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The Newsletter is published four times per year by the Houston Archeological Society. Contributions of news items, short articles and information of archeological significance should be sent to the Editor - Alan R. Duke, 1706 Oaks Drive, Pasadena, Texas 77502.

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Activities - 1979

- October 30-20 - ASNM and SWFAS Rock Art Field School - Carlsbad Caverns National Park.

- November 2-3 - Texas Archeological Society Annual Meeting (50th) Panhandle Archeological Society will host the meeting to be held at Amarillo Hilton Inn.

Houston Archeological Society field work continues at Hungerford and site laboratory work is being carried out in Houston. Call Sheldon Kindall at 334-2160 if you are interested.

Publication Notice

Bibliography of the Prehistory of the Upper Texas Coast, No. 4, March 1979, by L. W. Patterson, Houston Archeological Society, Special Publication is now available. This latest of a series contains 228 entries covering a 20 county area of southeastern Texas. The cost is $1.50 including mailing costs, and may be ordered from: John Herbert, 5935 Dellfern, Houston, Texas 77035.

Dues Reminder

1979 dues now are past due. Mail them to Bill McClure at 1409 Springrock, Houston, Texas 77055 or to P. O. Box 6751, Houston, Texas 77005.

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LITHIC PROCUREMENT STRATEGIES IN HARRIS CO., TEXAS

L. W. Patterson

INTRODUCTION

Stone tools were important to Indians on the upper Texas coast throughout prehistory. Harris County is an interesting example of lithic procurement strategies for tool manufacture in an area where lithic raw materials are generally not available. In this case, the study of the procurement of lithic raw materials not only furnishes information on the lifeways of local Indians, but also gives data on longer distance prehistoric contacts with adjacent regions. Contacts outside of local areas could have been in the form of trade or simply trips by local peoples. Nomadic Indians of the upper Texas coast following a hunting and gathering lifeway would have been traveling to some extent, anyway.

Changes in lithic procurement strategies with time is another important subject to study as part of the overall study of cultural change. As noted previously (Patterson 1976), there were definite changes through time in lithic technology on the upper Texas coast. Some of these technological changes may be related to changes in lithic procurement strategies, as well as other factors relating to subsistence patterns and types of weapons utilized.

LITHIC SOURCES

In a previous article (Patterson 1974), I gave some information on possible sources of lithic raw materials utilized by Indians in Harris County. Many large collections are available from archeological sites in Harris County, especially away from the coastal margin. Attempts can be made to match materials from archeological sites with possible raw material sources. The identification of stone materials from specific locations is still a developing science. It is not always possible to pinpoint exact locations of lithic raw materials, but types of materials from general areas can be considered.

As would be expected, the greatest amounts of flints and cherts found on sites in Harris County come from the nearest sources. These are from alluvial deposits of major river basins coming from the north and northwest. These rivers include the Brazos, Colorado, San Jacinto, Trinity, and their side streams. Most of these materials would be classified as tough cherts rather than fine flints, although flint is generally used as the generic term in archeology. Alluvial cherts generally have solid colors, and some have a number of fossil inclusions. Predominant colors are tan, brown, and grey; with a variety of other colors present (see Patterson 1974). Tan cherts are the predominant materials found at Harris County sites and much of this could have come from the Brazos River basin. I have obtained good material of this type from the College Station area, and Grant Hall informs me that this type of material is found in the Brazos River south of Highway I-10, not too far from Harris County (say 20 miles). Coarse quartzite materials suitable for hammerstones are also found throughout the alluvial deposits north of the Gulf coastal plain.

Some flints found on Harris County sites are from the Edwards Plateau and are sometimes from tabular flint deposits. These include a distinctive blue-grey type from the Georgetown area, a chaulky grey flint from Bell County and some stripped varieties that seem to come from west of San Antonio and Austin. Some typical Edwards Plateau dart point types, such as Pedernales, are found in Harris County also. Some of these may have been manufactured in the Edwards Plateau region as

trade items, instead of bringing raw materials to Harris County. These point types may simply indicate the wide range of nomadic hunters, however.

