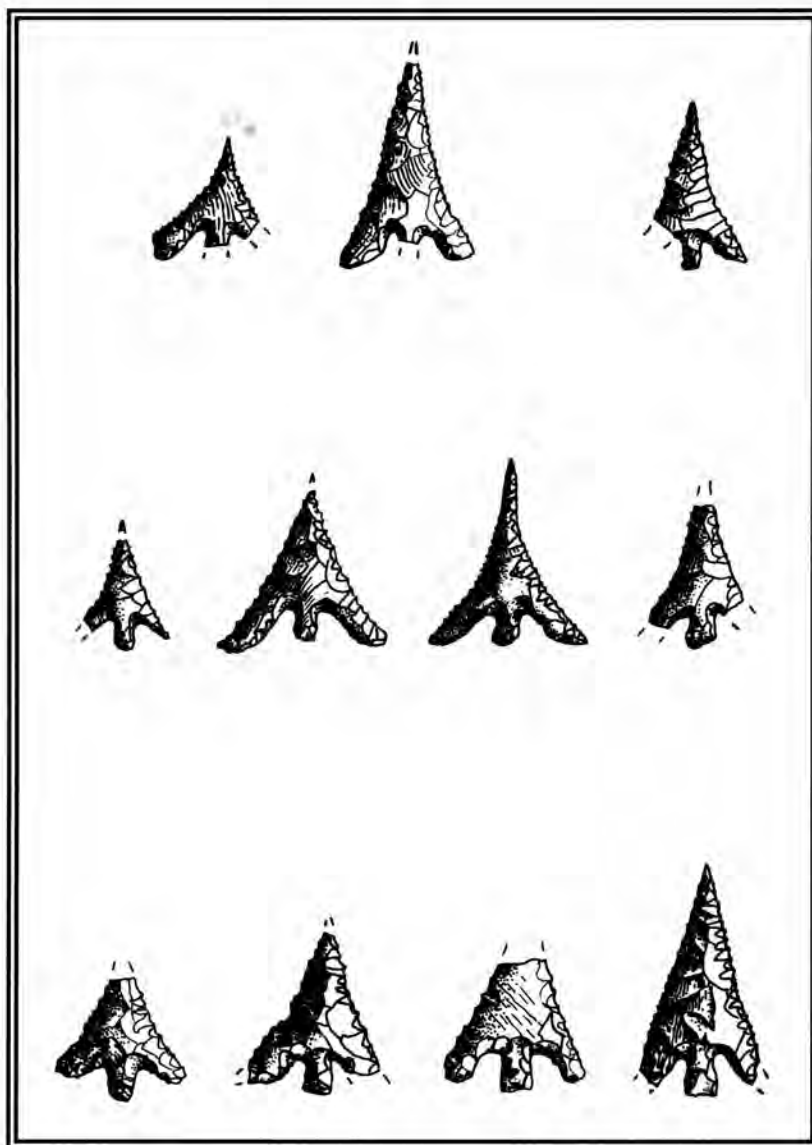


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Steve A. Tomka and Frank E. Griffin
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NOTES ON SOUTH TEXAS ARCHAEOLOGY: 2000-2001

“Observations on Recent Field Work and Analysis along the Middle Rio Grande”

Thomas R. Hester

Southern Texas is an area that has seen little fieldwork when compared to the level of research that has gone on in central Texas, the lower Pecos, and more recently, on the Texas coast. Thus, the journal, *La Tierra*, continues to be an important outlet for studies related to this region. Most readers of the journal, and indeed most professional archaeologists who have an interest in the area do not see, however, much of the “gray literature.” This is a term applied to reports of limited circulation, often spiral bound with plastic covers, which deal with contract surveys, testing and excavations. There is an immense body of gray literature in North America. I do not know if anyone could even calculate the number of limited-distribution reports that have appeared since CRM (cultural resource management) began to dominate the archaeological scene. In Texas, most of the projects that involve Federal funds, permits, etc., or which affect State lands or need Antiquities Permits, are reviewed by the Texas Historical Commission (THC). Among their requirements is that the firm (whether private or university-based) provide a certain number of copies to the THC, which then circulates copies to major research libraries and the Texas State Library. The Texas Archeological Research Laboratory (TARL) sometimes gets 2-3 boxes a month of “gray literature,” ranging from letter reports in which no sites were found to multi-volume studies containing vast amounts of data. With most university-based CRM units, an effort is made to publish more copies than required and to circulate these as widely as possible. The same is true for some private consulting firms (Prewitt and Associates of Austin being a good example in this regard) and for most state agencies concerned with CRM (such as the Texas Department of Transportation [TXDOT] and Texas Parks and Wildlife). But the avocational reader of *La Tierra* would be stunned by the sheer number of reports on Texas archaeology that are in the “gray literature” and which are never seen or heard of unless one does intensive research in a particular county or area. I have monitored the “gray literature” situation for more than 20 years; indeed, in 1981 I was involved in a debate with William A. Longacre in the *Journal*

of Field Archaeology (Boston University) over the nature of CRM publication in Texas.

For more than 40 years, I have recorded sites, analyzed artifacts, and published papers on the archaeology of southern Texas. I have held field schools in the area, conducted regional surveys, and served as Principal Investigator (through UTSA and UT-Austin) for dozens of CRM projects in the region, the largest being the Choke Canyon Project of the 1970s-80s. In recent years, there has been an acceleration of CRM work in southern Texas by private consulting firms. Most of this has involved surveys, but other work has been more comprehensive, including testing and large-scale excavations. Some of the private consulting firms have issued reports that are excellent (e.g., Quigg et al. 2000, Miller et al. 2000, both in the middle Rio Grande area) and which contain abundant new information that enhances our knowledge of regional prehistory.

In this paper, I want to offer my own personal views on two recent reports involving archaeological work in Dimmit, Webb, and Maverick Counties. These are examples of the “gray literature” since apparently only the required number of copies was printed and very few people have ever seen them. Had I not been Director of TARL, or now former Director of TARL, and had the chance to look at the boxes of “gray literature” that come into TARL, I would never have known of their existence. Yet, they represent archaeology done in specific areas where I have also done fieldwork and with which I am intimately familiar.

Both reports stem from the Joint Task Force Six (JTF-6) Action, which is aimed at aiding the U.S. Border Patrol in combating smuggling and illegal immigration along the Rio Grande corridor. This has involved the use of U.S. Army troops in Humvees, construction of roads and helipads, an airfield, base camps, and the like. Some persons who live in this corridor hold a certain resentment of the “militarization” of the border. Indeed, the *San Antonio Express-News* reported on Sunday, July 1, 2001, that a new owner of one of the ranches involved in the JTF-6 program has forced the Army to leave the ranch, as

the Army had only an oral agreement with the prior owner— no contract or lease! Now, the new owner will use the helipad and airfield as part of a deer-hunting resort [as they say, “your tax dollars at work...”].

The JTF-6 Task Force recognized that cultural resources might be disturbed by landscape modification and the Fort Worth Corps of Engineers (COE) has funded several studies (I do not know how many) within this zone, between Eagle Pass and Laredo. It is not my purpose here to in any way impugn the motives or actions of the JTF, the COE, or its private consultant contractors. Contractors were doubtless selected using COE standards. The archaeologists who worked on these projects do not appear to have ever had any experience with south Texas archaeology, but most archaeologists have been uprooted to conduct work in terrain foreign to them, and thus my comments certainly are not directed at them personally.

The first report is by Owens, et al. (1998), representing fieldwork in Webb, Maverick and Dimmit Counties in about a 3-week period in fall 1997. During this time, impacts were assessed on the construction of 110 miles of “new road” and improvements on 131 miles of “existing road,” planned excavation of borrow pits, equipment storage areas, helipads, an airfield and two base camps for the JTF-6 action. This included work on privately held ranches in the area (including the Galvan, recently broken up; see above) some parts of the Laredo River Road, and state-owned and maintained highways such as Highways 83 and 277, FM2644 and FM3338. Some of these had been surveyed in earlier years by TXDOT archaeologists, unrelated to JTF-6. The crew from Geo-Marine, Inc., in Plano, Texas, found 97 new sites and 349 “nonsite localities” and recommended that 26 sites were of possible eligibility for the National Register of Historic Places (NRHP; although 23 had already been cut through by existing roads).

Much of this report, in its front part, is characteristic of all basic archaeological reports. There are many maps and detailed descriptions of the survey areas (“segments”). The report begins to falter with its discussion of the environment and cultural background, but again this is not uncommon in CRM survey reports where limited time and money is devoted to such. It was interesting to learn (p. 23) that the “*Coahuiltecan* (sic) asked for missions to be established in their territories to protect them from Apache

and Comanche raiders.” This is indeed revealing, since most missions in northeast Mexico and southern Texas (San Antonio) were established well before the Lipan and Comanche even moved into the region! The “cultural background” is based largely on Black (1989), which is a very good overview; however, I do not think Dr. Black listed “burned rock middens” as a trait of the South Texas Archaic (p. 20). These sorts of errors creep into reports and I do not want to be unduly harsh in discussing all of them.

Chapter 3 is devoted to “Methodology.” Although in Hester (1995 and many other places) and in Hall, et al. (1986), archaeologists are repeatedly warned that South Texas sites cannot be evaluated on the basis of a few shovel tests, Owens et al. (1998:29) report that “subsurface cultural deposits on each site were determined by excavating one or more 30-by-30 cm shovel tests...in arbitrary levels.” And, “time constraints” made it possible to excavate only 1 or 2 shovel tests “to formulate a general assessment of the depositional context on the site.” If no cultural material was found in the upper 20 cm of a shovel test, it was abandoned. Sites were flagged, artifacts were sketched or photographed “and no artifacts were collected.” The latter is the result of an unfathomable COE regulation, which I am sure, warms the cockles of relic-hunter hearts in the region. A “site,” as defined in this report (p. 30), has “surface artifact density, contextual integrity, and depth of cultural deposits.” They were classified on the basis of low, moderate or high-density based on visible artifacts. Work appears to have been focused (due to “time constraints,” p. 30) on “high density” sites. Anyone who has worked in south Texas knows that that is not a wise expenditure of time, as the “high density” sites are the eroded/deflated multicomponent occupation sites. They are important, they must be recorded, but usually the whole prehistory of southern Texas is visible on the surface. Some of these sites measured “thousands of meters” across (but, again, the deposits were assessed with one or two shovel tests).

The field methods reflect a total lack of knowledge of South Texas settlement patterns or geomorphology. They also reflect the fact that while pertinent literature was listed and cited, it apparently was not read (cf. Black 1989:60). As noted above, the survey found 97 new sites, which is highly commendable. There were 349 localities documented; these either

were isolated finds or concentrations of less than six artifacts, or they were "very low density lithic scatters..." with less than six artifacts per 25 square meters (Owens et al., 1998:33). A quarter was shovel tested and failed to "exhibit any indication of subsurface context that might have warranted designation as a site." We can be grateful to this survey team for spelling out their criteria; most of us fail to do that. And, it is often difficult to separate one site from another based on widespread lithic debris scatters. But, I would certainly take issue with the argument that a locality is not a "site" because it doesn't have "subsurface cultural deposits." If that line of reasoning were followed, most of the sites documented to date at TARL from the South Texas region would have to be thrown out.

The reporting of artifacts in this volume is of extremely poor quality. Artifacts were not collected, but rather sketched or photographed. The sketches are terrible (e.g., Fig. 32). Since the artifacts were not collected and the illustrations are of little use, a reader would have to take the authors' word on the typology. Figure 35 illustrates a "Gower" (which might as easily be Edgewood), illustrations b and c are reversed, but b (an arrow point) is classified as Palmillas (a dart point, to which this specimen bears absolutely no resemblance), and c is Refugio. It may have an impact flute (the artwork is too bad to be sure), and it is more likely Catan. And, with no archived artifacts, future researchers cannot determine whether or not heat-treating was present, or carry out any wear-pattern or functional studies (e.g., was that an impact flute or not?). "No collection" policies on surveys, in vogue in some quarters in the 1970s, will result in a smaller body of research data for archaeologists in decades to come.

It is particularly bothersome that these sites are "dated" to various periods in the regional culture history based on typology of artifacts that were not collected, with which the surveyors had no familiarity, and for which we are left with useless illustrations. Fig. 37a is an "Early Triangular/Tortugas/Matamoros" point, and while we all acknowledge the difficulty of typing triangular points in South Texas, that "classification" spans about 6000 years. The same problem is present elsewhere, but I will not cover all of them. Figure 85 illustrates a triangular arrow point classified as "Fresno/McGloin" (although McGloin is a highly restricted type on the middle Texas coast; Turner and Hester 1993); it may well be a Historic-

period Guerrero point (those missions were just across the river), but we will never be able to handle it and are left with a simple outline (no flake scars) of a triangular indented base arrow point. Many of the illustrated "points" appear to be preforms abandoned or broken during manufacture, though they are called Pandora and Refugio. Unfortunately, many of the potentially time-sensitive points, listed in Table 5 (p. 237) are not illustrated, including Perdiz, Caracara (not usually present in the area), and Carrizo. The overall list of artifact diagnostics is typical of the region, including Clear Fork tools, Nueces tools, and the usual non-stemmed forms of projectile points. Arrow points are conspicuous by their rarity. This is an area with abundant arrow points, although the concentration of survey work at "high density sites" (i.e., sites that have already been heavily collected by local people) may have biased the recovery of such points.

The survey results (p. 232) are brief. "The entire region represents a potential raw material resource" (What is it? And hasn't that been published on before?). If the non-sites with a lot of lithics had been recorded "the resulting map of the region would produce a negative image of a map of the drainages in the region." That is a perception contrary to my own survey activities in the specific area, although as noted earlier, it is often difficult to separate individual sites where a lot of sheet erosion has occurred. "It would be practically necessary to document the entire county as a single archaeological site." So it must have seemed to a survey crew unfamiliar with the landscape and settlement characteristics of this region; it would have been so helpful if they had made a greater effort to document these observations, and thus improve our perspectives of the nature of the prehistoric utilization of the terrain. Little could be done with the chronology of this region from a survey, and that is usually the case. The lithics are overwhelmingly Archaic, no Paleo-Indian artifacts were found, and only five arrow points recovered. It may be that "time constraints" and unfamiliarity with the regional archaeological record precluded the discovery of more of the latter, as the Late Prehistoric is well represented along that part of the Rio Grande border.

Perhaps I have been too critical here, and I would hasten to add that this report does provide new site data, many maps, plans of sites, etc., that will benefit future researchers. It is a well-produced and nicely

bound volume. The poorly designed survey methods, the imposition of the ill-advised no-collection policy of the COE (coupled with the absence of suitable illustrations), and the generalized and inaccurate observations of the archaeological landscape detract from its utility.

The second report from the "gray literature" appeared in April 2001, again done for the Fort Worth COE and JTF-6. The private consulting firm was Wendy Lopez and Associates, Inc. of Dallas and the "Final Report" (Report of Investigations 4) is authored by Russell D. Greaves. The volume reports both Phase I survey and Phase II testing near El Indio and near Eagle Pass, both in Maverick County. The survey covered 14 miles of proposed new roadways and overall, encompassed about 254 acres. Twenty-six new sites were found and two previously reported sites and 11 isolated finds were also documented. The survey identified six sites recommended for testing as possible NRHP candidates. Ten sites were eventually tested, after consultation with the THC; indeed, two sites required additional testing efforts and were assessed as eligible for the NRHP.

The introductory and background sections of the report are good, better than in Owens et al. (1998), but read it with a thesaurus at hand as there is much jargon and many theoretically-correct words. In these initial sections, the author dismisses land snails (*Rabdotus*) as a food item, despite all the accumulated ethnohistoric and archaeological evidence (not to mention common sense). There is also some doubt about mussel shells and whether humans ate them or indeed modified them, but the theoretical review becomes so tedious that I ignored that section. We are told that, in South Texas, "*taphonomic sophistication in paleoethnobotany still lags behind archaeology. Potentially these classes of materials offer robust information about the critical subsistence activities that shape many other aspects of behavior that may be recoverable in the archaeological record.*" Perhaps the author was paid by the word; these sentiments have been expressed in English many times in the regional literature. And, it is alleged that south Texas researchers have done a bad job on stone tools: "*Applications of sophisticated techniques of residue analysis, use-wear, use-polish, refitting have not been applied systematically to the lithic assemblages from this area.*"

But then the present report cannot enlighten us *since "These analyses were also not a part of the budget for this project."* Of course, such has been done in south Texas, and publications abound, though admittedly some may be "unsophisticated." We just did not have the budget. One aspect of the introductory materials that is annoying is the fascination of the author with the word "robust." I have asked my graduate students never to use that word, and to also keep clear of "posited."

One aspect of the "Archaeological Background" reflects the lack of knowledge of South Texas archaeology on the part of the author and his fellow researchers. For example, Mallouf and Tunnell (1977) is cited for its "robust [!] evidence of prehistoric use of this area." But, Mallouf and Tunnell (1977) were describing a reconnaissance in the *canyons* of the Rio Grande more than 150 miles upstream, in an area west of the Lower Pecos culture area, and wholly unrelated to South Texas (although the earth oven experiments conducted by Tunnell remain very important). One presumes that inadequate editing has rendered "Coahuiltecans" as "Caohuiltecans" throughout (and Newcomb 1961 as Newcombe 1961). I was stunned to learn (p. 14) that the "Caohuiltecans" underwent a "brief effort" of missionizing "near Eagle Pass" (one suspects this refers to the century-long effort at San Bernardo and San Juan Bautista!), which also included "Jumanos" (but see Campbell 1988:143). And, that later missionization for these Indian groups "was centered on the missions at San Antonio."

The whole "background" is simply poor scholarship, with a tendency to dismiss earlier work, such as "simple associations" between "food targets and campsite locations." Research into all aspects of South Texas archaeology, save chronology, is "stagnated," and everything else is "normative," which is, of course, very bad from the writer's theoretical viewpoint.

The survey reconnaissance encountered many disturbances of the landscape, especially in the Eagle Pass area. Most commendably, large sites with diffuse boundaries were not dismissed, but rather were recorded as sites via topographic or geomorphic criteria. The field methodology reflects a great deal of thought and preparation on the part of the project archaeologists, and they note that COE regulations (again) precluded them from collecting surface

artifacts, although some collection was done at one site. The volume contains color topographic maps with site locations and these are very well done and useful.

The testing phase utilized shovel tests (as noted earlier, the regional literature clearly demonstrates the futility of 30 x 30 cm units, whether dug in 10 cm or 20 cm levels!). Artifacts and wood charcoal were collected, and other traditional archaeological testing techniques were followed. Backhoe trenching was used in sites buried in deep alluvium near the Rio Grande. These were profiled, subjected to geomorphologic analysis, etc., and numerous illustrations are provided in the report. Several short cuts had to be taken, e.g., no instrument maps were made during testing because of "time limitations", but alidade maps from the survey phase were adapted for the testing phase. Apparently, the recording and interpretations of the Rio Grande sediments were done without the aid of the Gustavson and Collins (1998) monograph, which may not have been available at the time.

