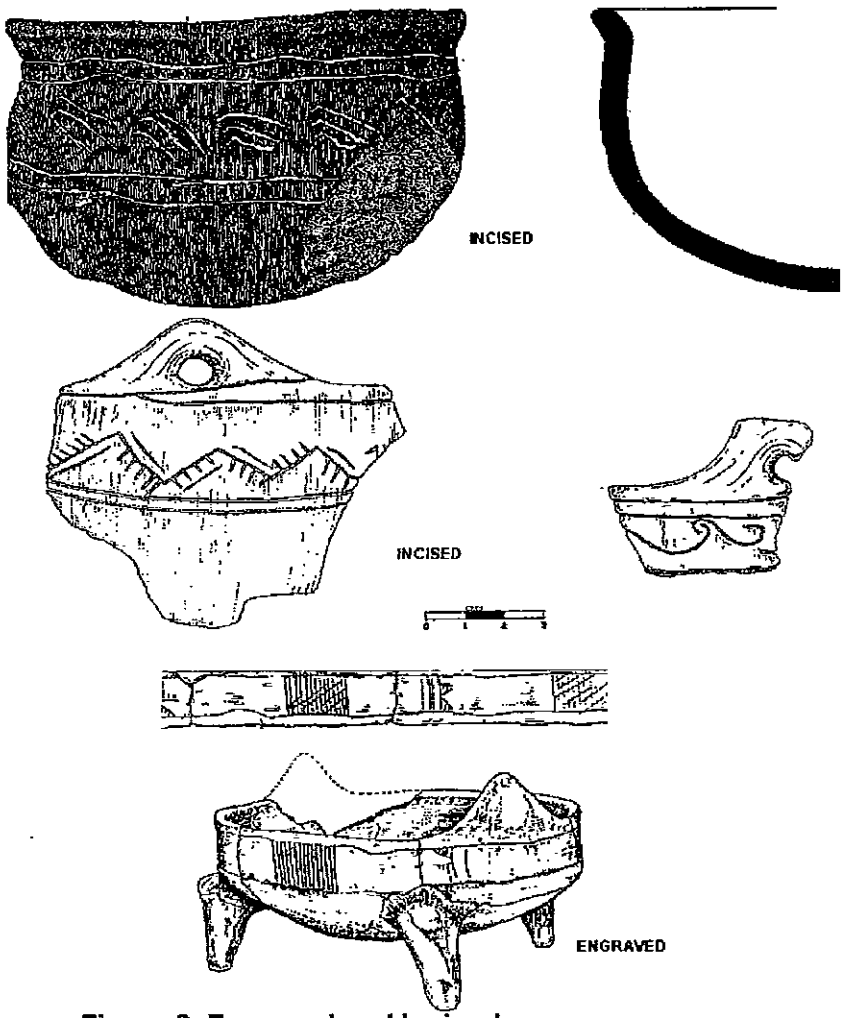

Figure 6. Engraved and Incised wares.

Trombold's (1991c; 1996) classification of the design types is the basis for all descriptions. As Trombold indicated, the brushed wares are really incised but have been treated as part of the plain wares. Trombold (1991b) also believes that the engraved decorative technique may be later than incised wares, perhaps after AD650. This type of decoration was the fourth most frequent of the decorated

wares (after the red/buff, the red and black slips and the brushed wares)(Appendix 3). It was possible to separate a minimum number of 189 vessels (6.06% of the total) from 538 fragments (1.14% of the fragment total). Which of these percentages best represents the original proportion of this type among the vessels in use is an important question since this ware has been described as "characteristic" of the ceramics of the Chalchihuites region (Kelley and Kelley, 1971). It cannot really be said to be "characteristic" of the La Quemada area, since it constitutes only 2.9% of all the decorated sherds (excluding plain, brushed, mud covered and fingernail impressed) or 11.8% of the decorated vessels.

The form bearing engraved/incised designs is almost exclusively the tripod bowl with opposing castellations, with or without perforations. The very few examples where the lip is everted may bear engraved designs on the inner lip. There are no interior engraved/incised plates (shallow bowls) at La Quemada as there are in Chalchihuites, where this technique is much finer in execution, with a greater abundance and variation in depicted life forms (Kelley and Kelley, 1971). This lends support to Trombold's (1991b) suggestion that these two regions produced local expressions of the same pottery tradition, but the La Quemada region potters clearly were producing lower quality finishes.

The flat "plaque" is not frequent either, but often bears engraved/incised designs. These rectangular slabs of baked clay are about 25cm X 15cm X 1.5cm or larger (Figure 7) and occur in Nayarit, northern Jalisco, western Aguascalientes, and

southern Zacatecas up to La Quemada (O'Neill 1993). They have not been reported from the Chalchihuites region. Their function has not been determined. The distribution of the plaques suggests that a particular relationship existed between La Quemada and southern Zacatecas and the northern fringe of west Mexico but not Chalchihuites. It is therefore important that contextual information be recorded for these objects to decipher their meaning. Kelley and Kelley (1966), Kelley (1974) and Weigand (1978) postulated that engraved ceramics arrived in the Northwest by "soft diffusion" (indirect) from central Mesoamerica (specifically Zacatenco-Arbolillo), where this decorative technique occurs from Early Formative times (ca. 1200BC). Kelley (1974) described the diffusion mechanism for the engraved/incised and red/buff types as a "budding-off" process, stemming from central Mexico. The recombination, variation, segregation and "cultural drift" of types in this sense was also assumed to reflect social (and biological) "drift" or diffusion. Braniff (1965; 1972) and later Betts (1986; 1989) postulated that engraved/incised wares entered Zacatecas from the Bajío of Guanajuato-Michoacan, where Braniff found this type in association with Chupícuaro ceramics.

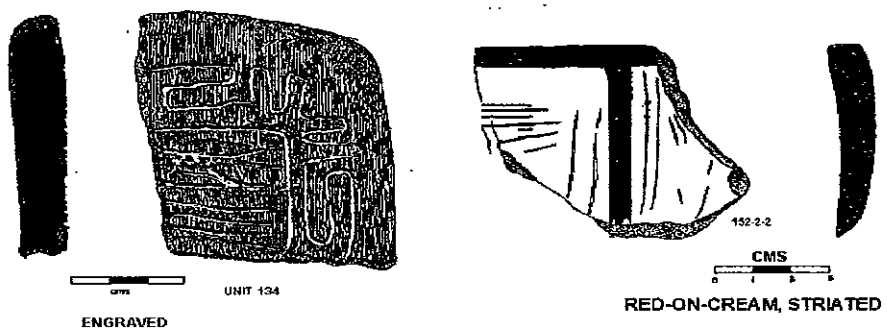

Figure 7. Plaques from La Quemada.

Betts (1989) concluded that, at the end of the Preclassic and beginning of the Classic periods, the Chupícuaro culture expanded west where it came into contact with the Shaft Tomb tradition and turned north up the Juchipila Canyon into La Quemada and up to Chalchihuites. Betts (1989) described Chupícuaro as the "basal" or mother culture for Chalchihuites. This is an example of a pottery type being utilized to draw major intercultural comparisons and develop complex meaning. This is neither theoretically nor methodologically valid.

As one of the earliest types of decorated ware in northwestern mesoamerican communities, the engraved/incised tripod bowl is sufficiently simple in execution to have been a local utilitarian ware. There is no reason to believe that this type distinguishes an elite class or any specific socioeconomic groups. The

occurrence of this category of ware across Mesoamerica (e.g. Caso, Acosta and Bernal 1967:lamina Xd) makes it difficult to accept that, in itself, it represents any specific kind of interaction with northwest Mesoamerica.

NEGATIVE WARES.

Two classes of negative wares exist at La Quemada: Negative A or bichrome (black base with red or yellow) and negative polychrome (black and red on a buff background) (Figures 8 and 9). There appear to be two variations of the technique for producing the black (negative) colour - exposure to smoke and burning. Usually, the design areas were left blank before painting. Bichromes tend to have painted designs while polychromes tend to have black designs with painted borders.

There are three vessel forms with negative decoration. The bichrome is, so far, exclusively a globular jar, probably wide-mouthed, but few examples are complete enough to see the range in forms. The bichrome designs are lines and dots, usually not complete enough to determine if there is some pattern to them. The negative polychrome wares are mostly tripod (hollow support, n=5) round bowls with very rare examples (one at La Quemada) of narrow-mouthed, globular jars.

A complete tripod bowl was found turned upside down in front of the rough stone wall erected to seal the great ossuary of the second level of La Quemada (O'Neill 1990; 1995) (Figure 10). At least two shallow bowls (or deep plates) have

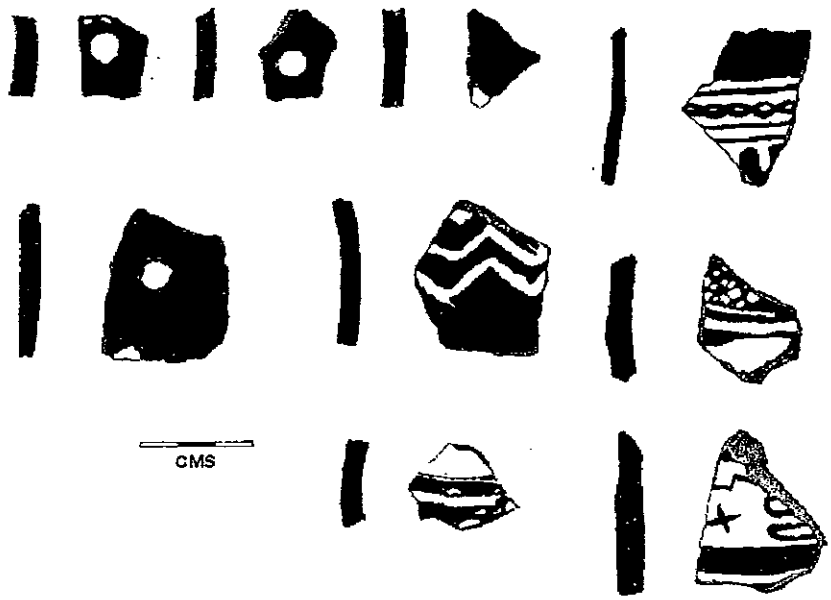

Figure 8. Negative Bichrome wares.

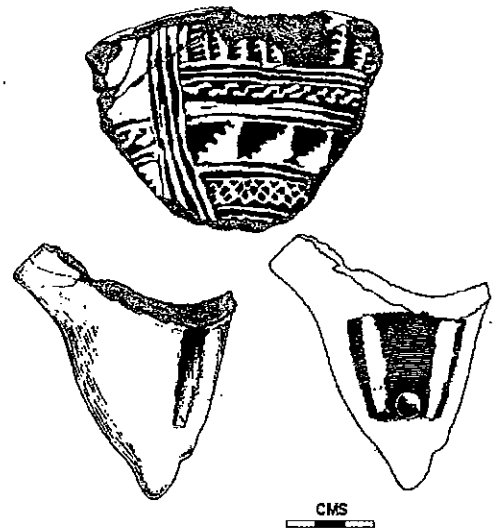

Figure 9. Negative Polychrome bowl.

been found at La Quemada, both bearing the same animal form, identical to one from the Juchipila Canyon.

Only 184 fragments of the Negative Bichrome were found, and even fewer (n=149; 0.32%) of the Negative Polychrome. The polychrome designs are more interesting but not greatly varied. There is one example from the Malpaso valley (Trombold 1974) of the "swastika" in negative black. The rest present lines or circles on the bowl interiors or on and around the upper, outer rim. One of the two vessels shown by Weaver (1969) as a Chupícuaro intrusive at La Quemada has negative decoration with interior wavy lines dividing the bowl into four parts. As indicated above, the relation to Chupicuaro has been rejected on other grounds, but it should be further noted that negative decoration is so scarce in the Chupícuaro assemblage that it was considered to be intrusive to that culture (Weaver 1969).

The temporal-spatial distribution of the negative technique in Mesoamerica is quite extensive, at least from the Early Preclassic (ca. 1200BC) in the valley of Mexico as well as in west Mexico (Oliveros 1974:187). The technique appears in the Mayan lowlands during the Middle Preclassic (900 - 600BC), albeit with little frequency and later at Monte Albán and its region, at about 500BC. Different forms and designs of negative wares are present at Teotihuacan by about 200BC (Caso, Acosta and Bernal 1967). The technique was fairly popular during Teotihuacan III times (Sejourné 1966) but was more common and the designs more diverse in west Mexico throughout the Preclassic to the Classic period. During the Classic period,

similar designs and forms of negative wares exist in the Rio Bolaños drainage to Valparaiso, Zacatecas, around Huejuquilla, Jalisco, in southern Zacatecas and up to La Quemada (Kelley and Kelley 1971; Jaramillo 1985; Cabrero 1989; Hers 1983; O'Neill 1993). I suggest that the negative wares also indicate some kind of interaction with west Mexico.

It is important to note that negative polychrome wares have not been recorded for the Chalchihuites region, only the simpler bichrome (Negative A) (Kelley and Kelley 1971). As well, the hollow support, which accompanies the negative decorated bowl, is also absent from the Chalchihuites region. Their presence in both La Quemada and southern Zacatecas or the northern fringe of west Mexico appears to be significant. Without precise contextual data, the nature of this relationship cannot yet be determined.