Red jasper is another common material on Harris County sites and can be found to the north. Small amounts of fine grained quartzite are found in Harris County, similar to materials from the Dallas area. Another minor type of lithic material found on many sites in Harris County is petrified wood. This can be found in many alluvial deposits together with flint. There is a well known concentrated belt of petrified wood in a diagonal line across Texas through Goliad, La Grange and Trinity.

RAW MATERIAL SELECTION

Most flintknappers test raw materials to obtain the best quality materials available. I have seen many examples of this at aboriginal quarry sites. The selective use of better quality tan cherts in Harris County is not fortuitous. This was the best knapping material available from nearby sources. Petrified wood was not generally preferred because of poor knapping quality, although there can be large variations in the quality of this type of material. Edwards Plateau flints are of better knapping quality than nearer alluvial cherts, but the transport distance from the Edwards Plateau to Harris County seems to have limited uses of the better flints.

QUARRY ACTIVITIES

Indians had several options in quarry activities and it is up to the archeologist to determine which methods were preferred at any given time. Not all Indians performed quarry activities in the same manner at different times. Indians could perform any or all of the following activities at the quarry sites:

1. Select raw materials (nodules, pieces, etc.)

2. Trim raw materials for rough shaping or to reduce weight

3. Manufacture flakes for tool blanks

4. Manufacture bifacial preforms from cores or flakes (mainly from flakes)

5. Manufacture finished bifaces and other tools

The above sequence could be stopped at any point and the materials then transported to remote campsites for finishing.

A number of archeologists have attempted to analyze debitage at campsites and quarry sites to determine where various stages of lithic manufacturing were being done. This analysis can become complicated when several stages of work have been done at the same site (Patterson 1978). Much work remains to be done in the analysis of quarry sites that could have served Harris County Indians. The few alluvial type quarry sites that I have observed seem to indicate transport of flakes and trimmed pieces of raw materials, with little evidence for advanced stages of biface manufacture at the lithic source locations.

HEAT TREATING

Most Texas flints and cherts seem to become better knapping materials by the use of heat treating (Patterson 1979). In fact, heat treating is a necessity for making good bifaces from tough alluvial cherts. Exceptions are fine grades of flint, such as Georgetown, and some good grades of dark colored cherts. I would guess that most heat treating was done at campsites rather than quarry sites, as a

more convenient "home base" activity. Most sites of all time periods in Harris County have extensive evidence of heat treated materials. This can be seen by waxy luster and reddish color changes. Not all heat treated flints have observable physical changes, however.

CAMPSITE ACTIVITIES

As noted above for quarry site activities, lithic materials can be transported to campsite at various stages in the manufacturing process. There are some examples, but whole chert nodules and large pieces of flint are not common at Harris County sites. This could indicate total use of scarce raw materials. It seems more likely however that flakes were the main materials transported to campsites to reduce transport weight. There are generally a number of large unfinished flakes found on Archaic period sites in Harris County. For most sites in Harris County, flake size range distribution indicates much activity in final shaping of bifaces and finishing with pressure flaking.

Finished bifaces, such as projectile points, are much more numerous on Harris County campsites than preforms. This suggests that finished projectile points were produced directly from flakes, rather than by importing bifacial preforms for final finishing stages. It could be argued, however, that any preforms brought to campsites were not cached, but rapidly made into finished projectile points. Flake size distribution on late prehistoric sites such as 41HR293 (Patterson 1977) suggests that all stages of arrow point bifacing and finishing were done at campsites, starting with small imported flakes. Biface manufacture of all types gives characteristic skew shaped curves for the percentage distribution of flake sizes (Patterson and Sollberger 1978), progressively tending towards higher percentages of smaller size flakes.

A problem that has interested me is why do fairly small campsites in Harris County have such long time sequences of occupations, lasting for thousands of years. These long sequences do not necessarily represent continuous use of the same sites every year. In terms of general campsite qualities, there is no obvious reason to reuse small sites, as nearby locations are often just as good. One answer may be related to lithic procurement. Since lithic raw materials are not generally available in Harris County, campsites may have been reused to take advantage of materials left by previous occupants.