In terms of the future of the sites, three will be monitored, and if the JTF-6 road improvements encounter significant archaeological remains there will be "at least minimally characterized and sampled" (p. 36).

The recorded sites are presented in great detail and maps and plans are provided. These will be very valuable for future research in the area, as well as to John Stockley, the THC Steward in Eagle Pass. His name does not appear in the Acknowledgments (of either reports), and upon talking with him, I learned that no one involved in these two projects consulted him about his vast knowledge of sites at Eagle Pass. Apparently, there should be better coordination between the COE and the THC, who sponsors the Stewards program.

As just stated, backhoe profiles abound, although they are not complex. Some are in color, and show the location of flakes, charcoal, and hackberry seeds (the latter would be natural introductions from rodent burrowing or soil cracks). There is much information in these pages, in terms of soil descriptions, and clear statements of what was found. While I am ill equipped to evaluate the merits of these details, it seems to me that any major project planning work in the South Texas area should be familiar with what is reported here. On the question of *Rabdotus* as a food resource,

this issue comes up again and is again dismissed (p. 99): "*Gastropod shells were not plotted because of their frequency and the excavation schedule demands*" (the snails never catch a break). "*Gastropods were assumed to represent the presence of background fauna.*" But if you don't plot them, don't analyze them, and don't look at their associated cultural contexts, one cannot possibly ignore them in such a manner.

Though the recovery of paleoethnobotanical samples was a priority, and samples for such were taken, the use of 1/4 inch dry screening seems inappropriate in conjunction with such an objective. An appendix in this volume, by Gina S. Powell, identifies a number of plant species from charcoal, including mesquite, hackberry, cactus, grasses and invader weed species. Mussel shells were also identified as to species, and were recorded, when excavated, as being "up" or "down" to evaluate whether they were cultural or perhaps the product of "natural resuspension" after having been transported as sedimentary clasts (p. 108). Only my colleague, Kenneth M. Brown, of TARL, can evaluate these data.

Scattered within the site descriptions are comments on artifacts. Most are fine, but once in a while you run across protracted and inaccurate discussions as with "unifacial Clear Fork gouges (sic)" (p. 173). There is no reference to Hester et al. (1973) who did the first unsophisticated wear analysis of these artifacts, or to Hudler (1997) who did a very sophisticated analysis, using wear-polishes, and systematic high-power microscopy. There is also a highly confusing discussion of Calf Creek points, Castroville points, and Clear Fork tools dominated by inferences derived from Oklahoma.

But let us not linger in the site descriptions, and rather move on to Chapter V, Artifact Analysis. As with other parts of this report, the author makes explicit the approaches that were used in laboratory studies. However, as with Owens et al. (1998), we are left here with very poor artifact illustrations, sketches apparently made as part of the no-collection policy. Inconsistent editing is reflected in the continual use of "Figueuro" points (cf. Figueroa) throughout the volume, and Transitional Archaic dart points are commonly classified as "Ensor/Figuero. I have great sympathy for persons trying to classify South Texas projectile points. But, some real basics have been

overlooked. A very small-stemmed point (I would be scared to "type" it, and certainly couldn't with the published sketch; Fig. 63,D) is classified as "Palmillas/Darl/Travis." The only thing that I have confidence in is that it is none of the above. Much is made in the report of a Late Prehistoric Caracara point, yet the illustration (Fig. 64,A) is that of a Transitional Archaic Frio point; Caracara does not occur this far north on the Rio Grande). Two badly fragmented points are described as Calf Creek/Calf Creek preform, and this is likely accurate. Examination of just a few *La Tierra* issues would have indicated to the author of this volume that these points are quite common in south Texas. The Clear Fork "gouges" (sic) in Fig. 65 are illustrated "both ways." A proximal fragment is bit down, and a complete specimen is (properly) bit up. There is considerable discussion in the text of Clear Fork unifaces being associated with Calf Creek points (based on Oklahoma data). Certainly, at the Granberg II site (Hester and Kohnitz 1975), there is a loose association of these forms, but the Clear Forks are much different in technology and size. The ones illustrated from Maverick County appear to be the style more common in the Middle and Late Archaic.

The artifacts get a little better treatment in Figures 66 where color illustrations are provided, although the photographs are at an angle, rather than from above. The penchant for calling things "Figuro" (sic) /Palmillas continues. Cores, usually ignored in south Texas lithic analysis or at least given short shrift, warrant a color illustration here (Figs. 67 and 68), as does a typical South Texas purple-brown quartzite hammerstone (Fig. 69,A) although it is rated only as "possible" in the illustration (there are clear impact fractures at both ends). The author obviously did not read my brilliant, if obscure, study of Chaparrosa Ranch core technology (identical to the technologies in this volume) published in the *Texas Journal of Science* in 1975. Clear Fork tools warrant color as well (Figure 72) and the text notes the use of Rio Grande gravels and the preservation of the dorsal surface as cortex in the manufacture of these tools. This is found along the Rio Grande corridor from here south, as long ago observed by Chandler (1974) in *La Tierra*.

Then there is Figure 73, another color illustration. There is a Transitional Archaic dart point (likely Fairland) classified as Uvalde/Fairland/Frio (again

spanning about 5000 years), an arrow point typed as "Perdiz/Sabinal." Having defined the Sabinal type, I would say it looks a lot like one, but it is far, far from its area of distribution. Where someone got the notion to include "Perdiz" in the type name eludes me.

The Regional Assessment chapter is thought provoking. It is biased towards the "landscape archaeology" theme, widely advocated in Southwestern archaeology and which de-emphasizes the concept of "site." But I would offer much praise to the author for his recognition of the great research value of these sites, warts and all. Too frequently, CRM archaeologists are prone to dismiss South Texas lithic sites (there is no rock art, there are no perishables, the surface collectors have already been there, they're just too diffuse to study), while Greaves recognizes that these sites are not a "depauperate or redundant record" (p. 312), but rather that they offer opportunities for important research and even "inference production" (ibid.). He may have the stubbornness to be a South Texas archaeologist after all, if he will just get caught up with the literature.

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Editorial Note: Comments and responses by the authors of the reports reviewed in this article will appear in a future issue of *La Tierra*.

THE JIMMY L. MITCHELL SYMPOSIUM: AN INTRODUCTION

Thomas R. Hester

The papers presented at the Southern Texas Archaeological Association meeting on July 28, 2001 were organized as a symposium in honor of the late Jimmy L. Mitchell. They were designed to reflect some of Jimmy's activities and, especially, his research interests. The first speaker was Dr. Chris Lintz, of TRC, a consulting firm in Austin, who shared with Jimmy a love for the archaeology of the Panhandle. His paper dealt with research in which Jimmy was not directly involved but features a site, Landergin Mesa, that was of great interest to him. The second paper, by E. H. (Smitty) Schmiedlin, a long-time friend of Jimmy's in the STAA, offered some observations on Jimmy's interests in the central coastal plain—"Karankawa country." Smitty's paper concluded with an original poem written in Jimmy's memory. My own paper dealt with various aspects of ancient trade in South Texas, focusing on obsidian trace element analysis, as Jimmy always shared my interest in this, and was of critical help in the early stages of the project.

I circulated, at the beginning of the symposium, some copies of an initial effort to compile a bibliography of Jimmy's publications and this is included in this issue of *La Tierra*. In these introductory remarks, I will address three broad categories where Jimmy Mitchell made contributions to archaeology, especially here in Texas. These are largely reflected in his publications and in his editing activities.

Documentation and Analysis of Material Culture

Jimmy demonstrated through his publication and his editing chores his belief that archaeology relies on a database built through publication of documented material. His research interest not only included documenting artifacts that ranged from Paleo-Indian to Historic-era metal arrow points but also, in an early paper, made an effort to assimilate the data into one of the earliest efforts to provide a tentative chronology for South Texas.

He was also fascinated with the Late Prehistoric, both in the Panhandle and in South Texas, and again his research ran the gamut from the study of point types to the definition of an early phase of the Late

Prehistoric in this region, which he named the Turtle Creek Phase.

Jimmy was dedicated to "salvaging" information... from the recording of collections to the study of previously dug sites which begged for analysis and interpretation. A notable example was the Rudy Haiduk Late Archaic burial site in Karnes County, published in *La Tierra*, and a study that is still widely cited today.

During the middle 1970s, he and I worked together on an unusual artifact form found in collections in Nevada, and known generically as "crescents." These are Paleo-Indian in age, and guesses about their function had ranged from scrapers to fetishes. But they bore no evidence of use as scrapers, and they occurred by the hundreds in old lakebed deposits in Nevada. I told Jimmy that Dr. Robert F. Heizer at the University of California, Berkeley had a hypothesis that these artifacts were hafted as "transverse dart points" and that there were examples from other cultures at different times around the world of the use of such artifacts in hunting waterfowl and other game. I had observed "impact breaks" on the corners and dulling on both sides in the midsection, and under low power magnification, no evidence of scraper or knife functions. So, when I went to Berkeley in winter 1976 as a visiting associate professor, I had some students in one of my classes undertake the measurement and trait analysis of a large sample. These data were then sent to Jimmy for statistical analysis, and publication in 1977 in the *Contributions of the Univ. of California Archaeological Research Facility*. Jimmy's study indicated that the frequency of the impact flutes, the dulling of mid-section edges, and so on, did in fact support the idea of a transversely hafted point, later named Great Basin Transverse Points. Great Basin specialists have never liked this term (or concept) very much, but they have not come up with anything better in the last 25 years.

Ancient Trade

As discussed in my paper in the symposium, Jimmy was fascinated with the evidence for trade in southern Texas prehistoric cultures. His knowledge

of Alibates chert, from the Canadian River in the Texas Panhandle, enabled him to recognize and publish specimens in South Texas collections. His work with artifact collectors enabled him to locate some of the first obsidian specimens found in South Texas. The trust he built with collectors allowed him to secure loans of these artifacts, which he first sent to me when I was a graduate student at Berkeley. Non-destructive x-ray fluorescence analysis (XRF) of two McMullen County arrow points of obsidian linked them to a geologic source in New Mexico. These small, side-notched points are unlike Late Prehistoric South Texas styles and may indeed represent Lipan Apache forays, or those of other intrusive groups, into south Texas in the 18th and 19th centuries.

Jimmy also provided our obsidian project at Berkeley (which later became the Texas Obsidian Project, still at work 31 years later) with obsidian specimens from the Texas Panhandle. The XRF results were published in the *Bulletin of the Texas Archeological Society*, and represent some of the first (if not the first) geologic source identifications for Panhandle obsidian artifacts.

Encouraging Publication and Interaction

While Jimmy's bibliography reflects considerable publication on his own (and an even greater series of contributions in his field in job and occupational analysis), he would have written a great deal more – but he felt the need to encourage others to write and publish. Indeed, I think this is one of the core factors in the growth and development of the STAA. Jimmy would take papers from new members, some who were, or had been, collectors, and despite what shape he received them in, he would patiently rework them for publication in *La Tierra*. This kind of dedication helped build the STAA and has carried on through the editorships of Evenly Lewis, Shirley and Van Van der Veer, and now passed to Dr. Steve Tomka. Jimmy always lurked in the background (well, he did not always lurk nor did he always stay in the background) and was involved in seeing *La Tierra* reach the important status that it has today.

Probably because of his training in educational psychology and his work in job and occupational analysis, Jimmy felt that archaeologists, professional and vocational, as well as collectors, needed better

interaction and communication. He initiated many events that made this happen, from collection documentation to the arduous task of recording and publishing the Coastal and South Texas "Palavers." Working with Bob Mallouf, Ed Mokry, Elton and Kerza Prewitt, and others, four "Coastal Palavers" were held in Corpus Christi and San Antonio. I remember at the first one, in 1984, Jimmy setting up his computer and patiently recording the lively discussions that ran for a couple of days. He then printed out the transcript, and saw it that it was published and distributed. These also remain a valuable source of information for researchers working in the region.

At meetings, large or small, you could always count on Jimmy to ask the "hard questions." He did this not through arrogance, but rather to get people stirred up, and to get them talking and thinking. He was always an outspoken advocate or devil's advocate as a Texas Archeological Society Board Member, a member of the Texas Historical Commission's Stewards Network, or in any of the other forums in which he was so often involved.

And, above all, Jimmy stressed the need for active, and activist, avocational archaeology. He was one of the prime examples of an avocational in the State; he wrote about it, he recruited collectors to avocational status, and, importantly for the STAA, he devised a series of awards to recognize avocationalists for their accomplishments. Dan Potter (letter of July 27, 2001) wrote me that he especially remembers "all the awards meetings of STAA over the years, always with Jim up front, handing out the awards...always on the giving end."

This symposium is held in the honor, respect, and esteem with which we all hold our friend, Jimmy L. Mitchell.

The Chronology of Occupations at Landergin Mesa, 41OL-2, Oldham County, Texas

Christopher Lintz
TRC Environmental

Abstract

In 1981 and 1984, the Office of the State Archeologist of the Texas Historical Commission conducted intensive excavations at Landergin Mesa, within the Canadian River valley, north of Vega, Texas. The 1981 excavations focused on two areas with discernible structures in the northwest and central part of the mesa top site. Work in both areas encountered considerable vandalism and a very complex stratigraphic situation. The 1984 excavations focused on a 42-m² area along the east-central portion of the mesa. This work attempted to identify the density of buildings and clarify their stratigraphic relationships.

A total of 21 radiocarbon dates and five obsidian hydration dates are available from the two seasons of fieldwork. They generally reflect ages spanning 2110 ± 60 to 490 ± 70 years B.P. (two sigma tree ring calibrated to 160 B.C. to A.D. 1615). Nine of the 13 radiocarbon dates from the 1981 season have poor precision. Twelve other radiocarbon dates have more acceptable standard deviation ranges from ± 60 to ± 90 years. With one exception of 2110 ± 60 B.P. (B.C. 160 ± 60), the dates with good precision are consistent with the age assessment of the Antelope Creek phase dating between 750–450 B.P. (A.D. 1200–1500).

Six obsidian samples from the 1984 excavations were submitted for sourcing and hydration dating analysis. X-ray fluorescence identified all six pieces as derived from Obsidian Ridge in the Jemez Mountains of New Mexico. Five pieces had measurable hydration rims, and four of these had ages attributable to the Antelope Creek phase (511 ± 51 to 699 ± 60 Before Date of Analysis [B.D.A.] date of A.D. 1985). One piece of obsidian yielded an earlier date of (1308 ± 106 B.D.A. or A.D. 677 ± 106).

The radiocarbon and obsidian hydration results indicate that the mesa top was sporadically utilized since the Late Archaic times and culminated in an intense utilization of the mesa top throughout the span of the Antelope Creek phase. The recovery of three Scallorn points and three dart points supports the chronometric evidence for early occupations beneath the Antelope Creek phase ruins.

Introduction

This report provides a description of the structures and features and the chronometric results from the excavations conducted by the Texas Historical Commission (THC) at Landergin Mesa, in Oldham County, Texas. The 1981 and 1984 work was conducted to assess deposit integrity in support of retention of the site in the National Historic Landmark program. Even though there has been a series of manuscripts, theses, and privately printed reports about this work, the results from Landergin Mesa excavations and analyses are not readily available (Dean 1986, DeMarcey 1986, Lintz 1990; Robinson 2001; Wulfkuhl 1984). This paper provides an overview of the two fieldwork phases with emphasis on summarizing the architectural discoveries and the chronometric data. The results provide insight into the complexity of occupations at this mesa top site.

Site Setting and History

Landergin Mesa is a freestanding, ovoid, erosion resistant butte, which rises some 42.7 m (140 ft) above the valley floor of Ranch Creek, a fork of West Alamosa Creek that drains north into the Canadian River (Figure 1). The lower mesa slopes are composed of thin interbedded gray and red shales of the Trujillo Formation that symmetrically rise at nearly a 33-degree slope towards a solidified conglomerate cap rock. The entire cap is 2.75 to 11 m thick and is made of cross-bedded fine to coarse sandstones and fine conglomerates characteristic of the bed of an Upper Triassic stream channel. The cap rock served as a main source for the masonry building materials, whereas the shales of the lower slope were used for mortar and plaster for walls, floors, and features.

The surface of the mesa top is slightly domed with the center of the mesa ranging from 2.1 to 3.2 m higher than along the edges of the mesa. The results of the 1981 and 1984 excavations show that the bedrock was chipped away to accommodate rooms and features. As much as 85 cm of cultural deposits of architectural rubble, midden sediments, and aeolian and reworked rain-washed silts covered the mesa cap.

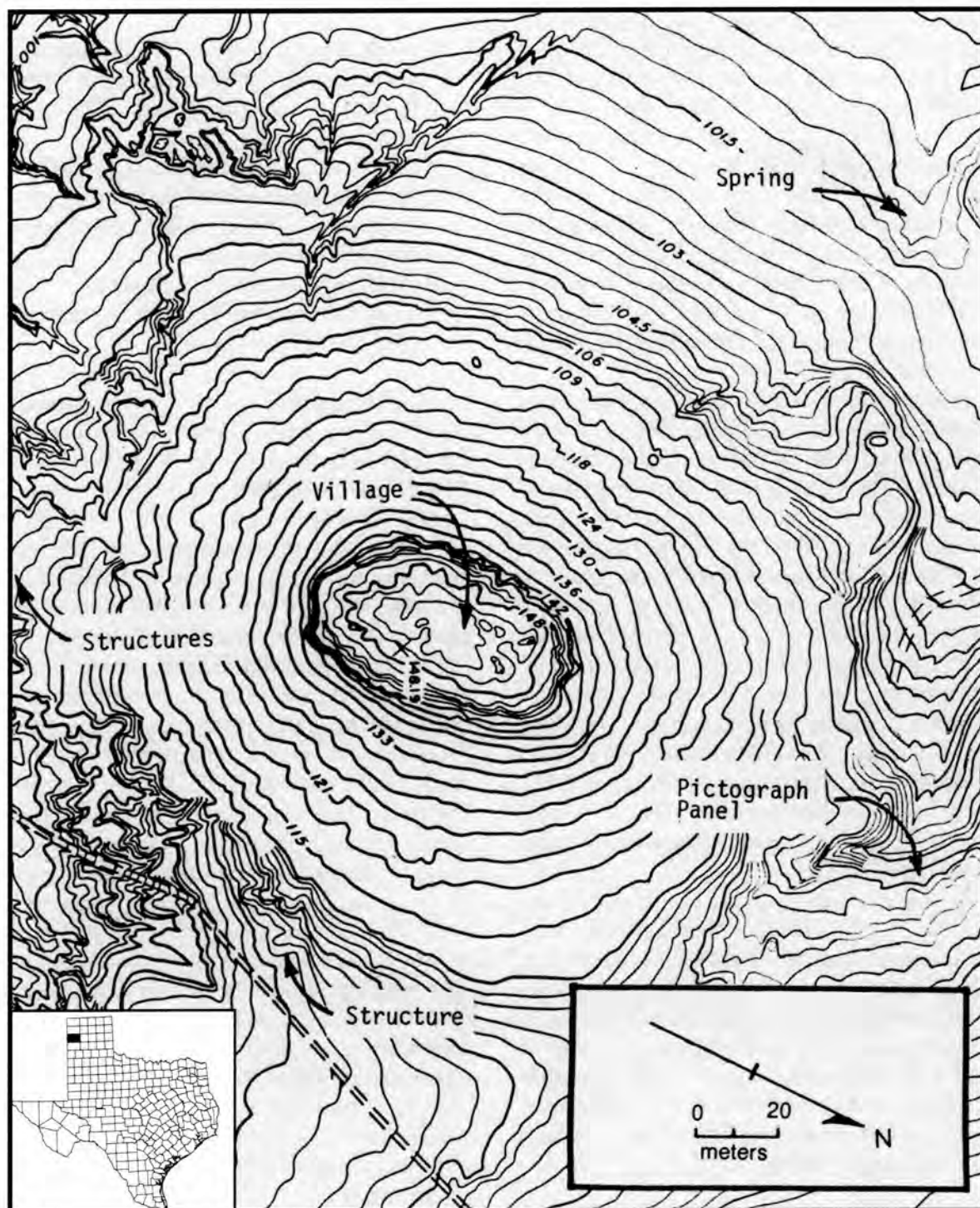


Figure 1. Contour map of Landergin Mesa.