The possibility that this ware was used for special purposes (pulque) or by the elite class for restricted purposes was suggested by Weigand (1968; 1978), but the cultural contexts represented by the finds do not support the interpretation. They are found at La Quemada mixed with common, utilitarian types and in domestic situations (from rooms along the upper banquette associated with hearths, manos and metates) or in middens.

Figure 10. Negative Plychrome bowl in front of ossuary.

Weigand's (1978) observation that it is found almost exclusively in funerary contexts is difficult to accept, since he has primarily made observations based on surface finds, looter's pits or private collections of dubious stratigraphic integrity. Weigand also suggested that the ware represented material moving with marriages into the La Quemada region from southern Zacatecas (Juchipila), which has now been rejected by determining local origins for the clay sources (Strazicich 1996).

PSEUDO-CLOISONNé WARES.

The term "cloisonné" originally referred to enamel work in which the different coloured zones are separated by wire. Because of the black lines separating the different pigments of this pottery ware, the decorative technique was called "pseudo-cloisonné" or, "false cloisonné".

The pottery technique involves covering the fired vessel with a dark lacquer which was subsequently covered or cut to apply polychrome pigments. Holien (1977) has described variations in the design technique and their distribution across Mesoamerica. The technique called "pseudo-cloisonné" is the "inlay investment technique", defined by Holien (1977), which involves cutting the designs out of the dark lacquer and filling in the spaces with the desired pigment. This is the most common design technique used in the La Quemada region (Figure 11). The "al fresco" technique is similar but the lacquer is not cut away. With "al fresco" ("al seco" or "fresco-seco"), the lacquer is covered with white lime and the designs are traced through the lime, leaving black lines visible. Watery pigments are used to

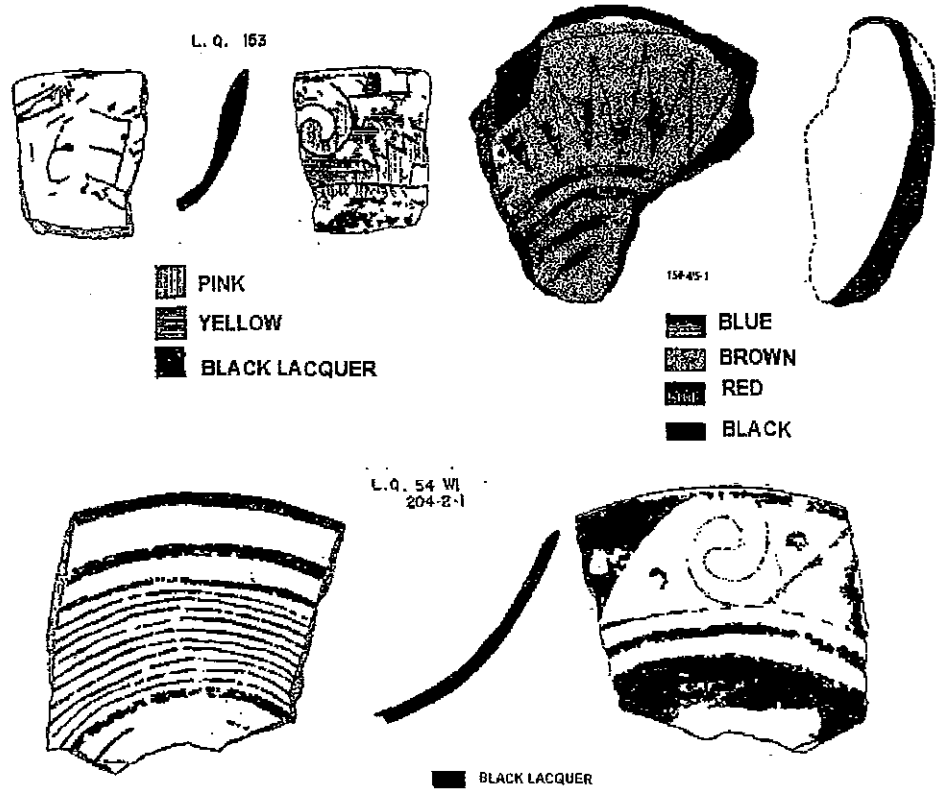

Figure 11. Pseudo-cloisonné wares.

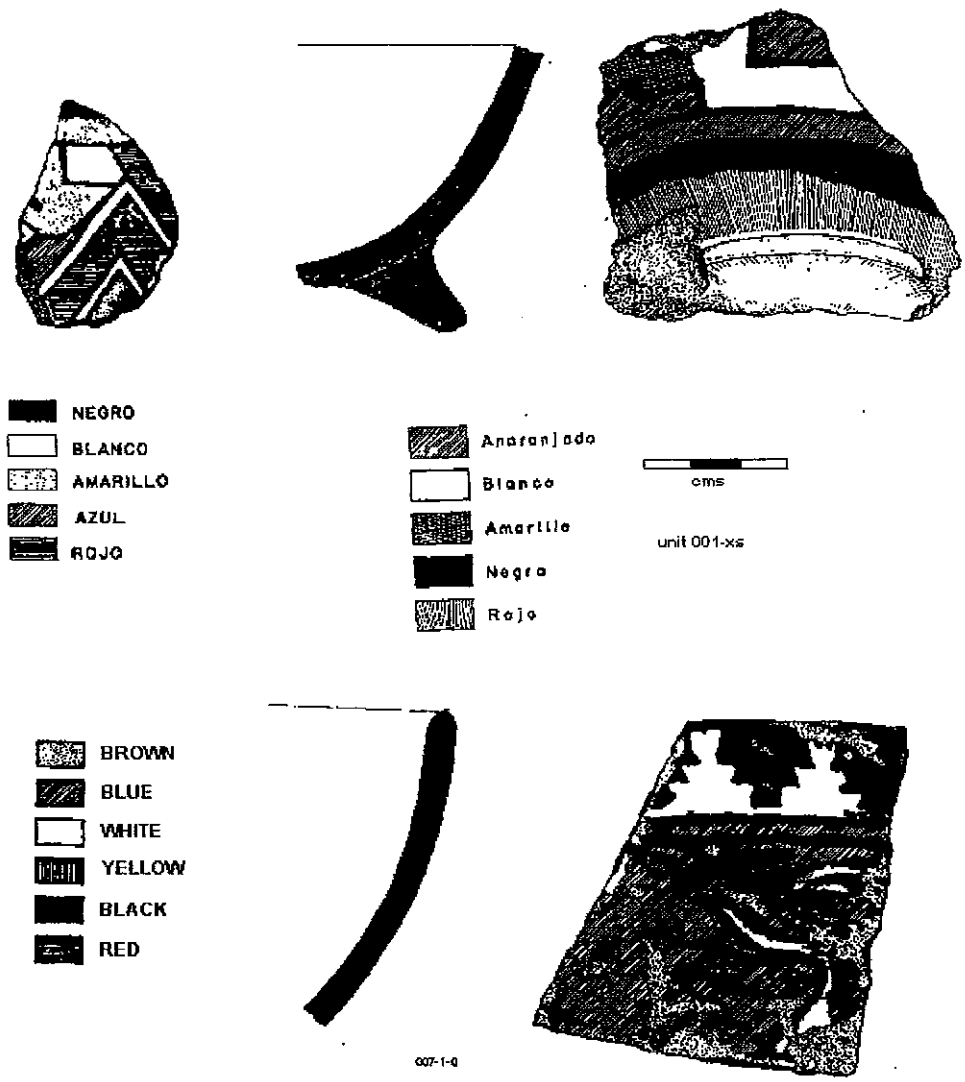

Figure 12. "Al Fresco" variety.

colour the lime. According to Holien (1977), the "al fresco" technique was more popular in Teotihuacan while the "Pseudo-cloisonné" technique was more frequent in West Mexico and in northwest Mesoamerica. Only three fragments of the "al fresco" variety were discovered at La Quemada (Figure 12). The pigments were premixed and used to cover the lacquer which was exposed to define borders around the colour designs.

The use of the inlay investment technique is known on other materials such as gourds, wood and squash, from about the Middle Preclassic (800-500BC). Various examples have been recorded from west Mexico and northern Mexico during the Late Preclassic and there are examples of decorated gourds or squash from Alta Vista, Chalchihuites, dating to the Late Classic (Holien 1977:23, 179-181, 276-279). This implies that a possible local derivation might have occurred from these early applications of the technique.

Pottery with applied pigments appears in the Late Preclassic to Terminal Preclassic at Monte Albán (Caso et al. 1967), in Tlapacoya and in the Toluca valley at the same time (McBride 1969), and at the end of the Preclassic in Teotihuacan and Kaminaljuyú (Holien 1977). Large globular jars with this decorative technique were collected by Lumholtz (1904) from Estanzuela, Jalisco and are well known from several sites along the Jalisco-Zacatecas frontier with tentative dates between AD100 - 400 (Bell 1974; Williams 1974; Kelley 1974; Weigand 1985). However, there is no indication for the use of this technique on

ceramics in the Alta Vista and La Quemada regions until after AD500/550. Although abortive attempts have been made to relate this ware in the northwest to Teotihuacan (Betts, 1989; 1990), the stylistic studies indicate a strong relationship with west Mexico in technique and general autonomy of expression in designs (Holien, 1977).

Specifically, Holien's study of the Chalchihuites "Vista Paint cloisonné" wares showed that this culture followed a "classic" style in design and motifs similar to mural paintings at Teotihuacan but they emphasized their own style when depicting thematic details and form. The style expressed in La Quemada has more similiarity to Alta Vista than any other region but there are specific designs in La Quemada that do not exist elsewhere (Holien, 1977). Holien concluded that the patterns in La Quemada represented autonomous production that followed the Chalchihuites pattern but expressed its own characteristics in proportions and design details.

The mechanism for the diffusion of this ceramic tradition appears to be quite specific, because of the homogeneity in the production of certain elements of design and form (goblets, jars and bowls). Holien (1977) suggested the possibility that special schools existed in which apprentices were trained by specialists, travelling to regional centres in order to maintain norms of perfection in the manufacturing. Kelley (1974) postulated that its production was the responsibility of merchants, organized to provide ceremonial centres with pulque for ritual use.

This implies the existence of a special class of merchants, which Kelley (1986) has referred to as "pochteca" traders or "mobile merchants".

In response to Kelley's question about the possible centre of production and the existence of an "interaction sphere" represented by the distribution of "pseudo-cloisonné" in the Northwest, Holien (1977) indicated that the Guadalajara-Sayula-Ixtlán del Río corridor was a likely "core area" for the production of this ware. However, the analysis of the clay sources by Strazicich (1996) has shown that its production at La Quemada was local.

The pigments are from natural minerals such as hematite (reds), azurite (blues), cinnabar (reds) and lime (white). All of these materials exist in the Malpaso valley and are common to neighbouring regions. There is, however, no evidence from the surrounding hills of the Malpaso valley for lime extraction or kilns for burning lime. Some materials, therefore, may have been traded or procured from neighbouring valleys. In this respect, the mines of Chalchihuites would have played an important role in providing materials for all of northwest and west Mexico.

We have yet to analyse the pigments and the lacquer and to determine their sources and describe the processes and places of manufacturing (see Schiavitti 1996). Until this is done, some very important technical information will be missing that will not permit much more than speculation on how the idea for this ware was disseminated. It is theoretically sound to assume that any network

distributing such specialized wares or pigments for the ware would also communicate non-material products (concepts, stories, technology, astronomical information, social symbols, etc.), all of which have an effect on the respective societies.

THIN RED, CHANNELLED RIM.

Before the 1987-89 excavations were conducted, the only part of this vessel form that had been identified was the channelled rim, called the "reverted rim" due to the misperception of its angle of orientation (Baus Czitrom 1982; 1985). The channelling is probably to support a lid, perhaps just an overturned bowl of the same type, but a formal "lid" has never been found (Figure 13).

The paste of this type is different from the rest of the assemblage and the vessel walls are much thinner; ranging from 0.4cm to 0.6cm compared to 0.6cm to 1.1cm. The paste includes white particles in a fine, sandy clay which was fired to a greater hardness, although it usually bears the dark core of incomplete oxidization. I do not know if Strazicich (1996) petrographically examined this type. The macroscopic observations presented here do need to be confirmed.

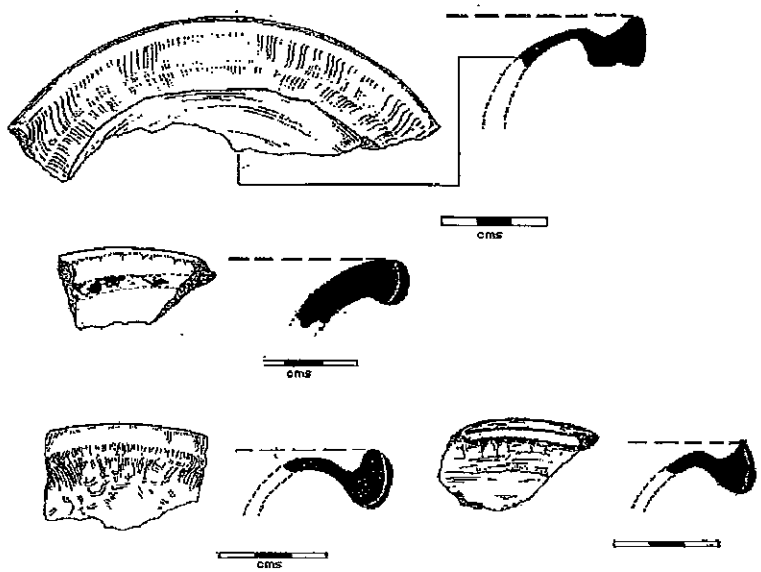

Figure 13. Thin, Red, Channeled rim wares.