CHANGES IN TIME

As previously noted (Patterson 1976), the average size of flint flakes found on campsites in Harris County tended to become much smaller in later time. While this can be related to the manufacture of smaller projectile points in later time, I feel that this is also related to changes in lithic procurement strategies. Middle to late Archaic period sites have many large flint flakes, some large pieces of flint and a few whole chert nodules. Also there are a significant number of quartzite hammerstones found for this time period. This situation continues into the early Woodland period. In the late Woodland and Late Prehistoric periods, however, average flake sizes become much smaller and there is generally less total debitage and few hammerstones. These changes in later time could be related to the following reasons:

1. Use of smaller size projectile points.

2. Importation to campsites of more preforms and preselected size flakes, which would then give smaller average flake sizes and less total debitage during final manufacturing stages.

3. Less frequent use of specific campsites would also give less total debitage.

4. Reuse of lithic materials left by previous occupants would also ultimately result in smaller average flake sizes.

5. The scarcity of hammerstones at campsites in later time may indicate relatively greater use of pressure flaking, which would be consistent with the manufacture of smaller projectile points, and smaller average flake sizes. The presence of large pieces of limestone at many archeological sites in Harris County complicates the analysis of lithic manufacturing activities, as these could be hammerstones but are not generally recognized as such. I have not developed much data yet, but I suspect that limestone hammerstones were increasingly favored in later time for fine bifacing work.

   Excavation at site 41HR315 in Harris County shows little lithic debitage associated with early Archaic dart points. Apparently, previously manufactured projectile points were brought to this campsite by the earliest occupants. After the middle Archaic, however, lithic manufacturing activities increase significantly here. This perhaps indicates the development of more intensive use of campsites in this region, by larger groups of people and/or involving longer occupation periods.

As previously noted (Patterson 1974), there are two examples of changes with time in use of types of raw materials in Harris County. During the Archaic and early Woodland, projectile points made from petrified wood are more frequent than the overall small occurrence of petrified wood as general tools and debitage. Although petrified wood is a fairly course material, it seems to have been worked easily enough for cruder varieties of dart points, and thus may have been preferred by some Indians, although not for general flake-tool use.

During the Archaic and early Woodland, red jasper was used extensively for flake tools but not for dart points. This is probably because red jasper is a tough material and difficult to work for biface manufacture. Later, red jasper is widely used for making small arrow points. Pressure flaking of thin flakes of red jasper is probably much easier than percussion thinning for larger dart points.

SUMMARY

Several aspects of lithic procurement strategies related to Harris County archeological sites have been discussed. This type of information should be developed for detailed reports on archeological sites whenever possible for reasons outlined in the introduction.

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The La Playa Ladosa Site, San Patricio County, Texas

Alan R. Duke and Bruce R. Duke

Introduction

In an attempt to enhance the archeological knowledge of the estuarine perimeters around Rockport, it was decided to survey as much of this area as possible. One of the places that seemed promising was the bluff along a series of small, somewhat intermittent saline lakes, marshlands, and mud flats about halfway between Rockport and Sinton near Highway 881. This saline wetland complex constituted a minor arm and tributary of Copano Bay in San Patricio County. Additionally, the mouth of the Aransas River was nearby. Mr. William T. Rives of Dallas, owner of the land where the La Playa Ladosa site is located, gave permission to survey the area.

Surveys were initiated by the authors in June, 1979. Along the top edge of the higher portion of the bluff, which is about 15 feet above the mud flats, flakes of flint were found eroding from a layer of dark, loamy clay. This and several subsequent surveys led to the recovery of a number of projectile points and additional flakes (see Figure 1). It was decided, based on the results of the surveys, that it would be worthwhile to excavate test pits to determine the depth and extent of the site.

Flora

The coastal bend region was largely a treeless prairie at the time of the arrival of the first Spaniard about 450 years ago. Grasses prevailed but there was a scattering of mosquite and pricklypear cactus. Generally, trees were scarce but were locally concentrated wherever there was a steady supply of moisture at the surface or in the subsoil. Halophytic or salt-tolerant plants were found along the coast where the soils were often salty. The halophytic and salt-tolerant vegetation of the coast remains essentially intact. However, most of the uplands adjacent to the coast have been altered by cattle and agriculture. These conditions can be applied to the area around the site. The wetlands and mud flats bordering the site essentially remain unchanged. However, the adjacent uplands are now cattle pastures and farmlands to within 15-20 yards of the edge of the bluff.