Abundant unshaped masonry rubble litters nearly all surfaces of the mesa top, except for a 19.5 m (n-s) by 12 m (e-w) area devoid of rocks in the west-central portion of the mesa (Figure 2). This "plaza area" is noticeably lower than adjacent areas containing rubble stones from collapsed walls. A map of the mesa top surface made in 1981 shows some 59 rock wall segments reflecting at least 36 structures or rooms, and some 92 depressions ranging from 8 to 63 cm deep. Although these depressions were thought to be potholes from years of vandalism, the 1984 work documented that some represent deposits filling the interior depressions of rooms.

The architectural remains atop Landergin Mesa have been known to archaeologists since 1919, when an elderly Mexican ranch hand claimed to have visited the mesa in the 1860s or 1870s and seeing Kiowa, Apache and Comanche camping on the hilltop (Moorehead 1921:4; 1931:115). The site has been visited by such archaeologists as Floyd Studer (intermittently since 1919); Warren K. Moorehead (1919, 1920); Ronald Olson (1929), Richard Snodgrass (1931); E. B. Sayles (1932), Jack Hughes (intermittent since 1959), and William Marmaduke and Hayden Whitsett (1975). Only brief records exist for these various field visits (Olson n.d.; Studer 1931; Merrill 1931; Sayles 1932; Marmaduke and Whitsett 1975). Most trips were mere site inspection visits, but Ronald Olson and Floyd Studer possibly dug a trench somewhere on top of the mesa.

The THC excavations focused on three areas and examined about 87.5 m² or about 4 percent of the mesa top area. Two areas examined in 1981 included one or more large rectangular rooms north of the plaza (Structure 81-1), and a smaller structure and a series of sub-floor features near the center of the mesa (Structure 81-2). The 1984 season examined a 42-m² area in the east-central part of the mesa, and explored the density and spacing of structures. The results of each excavation are summarized below.

The 1981 Excavations

The 1981 investigations occurred during six-weeks, from September 20 through October 30. Under the direction of Robert J. Mallouf, the crew accomplished several goals, including:

- 1) Defining and mapping the legal boundaries of the proposed National Historic Landmark property,
- 2) Producing a topographic map of the mesa from aerial photography,
- 3) Establishing a permanent 5 m grid and vertical elevation datum over all the mesa-top,
- 4) Mapping and surface collecting artifacts across the entire mesa top, and
- 5) Conducting controlled excavations within the horizontal limits of two well demarcated, but non-adjacent masonry structures.

The excavation records consist primarily of crewmember's daily journals, standardized scaled drawings of rocks and sketches of provenience artifacts of each excavation unit, and one or two stratigraphic profiles of each structure. But much of the excavation information is limited. The lack of consistent observations, the absence of standardized level and room/structure forms, the absence of excavation block-wide maps, and the lack of narrative summaries of structures that discuss the room size, or summarize the elevations of floor surfaces spanning different excavation units all limit the interpretations. To compound matters, field features inconsistently used number and alphabetic designations that were sometimes duplicated for the different excavation blocks. During laboratory processing, attempts were made to standardize the feature designations (Table 1). These methodological problems coupled with frequent cold, rainy conditions that saturated the deposits and obscured stratigraphic distinctions, a greater than anticipated complexity of the archaeological record arising from multiple occupations, rodent disturbances and relatively extensive vandalism, make interpretation of the 1981 archaeological situation difficult to characterize. In this paper a project year prefix has been added to the designations of structure and feature numbers to clarify data from the two phases of the project.

The "Structure 81-1" Area

This is an apparently large, rectangular room or series of rooms or structures along the north edge of the "plaza area." Eighteen excavation units of various

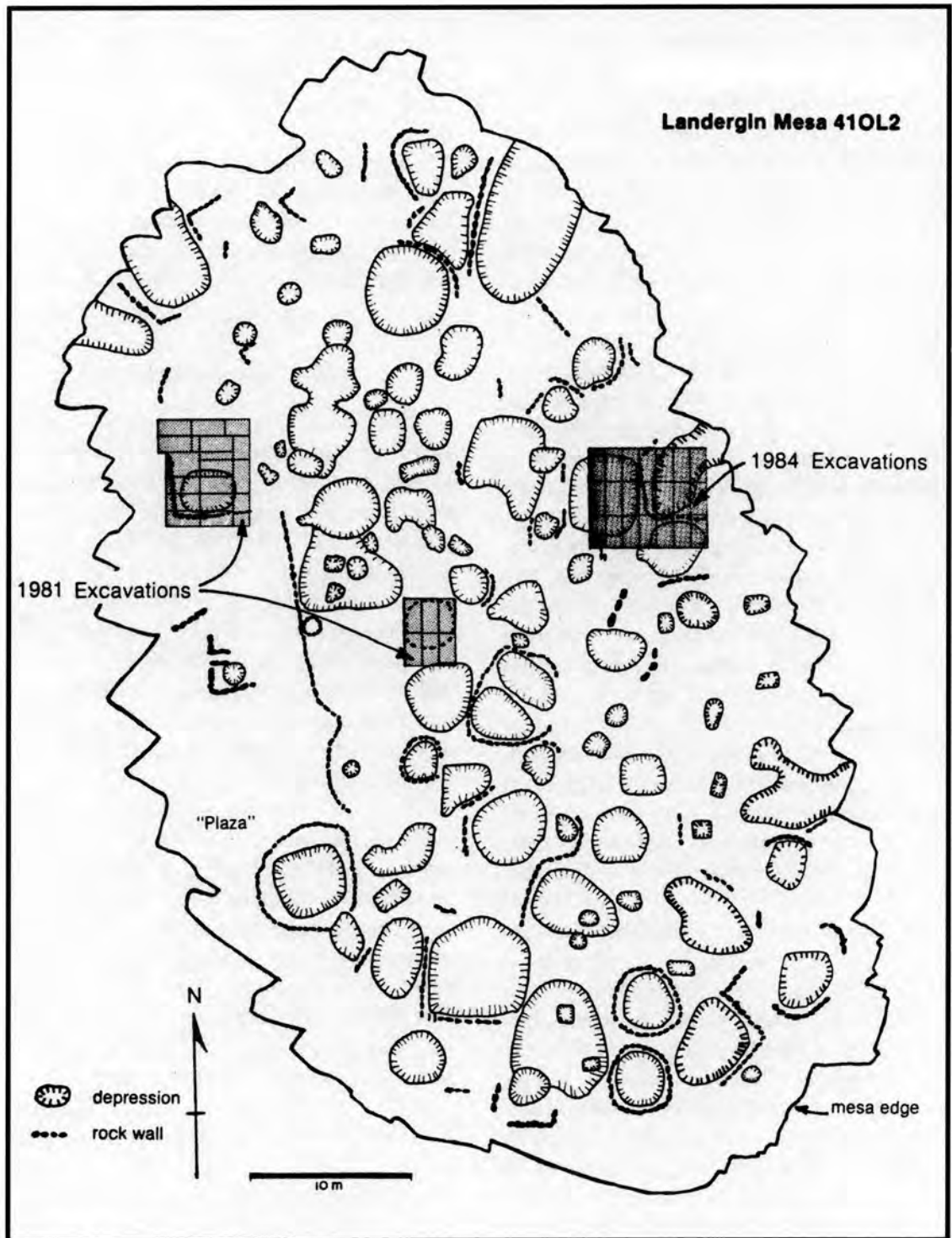


Figure 2. Rooms and excavation blocks on top of Landergin Mesa.

sizes were used to investigate a 34.5-m² area designated as "Structure 81-1" in the vicinity of grid units N124.5-130/E95.5-100. The jumble of collapsed masonry has been difficult to interpret (Figure 3). The records hint that more than one room may have been present, but development of a composite map suggests that some "wall elements" (especially in vicinity of N129/E97) may be stacked horizontal wall slabs that fell into seemingly vertical slab alignments. Multiple floor levels were also found near the walls, but correlations of the floor elevations are not always possible.

Composite maps of the excavation units show that at least one structure was a large rectangular room with rounded corners. Another room is possibly located north of Room 81-1 that is either contiguous and contemporaneous to, or stratigraphically and temporally different from Room 81-1. The approximate dimensions of Room 81-1 are at least 3.7 m wide (e-w) by 5.0 m long (n-s) as interpreted from the distribution of rocks and plastered floor remnants. The differential density of masonry, especially along the south wall of the room, suggests that some stones were reused elsewhere in later buildings. Two plastered floor levels separated by 12 cm of fill were noted in the northeast excavation unit (N127.5/E98) and either represents separate superimposed buildings, or remodeling of the room. Based on the size and shape of the walls, Structure 81-1 probably represented a large "residential" structure. Vandalism had destroyed most of the interior fill. But plastered floor remnants near the corners most consistently have an elevation of 99.42 m. An entryway was not identified, but one large, vertically set slab near the middle of, and oriented perpendicular to the axis of the east wall might indicate the entrance. Nor was a central channel found, but an abrupt edge of the plastered floor perpendicular to the west wall and a series of three vertical slabs marking the edge of the plastered floor in the east side offer tantalizing evidence for a depressed central floor channel. No lower channel floor was documented in the records, however. The room was too badly disturbed to retain evidence of the roof support posts or a central hearth features.

Two pit features dug into bedrock were found in the southern third of Structure 81-1. Feature 81-1-1 is a 36 cm diameter by 28 cm deep basin pit with a few lining slabs located in the southwestern corner of the

structure. A second basin pit, Feature 81-1-2 (field designated F-C), was found beneath a pile of rocks in the southeast portion of the room. It measures about 70 cm (n-s) by 55 cm (e-w) by about 43 cm deep. Both are probably interior storage pits.

A concentration of rock that was designated as "a possible cleaned-out burial cist" was found in a 40 by 100 cm area just inside the west-central wall of the room. No bone was recovered that would support the contention that the rocks covered a burial cist. These rocks might represent just another collapsed wall segment.

The "Structure 81-2" Area

Structure 81-2 was described as a small, masonry circular room or square room with rounded corners located near the center of the mesa (Figure 4). This room was investigated using six 1 X 2 m units within grid units N116-119/E109-111. This 2.55 m (e-w) by 2.05 m (n-s) room had also been extensively vandalized, but red sandy clay plaster remnants and charcoal flecking suggested the presence of a dish-shaped floor at an elevation of about 99.72 m near the center, and 99.77 m near the walls. Most of the excavation unit maps document wall fall rocks, and not the rocks or construction methods comprising the wall itself. No entrance was discovered.

One 1 by 2 m unit, N118/E110, investigated inside and outside deposits, but the profiles across the north wall of Structure 81-2 do not record foundation or wall construction methods. About 50 cm of stratified deposits were found outside and/or under the floor of Structure 2. One catalog correlation sheet lists 11 hearth and ash features, but the only information available for five of these features are the unit profile drawings. The unit plan maps depict several other ash areas that were not given feature designations.

The eleven features assigned designations from the area of structure 81-2 are summarized before other concentrations of materials are described. Feature 81-2-1 (field designation F-A) is an exterior hearth and living surface located north of the structure along the north edge of N119/110. The feature's elevation (99.85-99.91 m) is above the floor of the room; suggesting that Room 81-2 is either subterranean or the exterior hearth post-dates the room. This hearth measures more than 35 cm (n-s) by 50 cm (e-w) and may

Table 1. Rooms and features from the 1981 fieldwork at Landergin Mesa.

Structure 81-1 Excavation Block				
lab design.	field design.	Unit	Elevation	Description.
Structure 81-1	Room 1	N124.5-130/ E95.5-100	Floor: 99.72 - 99.75	Large rectangular room measuring 6.5 (n-s) by 5 m with possibly a central channel remnant found in sw edge of structure. Multiple floors in the ne corner might relate to this and/or earlier structures.
F81-1-1	None	N125.5/E96	99.16 - 99.42	Oval pit measuring 34 cm (n-s) by 38 cm (e-w), by 26 cm deep; three rocks along south wall.
F81-1-2	F-2	N125.5/E99	99.07 - 99.38	Oval pit with slab covering measuring 64 cm (n-s) by 56 cm (e-w), plastered floor 31 cm deep; Scraper and turtle shell inclusion, dense cluster of rocks cover orifice
Structure 81-2 Excavation Block				
lab design.	field design.	Unit	Elevation	Description.
Structure 81-2	Room 2	N116-119/ E109-111	Floor: 99.72 - 99.75	Small Subrounded Room 2.55 x 2.05 m with pastered floors and masonry walls, no prepared features or doors found.
F81-2-1	F-A	N119/E110	99.91 - 99.85	Hearth is 35+ cm (n-s) by 50 cm (e-w), rock lining to east next to an activity area located north of room and higher than floor
F81-2-2	rock cluster	N119/E110	99.75 - 99.70	Disturbed "Central Hearth"; rocks in pothole near floor elevation-- all disturbed pothole context located inside structure near floor elevation-- Rocks may be displaced from Feature 81-11.
F81-2-3	F-B	N119/E110	99.60 - 99.66	Oval Hearth measuring 36 cm (n-s) by 26 cm (e-w); rock interior to hearth located north of house and below floor
F81-2-4	Ash	N119/E110	99.60 - 99.68	Amorphous ashy area 12 cm (n-s) by 14+ cm (e-w); below house floor and north of room.
F81-2-5	Area A	N119/E110	99.59 - 99.51	Dark grayish brown loose, greasy midden with much charcoal, bone and tools. Measures about 76 cm (n-s) by 43 cm (e-w). Associated with activity area below house floor.
F81-2-6	F-D	N119/E110	99.33 - 99.42	Basin hearth found in north profile; cross section measures 52 cm (e-w); below house floor, north of room.
F81-2-7	F-E	N119/E110	99.30 - 99.32	Oxidized hearth 50 cm long in north profile; truncated by F81-6. Below house floor and north of room.
F81-2-8	F-F	N119/E110	99.60 - 99.76	Plaster 8 cm thick forms basin hearth 36+ cm (n-s) exposed in east wall profile. Replastered at least once. Below wall of house.
F81-2-9	F-H	N119/E110	99.66 - 99.78	Amorphous burned ashy "hearth" area exposed in east wall profile embedded into plastered floor of Room, 50 cm (n-s).
F81-2-10	F-G	N119/E110	99.44 - 99.52	Basin shaped area of ash and charcoal in east wall profile 36 cm (n-s). Below house wall.
F81-2-11	F-C	N118/E110	99.55 - 99.42	Dark ashy "hearth" area 16 cm in diameter with rocks at southeast edge covering area of 28 cm (e-w) by 20 cm (n-s). North of room, below floor.
None	Area B	N119/E110	99.45	Possible hearth defined by an arc of rocks sloping towards center, 60 cm (n-s) by 30 cm (e-w) adjacent to F81-3 with charcoal stain covering both areas. North of room and below floor.
None	Ash	N117/E110	99.73 - 99.78	Ashy area on house floor near south wall measuring 28 cm (n-s) by 26+ cm (e-w). On the house floor.

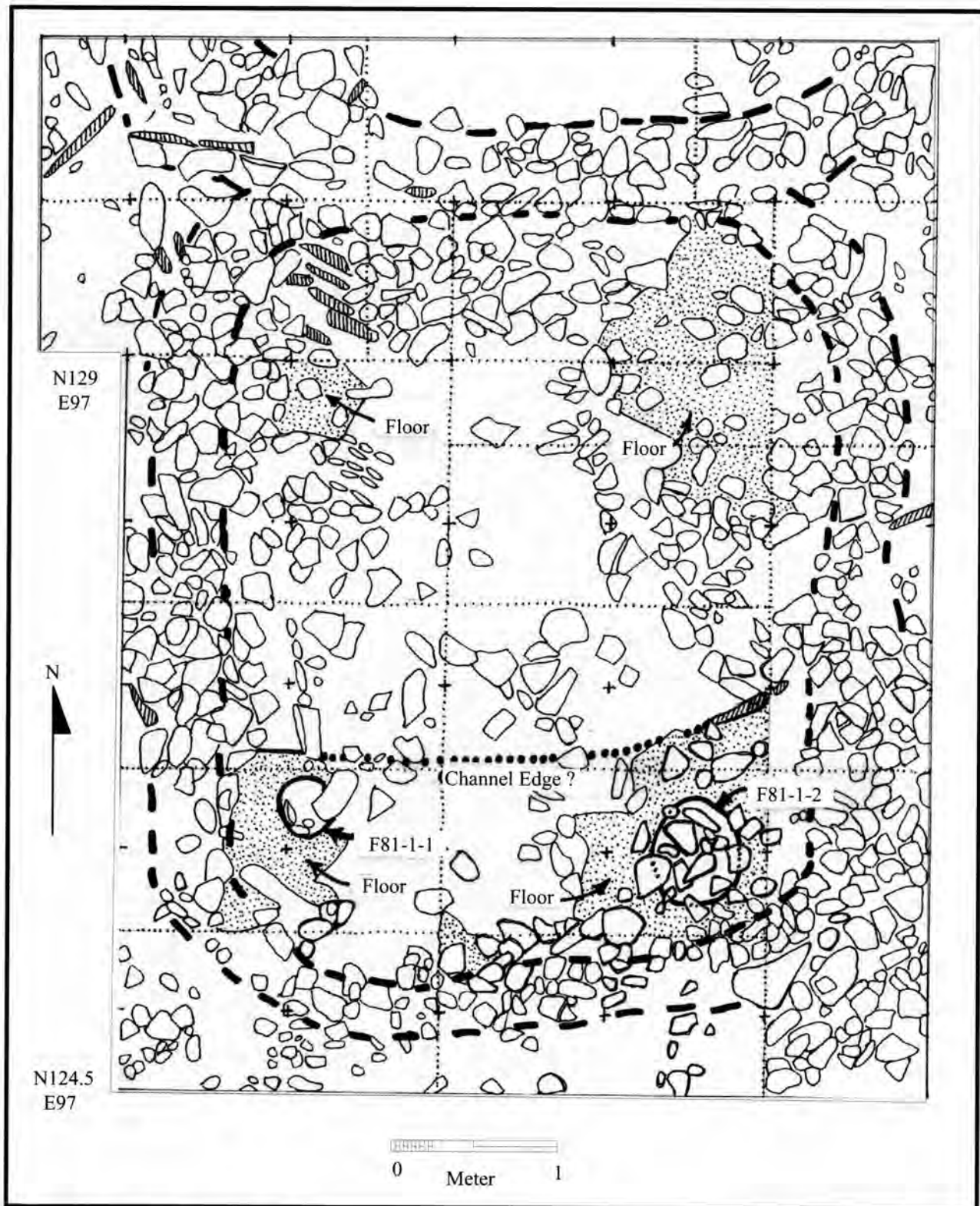


Figure 3. Map of Structure 81-1.