The only form known for this type is the globular jar with narrow neck. Because of its thinness, the vessel shatters into very small pieces and the body sherds have, until now, not been matched to the thicker rim. But a vessel, one third complete, was found *in situ*, sealed between two floors of a series in a separate corner of the passage leading to the ossuary (O'Neill 1990; 1995)(Figure 2, Unit 216). The decoration on the jar is rather uniform. There is a burnished red slip and, when complete enough to be visible, a thick, yellowish paint applied over the red slip with, as yet, unidentifiable designs (Figure 14).

Very few fragments of this type were found at La Quemada (N=14, 0.03%). Eight were rims from different vessels. The scarcity of body fragments is

somewhat anomalous since the body breaks into several pieces and should account for more of the total fragments.

Baus Czitrom (1982; 1985) reported these vessels (the rim portion) from the Atemajac, Guadalajara and Juchipila areas, yet another tie between this part of west Mexico and La Quemada. This type is not reported from Chalchihuites. Although Czitrom was convinced that this type marked a diagnostic of the Caxcan culture, she did not have the advantage of stratigraphic information from Las Ventanas (Mozillo 1991) or from La Quemada (O'Neill 1989). The stratigraphy

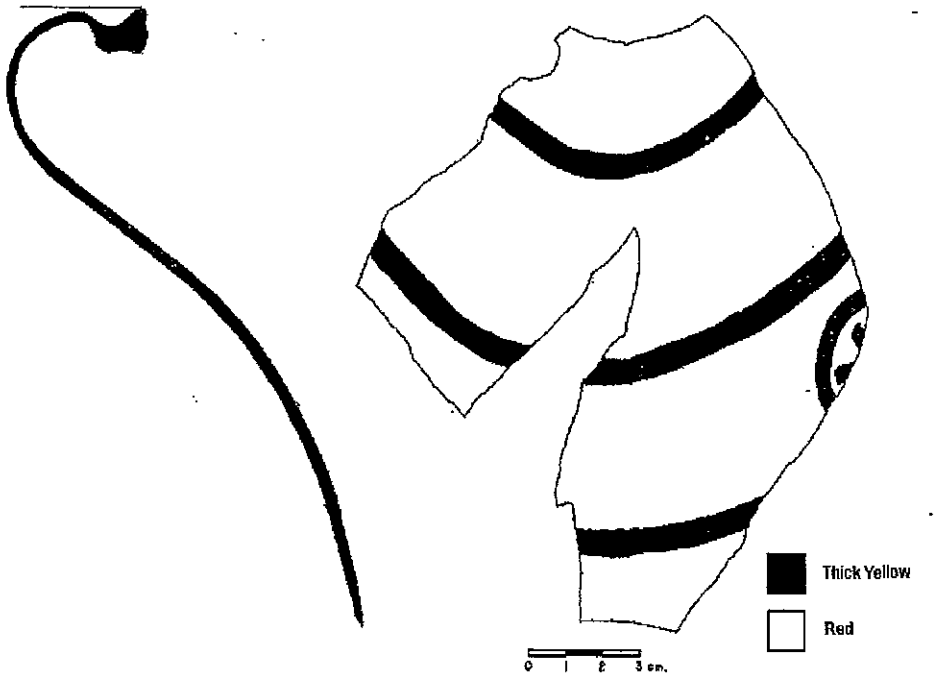

Figure 14. Profile of Thin, red, channeled rim vessel.

and corresponding 14C dates indicate that the vessel occurs well before the Caxcan occupation of Las Ventanas.

Weigand (1968; 1989) argues that the channelled rim not only represented the Caxcan culture but possibly indicated that a "proto-Caxcan" occupation preceded Las Ventanas at La Quemada, both with their ultimate origin in the Chalchihuites culture. This idea is based on the persistence of a tradition of relating the archaeology of Zacatecas to the Aztec migration myth[1]. This type has not been identified in Chalchihuites culture assemblages and we have known since 1985 that La Quemada and Alta Vista were inhabited simultaneously. The new 14C dates (Trombold 1987; 1991a, b; Nelson et al. 1992; Nelson 1997) have clearly shown that La Quemada was not occupied in the 12th century and was probably very much reduced in occupation or abandoned by the mid 11th century. Weigand's (1994) postulate that the Caxcanes abandoned Alta Vista ca. AD900 and moved to La Quemada where they supposedly resided until AD1200, based on the presence of this one decorative type, is not supported. The relation between a single type and a specific cultural identity over a 500 year expanse is theoretically suspect (Shennan, 1989).

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[1]This is an involved relation but stems from the idea that the Caxcanes could have been the legendary Tolteca-chichimeca, one of the seven Nahua tribes that migrated north to Chicomoztoc with the Aztecs and later returned to found a major centre in central Mesoamerica (Tula and Tenochtitlan, respectively) (Sahagún 1979/1577; Tello 1654; Clavijero 1780; Jimenez Moreno 1975; Davies 1977; Armillas 1964; Kelley 1979; Hers 1989; Betts 1989; Braniff 1993:80).

RED ON BUFF.

Unfortunately, the information on the design variation for this type is very incomplete. There are no exact counts but it was noted that the majority of the designs were geometric spirals, step frets, and straight or wavy lines around the outside of globular jars. (Figure 15). Only 4.81% of the assemblage (n=2256) is represented by this decorative type. All of the examples examined (minimum number of vessels=128) were globular jars (probably all wide necked), some quite large. One of the larger jars was completely reconstructed. It was found broken on the east side of the ossuary (Figure 16), and had contained the long bones of at least three individuals (O'Neill 1995).

Trombold (1996:68) mentions similarities between La Quemada red-on-buff or red-on-cream wares and vessels in the upper Rio Verde (los Altos) region of Jalisco. He suggests that, together with the presence of negative wares, the red-on-buff wares from the Rio Verde basin of Jalisco and Guanajuato may represent the "...cultural hearth from which primary influences emanated to La Quemada and Alta Vista".

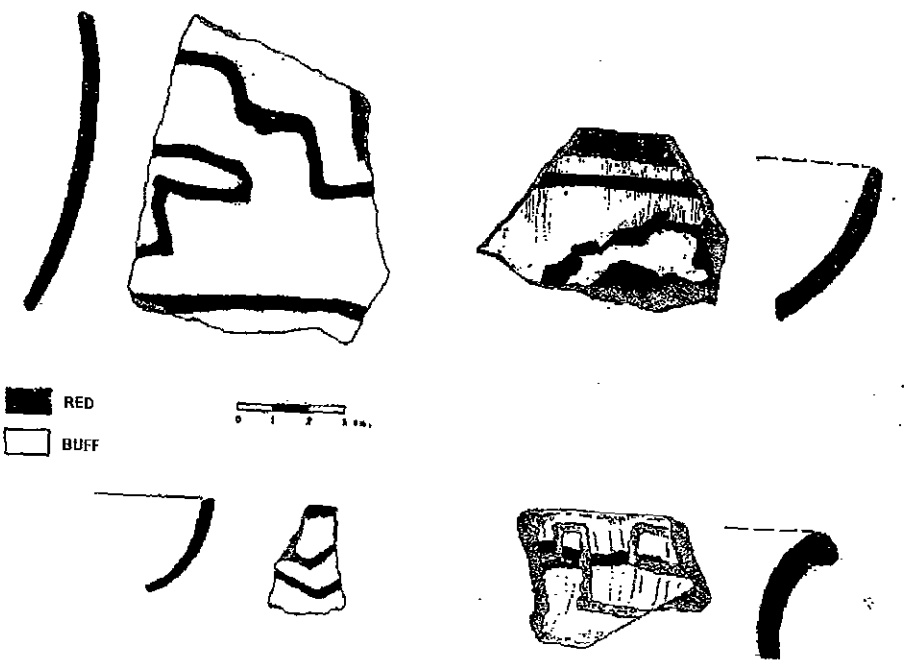

Figure 15. Red-on-Buff wares.

Figure 16. Large Jar with Human bone found in ossuary.

SUMMARY AND CONCLUSIONS.

The major functional classes of the pottery are related to "utilitarian" purposes, such as cooking, food preparation, serving and storage. There are surprisingly few (less than 3%) "trade" wares, either produced at La Quemada (perhaps none in this subcategory) or from neighbouring regions (Chalchihuites, Juchipila and maybe Bolaños). They may not technically be "trade wares" but represent other social interactions (marriages, gifts). There is no pottery or clay object from central Mesoamerica or the intermediate Bajío or even from nuclear west Mexico (central Jalisco, Nayarit). It should be noted that there is red obsidian and Pacific coast shell at La Quemada both of which come from within west Mexican distribution spheres (O'Neill 1991; 1993; Trombold *et al.* 1993). No conclusions can be drawn with respect to any effect the procurement of these items may have had on respective developments. The strong domestic component represented by an abundance of utilitarian wares and residential features suggests that La Quemada did not function primarily as a ceremonial site, devoted to the ballgame and mortuary displays, as Nelson *et al.* (1992) have argued (and see the chapter on human remains).

There is, as yet, no evidence to conclude that La Quemada was a pottery producing community, as defined by Rice (1987:177). No kilns were in use but neither have we found a firing pit or other area for firing the vessels. The present assumption is that local clays were worked and fired at the same production loci

(Strazicich, 1996). It appears that the scale of pottery production at La Quemada, and probably in its hinterland, was on the level of household production and household industry, with little specialization and with apparently no full-time artesans (Trombold 1985; 1989:69-71; Strazicich 1996). Until a formal clay workshop is uncovered, we cannot say more about the organization and economic importance of pottery manufacture.

The focus has been on sociological interpretations in which the spatial range of design and formal frequencies are directly related to the intensity of interregional contact (Kelley 1966; Kelley and Kelley 1971; Kelley 1974; 1991; Betts 1986; 1990). Ethnographic literature indicates that pottery production and distribution are complex. Large volumes of pottery can be produced and exchanged over great distances without centralized organization (nucleated workshops or industries) specialized technology (kilns or throwing wheels), full-time producers or professional merchants to move the goods (Loughlin, in Rice 1987). There are several instances of related groups producing very different pottery and independent groups imitating each other (Rice 1987; Hodder 1988), indicating that similarities or differences in design styles are not the key factor in determining whether or not a relation existed, much less the scale or nature of the postulated relation. Several small producers can also manage the long distance exchange of pottery.

I cannot say that the sector of La Quemada from which the

collections analysed here are drawn is representative of the entire site. For example, the decorative types that have been considered to occur late in the sequence, such as "pseudo-cloisonné" and white/red, are apparently among the earliest from this flank of the site. It is not likely that pseudo-cloisonné developed independently at La Quemada, in isolation from other Mesoamerican sites as postulated by Hers (1983; 1989). It is necessary to find the production areas and discover the scale, mode and variability over time for this specialization (see Rice 1987).

The complex internal structure of this ancient town includes residential, administrative, economic, ceremonial and public functions. How the pottery reflects these various facets of social order is not yet entirely clear. Much more information is required about the temporal-spatial distribution of pottery types, production loci, volume of exchange over time, the direction and intensity of material flows (with precise sourcing data) and the overall complexity of the system with the degree of centralization and control over distribution. Important work in this respect has been realized by Trombold (1976; 1991a) and Strazicich 1996).

At present, production and distribution appear to have been very decentralized. The percentages of each decorative type at each site elsewhere in the valley are difficult to calculate, based only on surface collections (Trombold 1974). More excavation of the smaller hinterland sites is necessary (Trombold

1989; 1991a). The distribution of pottery vessels, as observed and as implied by the scale of production, is largely for local markets and internal use. The occurrences of external wares at La Quemada or La Quemada wares in other areas, are not frequent enough or specific enough in their intrasite distributions to represent a system designed for export, elite or otherwise. Rather at present, they suggest an informal and infrequent occurrence, implying social relations not regulated or influenced by political or economic objectives. However, Trombold (1996:71) defines La Quemada as a primate centre or regional capital, "*...the loci of elite residence and associated production, and the focal point of external trade relationships.*" Unfortunately, until production areas are located and more studies are done on larger samples and from different areas of the site and valley, little can be concluded with respect to the internal organization of workshops, consumption patterns, norms of production or technological tendencies that might reflect upon socioeconomic status and the production and distribution of pottery.

The pottery and its contexts from La Quemada do not necessarily suggest a migration of people, goods or ideas over hundreds of kilometres and several generations (Kelley 1974; 1989; Betts 1989; 1990; Weigand 1978; 1991; Hers 1989); rather, the pottery points to relatively commonplace daily activities developing from locally related groups. This does not negate the existence of extraregional exchanges and intercommunications. But it is not the pottery alone that serves as evidence for these exchanges. The principal interaction represented

by the pottery, outside the immediate La Quemada region, is with southern Zacatecas, then with Chalchihuites (in descending importance).