Major bush and small tree species found on the bluff at present include agarito (common on well-drained calcareous soils along bluffs in this area), blackbrush, granjeno, mesquite, pricklypear, paloverde, and yucca. The red agarito berries are used to make jelly.

Dominant wetland plant species near the site are smooth cordgrass, glasswort, sea ox-eye, monanthochloe, and saltgrass.

Fauna

The groups of people inhabiting this area had access to a wealth of food sources. A varied environment of uplands, wetlands, rivers and bays combined to assure a generous supply of food and fresh water.

Mammals such as white-tailed deer, javelina, raccoon, and the Eastern cottontail, could be harvested from the uplands. Waterfowl of all kinds, alligators, and turtles could be taken from the marshlands. Freshwater fish could be caught in the rivers, and fish and shellfish procured from the bays. All the animals mentioned can still be found in this general vicinity.

Discussion

The La Playa Ladosa site yielded mostly lithic material including flint projectile points, scrapers, and flint flakes. These materials were found evenly distributed along a 0.3 mile stretch of bluff. Although the artifacts were found scattered from top to bottom along the bluff, several of the flakes and at least two of the projectile points were found at the 2 inch level immediately after heavy rains. There was no evidence of material eroding from other levels along the bluff. The dark loamy clay grades into a yellow clay at about 3-1/2 feet. Generally, the thickness of the dark topsoil in this area increases as the elevation of the bluffs increases.

A total of three test pits were excavated along the edge of the bluff to a depth of two feet. Two flint flakes were found in one pit at the 2 inch level. The other test pits yielded nothing.

The width of the site could not be determined due to the presence of a shell road and a fenced pasture about 15 yards from the edge of the bluff. However, it is suspected that archeological evidence would decrease rapidly if one moved away from the bluff's edge.

Other artifacts found at the site include seven small, worked conch columella (awls or pins), four unidentified bone fragments, one deer tooth, seven pebbles (one of which shows a worked depression on its surface), 23 clay balls (probably from old campfires), 3 small flint scrapers (thumbnail) and 331 flint flakes.

Projectile point types found on the site include Matamoras, Ensor, Tortugas, Alba, Abasolo, Bulverde, Catan, Pamillas, Scallorn and Perdiz. Portions of several Bell-like points were found also.

Conclusions

The La Playa Ladosa site appears to have been occupied on an occasional basis. The decided lack of cultural materials in the form of ceramics, shell, and bone indicates the bluff was probably utilized only as a campsite. The limited number of artifacts found on the surface of a relatively long area (0.3 miles) of exposed bluff points out that small hunting parties, not large assemblages of people, most likely utilized this high ground.

The complete lack of pottery places the site in the Aransas Focus and the types of projectile points and other shell artifacts also support this classification.

Artifacts found on the site indicating occupation during early historic times include a small (0.50 inch diameter) lead musket ball and an olive green glass sherd from an old, hand-blown whiskey bottle.

The bluff on which the site is located is eroding rapidly and the area of occupation is slumping and washing toward the mud flats below. A large portion of the site has been affected by erosion as evidenced by the deep gullies currently cutting through the bluff. It is estimated that at current erosion rates, at least 90% of the site will be destroyed within 10 years.