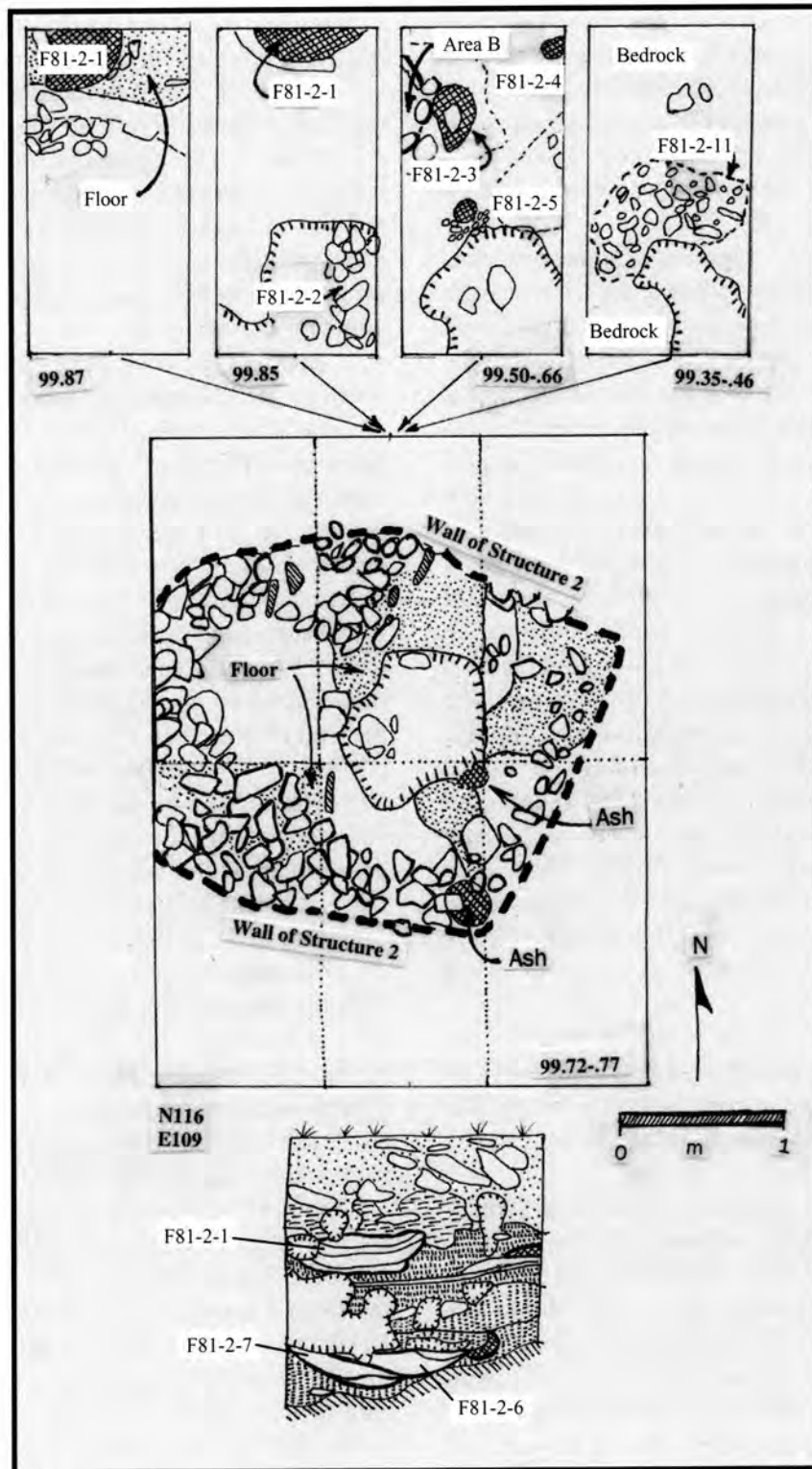


Figure 4. Map of Structure 81-2.

have rocks lining its east side. The profile shows four distinct replastering episodes, and that the initial configuration was slightly basin shaped. Through rebuilding, the hearth became essentially level. The associated living surface is defined by large animal bones and charcoal flecking at the same elevation and extends mostly west of the hearth.

Feature 81-2-2 was assigned to a burned rock cluster within a pothole in the middle of the room near the elevation of the floor surface. The cluster measured 82 cm (n-s) by 30+ cm (e-w) as exposed along the east wall of unit N118/E110, and was interpreted as representing disturbed central hearthstones. But it is equally plausible that the stones were reworked portions of rock Feature 81-2-11, resting just above bedrock that was also breached by the same pothole. Indeed, the size and quantity of the rocks depicted on the unit map (n=16) suggests that there are more rocks than commonly used to build a hearth. Furthermore, hearth features rarely occur in small structures of this size (Lintz 1986). Displacement of rocks from the lower hearth is regarded as a more likely possibility.

Feature 81-2-3 (field designation F-B) was an oval hearth measuring about 36 cm (n-s) by 26 cm (e-w) and located in unit N119/E110 about 10 cm beneath the floor of the room (elevation 99.60 to 99.66). The unit map shows this feature to have two large slabs in the middle of the feature, but it is uncertain whether these represent griddle or other cooking parts of the feature.

Feature 81-2-4 is an ash stain that occurs at the same elevation as Feature 81-2-3 (99.60 to 99.68), in the extreme northeastern corner of N119/E110. The ash is amorphous and measures about 12 cm (n-s) by more than 14 cm (e-w).

Feature 81-2-5 is a large, oval area of dark "greasy midden" that was field designated "Area A". This midden measured 76 cm (n-s) by more than 43 cm (e-w) and extended from unit N118-119/E110 into the adjacent eastern unit. This dark grayish brown deposit contained abundant charcoal flecks, much bone, with some tools and lithic debitage at an elevation of 99.50 to 99.59. It occurred immediately above a second floor or occupation zone that may not be related to Room 81-2, since the plastered surface extends beyond the walls of the structure. While this surface might be a plastered floor of another structure, insufficient

excavations were conducted to clarify the nature of this plastered surface.

Feature 81-2-6 (field designation F-D) is only depicted in the north wall profile of unit N118/E110. It is a basin shaped hearth that measures about 52 cm wide and occurs at an elevation of 99.33 to 99.42. It had one, and possibly two, superimposed basin hearths filled with gray ash overlying a very thin layer of tan sand, which in turn caps a thicker layer of gray ash with lumps of charcoal.

Feature 81-2-7 (field designation F-E) is also only recorded in the north profile of unit N118/E110, immediately below (99.30 to 99.32), and partially truncated by offset hearth Feature 81-2-6. This lower hearth also has a basin shape with a possible oxidized or plastered basin measuring 50 cm in diameter. This feature appeared as a very thin lens of black carbon staining and overlay a charcoal and dark ash area.

Feature 81-2-8 (field designation F-F) is a well-formed basin hearth measuring at least 36 cm in length (n-s) that occurs at a depth of 99.60 to 99.76, north of the wall of Structure 81-2 in the northeast corner of N118/E110. The original pit basin was lined with a lens of brown clay and ash measuring about 8 cm thick that curved upward along the edges. The hearth had been replastered once and contained a very thin ash layer above the replastered surface.

Feature 81-2-9 (field designation F-H) is the edge of a basin shaped hearth made of a brown loam mottled with ash and charcoal that appears to occur at floor level of Structure 81-2 and extend under the wall. In profile, the feature is about 50 cm long, and is not symmetrically formed. It ranges in elevation from 99.66 to 99.76. Due to the placement of the wall, this hearth is not regarded as part of the structure.

Feature 81-2-10 (field designation F-G) is another basin hearth located about 10 cm beneath hearth Feature 81-2-8 at an elevation of 99.44 to 99.52. Part of the feature extends north of excavation unit N118/E110, but the feature does not show on the north wall profile. This dish-shaped basin measures about 36 cm (n-s) long and consists of ash and charcoal matrix over a mortar of tan sand mottled with brown loam.

Feature 81-2-11 (field designated F-C) is a large cluster of burned rocks and a dark ashy area that occurs at an elevation of 99.55 to 99.42 in N118/E110. The top of the feature is next to a discrete dark stain

measuring about 16 cm in diameter that may or may not be associated with a scatter of burned rocks to the south and east in an area measuring 28 by 20 cm. The base of the feature had rocks concentrated in an area 60 cm (n-s) by 90 cm (e-w). A pothole dug into the middle of Structure 81-2 clips the edge of the feature, and some of the displaced rocks may have been misassigned to Feature 81-2-2.

The unit plan maps show two other possible features, but they are not definitely correlated feature discussed above. One feature is labeled as a "possible hearth/Area B" in N119/E110, depth of 99.45. It consists of four rocks in an arc that all slope towards the center, located west of hearth feature 81-2-3. The rocks encompass an area about 60 cm in diameter, but a charcoal area, 80 by 66 cm, extends mostly to the east of the rock alignment and encompasses both this feature and adjacent hearth F81-2-3.

The second possible feature is a pocket of ash along the interior south wall floor surface of Room 81-2 in unit N117/E110. The ash covers an amorphous area about 28 cm (n-s) by 26 cm (e-w). It is uncertain whether the ash related to activities associated with the use of the room, or was a dump inside the abandoned room.

The descriptions of features from the 1981 fieldwork provide information about numerous occupations that mostly occur beneath Structure 81-2. It is clear from the number of sub-floor features, that this portion of the mesa had a complex history involving multiple periods of reuse.

The 1984 Excavations

Under contract with the Texas Historical Commission, the author directed the Phase II excavations from April 8th to June 17th, 1984. The purpose of the ten-week project was to identify the number of occupations and stratigraphic relationships of structures and occupation surfaces within a 6 by 7 m block placed in the east-central portion of the site within grid units N123-128/E120-126. The plan for the 1984 season was to delineate the density of architectural remains within a limited block area. One restriction placed on accomplishing this goal was that few floors or architectural walls should be removed during efforts to search for deeper occupation zones. Thus, greater

emphasis was placed on the stratigraphy and architectural details during 1984, than during the 1981 season.

Ancillary goals of the 1984 season also included:

- 1) Making another controlled surface collection of materials from the mesa top,
- 2) Conducting limited testing in architectural rubble at the south base of the mesa
- 3) Collecting paleo-environmental data from the mesa and off-mesa areas; and
- 4) Searching for possible cemetery areas on flats north of the mesa using probe and shovel testing procedures. Results of these activities are beyond the scope of the present paper, and are found in the completion report (Texas Historical Commission 1984), and in the previous manuscript on Landergin (Lintz 1990).

Altogether, portions of ten separate, ne-room structures representing seven recognizable components were delineated in the 42-m² excavation area (Table 2; Figure 5). Only three structures, a large rectangular residential room (Room 84-1), a small room (84-2) built inside the ruins of room 84-1, and another small circular structure (Room 84-5) were fully exposed. Only by a small corner, a remnant of the plastered floor, or a portion of a wall defined the other buildings. Based on the size and shape of the exposed buildings, four large, rectangular residential buildings, (Rooms 84-1, 84-3, 84-6, and 84-9) four small, subordinate structures (Rooms 84-2, 84-4, 84-5 and 84-7), and two plastered floors (room 84-8, 84-10) of undefined size and shape, were identified. Also identified were several kinds of exterior pits, dump features and ash lenses. The following provides a synopsis of the rooms and features assigned to each of the seven components.

The earliest occupation evidence, Component 1, consisted of several discrete features without associated architecture observed in the sidewalls of overlapping potholes in the southeast corner of the excavation block in units N123/E123-126 (Figure 6). These features include a concentrated pile of bone splinters (F84-4), a second pile of burned cobbles and bone splinters that may represent a stone boiling dump (F84-13), a small ash lens or pit (F84-7), and a small

Table 2. Rooms and Features from the 1984 Fieldwork at Landergin Mesa.

Component	Room No.	Feature No	Unit	Elevation	Description
C-1	None	F84-4	N123/E124	98.41 - 98.33	Bison bone splinter and ash concentration measuring at least 52 by 42 cm. Possible grease extraction dump.
		F84-7	N123/E125	98.38 - 98.34	Ash lens or possible pit feature with charcoal flecks at base of pothole 2. Measures 13+ cm (n-s) by 21 cm (e-w) and 4 cm thick.
		F84-13	N123/E125	98.57 - 98.37	Quartzite cobble and bone concentration in ashy matrix measuring 32 by 46 cm. Stone boiling dump.
		F84-26	N123/E123	98.44 - 98.18	Large pit feature chipped 26 cm into bedrock, under Room 84-3. Estimated diameter of pit is 2.08 m, and walls may have been plastered.
C-2, E-1	Rm 84-3		N123-124/ E123-126	98.49 floor	Middle third of residential room with 5 cm high ridge or rill instead of channel. Room measures 3.12 m (e-w) and most masonry rocks removed. North edge of room truncated by Room 84-1
C-2, E-2	Rm 84-1		N124-128/ E123-126	98.34 bench floor; 98.19 channel floor	Rectangular residential room measuring 4.80 (n-s) by 4.07 (e-w) with central channel, central hearth, storage cist in nw corner and 2 of 4 center posts; multiple floor surfaces in channel, north bench and central hearth has two plastered episodes.
		F84-21	N127/E123	98.315 - 98.05	Slab lined cist measuring 52 cm (n-s) by 83 cm (e-w) and 25 cm deep (chipped into bedrock) with clay cap in NW corner of Room 84-1
		F84-23	N125/E125	98.17 - 98.07	Central hearth of Room 84-1 measuring 55 cm in diameter and chipped 18 cm into bedrock with replastering episodes of hearth.
		F84-24	N125/E124	98.43 - 98.22	Southwest posthole for interior roof support with stone shims, Room 84-1. Posthole measures 20 cm in diameter and is chipped 8.5 cm into bedrock.
		F84-25	N127/E126	98.43 - 98.01	Northeast posthole for interior roof support with shim stones, Room 84-1. The hole measures about 17 cm in diameter and is chipped 4 cm into the bedrock.
		C-2, E-3	Rm 84-2		N124-127/ E123-126
F84-3*	N125/E124			98.63 - 98.51	Burned soil and daub-- wall melt from room 84-1 or 84-2; not a cultural feature
F84-8*	N125/E125			98.45 - 98.32	Not a cultural feature-- soil texture change between F84-1 and above floor of Rm 84-2
F84-12	N125-127/ E127			98.18 - 97.82	Clay and slab lined exterior cist measuring 72 cm (n-s) by 52 cm (e-w) and 32 cm tall. The base of the pit is on bedrock.
C-3	Rm 84-9			F84-15	N126/ E123
		F84-1	N125/E125	98.66 - 98.635	Amorphous lens of ashy sediment measuring 55 cm (e-w) by 34 cm (n-s); has red oxidation rine at base of in-situ burning.

Table 2. Continued.

Com- ponent	Room No.	Feature No	Unit	Elevation	Description.
C-4	Rm 84-8		N127-128/ E121-122	98.52 - 98.56 floor	Plastered floor of unknown room type. Less than 0.5 m area of room exposed in two areas about 1 m apart. Type of room is unknown.
C-5	None	F84-16	N127/E121	98.64 - 98.61	Two exterior laminated living surfaces 3 cm apart marked by charcoal flecks, and sparse debris.
		F84-19	N128/E122	98.63 - 98.56	Small exterior pit measuring 27 by 30 cm and about 5 cm below the upper living surface F84-16
		F84-20	N127/E122	98.62 - 98.20	Large exterior basin shaped pit measuring 73 cm (n-s) by 55 cm (e-w) by 42 cm deep. Contains stratified deposits with refuse and rocks.
C-6	Rm 84-4	F84-22	N123/E122-123	98.78 - 98.82 floor	Arch- masonry wall of horizontal slabs perhaps on a vertical stone foundation. 1.8 m long and plastered floor of unknown type of room.
C-6	Rm 84-10		N128/E121-122	98.68 floor	Plastered floor of unknown room type. Room may have rectangular shape with rounded corner; no masonry remaining. The size is at least 1.6 (e-w) by 68 cm (n-s).
		F84-14/18	N127/E121-122	98.66 - 98.76	Exterior living surface south of Room 84-10. Defined by concentrations of debris on ground surface.
C-7	Rm 84-5		N124-126/ E120-122	98.83 - 98.86 floor	Circular subordinate room measuring 2.20 m in diameter with possible entry gap in north wall masonry; remnants of plastered floor present.
C-7	Rm 84-6		N123/E120	99.02 - 99.06 floor.	Corner of large rectangular residential room? Dimensions unknown, only defined in area 0.5 m on a side in sw corner of block excavation.
		F84-2	N123/E124	99.09 - 98.93	Ash lens with bison bone splinters in area measuring 60 + cm (e-w) by 80+ cm (n-s).
		F84-5	N127/E121-122	98.86 - 98.83	Activity surface 3 cm thick north of Room 84-5, as defined by ashy sediments, charcoal flecks and debris.
		F84-10	N127/E120	98.84 - 98.77	Exterior basin shaped hearth beneath wall of Room 84-7. The hearth measures 22+ cm (n-s) by 48 cm (e-w) with two use-episodes of ash.
		F84-11	N123/E123	99.08 - 98.86	Quartzite cobble concentration of 34 rocks in shallow pit 30 cm in diameter and 30 cm deep-- probable boiling stones.
		F84-17	N123/E123	98.93 - 98.81	Ash pit measuring 73 cm in diameter and 12 cm deep near boiling stone dump. Two use-strata recognized.
C-7	Rm 84-7		N127-128/ E120	98.86	Unknown room type. Only 1.5 square m exposed of floor and part of a horizontal masonry wall.
		F84-9	N127/E120	98.86 - 98.895	Floor plaster to Room 84-7. Composed of 1 cm thick reddish brown mortar in patches.
		F84-6*	N127/E120	99.22 - 99.215	Not a cultural feature-- contact of roof fall with wind-blown deposits.

* Not a cultural feature.