This is important with respect to the origins of the La Quemada inhabitants. There does not appear to have been a slow "budding-off" process, stemming from central Mexico (Zacatenco-El Arbolillo) through the Bajío to La Quemada and Chalchihuites over several centuries from the Middle Preclassic (Kelley 1974). It is probable that small, agricultural family groups, with their plain wares and simple decorated types, already lived in the valleys neighbouring the Malpaso valley, contemporaneous with but not related to those of central Mexico. These immediate neighbours slowly populated the La Quemada region, maintaining contact with their families in the neighbouring regions. Over time, these families grew and established the administrative and ceremonial centre of La Quemada which, in turn slowly grew to its monumental proportions (O'Neill 1991; 1993). The distribution of the decorated types of pottery indicates that La Quemada was closely tied to Chalchihuites but shared a special, and perhaps more vital relation with southern Zacatecas and northeastern Jalisco (maybe the original area of the ancestors for both La Quemada and Chalchihuites) (Trombold 1991b).

This is a complex society with a very diverse material culture that has not been properly studied. Major hypotheses have leapt much too far ahead of the processing and analysis of the archaeological material. Some hypotheses have been based on legends and myths rather than materials analysis. Arguments linking the

northwest mesoamerican frontier to central Mesoamerica appear to have developed out of a historical tradition that uses ethnohistorical accounts to explain archaeological cultures.

It appears that the La Quemada region can only be described as peripheral to Mesoamerica in a purely geographical sense. The connotation that a frontier is somehow dependent on a centre or its parent society does not hold. La Quemada shows signs of señorio organization, being the principal administrative centre for surrounding settlements in the Malpaso Valley. If there is any dependency relation, it would be a relation of interdependence with its immediate neighbours to the northwest and south. La Quemada should be considered a principal actor in its own exchange systems.

CHAPTER 4.

LA QUEMADA AND THE AMERICAN SOUTHWEST: TURQUOISE AND TULA.

The question of La Quemada's contacts with the American Southwest is intimately tied to studies of the distribution of turquoise and its relationship with Toltec Tula. The first systematic work on the identification and sourcing of "chemical turquoise" was performed by Weigand, Harbottle and Sayre (1977). The continuing work of Weigand and Harbottle (1993; Weigand 1991; 1993; Harbottle and Weigand 1992) on this material has greatly expanded our knowledge of the distribution of turquoise in Mesoamerica, although specific interacting partners and the organization of the distribution have been debated (O'Neill 1991). Sourcing the turquoise has been seen as sufficient evidence for drawing conclusions about the nature of the relationships involved in its procurement and distribution (Weigand, Harbottle and Sayre 1977:16). The role of La Quemada in turquoise distribution, its relationship with the Chacoan system, Tula or other central Mesoamerican polities is examined.

The exact number of pieces of chemical turquoise from New Mexico at La Quemada is difficult to determine from the published literature (Weigand, Harbottle and Sayre 1977; Weigand 1982; 1991; 1992; 1993; Weigand and Harbottle 1993;

Harbottle and Weigand, 1992). From the 1987-89 excavations I recovered only six pieces of what I believe to be turquoise from the fill within a shallow pit (unit 204-2-1) associated with the ossuary measuring about 3 meters in diameter and 60cm deep (Figure 2). The greenstone pieces were small (approximately 3mm in diameter), unworked nodules. These pieces may have come from local sources (the Suchil mines or Concepción del Oro). Harbottle and Weigand (1992:79; Weigand 1992) indicate that they analysed more than 2,000 pieces of turquoise from 28 archaeological sites in Mesoamerica and the Southwest: "*From each of several major archaeological sites, we examined nearly 100 artifacts.*" Sites from Mesoamerica include Guasave (Sinaloa), Las Cuevas and Zacoalco in Jalisco and Ixtlan del Rio, Nayarit. La Quemada and Alta Vista are not mentioned among the major sites from which New Mexico turquoise was found and analysed.

The frequency-distribution of turquoise throughout the rest of Mesoamerica for this time period of interaction (AD400-900) has not been precisely quantified either, but reports are extremely rare. The counts given at around 1,000,000 pieces of turquoise include material from all sources, including the American Southwest, and across the entire spatial and temporal expanse of Mesoamerica. Most finds date to the Postclassic, after the demise of Alta Vista and La Quemada (Weigand 1992:171). This does not support the model that La Quemada was a trade emporium redistributing turquoise for a central Mesoamerican polity.

Weigand (1991) includes La Quemada in the Early Postclassic Chaco

Canyon connection. Thus, some turquoise may have been found and sourced to the Cerrillos deposits. However, the exact number of pieces is not given and there does not appear to be any appreciable quantity, certainly not enough to suggest a role for La Quemada as a major middleman or "emporium", or for providing military protection for turquoise trade and exchange of other objects. With the new chronological data for La Quemada placing its florescence within the Late to Epiclassic periods (AD550-850)(Trombold 1987; 1991a; Nelson 1997; et al. 1992), there might be some question as to its involvement with turquoise distribution systems in the Southwest. La Quemada may have procured all of its turquoise via Alta Vista particularly since they are now considered to be contemporaneous and share a basic pottery tradition (Trombold 1991b).

Use of turquoise in the Southwest appears to be quite limited during the AD400-900 period. Weigand and Harbottle (1993:173) indicate that,

> "...prior to A.D. 950, early in the history of turquoise exploitation, its popularity and use in the Southwest was very limited, and turquoise artifacts are archaeological rarities. From about A.D. 950-1150, use was more widespread but concentrated at a few key sites. After A.D. 1200 turquoise use in the Southwest begins its quasiexponential rise in procurement and popularity. Thus there is a lag in the turquoise-use growth curves, with the more central areas of Mesoamerica leading the Southwest."

Windes (1992:159-168) confirms this for the period between AD1-900 in the Southwest. The largest concentration found was from one of the Petrified Forest sites with 376 worked pieces found in a burial. He further indicates that for the pre-

AD925 period, there are only three reported pieces of turquoise from ant hill samples at Chaco Canyon sites. Therefore, for the period AD500-900, the apogee periods for La Quemada and Chalchihuites, we should not expect to find much turquoise from the Southwest. However, this is when most of the turquoise is found at Alta Vista (Schiavitti 1996:abstract) and some 80 pieces from nearby El Vesuvio have been identified to a Southwestern source (Harbottle and Weigand 1992; Weigand 1992).

The connection between Mesoamerica and the Southwest was sought on the northern frontier of Mesoamerica (Kelley 1966; Kelley and Kelley 1966) and was described at even this early date in frontier research as the result of central Mesoamerican domination over, even colonization of, the northern frontier. The central polities have been identified as Teotihuacan (Kelley 1979; 1991) for Alta Vista and Tula for La Quemada (Weigand 1978; 1982). However, it is important to note that "*...the finds of turquoise from Teotihuacan are still problematical...*" (Weigand and Harbottle 1993:160), referring not only to their chronological placement but to their frequencies. Spence, Harbottle and Weigand (1997) state that only one piece of Southwestern turquoise has been found at Teotihuacan, from a tomb in a probably Xolalpan phase (Middle Classic) occupation of the Oaxacan barrio. This is particularly illuminating when we evaluate the hypothesis that expeditionary exploitation of the Cerrillos mines of New Mexico may have been dominated by Teotihuacan through the Chalchihuites outpost (Weigand, Harbottle

and Sayre 1977:19; Harbottle and Weigand 1992:80). Weigand (1991) also mentions the occurrence of turquoise from the Southwest at Tula but does not indicate how many pieces or from what contexts. As stated elsewhere, the chronological sequence for La Quemada places its decline before Tula's florescence.

Turquoise is not the only item cited as having moved between the Southwest and Mesoamerica. There are also pottery objects, shell, corn and beans, irrigation technology, ballcourts, and copper (Weigand 1978; Wilcox 1986a; 1986b; Scarborough and Wilcox 1991; Hosler 1994). Determining the nature of the interaction represented by these items involves some quantification of the frequency of contact, its intensity, magnitude, direction, and other associations (Plog 1977:129; Irwin-Williams 1977:142-143). The plethora of artefact exchanges other than turquoise has been used to support the idea that there was fairly frequent and diverse contact between Mesoamerica and the Southwest over a long period of time. Thus, the idea that the Southwest can be seen as a resource periphery of a Mesoamerican world system or economic system (Pailes 1980; Foster 1986; 1993; Weigand and Harbottle 1993) has ostensibly been substantiated by a long list of traits with a historical trajectory of considerable depth. The models of interaction have been supported only by the presence of objects or similarities, not by the identification of sectors of production and exchange, or social structures and actors related to the postulated interaction.

The La Quemada fortress, with architecture "strongly reminiscent of Chaco

Canyon" (Weigand and Harbottle 1993:21-22) takes over as the connection between the Southwest and Tula in Central Mesoamerica by AD900. The stone masonry and mud plastered architecture of Chaco Canyon, and the colonnaded halls and roadways postulated as coming from La Quemada (Weigand and Harbottle 1993:171-172) may be incorrectly sourced. These apparently occur too late in the Southwest to coincide with La Quemada's apogee and there is no reason to believe that local factors could not have produced these aspects of urban works independently. It is also unclear what is being referred to as a "colonnaded hall" in the Southwest. The examples shown (Weigand and Harbottle 1993) do not resemble the large rooms with columns for roof support at La Quemada or Alta Vista.

Weigand's (1978) list of items purportedly managed by La Quemada (feathers, copper, salt, green stone, slaves, shell) has not been archaeologically substantiated. None of the "Mesoamerican" items demonstrably passed from La Quemada to the Southwest since there are no copper bells, pyrite mirrors, cylindrical jars, effigy vessels or macaws at La Quemada. Pseudo-cloisonné has been related to local sources (Strazicich 1996) and strombus trumpets are very infrequent in the La Quemada area. In fact, none have been found at La Quemada itself.

The distributions of these materials alone do not conduct us toward an explanation of the nature of interaction, nor do they provide an understanding of material correlates of human activity. Data on production, distribution, and social

structures with links to logistical mechanisms are needed.

More recent studies are changing our perceptions of the northern frontier away from viewing it as a periphery to seeing it as a dynamic social manifestation in its own right, but I am also questioning the applicability of the world systems model for understanding frontier developments. The original model (Weigand, Harbottle and Sayre 1977: 22; Weigand 1982) was based on this assumption: "*If Chaco Canyon is viewed as a rare resource provincial participant in an ancient world system, the possibility of a direct Mesoamerican presence increases*" (Weigand, Harbottle and Sayre 1977:22). There appears to be no reason why we should view interaction between Mesoamerica and the Southwest in terms of the world systems model based on the archaeological evidence available. La Quemada, Chalchihuites, and the Chaco sites may have acted as principal actors in their own exchange networks.

CONCLUSIONS.

The idea that turquoise was a "prestige good", actively procured by high status individuals seems reasonable, based on ethnohistorical accounts. However, there is little contextual data on turquoise distribution in northern Mesoamerican sites. Reports of turquoise throughout Mesoamerica during the Classic period are so scarce that it does not seem justified to refer to a "demand" for turquoise by "Mesoamericans" (Weigand 1992:171). This appears only to be true for Late Postclassic central Mesoamerican groups like the Mexica. We cannot, at this point,

empirically support the conclusion that turquoise production and distribution were controlled by "elite" sectors of the Chalchihuites society, much less for the La Quemada region. Given the solitary piece of turquoise from the Oaxacan barrio, Teotihuacan must be presently excluded from the demand structure for turquoise.

Archaeological approaches to long distance exchange tend to favour elite-focused concepts of sociohistorical development. That is, they envision such exchanges as the proper sphere of the most powerful sectors of society which must maintain fairly strict control over production and distribution in order to achieve the primary goal of such exchanges - prestige. Thus, rare or precious goods are defined as prestige goods which are used by elite members of society to reinforce and legitimize their social standing through public displays, feasting and redistribution. They are also given as gifts to other elites to consolidate political relations or as ostentatious gestures of procurative power, hence social control and political might.

A high degree of specialization (division of labour), a large volume production and a wide distribution of a product are expected to correlate with a more highly centralized administration. Centralization is often seen as a function of political power or of economic institutions intimately tied to political objectives, usually hegemonic in character. These suppositions are not explicitly stated in the research on Mesoamerican-Southwest relations, but they are implicit in and fundamental to the arguments derived from frequency distributions that describe

Mesoamerican-Southwest interaction as the product of expansionary dynamics from core polities (Weigand 1982; 1992; Weigand and Harbottle 1993; Kelley 1966; 1980; Kelley and Kelley 1975).