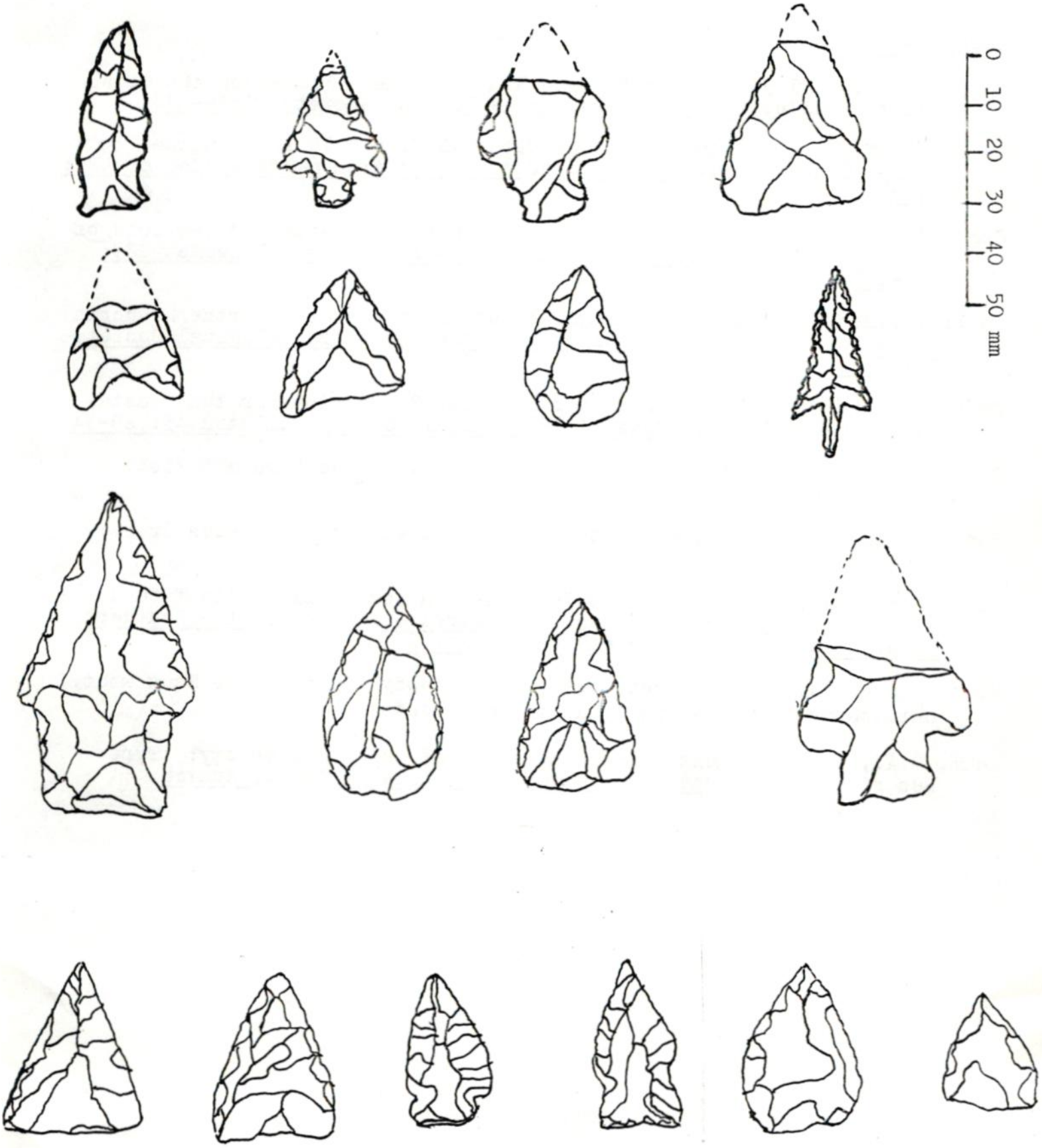

Figure 1

Artifacts from La Playa Ladosa Site

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41 HR 279-A (continued)

CERAMICS:
Analysis of the ceramics was assisted by HAS members Karen Faggard, John Faggard, Betty Kindall, Sheldon Kindall, Bernard Naman, and Pam Wheat.

The collection includes 1241 sherds of pottery vessels. Total weight is 10 kilograms. Five sherds (less than ½ of 1%) are San Jacinto Plain and the rest are Goose Creek wares.

San Jacinto Plain: (5)
Five plain body sherds were found. Color, paste and consistency are typical. Thickness varies from 5 to 10 mm.

Goose Creek Incised: (17)
Thirteen rims, one sherd from near the rim, and 3 body sherds were found. Color, paste and consistency are typical. Thickness varies from 3 to 7 mm. One rim shape is Type 10, which has interior thinning with a flat lip that slopes to the exterior (Figure 35, Q.). Half the other rim sherds are each Type 2 and 3 shapes. Lip notching on the sherds in Figure 35, A. & B. are about ½ mm. deep and 1 mm. wide, spaced at 4 mm. Sherds D. & E. appear to have been impressed by thumbnail on the lip, leaving depressions spaced at about 15 mm. Although 10% of the rims in the collection are incised, only three body sherds and no bases can be assigned to this type pottery with any assurance.