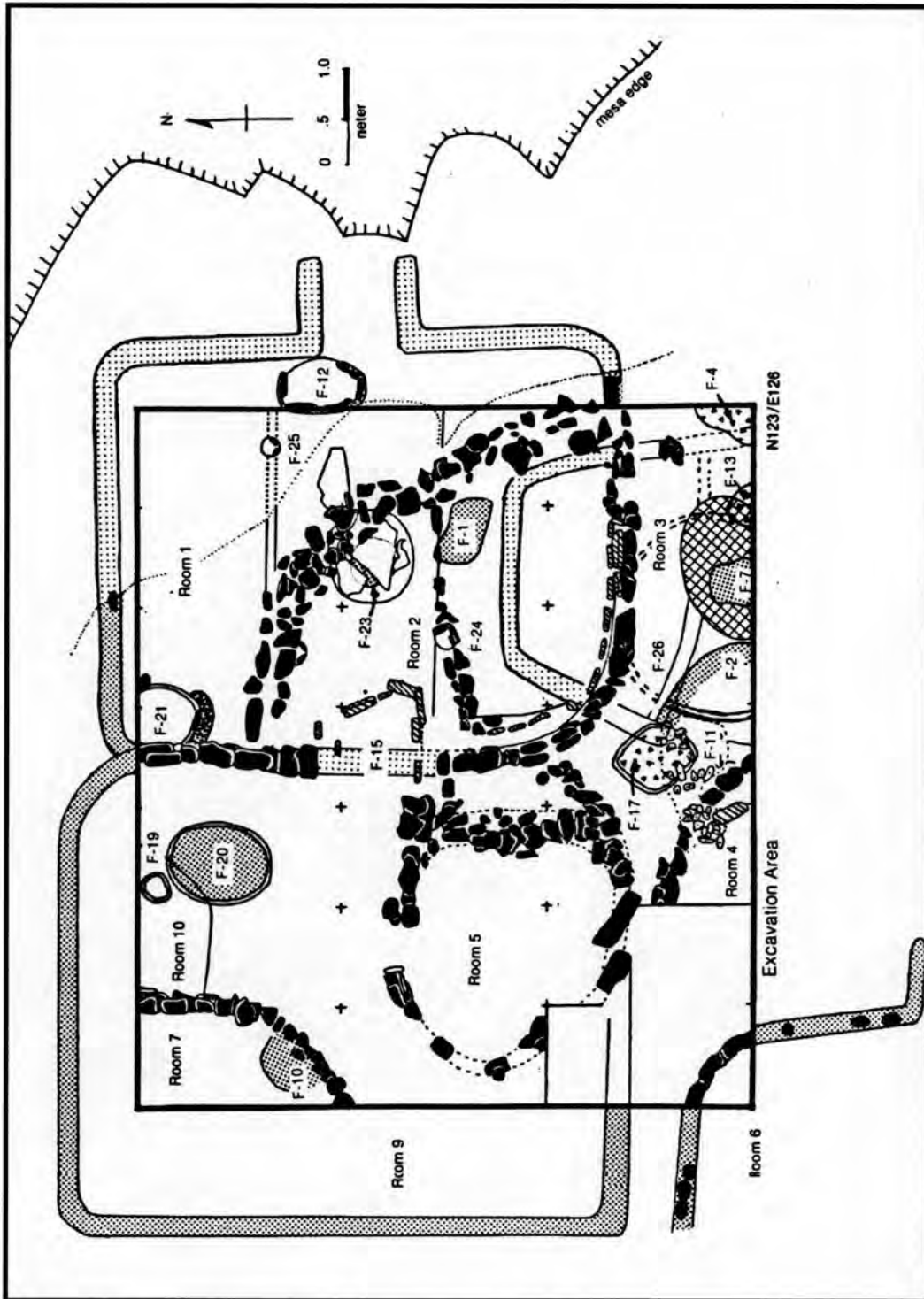


Figure 5. Map of features in the 1984 excavation block.

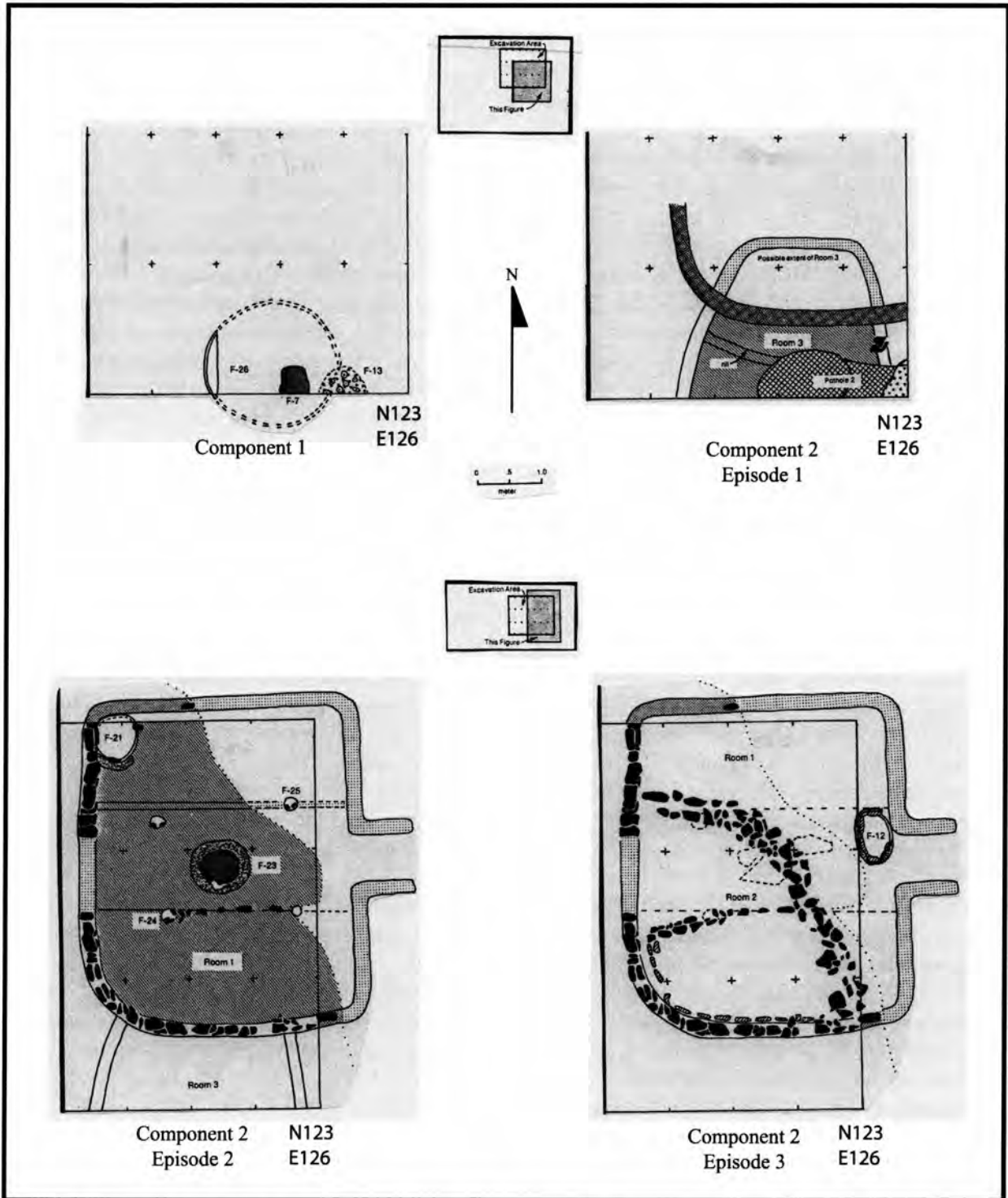


Figure 6. Map of features and rooms assigned to Components 1-2.

portion of a 2 m diameter basin pit chipped 26 cm into bedrock (F84-26). The stratigraphic relationship among these features is uncertain due to the limited area investigated along the walls of the disturbed pot-holes, and it is possible that they represent activities from different early occupations on the mesa. All share a common stratigraphic position beneath the plastered floor of Room 84-3.

Component 2 consists of three sequential room construction activities located in the eastern half of the excavation block (N123-128/E123-126). The initial activity is small residential structure measuring a little over 3 m (e-w), but the southern half of the room extends beyond the excavation block area, and subterranean Room 84-1 truncated the northern edge of the room. The east and west wall remnants are arcs with only a few stones left as an alignment near the edge of the floor. The floor was a 2-cm thick, saucer-shaped layer of brown silt plaster. The only interior feature was a raised plaster "rill" or ridge about 25 cm wide by 5 cm tall that extends east-to-west across the length of the room and divided the floor surfaces that were nearly at the same elevations. This rill may be the antecedent to the edge of the central channel that marks differences in the elevations of floor areas in a "typical" Antelope Creek phase residential structure (Lintz 1986). The scarcity of wall stones indicates that considerable salvaging of the masonry occurred after the structure was abandoned.

The second construction episode attributed to Component 2 consists of the excavation of a large, house pit for structure 84-1 that removed between 13 and 41 cm of deposits from the northern edge of Room 84-3. Remnants of this room occurred in excavation units N124/128/E123-126. This room is rectangular with rounded corners and measures about 4.8 m (n-s) by an estimated 4.07 m (e-w). Erosion of the mesa edge removed the east wall, the presumed eastward entrance, and the deposits adjacent to the mesa edge.

Interior features of Room 84-1 consist of an east-west central floor channel, about 1.6 m wide, in which the central third of the floor was 15 cm lower than the floor levels flanking the channel. North of the channel was three or four distinct red and brown silt floor replastering episodes that occurred during the use of the structure. A plastered basin-shaped storage pit (F84-21) was in the extreme northwest corner of the room; the base of the pit was chipped into bedrock.

Inside the central channel was a basin shaped central hearth (F84-23) with two replastering episodes. Also, postholes chipped into bedrock and braced with rock shims were found along the channel edges in the north-east (F84-25) and southwest (F-84-24) positions of the structure and constitute parts of a quadrilateral roof-support system. The other two postholes were inferred to be beneath a masonry wall of Room 84-2. No altar feature was identified along the west wall of the channel, but this area was obscured by an extended entry to another residential structure (Room 84-9).

The third construction episode occurred shortly after residential Room 84-1 was abandoned. Three large rock slabs were placed in the central channel of the room, and the channel was filled with imported fill. These rocks supported the arc of a masonry wall that was built to connect the west and south walls of abandoned Structure 84-1. Thus, a portion of earlier residential room was maintained and converted into part of a non-residential (subordinate) ovate structure, Room 84-2 (Lintz 1986). Little attempt was made to plaster the floor, but an east-west alignment of rock across the smaller room misaligned with the southern edge of the underlying floor channel may have served to create two bins. The walls of the south bin, forming the base of old Room 84-1, were lined with vertical stone slabs. At some point after room 84-2 was abandoned, the upper wall portions of the structure collapsed into a mound of fill and masonry rubble.

One exterior feature tenuously attributed to this third episode of Component 2 is the excavation of a v-shaped slab-lined cist. The cist was just inside the eastern channel portion of Room 84-1 and was dug to bedrock.

Component 3 is represented by a short, extended slab-lined entryway to an inferred residential room (84-9) placed west of Structure 84-1/2 in the area of N126/E123 (Figure 7). Very little of this room was excavated except the entrance and a small portion of the floor in unit 127/E122. Most of this room was covered by overlying structures 84-5, 84-7, 84-8, and living surfaces F84-5 and F84-8. The entryway floor was about 24 cm deep suggesting that the structure was semi-subterranean. The 85 cm-wide entrance extended only about 35 cm east of the east wall of the room and terminated in the rubble mound from structure of Room 84-1/2. Relatively small vertical stone slabs lined the entrance and the floor was made of a

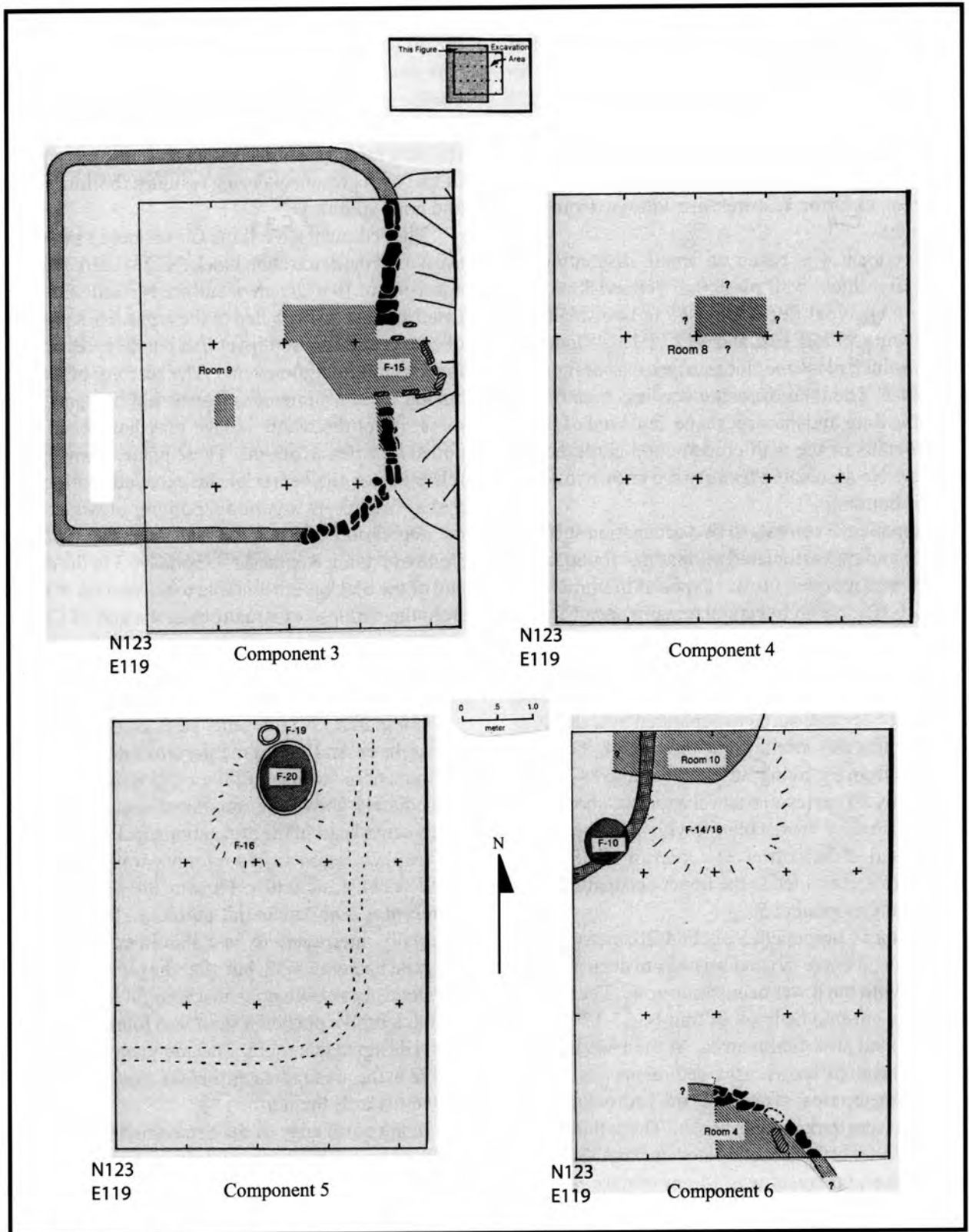


Figure 7. Map of features and rooms assigned to Components 3-6.

4 cm thick layer of brown and yellow red silty mortar that sloped down into the room. The eastern wall of Room 84-9 was built of large size rocks placed directly over smaller masonry rocks from the west wall remnants of structures 84-1/2. The excavations were not sufficient to ascertain whether an entry-step or collar attributes were present inside room 84-9. No interior or exterior features are known from this component.

Component 4 is based on small, discontinuous patches of a thick, well plastered, yellowish red silt floor with charcoal flecks exposed in two small test areas of units N125/E121, and N127/E122 (Figure 7). The 6 cm-thick plastered floor surface was designated Room 84-8. The total exposure was less than 0.5 m² area of the floor and the size, shape, and kind of structure or details of the wall construction could not be discerned. No associated features are known to occur with this building.

Component 5 consists of two occupation surfaces (F84-16) and two associated pit features found in the complex stratigraphic profile exposed in unit N127-128/E121-122. No architectural remains are attributed to this component within the investigated areas. The two occupation surfaces were defined from a low density of bone scrap, flake debris and charcoal flecking exposed at traceable surfaces separated by 2 cm thick layer of culturally sterile light brown silt. Two pits originated from the living surfaces. Feature 84-19 was a 27 (n-s) by 30 cm (e-w) basin shaped pit, about 5 cm deep with an ashy brown matrix with some bone that was exposed in the northwest corner of N128/E122. The feature is attributed to the upper occupation zone assigned to Component 5.

The other Component 5 pit, F84-20, measured 73 cm (n-s) by 55 cm (e-w) and was 46 cm deep and was affiliated with the lower occupation zone. The base of the pit was cut into bedrock of unit N127-128/E122, and contained stratified matrix. At the base was a 3 cm-thick layer of brown ashy sediments covering a 26 cm diameter area; elsewhere, the bedrock contact sediments were dark reddish brown. These thin lenses reflect sediments that accumulated during the pit use. Above these two layers was 14 cm of dark reddish-brown sediment containing a few large rocks and charcoal inclusions, which was interpreted as post-occupation fill. The next layer comprised brown ashy sediments with charcoal flecks and bone splinters

that covered only a 24 cm diameter area. The upper pit fill consisted of an olive gray (5Y 4/2) ash layer. The occurrence of large sandstone slabs, quartzite boiling stones, pottery and other debris and a high density of splintered bison bones with the ash may reflect a mixture of burned grass or bison dung fuel, mixed with grease rendering residues (boiling stones, and bone splinters).

The sediments overlying Component 5 in the central part of the excavation block (N123-128/E122-123) consisted of 10 to 20 cm of culturally sterile fine laminated silt layers attributed to the repetitive separation of coarse and fine sediment in a pond depression following multiple rain events. The scarcity of artifacts among these sediments suggests that this part of the mesa, if not the whole village may have been abandoned for a period of time. These pond sediments correlate across the center of the excavation block and perhaps represent a periodic pooling of water inside the depression of Room 84-9. The absence of these strata overlying Rooms 84-1/2 and 84-3 in the eastern end of the block is attributable to the mound of rubble from the collapse of structures at the end of Component 2. Insufficient excavations were conducted in the western end of the block due to the abundance of other structural remains.

Component 6 represents parts of two structures across the central part of the site attributed to the same component on the basis of their stratigraphic position immediately above the laminated sediments. In the south-central part of the excavation block (N123/E122-123), a 1.8 m segment of a masonry wall was encountered from a structure (Room 84-4) that might represent a non-residential building. This wall was originally interpreted to be a slab lined cist and was assigned Feature 84-22, but after the rocks were found to extend across two units in a straight line, and a 3.5 cm thick brown plastered floor was found, the feature was redesignated a room. The abundance of masonry rubble in the area indicates that the masonry wall collapsed towards the north.