The methods developed for discerning the nature of Mesoamerican-Southwest interaction have been circumscribed by presuppositions about long distance exchange and its relation to hegemonic political organization. For example, it has been assumed that the large scale of mining in the Chalchihuites area must have been the effort of a centrally organized and politically motivated social power. A similar supposition about the Chaco Canyon turquoise workshops has also been challenged. Mathien's (1993) analysis of turquoise workshops within and outside Chaco Canyon led her to the conclusion that, "The available evidence does not support control over the entire San Juan Basin by leaders in Chaco Canyon even though there seems to be more evidence for the use of turquoise both as a ceremonial offering and possibly as a status marker" (Mathien 1993:44). This may suggest that long distance trading was not centrally organized even though it was perhaps destined primarily for regional centres. The presence of Southwest turquoise in the Chalchihuites area may have been the result of a very indirect operation. The level of political centralization that some believed to be concomitant with the volume of production, extent of turquoise distribution and geographical distances involved suggested the involvement of a major power in central Mesoamerica - Teotihuacan and Tula. It has also been assumed that elite

consumption of turquoise also represents elite control over its distribution and/or production. No methods have been developed to test these hypotheses since they were accepted as given. The studies concentrated on the level of influence of central Mesoamerican polities on the frontier Mesoamerican societies that were supposedly in direct contact with the hinterland Southwest American producers. The paucity of turquoise finds at Teotihuacan and the chronological difficulties for the La Quemada-Tula relationship were largely dismissed as sampling biases and standard archaeological errors (Weigand, Harbottle and Sayre 1977; Weigand 1982).

More quantitatively detailed studies on production and distribution (e.g. Schiavitti 1996) and the reassessment of the social significance of artefact similarity presented here, indicate that politically centralized control over the production and distribution of rare resources is not necessarily associated with large scale operations, long distances and wide distributions. Elite consumption of a product may occur without elite control over its production or distribution and political or economic hegemony may not be the primary goal of extensive long distance exchanges.

CHAPTER 5.

CULTURAL TREATMENT OF CRANIA AT LA QUEMADA.

A total of 184 crania were recovered and reconstructed from an ossuary containing the remains of more than 300 individuals at La Quemada. Information concerning the cultural treatment of the skulls was recorded and analysed for patterns that may shed light on the reasons for the modifications. This deposit is the largest of three ossuaries known from the site, representing a distinct treatment in the mortuary pattern at La Quemada and providing data regarding cultural practices before death. Excavation data and laboratory examination indicate that this is a secondary deposit formed from at least three different primary contexts: 1)houses for the dead (charnel structures), 2)burial in large earthenware jars and 3) skull racks and other display devices.

Although radiocarbon dates are not available from this area of the site, dates from other areas of La Quemada (Nelson et al. 1992; Nelson 1997), from the hinterland (Trombold 1990) as well as the context of the find and ceramic and architectural correlations, indicate that this deposit represents one of the final acts performed on the

site somewhere around the end of the ninth century A.D. or beginning of the tenth century A.D.

An overview of the distribution of cranial deformation and the use of skull racks in the Northwest is examined to evaluate the validity of hypotheses that relate these practices to macroregional scales of interaction. Inferences drawn from mortuary data about social organization have also been examined to determine the role of internal versus external processes in the development of funerary programs (Nelson et al. 1992). An attempt is made here to analyse the osteological material for evidence of socioeconomic distinctions that might reflect differential access to wealth, and for shared patterns in the cultural treatment of the living and the dead between sites in the immediate area, regionally and macroregionally. Certain practices such as human sacrifice and cannibalism at La Quemada are examined with respect to the ethnohistorical examples of these practices among tribes of the Western Sierra Madre (Nelson et al. 1992), implying a broad cultural tradition across the Northwest. An evaluation of the validity of using the occurrence of these practices as archaeological evidence for localizing the mythical Chicomoztoc and the legendary Tolteca-Chichimeca in the Northwest (Hers 1989; Braniff 1993) is also presented.

In general, the complexity of the mortuary program at La Quemada is analysed to discern possible shared patterns and suggest geographic and temporal boundaries for

any perceived patterns. The data are presented with the objective of determining the fit between the mortuary program at La Quemada and the varied hypotheses and models that have been proposed for explaining its development and decline.

LOCATION OF THE OSSUARY AT LA QUEMADA.

The deposit was found on the second monumental level of the site, enclosed in a circular space near the area of Armillas'(1964) "cuartel", which is a complex of habitations overlooking the "votive pyramid" and ball court (Figure 2). The bulk of the bone was found on the upper floor between a shallow circular pit (3m in diameter and 60 cm deep) and a small (3m high) temple-mound. There were also fragments of human bone in the fill inside the circular pit, which included thousands of pottery sherds and lithic artifacts. The incomplete remains of a further dozen individuals were on the upper floor of the adobe room on top of the temple-mound.

There are three accesses to the circular area where the bones were deposited:

1) Climbing up the large stairway from the votive pyramid and turning left toward the south,

2) Climbing the stairs from the south which enter between the west wall of the "cuartel" and the platform wall of another small set of habitations to the west. This access (unit 215) contained an adobe stairway and a small structure situated in an indented space in the west habitation platform (unit 216) (Figure 2),

3) A more restricted access climbing a narrow stairway on the west flank and crossing the above mentioned habitations to the narrow passage between the "cuartel" and the banquette (unit 215).

The precinct which contained the osteological remains has been interpreted as a ceremonial area, for the following reasons:

1) The organization of the space is circular, not square, an irregularity for the site and area.

2)The large, later platform walls rising more than 12 metres above this area represent the last phase of construction which covered part of the crescent wall to the west and the low platform/room beside the temple to the north. Despite the later modifications, this circular area was respected, indicating some preferred importance.

3)With the human bone on top of the small temple, the forelimbs (radii-ulnae) and occiput of a black bear (*Ursus americanus*) were discovered. Figurines carved in weathered chert and depictions on ceramics may also portray bears (Figure 17). While these artefacts are not immediately associated with this ossuary, the possible depiction of the bear in diverse contexts at La Quemada and in the Malpaso valley may indicate a more ubiquitous social significance.

Figure 17. Possible depiction of a bear.

4) The passageways leading to and from the ossuary were protected by "guardian skulls (crania only). One was found in situ set between a stone slab and the first ramp leading up to the east entrance. Fragments of two more skulls (one was not reconstructable) were found in the debris in the south passage of this same area. Two were of young adult males and one maxilla fragment was of a young adult of indeterminate sex. Another skull, also of a young adult male, was found set between a stone slab and the steps of the second flight of stairs leading to the third level.

5) In front of the sealed entrance to the ossuary, a complete tripod, polychrome negative painted "molcajete" was found turned upside down as an offering.

6) The ossuary is a secondary deposit, it was not formed slowly over several years (see below). The various individuals were deliberately removed from their original places of rest and deposited in this area shortly before the abandonment of the site or of this area

of the site (see below). The fact that this circular area was chosen represents a special value placed on it.

SITUATION OF THE OSSUARY.

The majority of the deposit lay directly on the upper floor between the shallow circular pit and the temple. More bone and artefacts, mainly lithics and ceramics, were found filling the shallow pit and within the small room on top of the temple. The almost completely disarticulated skeletons were left exposed and later covered by collapsing mud and lime plaster. Some hand bones and vertebrae and two radii-ulnae were found articulated.

Although the elements were essentially "dumped", the bones were not piled haphazardly. In general, the skulls were placed around the circular pit; foot, hand, rib, vertebrae and pelvic material lay directly on the floor; most mandibles had been placed beside the small landing step of the temple. The long bones were then scattered over the rest of the osteological material (Figure 18).

On the east side of the ossuary a rhyolite core surrounded by four skulls was uncovered. Throughout the deposit, in almost every level of the excavation, lithic flakes of a similar rhyolite were recovered. They were mainly secondary, unworked flakes that had been scattered through the layers of bone. Attempts to reconstruct the cores were unsuccessful.

The lower levels of the eastern extreme of the ossuary also contained large, broken fragments of three complete jars that still contained human bone. Bone still resting on the larger sherds were in very poor condition and surrounded by a darker soil, which contrasts with the soils in the rest of the deposit.

The bone and artefacts within the shallow pit and on top of the temple were not visibly organized. On the interior rock floor of the shallow pit was found a complete ceramic figurine and, as mentioned above, on top of the temple were found the bones of a black bear. It is noteworthy that at Casas Grandes six "trophy skulls" (4 with drilled perforations) were found with more than 100 long bones belonging to the black bear (Ursus americanus). All were from the same unit (16, room #23): a cross-shaped, cardinally-oriented structure dating to the Medio period's Diablo phase (AD1200/1250-1450/1500) (Di Peso 1974; Dean and Ravesloot 1993:96-98).

CULTURAL TREATMENT OF CRANIA FROM LA QUEMADA.

The data in Table 2 show all the visible cultural modifications performed on the skulls. The age classification includes overlapping age ranges because it was not possible to be more precise, particularly with the younger age groups. It is nevertheless possible to group broad age ranges such as children (5-11) and adolescents (11-17 and 10-20) apart from subadults (18-25), young adults (22-35) and older adults (35-50)(see

Figure 18. First excavation layer of the ossuary.

Tables 2, 3a,b,c). No age identification greater than 50 years is indicated because the only criterion available was cranial suture obliteration (Meindl and Lovejoy 1985).

TABLE 2. CULTURAL TREATMENT OF CRANIA FROM LA QUEMADA 87-89, OSSUARY, UNIT 203 BY AGE (ALL SEXES INCLUDED).

TREATMENT	5-11	5-17	11-17	10-20	18-25	22-35	35-50	50+	UNKNOWN	TOTAL
CUT MARKS	5	3	5	6	13	75	45	3	9	164
NOT CUT	0	0	0	0	0	0	0	0	0	0
CUTS N.A.	0	0	0	0	0	4	4	2	10	20
DEFORMED	3	1	0	1	5	26	24	3	2	65
NOT DEFORM	2	0	2	0	4	25	16	1	1	51
DEFORM N.A.	0	2	3	5	4	28	9	1	16	68
PERFOR.	0	0	0	0	0	5	7	0	0	12
NOT PERFOR	2	0	3	0	6	47	30	4	1	93
PERFOR. N.A.	3	3	2	6	7	27	12	1	18	79
NO BASIOCC	1	2	3	0	7	41	34	1	4	93
BASIOCCI.	0	0	0	0	0	2	1	0	2	5
BASIOC. N.A.	4	1	2	6	6	36	14	4	13	76
BURNT	0	0	0	1	2	5	4	0	1	13
NOT BURNT	0	0	2	0	6	30	32	3	0	73
BURN N.A.	5	3	3	5	5	44	13	2	18	98
N	5	3	5	6	13	79	49	5	19	184

N.A. = DATA NOT AVAILABLE.

TABLE 3a. CULTURAL TREATMENT OF CRANIA BY AGE. MALE

TREATMENT	5-11	5-17	11-17	10-20	18-25	22-35	35-50	50+	UNKNOWN	TOTAL
CUT MARKS	0	0	0	0	7	41	29	2	0	79
NOT CUT	0	0	0	0	0	0	0	0	0	0
CUTS N.A.	0	0	0	0	0	3	0	2	0	5
DEFORMED	0	0	0	0	5	16	16	3	0	40
NOT DEFORM	0	0	0	0	1	14	8	0	0	23
DEFORM N.A.	0	0	0	0	1	14	5	1	0	21
PERFOR.	0	0	0	0	0	2	5	0	0	7
NOT PERFOR	0	0	0	0	3	25	19	3	0	50
PERFOR. N.A.	0	0	0	0	4	17	5	1	8	27
NO BASIOCC	0	0	0	0	5	24	22	0	0	51
BASIOCCI.	0	0	0	0	0	2	1	0	0	3
BASIOC. N.A.	0	0	0	0	2	18	6	4	0	30
BURNT	0	0	0	0	0	2	2	0	0	4
NOT BURNT	0	0	0	0	3	15	21	2	0	41
BURN N.A.	0	0	0	0	4	27	6	2	8	39
N	0	0	0	0	7	44	29	4	0	84

N.A. = DATA NOT AVAILABLE.

TABLE 3b. CULTURAL TREATMENT OF CRANIA BY AGE. FEMALE.

TREAT MENT	5-11	5-17	11-17	10-20	18-25	22-35	35-50	50+	UN KNOwN	TOTAL
CUT MARKS	0	0	2	0	3	28	16	1	0	50
NOT CUT	0	0	0	0	0	0	0	0	0	0
CUTS N.A.	0	0	0	0	0	1	4	0	0	5
DEFORMED	0	0	0	0	0	10	8	0	0	18
NOT DEFORM	0	0	1	0	3	9	8	1	0	22
DEFORM N.A.	0	0	1	0	0	10	4	0	0	15
PERFOR.	0	0	0	0	0	3	2	0	0	5
NOT PERFOR	0	0	1	0	3	17	11	1	0	33
PERFOR. N.A.	0	0	1	0	0	9	7	0	0	17
NO BASIOCC	0	0	1	0	2	16	12	1	0	32
BASIOCCI.	0	0	0	0	0	0	0	0	0	0
BASIOC. N.A.	0	0	1	0	1	13	8	0	0	23
BURNT	0	0	0	0	0	1	2	0	0	3
NOT BURNT	0	0	1	0	3	14	11	1	0	30
BURN N.A.	0	0	1	0	0	14	7	0	0	22
N	0	0	2	0	3	29	20	1	0	55

N.A. = DATA NOT AVAILABLE.

TABLE 3c. CULTURAL TREATMENT OF CRANIA BY AGE. SEX UNKNOWN.