Two rim sherds and three body sherds were glued together to reconstruct the vessel shape illustrated at half scale in Figure 36, E. Diameter of the rim is 14 cm. The jar is constricted below the rim. This vessel has Type 3 rim shape and is decorated as in Figure 35, A. Although the decoration and lip notching on the sherd shown in Figure 35, B. are the same as A., its rim shape is Type 10, the paste is sandier, and the thickness is greater.

The decorations are shown in Figure 35, A. to M. and include triangles, horizontal lines, diagonal lines and a wavy line below two horizontal lines.

Goose Creek Plain: (1219)
One hundred and thirteen rim sherds, 8 bases, and 1098 plain body sherds of Goose Creek Plain pottery were found. Color, paste, and consistency are typical. Many of the sherds have calcium carbonate deposits on surfaces. Diameter of the pottery represented by the sherds varies from 100 to 400 mm. Nine sherds, representing two vessels, have asphalt coating on the entire interior surfaces.

One body sherd has indications that it was deliberately altered after being broken. It was drilled, rubbed, chipped, and scratched as shown in Figure 35, P. With use of some imagination, the sherd appears to be a representation of a human or animal head. If the two sherds from 41 HR 273, Figure 31, D., are rotated 90° counterclockwise as illustrated, they may also be imagined to be animal heads.

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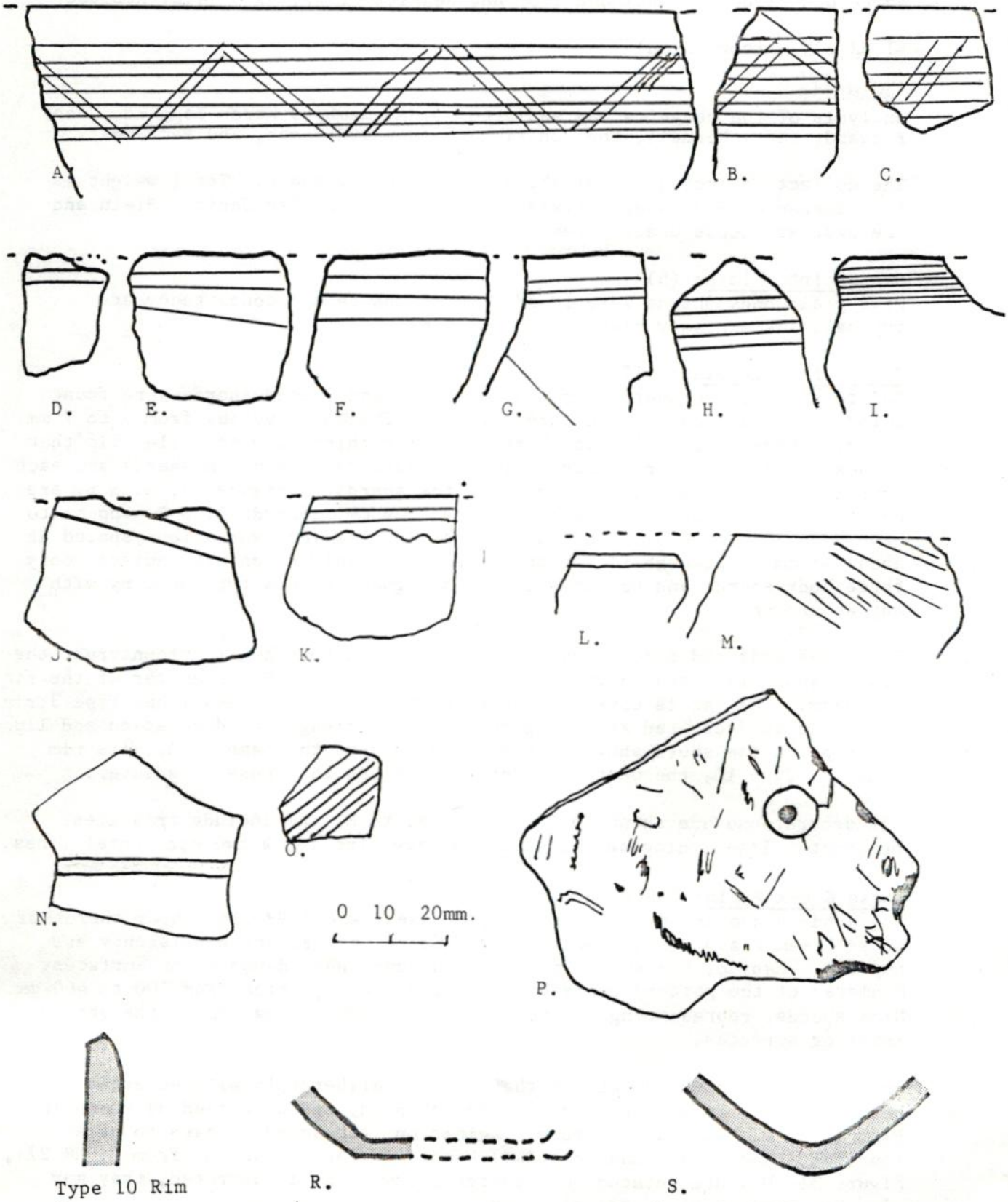