In the north edge of the excavation block (N128/E120-121), a 1-to-2 cm-thick level layer of mottled yellowish-red plaster was designated Room 84-10. The rectangular plastered floor surface is roughly oriented in the cardinal directions with a very rounded corner. The exposed portion of the room is at least 68 cm (n-s) by at least 1.6 m (e-w) before it is covered by another

structure (Room 84-7). No walls were found near the plastered floor, suggesting that it might be a shade/ramada, or that all masonry blocks were reused in later structures.

South of Room 84-10 was an exterior occupation or activity surface (Feature 84-14/18) that contained bone splinters, pottery, pebbles, a few flakes and charcoal flecking. The debris layer is about 2 cm thick near structure 84-10, but thickens into a trashy layer 8 to 12 cm-thick further from the structure. One black-on-white trade sherd is associated with this layer, but the pottery type has not been identified.

The last recognized activities are assigned to Component 7, and occurred in the western half of the excavation block in units N123-128/E120-122 (Figure 8). This component is represented by at least three rooms, and five exterior features. A sequential series of use-episodes is represented based on the superposition of extramural features and structures, although it is not possible to demonstrate contemporaneity of specific exterior features with specific rooms or among the various features. Most of the structures and features were capped by a thick layer of masonry rubble from the collapse of the buildings following the last occupation in the area under investigation.

Room 84-5 represents an isolated, small, semi-circular structure located in units N124-126/E120-122. This room measured about 2.2 m in diameter as defined by horizontally laid masonry walls around a dish-shaped floor plastered with light red silt mortar with distinctive white sandstone pebble inclusions. Extensive rodent disturbances obscured the presence of any interior features, but a set of vertical stones, 40 cm apart and oriented perpendicular to the north wall axis, may indicate the entryway.

Immediately north of Room 84-5 in units N127-128/E121-122 was an occupation surface (F84-5) demarcated by a 3-cm thick unconsolidated ashy sediment layer containing burned rocks, charcoal flecks, a concentration of cord marked pottery and bison bones, and a minor amount of lithic debitage. Associated with this surface was a light gray ashy hearth (F-84-10) with amorphous boundaries that measured more than 22 cm (n-s) by 48 cm (e-w) by 12 cm thick with multiple burned lenses protruding from beneath the wall of Room 84-7. The lowest was a layer of white ash with few pieces of charcoal, covered by a 1-cm thick layer of burned earth, and above that, a

charcoal-rich layer that gave the area a blackened appearance.

Room 84-7 occurred in the extreme northwest part of the excavation block and covered most of units N127-128/E120. The east wall of the structure was oriented north south, but it angled diagonally across unit N127/E120, and may represent a rounded corner to a room. The size, shape and type of room were not discerned from the 1.56 m² area exposed. The room had a plastered floor (designated F84-9) consisting of a dark reddish brown mortar about 1 cm thick that was level up to its abutment with the masonry wall remnant made of horizontally laid sandstone cobbles. The wall remnant measured about 26 cm in height and was composed of multiple courses of horizontally laid rock held together by red mortar 3 to 4 cm thick. No interior features were found in this room. The occurrence of this structure over hearth F84-10 suggests that this room was built very late in the occupation sequence.

Minimal amounts of excavations were conducted in areas west and south of Room 84-5 (N125/E120, and N123-124/E120-121), due to a desire to reserve a sample of the abundant masonry rubble in this area. However, in the extreme southwestern corner of the excavation block, the corner of another structure was found. Based mostly on wall alignments visible at least 2 m south and perhaps 4.8 m east of the limits of the excavation block, this structure (Room 84-6) is believed to be a large rectangular, residential room. Only an area measuring about one-quarter of a meter in the northeast corner of the room was exposed. The room was semi-subterranean and the floor was chipped into the bedrock of the mesa. The brown plastered mortar of the floor rose to meet the 20 cm tall remnants of masonry wall. The nature of the wall foundation is uncertain, but above the floor, the wall consisted of horizontally laid courses of rock slabs 25 cm long by 5 cm thick that have vertical gaps about 2-3 cm apart. Upon abandonment, the masonry wall collapsed towards the northeast.

Three extramural features were found directly under the masonry wall rubble in units N123/E122-124, located southeast of Room 84-5. These include an ash lens (F84-2), a basin hearth pit filled with ash and bone splinters (F84-17), and a pile of quartzite boiling stones (F-84-11). All three features might represent components of stone boiling and grease

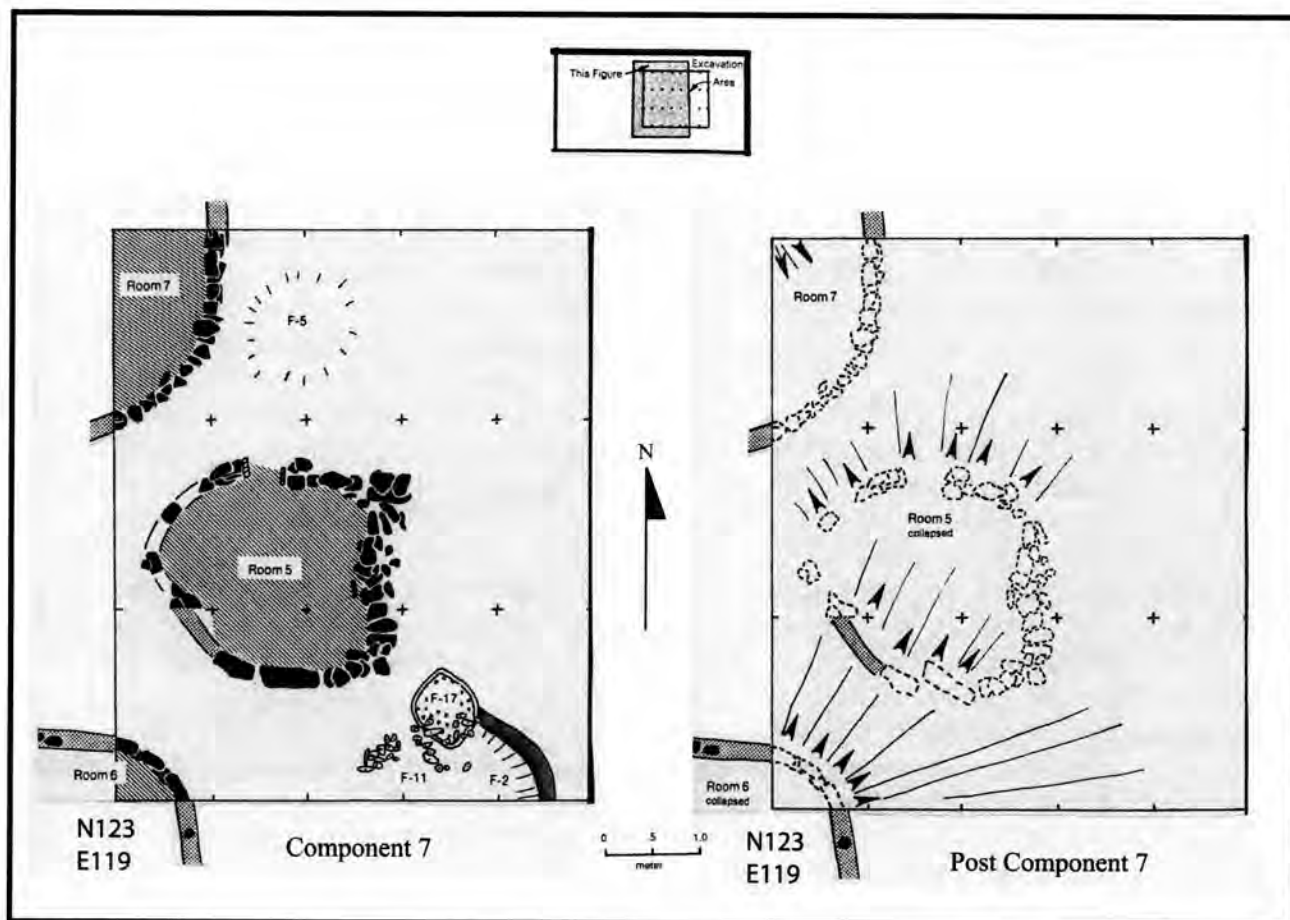


Figure 8. Map of features and rooms assigned to Component 7.

rendering activities that were possibly associated with and located north of the inferred extended entrance of Room 84-6. The ash lens (F84-2) is an amorphous stain that occurred in unit N123/E124, and measures more than 60 cm (e-w) by 80 cm (n-s). It may be a “rake-off” ash stain from the adjacent ash filled pit feature located in N123/E123. The shallow basin hearth pit (F84-17) measured about 73 cm in diameter by 12 cm thick and contained at least two distinct layers indicative of in-situ heating. The lower stratum was a semi-compacted grayish brown ash mixed with pebbles and large bison bone splinters. The upper stratum was a less compact brown silt with fewer pebbles, more bone splinters and some ceramic and lithic artifacts. Adjacent to both of these features was a small, 30 cm diameter pit dug into the wall of Room 84-4 that contained 34 tightly packed, rounded quartzite

cobbles (F84-11). An additional 18 quartzite cobbles associated with bison bones were scattered over the ash scatter and ash filled basin features.

The results from the 1984 excavations are compiled in various documents. A contract completion report was prepared for the National Register Department of the Texas Historical Commission (THC 1984). A major manuscript providing detailed descriptions of the site setting, history of investigations, methods, architecture, stratigraphy, and chronology was also written (Lintz 1990). Other studies were made of the pollen and macro botanical remains (Dean 1986), the faunal remains (DeMarcay 1986), and the ground stone assemblage (Robinson 2001). Unfortunately, no formal analyses or quantification of artifacts from the site have been conducted.

Chronological Results

The age of the structures and occupation surfaces in the two areas investigated during the 1981 season were derived using 13 radiocarbon dates. Five were from the area of Structure 81-1 and eight were from the area of Structure 81-2. Eight other radiocarbon samples and six obsidian samples were processed for age determinations for the 1984 excavation area. In addition, two sets of baked clay samples were collected from the central hearth (Feature 84-23) of Room 84-1 and burned clay adjacent to ash lens feature 84-10 in Room 84-7 and submitted to the University of Oklahoma for archaeomagnetic dating. Unfortunately equipment disrepair and the extreme strength of the magnetized samples have prevented processing of these samples.

The following section discusses the radiocarbon results prior to that of the obsidian sourcing and hydration studies. The radiocarbon results are discussed by the season of fieldwork and excavation block.

Radiocarbon Dating Results

A total of 21 radiocarbon dates were processed from both work phases at Landergin Mesa (Table 3). This table provides the laboratory and field catalog numbers, the conventional age and one sigma interval before present (B.P., as measured from 1950), a tree-ring (TR) calibration that provides a calendrical date conversion of the date with a two sigma range and date for the tree ring calibration curve intercept points. Also included are the kinds of materials dated, the provenience and context of the samples, and comments about the acceptability of the dates. The tree ring calibration utilizes the University of Washington Quaternary Isotope Lab program, version 1.3, and employs the 10-year atmospheric calibration record (Stuiver and Becker 1986). Although other calibration programs are available, the differences in the program are not regarded as significant.

Radiocarbon Results from the 1981 Field Season

Eleven samples were submitted at the end of the 1981 field season to the radiocarbon laboratory at the University of Texas. Most yielded disappointingly

early mean ages and remarkably large standard deviations when compared to the suite of other samples processed from Antelope Creek phase sites.

Of the four initial samples submitted from the area of Structure 81-1, three (Tx-4639, Tx-4640, and Tx-4641) had TR calibrated mean dates ranging from 1120 to 1380 radiocarbon years before present, with standard deviations of 180 to 340 years. The calibrated results have intercept points 250 to 600 years earlier than the traditionally recognized ages of the Antelope Creek phase (Lintz 1986). At the 90 percent level of confidence, only small segments representing less than 75 of the 1,400-year span at the two-sigma or standard deviation calibration intervals occur within the known Antelope Creek range for two of the samples. The context of all samples is on or above the floor surface of the large room, or from the sub-floor storage pit feature in the southeast corner of Room 81-1. Despite the solid context of the samples, these three results are not regarded as useful for interpreting the age of the structure. Undoubtedly the early age and poor precision are due to the very small amount of charcoal and/or bone that was submitted for dating. The fourth date (Tx-4642) from Structure 81-1 and a single sample submitted in 1984 to a different laboratory (Beta-17193) yielded results whose mean ages fall squarely within the anticipated ages of the Antelope Creek phase and with tight standard deviations (± 70 years). Both samples are from the same sub-floor storage pit feature (F81-1-2), and they have an overlap in the TR calibration of 100 years, throughout the 14th century. Based on these results, it appears that the other dated specimens submitted to the University of Texas radiocarbon laboratory were exceedingly small pieces from pre-Antelope Creek Phase deposits that might have been displaced by rodents or vandalism. The recovery of single examples of corner notched (Scallorn) arrow points, from the two 1981 excavation blocks and from the 1984 excavations suggests that some of these dates reflect Plains Woodland period occupations on the mesa top.

Seven of the eight dates from the area of Structure 81-2 were also submitted to the University of Texas radiocarbon laboratory in 1981, and six of these samples also yielded ages that lack precision. These six samples (Tx-4643, Tx-4645, Tx-4647, Tx-4648, Tx-4649, and Tx-4651) have uncalibrated one-sigma

Table 3. Radiocarbon dates from the 1981 Fieldwork at Landergin Mesa.

Lab No	Cat No.	Date B.P.	2 SD range	Curve		Material	Provenience	Context	Comments
				Intercepts	TR Calibrated Date (A.D./B.C.)				
1981 Excavation Blocks									
Structure 1 Area									
Tx-4639	LM-1A	1120 ± 180	580 - 1275	898, 920, 942	charcoal and charred bone	N130/E95.5, L2 (10-20 bs)	Scatter sample above floor	Unexpectedly early-- mixed	
Tx-4640	LM-1M	1440 ± 340	171 - 1260	608, 627, 638	charcoal	N125.5/E98, --, Ele. 99.45	Adjacent to F-1-2, storage pit	Much too early-- possibly contaminated or rodent mixed	
Tx-4641	LM-1K	1380 ± 210	138 - 1146	648	charcoal	N127.5/E96, --, Ele. 99.26	Floor of room base of rock wall	Unexpectedly early-- possibly mixed by pothunting	
Tx-4642	LM-1N	720 ± 70	1164 - 1394	1279	charcoal	N125.5/E98, --, Ele. 99.14-99.07	Feature 1-2, storage pit clay layer	Date is acceptable	
Beta-17193	81-1L	500 ± 70	1298 - 1498	1422	charcoal	N125.5/E98, unknown depth	Feature 1-2, storage pit	Date is acceptable	
Structure 2 Area									
Tx-4645	LM-2J	1430 ± 340	169 - 1276	639	charcoal	N118/E110, L2, Ele. 99.90	Feature 2-1 basin hearth	Unexpectedly early-- possibly mixed by pothunting	
Tx-4649	LM-2G	1110 ± 630	410 - 1955*	902, 918, 955, 972, 975	charcoal	N118/E110, L2, Ele. 99.82	Base of rock wall	Unexpectedly early-- possibly mixed by pothunting	
Tx-4644	LM-2Q	630 ± 80	1260 - 1430	1304, 1371, 1384	charcoal	N118/E110, L2, Ele. 99.66	Feature 2-3, hearth	Date is acceptable	
Tx-4651	LM-2U	570 ± 710	85 - 1955*	1332, 1343, 1394	charcoal	N118/E110, L3, Ele. 99.52	Feature 2-5, midden	Date is acceptable	
Beta-17194	81-2V	580 ± 60	1280 - 1440	1330, 1347, 1393	charcoal	N118/E110, L3, Ele. ca. 99.50	Area B, midden near slab hearth	Date is acceptable	
Tx-4647	LM-2Y	590 ± 190	1260 - 1450	1328, 1350, 1391	charcoal	N118/E110, L4, Ele. 99.50	Feature 2-11, hearth	Date is acceptable-- reflects AC occupations below floor	
Tx-4648	LM-2W	1010 ± 280	433 - 1440	1001, 1012, 1017	charcoal	N118/E110, L4, Ele. 99.50	Feature 2-11, hearth	Date is acceptable-- reflects AC occupations below floor	
Tx-4643	LM-2BB	1860 ± 660	1492 - 1404	84, 89, 127	charcoal	N118/E110, L4, Ele. 99.37	Area A, midden, below floor	Indicates Archaic occupation	

Tree ring calibration uses University of Washington Quaternary Isotope Laboratory computer program version 1.3 (1987). 10 year atmospheric conversion used in the TR calibration.

Dates that are in bold and underlined represent ages Before the Christian Era.

age spans ranging from ± 190 to ± 710 years. Four of these samples have TR calibration curve intercept points ranging from 125 to 1100 years earlier than the anticipated age of the Antelope Creek phase, whereas two other poor precision dates have curve intercepts within the estimated date range. The context of these samples is rendered moot by the high degree of uncertainty about the imprecise ages of these samples.

Only one other radiocarbon sample from the batch sent to the University of Texas radiocarbon laboratory in 1981, and one other sample later submitted to Beta Analytic in 1984 have results with good precision (630 ± 80 years B.P. [Tx-4644] and 580 ± 60 years B.P. [Beta-17194]). Both dates occur within the anticipated range of the Antelope Creek phase. Even though the former sample is older and associated with Feature 3, which occurs 16 cm above the latter sample collected for the possible hearth in Area B, the tree ring calibration procedure renders these two dates essentially contemporaneous.

Radiocarbon Results from the 1984 Field Season

In contrast to the chronometric problems with most samples from the 1981 excavation areas, all eight carbon samples from the 1984 excavations yielded results with relatively tight precision (± 60 to ± 90 years; Table 4). Most interestingly, one of two samples from the earliest occupation, Component 1 ash pit, F84-7, yielded a date of 2110 ± 60 B.P. (Beta-17198). The two-sigma TR calibrated date spans from 361 B.C. to A.D. 20 and suggests that some of the occupation zones beneath the Antelope Creek structural floors on Landergin Mesa relate to Late Archaic occupations. Although no diagnostic materials were found directly associated with this sub-floor feature, two dart point stems were obtained from the fill of the 1984 excavation block, and a third dart point was from surface collection context (Lintz 1990: Appendix D). These three specimens and the radiocarbon result provide supporting evidence for Late Archaic use of the mesa top, and is consistent with a pattern recognized for Archaic use on other mesas in the lower part of the Texas panhandle (Walter n.d.)

The second sample attributed to Component 1 is from the sub-floor bone splinter and ash feature, F84-4. Charcoal flecks yielded a date of 700 ± 80 B.P.

(Beta-17197), and represents the second oldest date that potentially represents activities from the Antelope Creek phase occupations. The two-sigma TR calibrated age span for this sample ranges from A.D. 1164 to 1410.