TREATMENT	5-11	5-17	11-17	10-20	18-25	22-35	35-50	50+	UNKNOWN	TOTAL
CUT MARKS	5	3	3	6	3	6	0	0	9	35
NOT CUT	0	0	0	0	0	0	0	0	0	0
CUTS N.A.	0	0	0	0	0	0	0	0	10	10
DEFORMED	3	1	0	1	0	0	0	0	2	7
NOT DEFORM	2	0	1	0	0	2	0	0	1	6
DEFORM N.A.	0	2	2	5	3	4	0	0	16	32
PERFOR.	0	0	0	0	0	0	0	0	0	0
NOT PERFOR	2	0	2	0	0	5	0	0	1	10
PERFOR. N.A.	3	3	1	6	3	1	0	0	18	35
NO BASIOCC	1	2	2	0	0	1	0	0	4	10
BASIOCCI.	0	0	0	0	0	0	0	0	2	2
BASIOC. N.A.	4	1	1	6	3	5	0	0	13	33
BURNT	0	0	0	1	2	2	0	0	1	6
NOT BURNT	0	0	1	0	0	1	0	0	0	2
BURN N.A.	5	3	2	5	1	3	0	0	18	37
N	5	3	3	6	3	6	0	0	19	45

N.A. = DATA NOT AVAILABLE.

Cutmarks.

All skulls for which data are available (n=164) exhibited cut marks over the vault. In 31 individuals (12 males, 16 females, 3 unknown), the cut marks appeared to divide the skull into four parts with cuts along the frontal, sagittal suture and occipital and perpendicularly across the parietals sometimes extending to the temporals (Figure 19). This pattern of cutmarks does not correspond to that expected if the activity represented

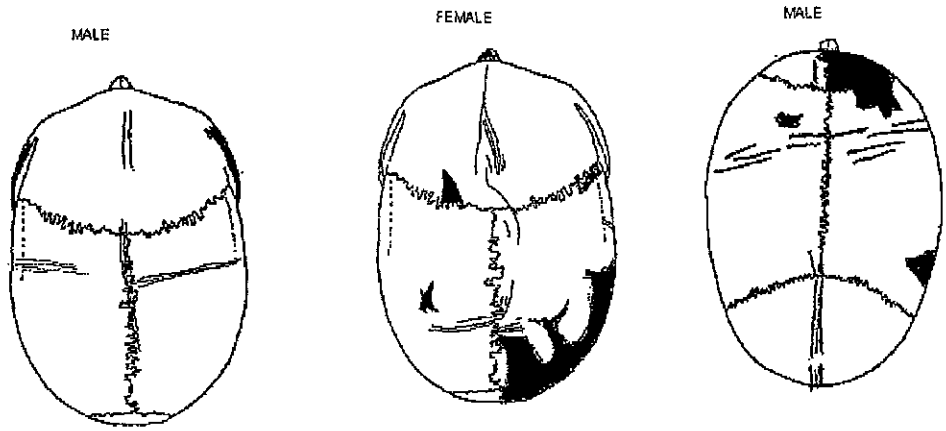

Figure 19. Four quarter cutmarks on male and female cranii from the ossuary.

were scalping.

Powell (1952:51) cites a description of scalping, a practice apparently quite common among the varied "chichimec" tribes of the north (including Zacatecas), in which the victim was held to permit cutting across the forehead, then the head was kept still by stepping on the neck and the scalp removed by quickly yanking "against the

grain" or, from back to front, "The Chichimeca warrior obtained the scalp by placing a foot on the victim's throat and yanking off the skin of the head and face by pulling against the natural direction of growth of the hair. The first thing they do is remove the top of the head, taking off all the skin and leaving the skull clean just like (sic) one takes a friar's tonsure, and this while they still live...". It is reported that men, women and children were indiscriminately scalped and the "trophies" displayed in the villages. This sort of scalping should not leave more than a few cutmarks on the frontal and perhaps in the lambdic region and on the temporal bones.

The La Quemada cut marks and most of those on Chalchihuites skulls (Kossick 1990), occur all over the vault (frontal, temporals, parietals and occipital) and in varying directions. Cutmarks around the temporal bone are often so numerous and irregular that defleshing the skull, would be the most appropriate term to account for their occurrence. The quartered cutmarks may indicate a ceremonially oriented activity.

Cranial Deformation.

Only 116 of the 184 skulls were complete enough to record the presence of deformation. Of these, 65/116 or 56% of the sample showed tabular erect cranial deformation. This would be sufficient to include members of most socio-economic classes. Unfortunately, there is no indication from the ossuary context whether the

individuals deposited there do represent a cross section from all socioeconomic levels of the site, or precisely what social distinctions were made at the site of La Quemada.

Similar percentages of deformed skulls were reported by Kossick (1990) for Alta Vista (46/83 = 55.4%) and Cerro El Huistle (12/20 = 60%). Whether or not this represents similar social processes is not yet known. There is very little osteological material reported from the smaller sites in the Malpaso valley (Trombold 1989:65-66), primarily postcranial fragments with no signs of intentional cranial deformation for the three burials reported.

The suggestion (Hers 1989; Pijoan and Mansilla 1990; Braniff 1993) that many traits, including cranial deformation first appeared in the north then were passed on to Tula requires examination of the evidence for cranial deformation in Mesoamerica prior to its Late Classic occurrence at La Quemada and Alta Vista. Preclassic examples of cranial deformation in both males and females occur at several sites including Late Preclassic Chupícuaro (Chadwick 1971:671), Middle Preclassic El Opeño, Michoacán (Oliveros 1974:186-187), the Valley of Mexico from the Middle Preclassic to the Postclassic (Romero 1970:66; Lagunas R. 1986), Late Preclassic Monte Negro, Tilantongo, Oaxaca (Romero 1970) and Archaic Valsequillo and Tehuacan, Puebla, (Lagunas R. 1986). These antecedents indicate that cranial deformation was a fairly

widespread social practice before the Classic period in central Mexico and it cannot be concluded that the practice "migrated" from north to south.

The frequency of the occurrence of cranial deformation reported here, suggests that "high status" or "elite" is not the correct term; many people were subjecting their children to the practice and perhaps over half of the individuals at both La Quemada and Alta Vista show it. There is no indication of regional styles for the Northwest but the deformation types have not been reported in great detail. The fact that La Quemada can be described as a primate centre (Trombold 1990; Nelson et al. 1992) sets it apart from the other 200+ sites in the valley but, to consider its entire population as a single class of "elite" might be an overgeneralization. If by "elite" we mean they were not primary producers, this may be true of some of them, but certainly not all. We have little data on just what occupational activities constituted the daily routine of the inhabitants of La Quemada. It also remains to be determined what elite or other interactions occurred between neighbouring centres in Zacatecas, let alone on a macroregional scale. The practice of cranial deformation in itself is not clear evidence of any specific type of intersocietal exchange. Inferences drawn from data pertaining to social rank related to this practice from this sample in Northwest Mesoamerica do not indicate much of a relation to differential social status. The association of cranial deformation with high

status individuals who may have participated in organizing long distance exchanges is not evident.

Cranial Perforation.

Braniff (1993:80), Hers (1989), and Pijoan and Mansilla (1990) have claimed that a series of traits including evidence for skulls racks in the Northwest, "*...confirm archaeologically the historical documents identifying a northern "chichimec" origin for Tula"* (Braniff 1993:80). They argue that the practice occurred first in the north and then in central Mexico. However, a few examples of cranial perforation from Late Preclassic Oaxaca (Huamelulpan and the Cuicatlan Cañada) do exist (Gaxiola 1984; Spencer 1982). The evidence for skulls racks at Tula is difficult to evaluate. Diehl (1983:66) mentions a skull rack from the Proyecto Tula, but the pile of skulls was not described (Matos Moctezuma 1974). Neither do the stone carvings of skulls near the ballcourts at Tula and Chichen Itza show any definite signs of perforation (Jones 1995:6, 338, 339).

It is assumed that the 12 apically perforated skulls (7 male, 5 female) found at La Quemada, were suspended by a cord that held the skull by a knot or tied to a stick inside the skull. Ellen Kelley (1978) reported finding perforated skulls and the remains of fibres adhering to the necks of two femora and inside the perforation of one of the many skulls within the Temple of the Hearths at Alta Vista, Chalchihuites. Kossick (1990) also recorded perforations 4-6mm in diameter, on several skulls he cleaned from one of the

Alta Vista bone piles (exact numbers are not available but I observed considerably more perforated skulls in the Alta Vista collection than at La Quemada). Nelson et al. (1992; 1997:91,96) suggest that the bones (about 100 fragments representing 11-14 individuals), found in a structure along the western banquette of Terrace 18 at La Quemada, represent the remains of revered ancestors suspended in bundles or just resting on the floor. The bones may have been suspended by fibre or placed on shelves but the lack of any evident perforation of the three cranii or fibres on the bones leaves this interpretation inconclusive (Nelson et al. 1992:302-305).

It should be noted that the perforation technique at La Quemada is not like that found at Alta Vista, which is a drilled hole with smooth inner sides less than 7 mm in diameter, whereas at La Quemada the apical perforations were made by poking-out a circular hole. This resulted in bevelling from the outer to the inner table, often with small chips of bone broken off the inner surface along the edges of the hole. The conical perforation leaves an inner orifice approximately 10 mm in diameter (Figure 20). The perforated skulls from El Huistle (Kossick 1990) also present a rough, poked-out, bevelled hole. So far, these three sites are the only ones with sufficient samples to have noted these characteristics.

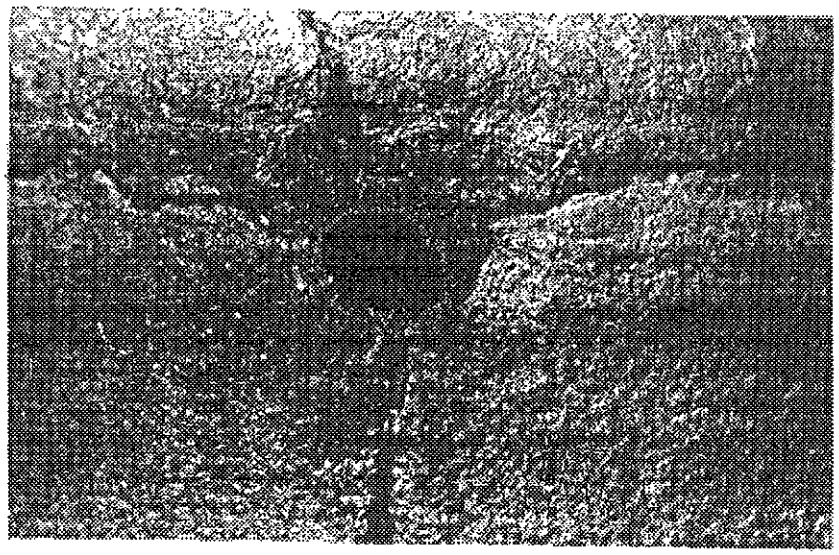

Figure 20. Example of an apical perforation in bregma.

In order to introduce a knotted cord into the skull for vertical suspension, it would be necessary to pass it through the foramen magnum or enlarge the available space. Although breakage of the base of the skulls was quite common (93/98 = 94.8%) only 12 skulls were perforated (12/98; 12.2%). Thus, it seems unlikely that the breakage was intended only for suspension purposes. The destruction of the basiocciput appears to have been deliberate. Only three isolated occipital condyles, not belonging to the same individual, were present in the ossuary. The pattern of breakage was remarkably consistent with the sutural lines and thinnest parts of the skull base. While these are the areas where natural breakage would be expected to occur, other thin skull bones were recovered in abundance, such as sphenoids, ethmoids, squamous portions of temporals

and parietals, nasal bones and even ear ossicles. The absence of all but three basiocciputs/occipital condyles is significant. There is also little difference in the degree of preservation of the materials from La Quemada compared to Alta Vista and El Huistle, but these latter two sites present a much greater proportion of complete skulls with their basal portions intact.

The possible insertion of a stake through the broken base of the skull may be indicated by a 60 cm tall basalt figure of a headless woman carrying a child on her back, which bears a 3.5cm perforation in the middle of the neck where a short stake might have been inserted to hold a skull or artificial skull in place. This figure was apparently recovered from a temple-mound on the upper level of the site. There are also two opposing small holes on the neck as if to tie on an object. Kossick (1990) also considered the possibility that some skulls from El Huistle had been placed on poles. However, the basal portion of these skulls was intact and in neither the La Quemada nor El Huistle samples is there any indication of internal wear on the intact parietals from the presence of a stake or pole.

Another interpretation of this cultural treatment (O'Neill 1991) is that the brain was intentionally removed, perhaps in pieces, through the broken base of the skull. Although it is not possible at this time to say for what purpose, possible reasons are for ritual consumption, or for use in tanning hides and/or as part of the cleaning process.

Sescosse (1990:13; from Arlegui ca.1737) refers to the violent death of many Spanish priests at the hands of the various nomadic tribes of Nueva Galicia in which Arlegui includes mention of the custom of eating the brain, "Y todos, cual más cual menos, eran viciosamente aficionados a los 'sesos de fraile'".(And all of them, without exception, were terribly fond of priests' brains)(Arlegui in Sescosse, 1990) (translated by the author). However, it is not known on what if any occasions, nor by whom, the brain would have been consumed by the La Quemada population.

Cranial perforation suggesting the use of skull racks, has been described by Nelson (1997:96 cum Pijoan and Mansilla 1990:467) as "...a pervasive feature of La Quemada in general and Terrace 18 in particular...". The data do not support this conclusion. Rather the contrary appears to be true; the use of skull and long bone racks at La Quemada was quite limited and there is no conclusive evidence for its presence on Terrace 18.