Figure 35

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The body sherd in Figure 35, N. has a broad shallow groove on its interior surface. The groove appears to have been made before firing the vessel. The body sherd in Figure 35, O. was incised on the interior surface with parallel, diagonal lines.

Six bases are rounded with thickness varying 2 to 5 mm. with the greatest thickness being 11 mm. One base is parabolic in shape and is shown in Figure 35, S. Its thickness increases only one mm. This is probably a variation of the rounded form that is due to the vessel having a small diameter. One base has a flat bottom as shown in Figure 35, R. The collection includes several sherds that are from near the base, all of which would be of the rounded shape.

Thirty rim sherds are Type 1, 60 are Type 2, 6 are Type 3, 2 are Type 4, 6 are Type 5, 3 are Type 6, 5 are Type 8, and 1 is Type 10. Thickness varies from 4 to 10 mm. with the average of 81 sherds being 6.5 mm. Exclusive of the partially reconstructed pots, 13 of 81 rim sherds have some form of alteration of the lip. Two Type 1 rims have notches that are 1½ mm. wide, 1 mm. deep, spaced at 4 to 6 mm. One Type 1 rim was punctated on the lip with a 2 by 5 mm. object at 8 to 10 mm. spacing. One Type 1 rim and 1 Type 2 rim have fine lines cut into the lip. The lines are not radial and are spaced at 2 mm. The Type 1 sherd also has a hole that was drilled from both sides (9 mm. exterior, 6 mm. interior, 5 mm. minimum). One Type 2 rim has notches that are 2 mm. wide, 1 mm. deep, spaced at 5 mm. One Type 2 rim has notches that are 1 by 1 mm, spaced at 8 mm. One Type 3 rim has broad, shallow notches, 3 mm. wide, ½ mm. deep, at 5 mm. The outer edge of the lip on two Type 5 rims has notches that are not visible from the interior, 1 mm. wide, ½ mm. deep, at 4 to 6 mm. One Type 5 rim sherd has the beginning of a drilled hole. The 3 mm. depression is 2 mm. deep and was made with a drill with a round distal end. Three Type 8 rims, from the same vessel whose diameter at the rim was 15 cm., were irregularly punctated on the lip by a rough object about 3 mm. in size. The lip was then rubbed down to produce a flat lip.

Exclusive of the rims and reconstructed vessels, 18 sherds have been drilled. In a few instances, the drilling was slanted rather than at right angles to the sherd. Five sherds were drilled only from the outside with the hole being 9 mm. on the exterior and 3 to 6 mm. on the interior. Thirteen were drilled from both sides with the hole being 7 to 9 mm. on the exterior and 5 to 7 mm. on the interior and with a minimum of 4 to 6 mm. One sherd was drilled from both sides without penetration. The exterior depression is 6 and the interior depression is 2½ mm. in diameter. The drill had a rounded distal bit.

Four vessels were partially reconstructed and are shown in Figure 36 at half scale.

Pot No. 1, Figure 36, A., has 30 body sherds and 16 Type 2 rim sherds. The entire rim was reconstructed. Its shape is oval with an average diameter of 20 cm. The lip is somewhat undulating with a variance from a plane of as much as 10 mm. Rather than being deliberate, these two characteristics may be due to slump during forming the pot. The lip has

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irregular pinching spaced at about 6 per 50 mm. The pot apparently had a long period of use as there are several chips of the lip. There are also 6 drilled holes that, due to position, indicate repair efforts rather than suspension purposes. The holes are 9 mm. on the exterior and 4 mm. on the interior. The sherds have a wide variety of colors and some variation of texture.