Two radiocarbon dates are assigned to Component 2. One sample is from the central hearth of Room 84-1, and represents the age of the second use-episode. The second sample is from fill deposits north of the central channel of the same room and either represents a date from the terminal second use-episode, or the third use-episode. The results are 630 ± 70 B.P. (Beta-17201), and 600 ± 90 B.P. (Beta-17199), respectively. The spans of TR calibrated dates from Component 2 are nearly contemporaneous: A.D. 1260–1430, and A.D. 1260–1440. Both are stratigraphically consistent.

Two radiocarbon dates are derived from different portions of the large pit feature, F84-20, that is attributed to Component 5. Even though the two dates are attributed to the A.D. 1200 to 1500 range of the Antelope Creek phase, the two dates from the same large pit feature are very dissimilar. One sample dated 780 ± 70 years B.P. (Beta-17195), and represents a date earlier than the date from Feature 84-4 from Component 1. Indeed, it is the oldest date assigned to the Antelope Creek phase from the 1984 excavation block. The second sample from the same pit yielded a date of 490 ± 70 B.P. (Beta-17202). This is the second most recent date from the entire 1984-excavation block. When the TR calibration is applied to the two dates, the range of the two-sigma span overlaps for nearly a century, between A.D. 1301 and 1383. Portions of the extreme calibration tails of the two dates extend more than 150 years earlier and 115 years later than the generally accepted range of dates assigned to the Antelope Creek phase. It is possible that the inconsistency between these two samples is due to displacement of older charcoal into the pit fill through aboriginal filling of the feature with some earlier sediments, and/or the introduction of newer charcoal into the pit fill by rodent activities.

The final two radiocarbon dates from the 1984 excavation block are both attributed to Component 7. One sample that yielded a date of 450 ± 70 B.P. (Beta-17200) is from the ashy stain on the floor of Room 84-7. This is the most recent date in the radiocarbon series from the 1984 excavation block and is

Table 4. Radiocarbon dates from the 1984 Fieldwork at Landergin Mesa.

Lab No	Cat No.	Date B.P.	TR Calibrated Date (A.D./B.C.)		Material	Provenience	Context	Comments
			2 SD range	curve intercepts				
1984 Excavation Block								
Component Assignment								
C-1	Beta 17198	84-266D/266H	2110 ± 60	361 - 20	168, 140, 125 ashy sediment	N123/E125, Ele. 98.34-98.38	F84-7, ashy midden beneath floor of Room 84-3	Date suggests Late Archaic occupation
C-1	Beta 17197	84-266D/266H	700 ± 80	1164 - 1410	1280 charcoal flecks	N123/E126, Ele. 98.33-98.415	Bone splinter and ash concentration F84-4.	Earliest AC activities below lowest recognized floor in excavation block.
C-2	Beta 17199	84-42E	600 ± 90	1260 - 1440	1326, 1353, 1363, 1356, 1389 charcoal chunk	N125/E124, Ele. 98.40	Room 84-1, fill north of central channel	Date is acceptable and consistent with Beta-17201
C-2	Beta 17201	84-297E/291B	630 ± 70	1260 - 1430	1304, 1371, 1384 combined charcoal flecks	N125/E125, Ele. 98.06-98.12 and N127/E124, Ele. 98.06-98.315	Room 84-1, central hearth F84-23 and sealed floor cist F84-21	Date is acceptable and consistent with Beta-17199
C-5	Beta 17202	84-286H/287B	490 ± 70	1301 - 1615	1426 combined charcoal flecks	N127/E122, Ele. 98.42-98.51	F84-20 large pit, mixed sample from general fill and bottom of pit.	Date span is within AC range; second most recent date in series and is inconsistent with Beta-17195
C-5	Beta 17195	84-289A	780 ± 70	1041 - 1383	1259 charcoal flecks	N127/E122 Ele. 98.57 - 98.62	Top of Pit Feature 84-20, large pit, mixed sample	Date span is within AC range; second oldest date in series and is inconsistent with Beta-17202-- Intercept is probably too early for component
C-7	Beta 17196	84-254D	660 ± 60	1260 - 1410	1284 charcoal flecks	N127/E120, Ele. 98.68-98.76	Room 84-7, floor fill	Dates to AC range, but age is comparable to those from Component 2-- Intercept is probably too early for component.
C-7	Beta 17200	84-271E	450 ± 70	1327 - 1636	1437 charcoal and bone	N127/E120, Ele. 98.985	F84-9, ashy stain on floor of Room 84-7	Most recent date in series and is stratigraphically consistent.

Tree ring calibration uses University of Washington Quaternary Isotope Laboratory computer program version 1.3 (1987). 10 year atmospheric conversion used in the TR calibration.

Dates that are in bold and underlined represent ages Before the Christian Era.

stratigraphically consist with the series. The second date of 660 ± 60 B.P. (Beta-17196) is from the fill above floor of the same room. The age of the second sample is more compatible with the dates assigned to Component 2. TR calibration of the two samples yield age spans of A.D. 1327 to 1636, and A.D. 1260 to 1410, respectively. An 83-year overlap in the two-sigma span exists for these two samples (A.D. 1327–1410). The significance of these dates is discussed after the obsidian hydration results are presented.

Obsidian Hydration Results

Six obsidian flakes from the 1984 season were submitted to the Oklahoma Archaeological Survey for hydration dating. All specimens were from deposits attributed to Components 2 and 7 assigned to the Antelope Creek phase. A piece of each flake was pulverized and X-ray fluorescence (XRF) analysis was conducted to identify chemical characterization of the specimens (Table 5). The relatively high percentages of niobium (82.9–87.0 parts per million) indicate that all six samples came from Obsidian Ridge portion of Rabbit Mountain, which is a specific peak within the Valles Caldera also known as the Jemez Mountain group of north-central New Mexico.

The thickness of the hydration rims on the obsidian pieces were measured multiple places along the thin section to derive a statistically valid sample for determining the age of the specimen (Baugh and Nelson n.d.) One sample had been burned and had no reliable hydration rim thickness. Although no satisfactory rate of hydration or moisture absorption was available in 1985, when the Landergin Mesa obsidian samples were processed, subsequent studies have experimentally derived an induced hydration rate of $7.83 \text{ } \mu\text{m}^2/1000 \text{ years}$ (Earls et al. 1989). The calendrical age of the obsidian specimens from Obsidian Ridge is derived by squaring the thickness of the measured hydration rim and multiplying by the value 127.71 (which is the 1000 year interval divided by the induced hydration rate of 7.83), and then subtracting the date of the specific year that the samples were processed to derive a "Before Date of Analysis" (B.D.A.) of date (1985 for the Landergin Mesa samples). To render the obsidian hydration (B.D.A.) dates from Landergin Mesa comparable to the B.P. radiocarbon dates, simply subtract 35 years from the radiocarbon results.

The results indicate that three of the four specimens from the Component 2 context yielded mid-point ages of A.D. 1378, 1389 and 1474 and are regarded as reflecting the age of the deposits (Table 6). The fourth specimen (No. 1988) yielded a date of A.D. 677 ± 106 which is too early from both the other obsidian samples and the bulk of known radiocarbon dates of the Antelope Creek phase (Lintz 1986). The anomalous date suggests that the specimen may represent a piece displaced from earlier contexts on the mesa or a piece of obsidian recollected from some other sites in the region.

One obsidian specimen (No. 1987) from Component 7 context yielded a date of A.D. 1286. Even though this age is within the accepted range for the Antelope Creek phase, it is stratigraphically inconsistent with the other three obsidian samples from Component 2 and is inconsistent with the radiocarbon dates from this occupation. The date is rejected as a valid age for this component.

Summary

Most of the radiocarbon results from the 1981 proved to be disappointing since most have exceptionally large standard deviations that are probably due to small size of the charcoal sample and brevity of the radioactive counting time (Figure 9). Only four of the 13 samples had one standard deviation intervals of less than 100 years, but three samples had one standard deviation intervals of more than 500 years. With such large correction factors, the samples offer little precision for the two excavation blocks sampled during the phase 1981 field season. Nevertheless, seven of the 1981 dates with poor radiocarbon precision have tree-ring curve intercepts dating well before the Antelope Creek phase. Perhaps it is more than an interesting coincidence that the TR intercept positions of three radiocarbon dates and one obsidian hydration sample fall in the range of A.D. 608 to 677 (Tx-4640, 4641, 4645, OH-1988), and another three TR intercepts cluster between A.D. 898 and 1017 (Tx-4639, Tx-4648, and Tx-4649). The similarity of these results suggests that the samples may be from two occupational events that might have occurred during the Plains Woodland period. Two other dates tend to be much earlier. One (Tx-4643) has poor precision (± 600 years, one sigma), but nevertheless has TR

Table 5. X-Ray Fluorescence Results on Obsidian Samples from Landergin Mesa.

Element	Sample No.					
	OH-1987	OH-1988	OH-1989	OH-1990	OH1991	OH-2007
Rb (ppm)	198.7	198.5	198.5	200.1	200.3	197.4
Sr (ppm)	0.1	0.0	0.0	0.0	0.0	3.8
Y (ppm)	85.3	87.4	88.9	88.6	85.5	80.3
Zr (ppm)	221.7	229.4	234.6	231.5	231.2	218.8
Nb (ppm)	83.6	85.2	85.6	87.0	84.7	82.9
MnO %	.084	.085	.085	.085	.084	.085
Fe ₂ O ₃ %	1.23	1.21	1.24	1.23	1.23	1.22
TiO ₂ %	0.83	0.82	0.83	0.83	0.82	0.83
Ba (ppm)	10.5	9.8	13.2	10.3	12.7	10.3
Na ₂ O	4.37	4.29	4.34	4.31	4.27	4.38
Obsidian Source	82	82	82	82	82	82

Obsidian Source 82 = Obsidian Ridge, Sandoval County, New Mexico.

intercepts ranging from A.D. 84 and 127; the second sample (Beta-17198) has very good precision (± 60 , one sigma) and a TR intercept of 168, 140 and 125 B.C.). Perhaps these samples reflect activities on top of the mesa that date to the Late Archaic times.

The other 13 radiocarbon dates and 4 obsidian hydration dates all reflect ages within the span of the Antelope Creek phase of A.D. 1200 to 1500. Only one of these (Tx-4651) has a poor level of precision (± 710 , one sigma). All but one (Beta-17200) of the dozen dates with good precision span the 14th century. Three radiocarbon dates and one obsidian hydration date span the 13th century (Tx-4642, Beta-17197, Beta-17195, and OH-1987), while one obsidian hydration date and three other radiocarbon dates span the 15th century (Beta-17193, Beta-7202, Beta-17200, and OH-1991). The complex stratigraphy and sequence of houses from seven components represented in the 1984 block excavations reflects occupations occurring over a considerable period of time. These results indicate that the mesa top houses span the known range of the Antelope Creek phase.

Conclusions

The chronometric results from Landergin Mesa are important for three reasons. First, even if the radiocarbon dates with large standard deviations are set aside, the date of 361 B.C.–A.D. 20 (Beta 17198), from the earliest component in the 1984 excavation block, and an obsidian hydration date of A.D. 571–783 suggest that the mesa top was intermittently utilized by various Late Archaic and Plains Woodland people. Supporting evidence comes from the recovery of 3 excavated Scallorn projectile points, and the recovery of two excavated and one surface-collected corner notched dart points from the mesa top (Lintz 1990: Appendix D). Little is known about the utilization of the site by these pre-Antelope Creek groups, other than they apparently made prepared hearths, as indicated by the sub-floor features in the excavation block around Structure 81-1, and processed some bone grease, as indicated by the bone splinter and ash feature 84-4.

Second, the bulk of the radiocarbon and obsidian dates reflect intensive occupation and utilization of

Table 6. Obsidian Hydration Dates from the 1984 Fieldwork at Landergin Mesa.

Component and Use Episode	Lab No.	Cat. No.	Hydration Rim Thickness (microns)	Obsidian Source	One sigma Date A.D.	Two Sigma Range A.D.	Provenience	Context	Size			Comments	
									Ln (cm)	Wd (cm)	Th (cm)		
C-2, E-2	OH-1991*	-	2.00 ± 0.10*	Obsidian Ridge	1474 ± 51	1372 - 1576	N125/E125, --, 98.14	D Central hearth F84-23 in Room 84-1	2.26	3.14	0.67	2.8	Obsidian date within AC range, but slightly too recent, based on associate4d radiocarbon age.
C-2, E-2	OH-2007*	-	No Reading*	Obsidian Ridge	ND	ND	N125/E125, --, 97.995	D Central hearth F84-23 in Room 84-1	3.68	1.27	0.40	1.6	Not datable-- hydration rim affected by hearth temperatures
C-2, E-2	OH-1988	128F	3.20 ± 0.13	Obsidian Ridge	677 ± 106	465 - 899	N127/E124, L-1F, D 98.285	Channel Fill Room 84-1/2	2.23	3.11	0.69	4.6	Date Rejected: Much too early for AC range-- obsidian suspected to be out of temporal context.
C-2, E-2 or C-2, E-3	OH-1989	51E	2.16 ± 0.11	Obsidian Ridge	1389 ± 61	1267 - 1511	N125/E125, L-1A, D 98.68 - 98.89	South half of Room 84-1/2 near aeolian fill	3.16	2.39	0.68	5.0	Date acceptable
C-2, E-2 or C-2, E-3	OH-1990	38C	2.18 ± 0.11	Obsidian Ridge	1378 ± 61	1256 - 1500	N125/E124, L-1, D 98.61	Room 84-1/2 contact with wall fall and aeolian fill	2.34	1.79	0.46	1.8	Date acceptable
C-7	OH-1987	147C	2.34 ± 0.10	Obsidian Ridge	1286 ± 60	1166 - 1406	N123/E121, L-3, D 98.89	Rm 84-5, interior room fill	3.19	1.84	0.53	3.3	Date within AC range -- hydration result slightly earlier than associated radiocarbon dates.

* These two obsidian samples are from different replastering layers of the same hearth and should be nearly contemporaneous.

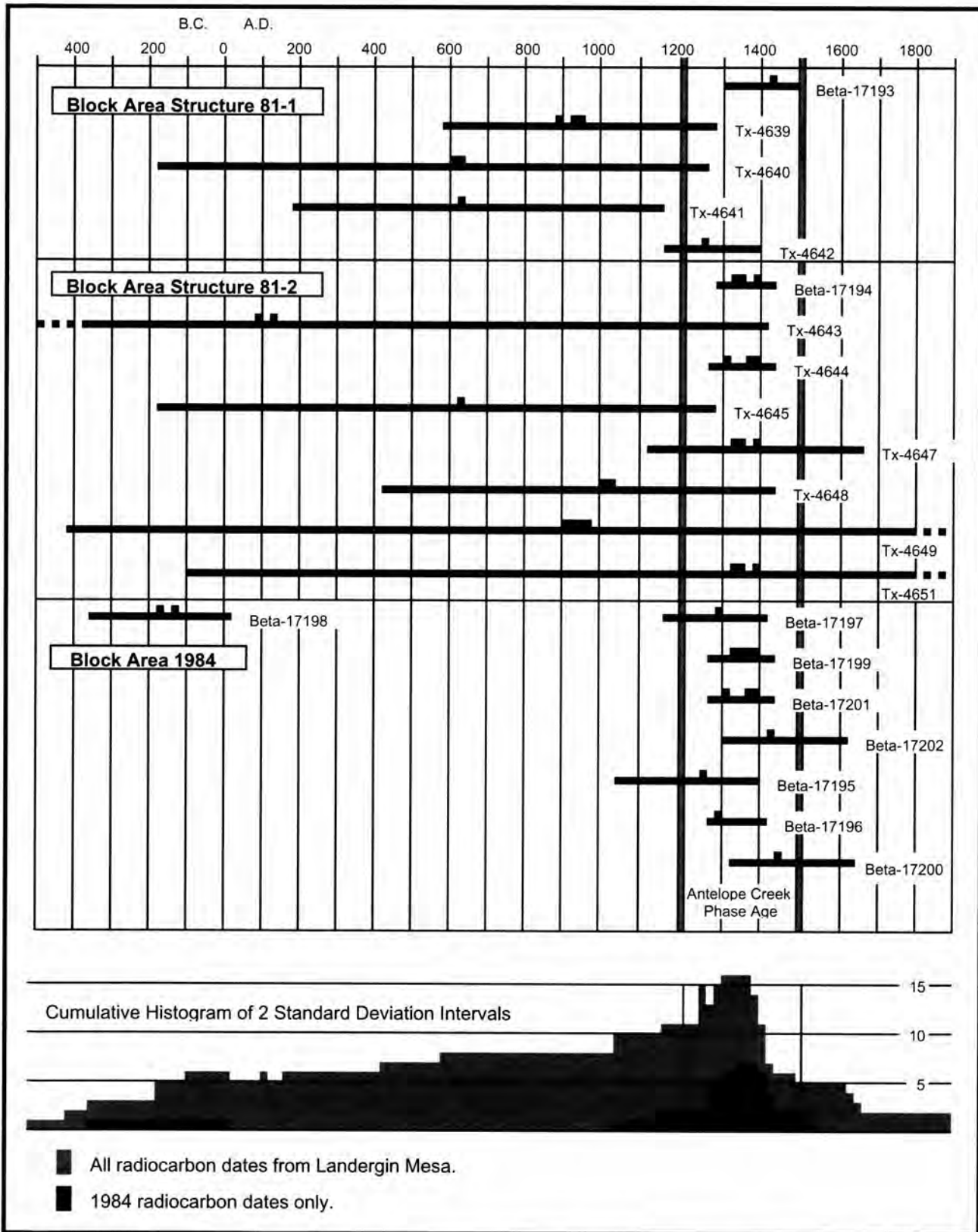


Figure 9. Calibrated Radiocarbon Dates: Two Standard Deviation Interval, and Curve Intercept Points.

the mesa top during the age of the Antelope Creek phase. Within the 1984 excavation block, all of the plastered floors and structures are attributed to the Antelope Creek phase. Many of the mesa-top structures were constructed in house pits (cf. Structure 84-1, 84-5, and 84-9) that were chipped into the bedrock deposits of the mesa, as were roof support posts (F84-24, F84-25), central hearths (F84-23), and storage pits (F84-21, F84-20). Such forms of structure preparation reflect the commitment to residing successfully on a mesa top despite seasonal exposure to harsh climatic conditions, and with difficult access to water. With all the digging of features and structures occurring on site and the displacement of early depositional fills, it is remarkable that the sequence of dates is at all consistent with the inferred stratigraphic sequence. For all the limitations of occupational space imposed by the mesa top, it is remarkable that freestanding dwellings, rather than contiguous room buildings are represented in the excavation blocks. But only some 4 percent of the site has been professionally excavated and elevation changes and lengths of wall alignments hint that a contiguous room building might be present immediately east of the plaza.