The prevalence of perforations in the crania at Alta Vista seems fairly unprecedented. The frequency of the practice at Alta Vista and La Quemada distinguishes this aspect of the northwestern mortuary programs from contemporary sites and is clearly not a product of central Mesoamerican influences. The idea that this practice may have diffused from the north to Tula (Pijoan and Mansilla 1990; Hers 1989; Braniff 1993:80) has yet to be proven.

Burning.

Of the 13 skulls with visible charring, 5 presented the burned area on only one side(2 right, 2 left, 1 frontal). The other 8 were not complete enough to determine if the charring extended further. Charring only on one side suggests the intentional burning of the vault. This isolated occurrence of charring is not like the accidental burning described by Brothwell (1981). The skulls were completely charred on one side, not just slightly burnt in a restricted area. They also exhibited cutmarks but it cannot be concluded definitively that these individuals had been cannibalized. The burning occurred after the skulls had been cut. It is clear, due to the absence of calcination, that these skulls were not exposed to prolonged or intense heat and, since there was no sign of burning in the ossuary area, it is also evident that the charring occurred elsewhere. It would be interesting to know if the brain was still in the skull when the burning occurred. Intentional exposure to fire and deliberate removal of the brain might suggest cannibalism.

Trepanation.

One trephined skull was discovered. The small (approximately 5mm) slightly healed perforation lay on the right parietal toward the posterior portion. This skull was also intentionally deformed (Figure 21). The inner diploë of the skull was closed but just barely. The individual had not survived long after the treatment.

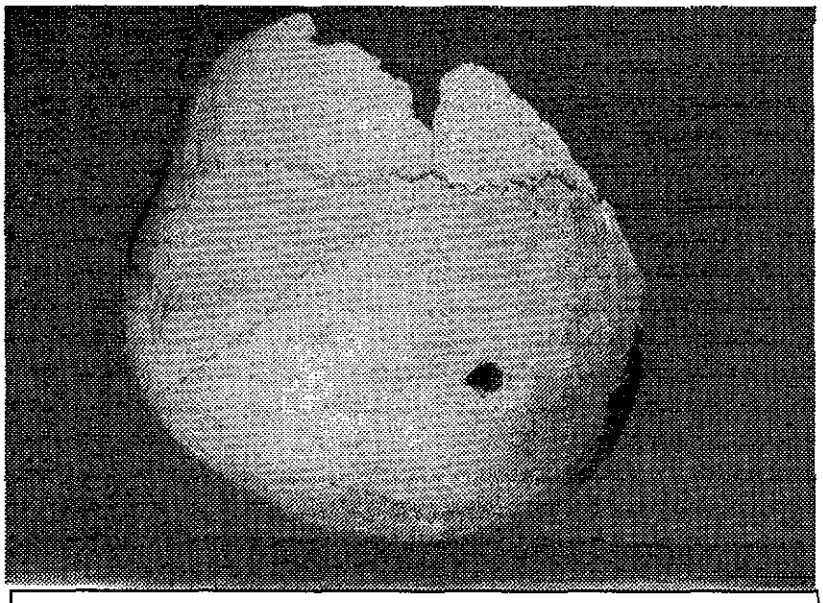

Figure 21. Trephined cranium.

Trauma.

Only three skulls exhibited unhealed percussion fractures measuring about 2cm in diameter, all on the frontal bone, perhaps the cause of death, possibly postmortem damage. If they do represent violent trauma, they are the only individuals (3/184 = 1.6%) that show possible evidence for violence. It should be stressed that the postcranial material presents very little in the way of traumatic anomaly, none of which can be assumed to have resulted from warfare or other intentional violence without supporting evidence.

HUMAN SACRIFICE AND INTERACTION.

Weigand (1978) suggested that the groups from the western Sierra Madre destroyed La Quemada after some period of violent conflicts. Based on a contemporary Huichol legend about the destruction of a hilltop town, Weigand (1975; 1978) identifies La Quemada as the town that may have been burned as the result of warfare between Huichol ancestors of the western Sierra and the inhabitants of La Quemada. This suggestion has contributed to the notion that human sacrifice and mass burials were more common at La Quemada than the evidence actually supports. It also suggests that the sacrificial victims may have been people from the western Sierra but this is not definitively stated. Hers (1989) proposed that the Mesoamerican inhabitants of the larger Northwest region were in constant conflict with local Chichimec groups and that human sacrifice was widely practiced.

Nelson et al. (1992:298-311) compared the distribution of the remains on Terrace 18 to ethnohistoric accounts for the practice of human sacrifice described for the Acaxee (Beals 1932) and from Santarén's description (in Nelson et al. 1992:309) of a captured enemy being beaten to death, quartered and eaten. Since there are no cutmarks or perforations on the three cranii, and no evidence of cannibalism (signs of traumatic death, crushed bone, burning...)(Nelson et al. 1992:304-305), they reject the possibility

that the elements belonged to war captives or sacrificial victims; rather, they describe them as the remains of "revered ancestors" or respected community members.

Abbott Kelley (1978:117-118) also mentions the ethnohistorical accounts of human sacrifice among various groups including the Acaxee, Ximime, Yaqui, Tarahumare, Huaynamota, Tepahue, Sinaloa and Cora of the western Sierra (after Beals 1932) when referring to the skull and long bone piles at Alta Vista. These references mention boiling human bodies in large pots, placing skulls on poles in public plazas, suspension of bones for display or placing them in wall niches. There is ample evidence for the use of skull racks (cranial perforations, fibres adhering to bones) and for dismemberment and decapitation at Alta Vista, suggesting human sacrifice. As Nelson et al (1992:304-305) indicate, there is no evidence for this on Terrace 18.

There are only 12 examples of cranial perforation at La Quemada that might suggest the use of skull racks. There is no indication that long bones were suspended as at Alta Vista. This does not constitute a "mortuary complex" but a minor custom in a complex mortuary program. Neither does there appear to be a chronological discrepancy between La Quemada and Alta Vista. Their own chronology confirms Trombold's (1985; 1990) data showing La Quemada and Alta Vista to be contemporaneous.

With respect to the complexity of ethnohistorical funerary rites, Beals also mentions headtaking for the Acaxee, (IBID:191, Table 80), dancing with heads among

the Acaxee (IBID:192:Table 83), and for the Xixime, "ollas full of human flesh" (IBID:194, Table 84). The Acaxee apparently left offerings of food and bows and arrows with their dead (IBID:207, Table 112). However, the descriptions compiled from ethnohistorical literature lack sufficient detail to decipher "stages" in the disposal of the dead as suggested by Nelson et al. (1992). The complexity of the Sierran mortuary practices appears to have few or no correlates with the patterns seen at La Quemada. Since the ethnohistorical accounts present cases for sacrificial victims, their relevance to the material from La Quemada, which is not primarily indicative of human sacrifice, is probably minimal. Thus, there appears to be no reason for relating mortuary practices at La Quemada with those cited in the ethnohistorical literature.

Beals (1932:191, Table 81) reports that among the mortuary practices of the Acaxee, the bones of enemies were sometimes deposited in strong houses. Rather than a charnel house, Nelson et al. may have a "strong house". This is a large room with quasi-public access where community leaders and officials gather to discuss and decide on the affairs of their community, as employed by the modern day Cora and Huichol. In support of the Nelson et al's (1992:305) interpretation of the existence of charnel houses at La Quemada, much of the postcranial bone found in the lower levels as well as throughout the ossuary had been gnawed by carnivores without any sign of disturbance of the deposit. These bones must have been located originally in an area accessible to

carnivores but sufficiently restricted so that the elements were recovered before being carried off. This may indicate a storage space (house for the dead) where the remains were kept for a period of time before reburial or relocation.

The human bone piles known to exist in the Hall of Columns at La Quemada have been seen as evidence of a massacre or "cannibalistic feasts" (Kelley 1971; Weigand, 1982; Hers 1989; Nelson 1989; Trombold 1990). I have examined these remains in the field (and see Faulhaber, 1960) and have analysed the remains of some 300 individuals from two other ossuaries at La Quemada (the second level ossuary reported here and a further 54 individuals from a first level patio) (O'Neill 1993; 1995) and found very little evidence of traumatic lesions on the skeletal elements. Since the analysis of these materials still needs to be completed, earlier statements regarding cannibalism or other rituals are questionable.

It is also important to note that none of these ossuaries represents single mortuary events. That is, the bones were brought in from other contexts in varying states of decay, with very few elements articulated. Other elements had been broken prior to transferring them as the broken parts were not present in the ossuary and there were signs of varying primary mortuary treatments. In themselves they do not represent mass sacrifices or collections of war or plague victims. Nelson et al.(1992:298) also point out that a number

of burial practices are represented at La Quemada, none of which indicate a single, mass sacrificial event.

In general, there is no evidence that the deposits from the Hall of Columns, lower patio and second level ossuaries were the result of chronic violence that eventually caused the destruction of the site (Weigand 1982; Pijoan and Mansilla 1990; Hers 1989). It is evident, however, that the abandonment of the site, or at least the closure of the eastern flank of the site, was planned. There was sufficient time to relocate more than 300 individuals from varying contexts and at least another 100+ individuals were carried into the Hall of Columns and 50+ into the sunken patio (O'Neill 1995). It might be concluded from this that the site was not sealed off for defensive purposes; rather it was sealed in order to protect the dead from desecration. The possibility that the original inhabitants of the site were responsible for setting fire to the buildings as part of its ceremonial closing should be considered. The evidence here suggests that the ossuaries at La Quemada were formed as single acts of closure. They are not bone piles accumulating *in situ* over time from independent events. They are therefore, another stage in the mortuary program: the very final act of deposition.

SOCIOECONOMIC STATUS AND INTERACTION.

High socioeconomic status may be seen as a prerequisite to engaging in long distance exchanges. Certainly, the concentration of trade wares or high-value goods with

some burials would suggest individuals capable of managing surplus wealth for exchange as well as indicating the existence of social structures for interacting with local and extralocal interests.

The burials or deposits reported to date from La Quemada and its valley sites have not produced much in the way of grave goods. Indeed, there is nothing yet reported that is in any way remarkable in this respect. The black bear radii and ulnae found with human bone on top of the temple suggest that other symbols were more important.

It is assumed that the individuals deposited in the large ossuary around the circular pit were the inhabitants of the site and perhaps of that area of La Quemada, although this has not been shown. Since La Quemada is expected to have housed higher status individuals, because of its large size and dominating position on a hill, the inhabitants would include the social leaders and organizers. The equalizing effect of ossuary deposition and the evidence for various, primary burial practices without differentiated associations of wealth, make it difficult to recognize socioeconomic groups. The grave goods with these remains were quite ordinary; indeed there was nothing outstanding about the grave goods at all. If these individuals were the inhabitants of the "acropolis" residential area, they do not appear to have commanded much wealth. Or perhaps burial treatments did not include displays of wealth, at least at this point in what appears to have been a multi-stage sequence.

No large deposits or specific contexts or concentrations of "luxury" goods have yet been found at La Quemada or from the valley sites (Trombold 1996:69). It is still too early in the archaeological work in this region to advance suggestions. Presently, we cannot determine whether the inhabitants of La Quemada were actually the high status administrators for the region. We are still in the discovery phase of research and certainly, we need to recover human remains in context and analyse them in detail before we develop general statements.

CONCLUSIONS.

The mortuary program at La Quemada was varied and patterned. The complexity of the mortuary program does not appear to follow the norms of any other local or extralocal program. Many of the cultural treatments are shared with other sites in the region and outside the region, including very distant places such as the Lowland Maya and Andean Peru, but differ markedly in degree, timing, artefact associations and other contextual elements. Evidence for cranial deformation and cranial perforation for hanging on a skull rack does exist well before the Zacatecan examples, but no direct or indirect cultural relationship can be drawn from these data. As expressed elsewhere concerning Mesoamerican expressions in Zacatecas (O'Neill 1993), the force of tradition in Mesoamerica follows a labyrinthine course and caution should be exercised before suggesting generalizations or specific contacts on the basis of singular, similar traits or

cultural phenomena that appear in local contexts (such as mortuary practices, adornments, astronomical expressions or display of prestige objects). No derivation either from these areas or from La Quemada can be reasonably argued given this data.

Nelson et al. (1992:305) identify six types of burial practices for sites in Zacatecas and Durango ("charnel structures, skull racks, bone piles, articulated but incomplete skeletons, partially disarticulated incomplete skeletons, and ordinary articulated burials"). My research indicates that burials in ollas are another type. In addition, we must distinguish organized ossuaries from "bone piles" as different mortuary treatments. The possibility that some skulls were placed on poles should be noted but the evidence for the placement of skulls on statues or as trophies is yet inconclusive.