Pot No. 2, Figure 36, B., has 20 body sherds and 13 Type 2 rim sherds. The rim is circular with a diameter of 25 cm. The lip has been punctated at a spacing of 7 per 50 mm. by an irregular object which was 5 mm. by 1 mm. More than half the rim was recovered.

Pot No. 3, Figure 36, C., has 8 body sherds and 2 rim sherds. Except for absence of lip notching, it is practically identical with Pot No. 2.

Pot No. 4, Figure 36, D., has 20 body sherds and 1 Type 3 rim sherd. Its size is the same as Pot No. 2 but the wall shape and rim type are different.

Pot No. 1, one of the bases, and the fired clay lumps from Feature No. 1 were part of the H.A.S. display at H.L. & P. in Houston earlier this year.

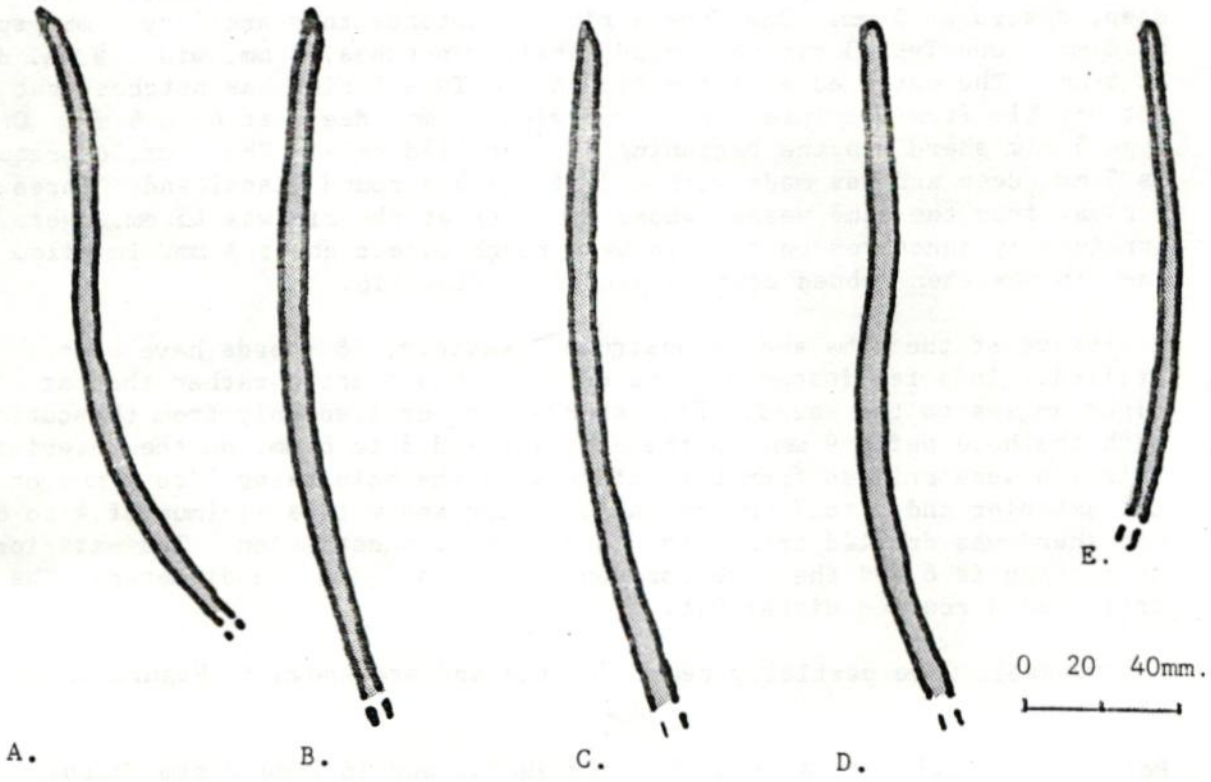

Figure 36 Vessel shapes. (Exterior to left)

A discussion of the lithics will be in the next issue of the Newsletter.

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