The third important contribution made by the chronological studies involves the empirical evidence that the mesa top was utilized for nearly the entire span of the Antelope Creek phase. That being said, it is clear that an insufficient amount of faunal remains and implements exist to reflect a continuous sedentary occupation of the mesa top for 300 years by a sizable group of people. More likely, the site was intermittently used. The laminated strata found above Component 5 in the 1984 excavation block offer supporting evidence for non-continuous use. It is possible that the village on Landergin Mesa represents a short to moderate duration refuge for people residing in the region (Marmaduke and Whitsett 1975). The mesa top community would have been an effective retreat against brief threats of raids, but not against long-term sieges by hostile groups.

In a previous study of architectural and burial practices among 28 Antelope Creek phase sites located within a 50-mile segment of the Canadian River valley, I postulated that the Antelope Creek phase people employed various adaptive strategies to perpetuate their semi-sedentary gathering-hunting-horticultural existence during intensifying periods of drought (Lintz

1986). By contrasting community, settlement and artifact patterns between an early subphase (A.D. 1200–1350) and a late subphase (A.D. 1350–1500), I postulated the existence of four buffering mechanisms. They consisted of:

- 1) A shift from sites located near the sand-filled Canadian River to sites along lateral tributaries to take advantage of spring water from the Ogallala aquifer;
- 2) A shift from communal contiguous room structures to isolated freestanding buildings as an indication of less commitment to place and deterioration in social cohesion;
- 3) A 3400 percent increase or intensification of trade goods from the Southwest, that signaled the establishment of distant trade partners as an adaptive means of supplementing food resources from other regions when short-term localized droughts became severe; and
- 4) An intensification in hostilities with external groups as a means of protecting the Alibates agatized dolomite as a sought-after trade commodity. The evidence for war was most vividly reflected in the partially disarticulated human skeletal remains on the floor of Structure I at the Footprint Site, and the subsequent interment of pile of ten human skulls of non-Antelope Creek people into a pit dug after the room was burned down. Several other burials from other sites also contained arrow points or were isolated human skulls in various contexts.

The dates from Landergin suggest a need to rethink two of these issues. Clearly the temporary residences involving isolated, freestanding buildings occurred on Landergin Mesa during both the early and late sub-phases of Antelope Creek. Also, the pressures that provoked people to live on top of Landergin Mesa must have begun during the early sub-phase of the Antelope Creek phase, and one of the possible pressures might include the need for defensive sites from raiding groups. The reasons for occupations on the mesa are uncertain, and perhaps the thorough study of the artifacts from the excavations and investigations

of sites near the mesa will shed light on some of these reasons. The complexity of the architecture, stratigraphy and chronology make it clear that a number of factors affected settlement choices in the region to induce people to consider establishing residences on top of this mesa.

Acknowledgments

A number of people have helped with this project, and I would like to acknowledge some of their help. Foremost, I want to thank three special people who contributed much to my education about the prehistoric sites in the Texas panhandle. These are Jimmy Mitchell, who maintained stimulating correspondence lasting several years during my formative studies of the region, Jack Hughes who provided access to his many records about the sites in the Texas panhandle and for innumerable lessons about the Antelope Creek sites, and Meeks Etchieson who helped me in many ways during my dissertation field work. Robert J. Mallouf found creative ways to raise the funds for the Phase II season and gave me the opportunity to direct the excavations at Landergin. I especially thank the Mansfield family for their interest in preserving one of the most interesting and important sites in the region. Ms. Patricia Mercado-Allinger, State Archaeologist at the Texas Historical Commission, helped obtain permission to reproduce maps and photographs in this article. Dr. Glenna Dean has been a constant source of encouragement over the years and reviewed an earlier draft of this paper. Mike Quigg served as a sounding board during the writing and also commented on an early draft of this paper. Finally, I want to thank the many crewmembers that helped in many facets of field and laboratory work involving the two seasons at Landergin. I especially would like to single out those members who are no longer with us: Vivian Chagra, Wayne Chesser, Billy Harrison, Jack Hughes, and Jim Word. To those dearly departed and those dearly present, I wholeheartedly thank you all for your contributions on a most memorable project.

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Symposium Paper in Honor of Jimmy Mitchell

Remembering Jimmy Mitchell

E. H. "Smitty" Schmiedlin

For the longest time, the Texas Coastal Plain was a blank spot in Texas Archeology infested with mosquitoes and alligators. Other than shell middens, it was without any significant archeological sites as there were no burned rock middens, ceremonial mounds, or caves filled with perishable goodies. But then, what could you expect from a land that was home to only one tribe of Indians whose main claim to fame was that they smelled bad and ate people?

There were, however, some collectors such as Schmiedlin and Birmingham telling wild stories about Paleo sites. But then, they were not professionals so what could they know—surely nothing worth publishing. They talked about arrowheads with asphaltum, located sites by looking for *Anaqua* trees, reported on Goosecreek-looking pottery from the coast, buried sites on the Guadalupe River, *aceqias* in the Victoria City Park, mission and presidio ruins, Paleo sites in the nearby caliche hills, and something about a French fort in the area.

But thanks to Tom Hester, people like Jimmy Mitchell started to get interested in documentation. He made notes on what we said, and pestered us to write about our observations. Just saying OK no longer got you off the hook with Jimmy, so you just had to make a commitment and start writing.

I finally turned in a short report but Jimmy's comment was "Schmiedlin think about an archeological report in the same way you would if you were going to write about a hunting story for publication. You cannot just say you killed a deer and ate it. A good report would include the following questions.

- 1) Why were you going hunting?
- 2) What type of animal were you hunting and its various attributes?
- 3) Describe the terrain where you were going to hunt including reasons why it was a good place.
- 4) Describe the various tactics you used to make the hunt successful.
- 5) Describe what really happened in relation to what you thought would happen.

- 6) If the hunt was successful, describe the steps in processing the animal.
- 7) If you were unsuccessful, describe what went wrong.
- 8) If you were going to make a stew, you would want to list all the ingredients that went into it.
- 9) You would want to make a map so that you or others could go back to that location.
- 10) You would want to take some photos to prove what you had done.

That is pretty much what I did. My article was published in *La Tierra*. I think this is what Carolyn Spock likes to call "fleshing out the article."

Since then, a long list of professional archeologists have worked and written about the Victoria area resulting in hundreds of sites recorded, dozens of reports written, at least four student dissertations produced, and ongoing research implemented. Without Jimmy's promoting of the area, it is likely that we would still be known as the "cannibal coast."

Jimmy had a special way of rewarding people both verbally, and in editing papers. He pestered me until I sent a report to Hester who spilled a bottle of red ink on it and sent it back. Jimmy rewrote most of the article, and had it published with my name on it, and did not mention his contribution. I was really proud of my first publication; however, Jimmy continued to pester me to write more articles. I must be making progress since my last report to Hester got only a half bottle of red ink.

After years of pestering by Jimmy, I finally sorted the Paleo-Indian materials. I sent them to TARL where Norman Flaigg spent many hours resorting and renaming the points, which were published in *La Tierra* as "The J2 Ranch Paleo Points." That still was not good enough. I was continually hounded about the Archaic materials. Along with Hester, Jimmy helped in my first major work, "The Archaic and Late Prehistoric Artifacts from the J2 Ranch Site" which was published in *La Tierra* Vol. 27-4.

WHO WAS THAT MASKED MAN??

By Smitty Schmielidlin

MANY KNEW HIS NAME
BUT FEW KNEW THAT BEHIND THAT
SMILING FACE WAS A MAN DESTINED
TO LEAD
MANY TO FAME

TO HONOR OTHERS IN STAA
WITH PRAISE AND PLAQUES WAS
ALWAYS JIMMY'S WAY

SHEEPSKINS OR NOT
HIS GOAL WAS ALWAYS TO MAKE THE
INDIVIDUAL GIVE IT HIS BEST SHOT

"I DON'T KNOW HOW TO WRITE" WAS
NEVER AN EXCEPTED EXCUSE
AS JIMMY FOUND SOMETHING IN
EVERYONE'S ABILITIES HE COULD USE

TO OBTAIN A REPORT
HE OFTEN TO TRICKERY WOULD
RESORT

SEEMINGLY INTERESTED ONLY IN WHAT
YOU THOUGHT
HE SOON WOULD GATHER A PROMISE
OF A
REPORT HE SOUGHT

HIS MILITARY FEATS WERE UNKNOWN
NO ONE KNEW WHAT MYSTERIOUS
OBJECTS HE MAY HAVE FLOWN

WAS IT HE THAT SUE TURNER AND
SMITTY SAW IN THE DISTANT SKY
OR JUST A UFO PASSING BY?

WHEN THE KNOCK CAME ON HESTER
AND COLLINS DOOR, AND FAUPEL SAID,
"THEY ARE HERE"
WAS IT JIMMY OR SOMETHING TO FEAR?

TALK OF AREA 51 AND ROSWELL
BROUGHT MANY A SCARE
BUT MOST OF US KNEW IT WAS OK
CAUSE MOST LIKELY JIMMY WAS THERE

SO IF TO NIGHT YOU SEE A SHOOTING
STAR IN THE SKY
DON'T WORRY BE HAPPY ITS JUST
JIMMY PASSING BY

In Jimmy's honor, I am in the process of finishing an article titled "The Last Chapter – The J2 Ranch Lithic Tools". I do not know if it will ever get published without Jimmy's help, but somehow I feel that Jimmy's spirit will pester me until it is done.

BIBLIOGRAPHY OF PUBLISHED WORKS IN ARCHAEOLOGY AUTHORED BY JIMMY L. MITCHELL

Thomas R. Hester

This bibliography constitutes an initial effort to catalog the archaeological publications of Jimmy L. Mitchell (1935–2000). The focus here is on his publications related to Texas archaeology, but papers related to research in other states have been included. Jimmy served as Editor of *La Tierra*, the quarterly journal of the Southern Texas Archaeological Association (STAA) for 10 years (1978–1987), the *Bulletin of the Texas Archeological Society* (Vols. 59, 60, 61, 1988–1990), and served as the Editor of Special Publications for STAA, with eight *Special Publications* issued under his oversight. Similarly, most issues of *La Tierra* edited by Jimmy contained a 1-page

“Editorial” at the beginning of the issue; some of these contained some very interesting commentary and may warrant listing in the final bibliography as separate entries.

Items that are missing from this compilation, or any corrections to those listed below, should be brought to the attention of Tom Hester (PO Box 625, Utopia, TX 78884; secocreek@ricc.net).

Jimmy published numerous papers, manuals, books and other materials during his long career as a specialist in job and occupational analysis. A listing of these can be found for the next few months at www.ijoa.org/resumes/mitchell.html.

Abbreviations Used

BTAS: Bulletin of the Texas Archeological Society

LT: *La Tierra*

OA: Ohio Archaeologist

Senior author, of papers, monographs, and book review:

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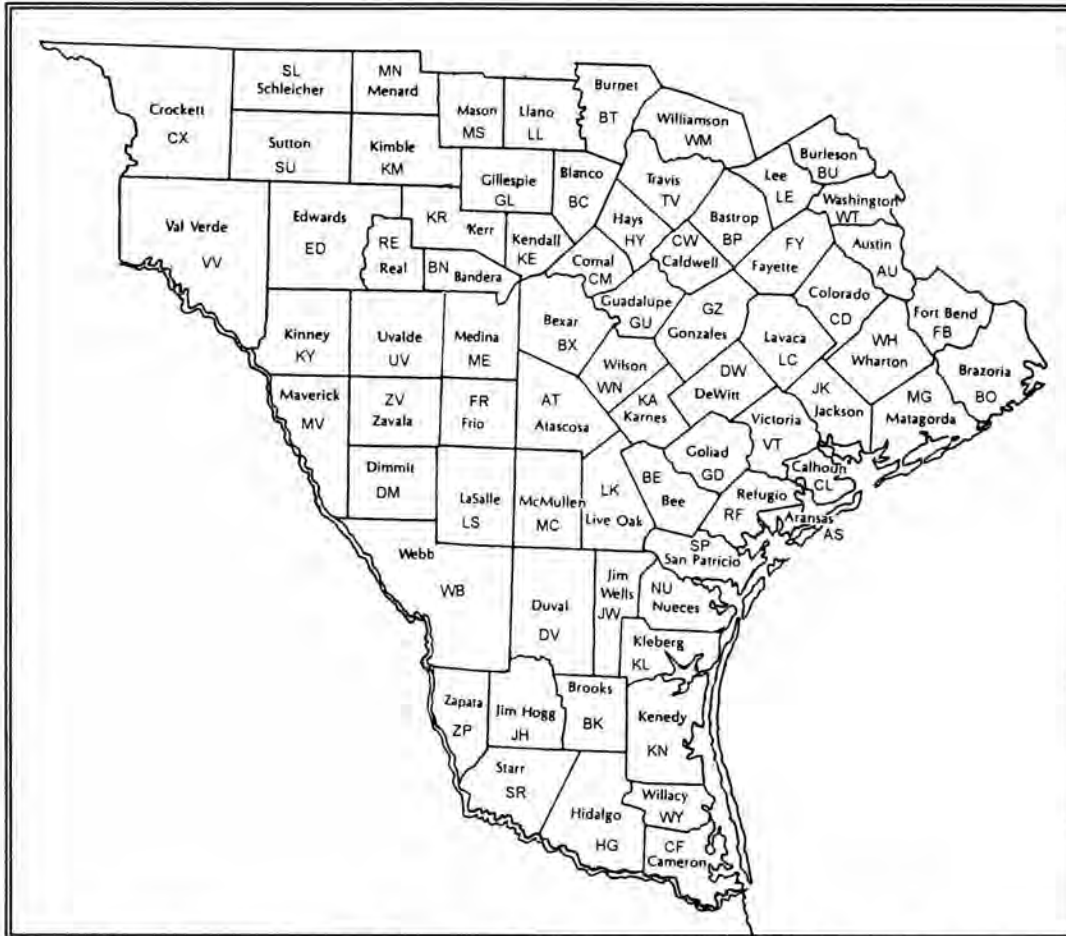
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Authors

Christopher Lintz is the Cultural Resource Program Manager for the Austin Office of TRC Environmental. He received his B.A. in Anthropology from Arizona State University (1969) and his M.A. (1975) and Ph.D. (1984) in Anthropology from the University of Oklahoma. His thesis and dissertation research has focused on understanding Antelope Creek phase adaptations in the Texas and Oklahoma panhandles. He has worked in the Plains, Caddoan Area and Central Texas during the past 30 years and worked six previous years in the Great Basin and Southwest. He can be reached at TRC, 505 E. Huntland Drive, Suite 250, Austin, Texas, 78752.

E. H. "Smitty" Schmiedlin has most recently worked with the Office of the State Archeologist (OSA) in field and archival research on Spanish sites in the Victoria area. He was given, along with Bill Birmingham, the 1998 Outstanding Archeologists of the Year Award. He is a charter member of STAA, a member and past regional Vice President of Region 6 for the Texas Archeological Society, past president of STAA, member of the Texas State Historical Association, steward for the Texas Historical Commission, crew chief on various field schools since 1967, and author of articles in *La Tierra* and in *OSA Cache* publications. He is presently retired from Union Carbide as a supervisor with 38 years service.

APPENDIX A



South Texas counties with symbols for archaeological site designations.

CONVERSION CHART

<u>Multiply</u>	<u>By</u>	<u>To Get</u>	<u>Multiply</u>	<u>By</u>	<u>To Get</u>
millimeters (mm)	0.0394	inches	inches	25.4	millimeters
centimeters (cm)	0.394	inches	inches	2.54	centimeters
centimeters	0.0328	feet	feet	30.48	centimeters
meters (m)	3.281	feet	feet	0.3048	meters
meters	1.094	yards	yards	0.9144	meters
kilometers (km)	0.621	mile	mile	1.609	kilometers
hectares (ha)	2.471	acres	acres	0.4047	hectares

INFORMATION FOR CONTRIBUTORS

La Tierra publishes original papers and selected reprints of articles involving the historic and prehistoric archaeology of southern Texas and adjacent regions. The main objective of this quarterly journal is to provide a way for STAA members and others interested in the archaeology of southern Texas to share the information they have with others. The editors encourage the submission of manuscripts involving not only documentation of sites, surface finds, and collections but also archaeological techniques, methods and theories.

The PREFERRED manuscript form is electronic in MS Word formatted into two columns with one-inch side and three-fourths inch top and bottom margins with one-fourth inch spacing, and with single spaced type in New Times Roman with an eleven-point font. Paper manuscripts should have the same column, margins and spacing. The editors will work with those not comfortable with computers.

In order to maximize space in *La Tierra*, both the metric conversion table and the map of South Texas counties will be inserted wherever space is available. If applicable to the article, the map will highlight the county location. A general location map of the site is suggested since a precise location may subject the site to vandalism. Always seek permission before entering any property to avoid a negative image to archaeological research. Any relevant information regarding permits should be mention in any article (see publication policy statement in Vol. 27-2).

Line drawings are preferred if they are of good quality as photographs requires special processing which adds to the cost of the issue. Sharp Black and White photos are preferred but color can be used. If you are in need of assistance with illustrations, please let us know, as several STAA members have volunteered to help. For examples of good artifact and map illustrations, see those by Richard McReynolds and Ken Brown in previous issues. Authors may suggest artifacts from their article for use as cover art or for inclusion in Index Notes on South Texas Artifacts (see Editorial in Vol. 28-1).

PLEASE include a proper scale on all maps, diagrams, and artifacts. When any figure must be reduced, the scale must be in the original figure so that reduction will not change any proportions. Most of our artifact figures are drawn "actual size" but scale is still necessary, and may be reset in the picture through "cut and paste". Paper manuscripts, as well as maps, illustrations, tables, charts and graphs will be scanned into electronic form. Again, include a scale in all figures. Any site excavation map MUST have a good scale with it, again, inside the map so that any reduction will not change the proportions.

Citations of references should be embodied in the text, giving the author, date, and page (e.g., Hester 1980:33). All references cited should be included in a References list using normal archaeological form (see articles in this issue for examples). The References list should not include publications not referred to in the text. Personal communications are cited in the text (e.g., Anne Fox, personal communication 1977) but need not be included in the References list.

Be sure to include a short, (4-6 line) biography for EACH author of the paper. The principal author and one co-author will receive two additional copies of *La Tierra*. Additional co-authors will receive one extra copy each. We will need each author's address for mailing purposes.

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- NOTES -

THE SOUTHERN TEXAS ARCHAEOLOGICAL ASSOCIATION

The Southern Texas Archaeological Association brings together persons interested in the prehistory of south-central and southern Texas. The organization has several major objectives: To further communication among avocational and professional archaeologists working in the region; To develop a coordinated program of site survey and site documentation; To preserve the archaeological record of the region through a concerted effort to reach all persons interested in the prehistory of the region; To initiate problem-oriented research activities which will help us to better understand the prehistoric inhabitants of this area; To conduct emergency surveys or salvage archaeology where it is necessary because of imminent site destruction; To publish a quarterly journal, newsletters, and special publications to meet the needs of the membership; To assist those desiring to learn proper archaeological field and laboratory techniques; and To develop a library for members' use of all the published material dealing with southern Texas.

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