It is, unfortunately, too early to distinguish the social status of the individuals involved but demographic information is forthcoming. There is no indication that they represent pochteca movements or itinerant merchants from nuclear Mesoamerica, as suggested by Brooks and Brooks (1980:1-12) and Pailes (1980). There is as yet, no indication of status differentiation from mortuary program data from La Quemada or the valley sites. Greater attention to excavating residential structures and employing contextual methods will vastly improve the quality of data regarding socioeconomic differentiation. As such, the requisite structures of a World economy or other macroregional interaction strategy cannot be identified. These finds also counter the idea

that the site was plagued by chronic violence (Weigand 1982; Hers 1989; Pijoan and Mansilla 1990). The evidence for traumatic lesions and violent practices at La Quemada or in the Malpaso valley is negligible. Ethnohistorical accounts of groups in the western Sierra Madre describing human sacrifice and other mortuary practices do not appear to be analogous to the funerary program at La Quemada. There may be some structural relationship between the design of the ceremonial space where the bones were finally deposited and the treatment of the skulls (four-quartered cutmarks) but it is not a regular occurrence and its importance is unclear. Extant indigenous groups utilize a similar circular quartered space for their ceremonial activities, which may represent the retention of a broad tradition. It does not, however, mean that their ancestors were in contact with each other in any systematic manner.

The osteological evidence, at this time (much analysis needs to be done on health, biological distance and biomechanical stress) does not support the macroregional interaction hypothesis that La Quemada developed as a result of influences from central Mexico or that practices at La Quemada were passed on to later Postclassic cultures in central Mexico.

The large ossuary found in the circular ceremonial area on the second monumental level of the site of La Quemada is a secondary deposit representing an ordered reburial of individuals brought in from at least three different contexts (skull

rack/s, burial ollas, and structures for the dead). The deposit was organized by body part and roughly in the following order: extremities and thoracic cavity on the floor (first event), skulls separate from their mandibles (second) and long bones scattered on top(last). The eastern door was sealed by a rough stone wall, an offering bowl was placed in front of the door and "guardian" skulls were left protecting the passageways. This deposit was not formed as the result of warfare nor under the pressure of attack. It was planned and ceremoniously executed. At the same time, the large stairway leading to the votive pyramid on the level below, was sealed off. At least this area of the site which probably also included the hall of columns, was abandoned upon completion of the burial activity. The possibility that the original inhabitants of the site were responsible for setting fire to the buildings as part of its ceremonial closing should be considered.

CHAPTER 6.

CONCLUSIONS.

The pottery analysis of the 1987-89 La Quemada project presented here does not support the conclusions of the culture historical reconstruction (Weigand 1978; 1982; 1991; Harbottle and Weigand 1992; Betts 1989; 1990; Hers 1989) It also points to the inadequacy of the comparative analysis of intuitively classified materials for determining not only the nature of intersocietal interaction, but also for correctly identifying possible interacting partners. The pottery data indicate household level production for local consumption. Wares from west Mexico or the Alta Vista region may not represent trade per se but could represent noncommercial exchanges. No specific mechanism of diffusion is implied by the similarities between the various styles at La Quemada and wares at other Mesoamerican sites. The "soft diffusion" hypothesis (Kelley 1974) is, in part, plausible but does not involve interaction with central Mesoamerica.

Based on an analysis of the mortuary program and a comparison of the cultural treatment of 184 skulls at La Quemada, I examined the hypothesis that social groups on the frontier interacted with central Mesoamerica . The practice of cranial deformation and evidence for skulls racks at La Quemada do not indicate derivation from or migration to any central Mexican polity. They do represent an

interesting example of the complexity of interaction since it is likely that they were not independently invented. However, no particular mechanism of interaction or specific interacting partner is evident.

Hypotheses regarding mass sacrifice, chronic warfare, cannibalism and overt ceremonialism and mortuary display have not been supported by the present analyses. Neither can the mortuary practices at La Quemada be directly linked to ethnohistorical accounts of human sacrifice and warfare from the western Sierra Madre. Violent interaction and a tradition of violence between La Quemada and its neighbours, with concomitant oppressive social structures, do not characterize the site.

I was also interested in how archaeological data from La Quemada and Alta Vista have been linked to 16th century Nahua legends and myths. Use of the direct historical approach is lamentably common in the archaeological literature on northwest Mesoamerica (Armillas 1964; Kelley 1974; 1979; Weigand 1978; Betts 1989; Hers 1989; Braniff 1993). Nahua myths describing the migration of the Tolteca-Chichimeca from the north to Tula at the onset of the Mesoamerican Postclassic are not supported by archaeological data from La Quemada. The fact that this idea has come to characterize the archaeological literature of the northwest frontier and other regions, appears to be a modern-day bias rather than having been derived from exhuastive research results or analyses.

A relationship with socioeconomic class cannot presently be determined

given the mixed contexts. There are no artefacts (trade wares, external design styles, architectural or burial forms) from the different mortuary contexts to suggest differential wealth accumulation. There is notably little occupational/divisions of labour data for the inhabitants of La Quemada or for the valley. While settlement pattern data from the Malpaso valley clearly identify La Quemada as a primate centre, there is no empirical justification for its classification as a "fortress" or military outpost or for postulating a feudal-style, political-economic structure for the valley (Armillas 1964; Weigand 1978). It is also evident that the site was much more than just a ceremonial centre (Nelson 1997; Nelson et al. 1992).

I examined the published literature relating the mining and distribution of turquoise and other semi-precious stones to spheres of macroregional interaction, specifically, the role of La Quemada in the postulated procurement interests of Tula, extending into the American Southwest. The reporting of relative frequencies, distributions and social contexts was found to be somewhat misleading. The "demand" for turquoise by mesoamerican polities south and east of Zacatecas during the apogee periods for La Quemada and Alta Vista is negligible. There appears to be no validity to the application of a world systems model to explain interaction between Mesoamerica and the American Southwest. Specifically, no dominant actor is indicated and there is little or no evidence for centralized control over production and distribution from either side of the Mexican border.

La Quemada must presently be excluded from any models describing

interaction with the American Southwest. The very scarce examples of possible New Mexican (Cerrillos) turquoise found at La Quemada in all likelihood arrived via Alta Vista. However, turquoise finds at La Quemada are not associated with high status or any other clear socioeconomic group since most contexts are mixed. It cannot be concluded that turquoise represents an elite exchange between La Quemada and Alta Vista.

The difficulties with determining social organization and its relation to various scales of interaction at La Quemada stem from the practical limitations of the research. Specifically, to date, no storage facilites have been discovered, no workshops have been discovered, there is no analysis that describes the administrative infrastructure that would have been responsible for directing economic exchange and political diplomacy and there is insufficient information on the intensity and diversity of crafts produced, marketing, agricultural output, carrying capacity of the region and boundary maintenance strategies. In the absence of the structural units that are more directly related to the type of production, its intensity and management, it becomes paramount to analyse the associations among artefacts in social context. But, since most of the contexts are mixed, we cannot control for the desired variables.

There is not yet sufficient data to determine what were the mechanisms of exchange between La Quemada and its neighbours. There are no signs of contact with Teotihuacan, Tula, the Tarascans or with the Southwest. The clearest and most

abundant relations appear to occur between La Quemada and Alta Vista, Chalchihuites and northern West Mexico. Relations with neighbouring "Chichimec" groups are totally indiscernible given the present evidence, despite the probability of their occurrence. Given the current state of investigations at La Quemada, we have no clear understanding of how this frontier centre was integrated into either regional or macroregional networks of interaction.

Future Research.

Validation of the interpretations derived from the large bodies of data compiled over the years of research at La Quemada appear to be limited by methodological oversights rather than theoretical inconsistencies. Many of the doubts expressed here could be resolved by simple quantification of data. Particular attention to details of archaeological context would help to clarify relations between objects and to discern patterns in their deposition within and between sites. The pottery and lithic assemblages need to be further analysed with reference to their archaeological contexts to address the questions of internal organization of the site's hierarchy and variables related to production and distribution. Demographic data from the human bone needs to be analysed. Specifically, a complete demographic profile Questions concerning socioeconomic status could be addressed through nutritional stress, occupational stress and biodistance analyses. In general, more data is needed from the residential components of the site (Nelson et al. 1992) and from the small, hinterland sites (Trombold 1985; 1991a).

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APPENDIX 1: RADIOCARBON DATES FROM THE ARMILLAS SERIES. RECALIBRATED BY ISOTRACE, TORONTO, 1990.

LA QUEMADA	CONTEXT	CAL AGE A.D.	95.5% C.I.
M-430 (M-6575)	Construction timber, probably a roof beam from unexcavated fill on north side of a room in the east side of the acropolis[1].	1124±157	967-1281
M-431	John Griffin is picking up charcoal from a fireplace. Charcoal selected from a concentration of charred wood against a smoke-stained wall in a room from the Acropolis excavation[1]. This is our M-431 which was published as 780+200 but with one sigma is +100[2].	1174±151	1023-1325
M-432	Construction timber from upper western section of occupied area.[1] This was taken high up on the acropolis area and looking west. The timber section I took was sticking up out of the ground in this vicinity. The samples were collected in 1955[2].	828±187	642-1015
LQW-1 (M-1651)	Charcoal found in the rubble filling room 3, above adobe floor and 1.56m below datum; probably a fragment of charred beam[2].	810±211	599-1021
LQW-22 (M-1652)	Wood from fallen beam above floor of room 4; one of several partially burned parallel beams that had supported an adobe roof[2].	458±221	237-679
LQW-35 (M-1653)	Charcoal from north post, one of two wooden posts that supported the roof of room 4; the stumps were found in the debris of the roof.	810±211	599-1021
LQW-38 (M-1654)	Wood from south post.	943±272	671-1215
LQW-13\28 (M-1655/1657	Charcoal lying in the rubble directly on hard adobe assumed to be upper surface of the roof, room 4 (excavation blocks 1-2). The stratigraphical position could be misleading for, if the wood belonged to the structural elements, the assay may date the construction of the house rather than the destruction.	836±201	636-1037

[1]Crane and Griffin, 1958.

[2]Letter to Armillas, 1963, from Griffin.

LQW-25 (M-1656)	Same stratigraphical position as LQW-13 but different area (excavation blocks 3,4,5).	1211±198	1014-1409
LQW-24 (M-1658)	Charcoal from a hearth in the rubble filling room 4; 5cms above the upper surface of the fallen roof, 50 cms below present ground. Several stones placed in a circle (approximate diameter: 50 cms) around the fire, animal bones and a broken pot in the same general area. It definitely post-dates the destruction of the house, but does not necessarily date this event; the fire may have been lighted long after the building was ruined.	1011±247	765-1258
PRESA AMBOSCO	**CONTEXT**	**CAL AGE A.D.**	**95.5% C.I.**
M-1659	Charred beans found inside Blast #2, house #2.	919±252	665-1173
M1660	Charred corn seeds found inside blast #1, house #2. This is one of twin sunken blasts adjacent to the house. Bottoms and walls of these pits were plastered with hard adobe.	1035±239	796-1274

APPENDIX 2. COMPARISON OF RADIOCARBON DATES FROM THE CORE (CUARTEL) AND MARGINAL AREAS OF LA QUEMADA (YEARS A.D.).

TERRACE 18*	MIDDEN 11*	(CORE)**
230±100	290±120	458±221
310±60	400±60	810±211
390±70	540±80	810±211
530±60	610±60	828±187
500±80	610±60	836±201
540±80	610±80	943±272
600±50	630±60	1011±247
630±60	630±90	1124±157
630±60	640±80	1174±151
690±50	670±100	1211±198
690±50	700±60	
690±90	800±80	
660±60		
670±120		
650±50		
740±50		
720±60		
820±60		
840±70		

*From Nelson 1997: Table 2.

**From Armillas 1963-64.

APPENDIX 3: FREQUENCY OF THE DECORATIVE TYPES FROM LA QUEMADA.

The following results are for the field season 1987-1989 and include the entire sample.

TIPO	TOTAL	%TOTAL	M.N.V.*	%M.N.V.
PLAIN	21286	45.42	1034	33.38
BRUSHED	5970	12.75	---	----
BRUSH + RED\BUFF	1	00.00	1	00.03
BRUSH + RED	1	00.00	1	00.03
NAIL IMPRESS	53	0.11	14	0.45
MUD LAYER	1256	2.68	---	----
BRUSHED + BLACK	4	0.01	4	0.13
RED SLIP	8535	18.22	873	28.18
BLACK SLIP	6254	13.34	260	8.37
WHITE SLIP	30	0.06	5	0.16
YELLOW SLIP	3	0.01	1	0.03
BROWN SLIP	1	00.00	1	0.03
RED\BUFF	2256	4.81	128	4.10
RED\CREAM	1	00.00	1	0.03
RED\BLACK	135	0.28	13	0.42
RED\WHITE	3	0.01	3	0.09
ORANG\BUFF	2	00.00	2	0.06
BLACK\PURP	114	0.24	15	0.48
BLACK\BUFF	33	0.07	5	0.16
BLACK\WHIT	1	00.00	1	0.03
BROWN\RED	55	0.11	4	0.13

BROWN\BUFF	31	0.06	2	0.06
WHITE\RED	12	0.02	7	0.22
WHITE\ORAN	2	00.00	2	0.06
THIN RED SLIP	14	0.03	3	0.09
POLYCHROME PAINT	16	0.04	7	0.22
NEGATIVE A BICHROME	149	0.32	31	1.00
NEGATIVE POLYCHROME	35	0.07	14	0.45
ENGRAVED OR INCISED	538	1.14	189	6.06
PSEUDO-CLOISONNE	84	0.18	34	1.09
TOTAL	**46889**	**99.98**	**3104**	**100.04**

*M.N.V. = Minimum Number of Vessels (based on rim profiles and distinct decoration)