REWEAVING THE STRANDS: CONTINUED EXPLORATION INTO THE BASKETRY TECHNOLOGY OF PREHISTORIC BAHAMIANS

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ABSTRACT
Ceramics with negative basketry impressions can provide an indirect means of studying prehistoric basketry technology in the absence of basketry remains within the Caribbean. This paper presents data of basketry impressed ceramic sherds from the Palmetto Grove site (SS3), San Salvador, Bahamas, using guidelines previously developed by Mary Jane Berman and the author for the Pigeon Creek site (SS1) on the same island. After a discussion of weave type and variation, a comparative analysis of the data from Palmetto Grove and Pigeon Creek sites will show some striking differences, while revealing an overall homogeneity reflecting a single basketry technology. The variability within, and between, these sites sheds light on the usefulness of this type of analysis in questions concerning basketry grammar and materials as functional, personal or group markers, as well as questions of basketry and pottery production and technology. This paper represents early stages in a long range Bahamas-wide project.

Resumen
Debido a la poca preservación, la cestería puede proporcionar un medio indirecto de estudiar la tecnología cestera en la ausencia de restos de cestería en las Antillas. Este artículo presenta datos de cestería impresionada en cerámica provenientes del sitio Palmetto Grove (SS3), San Salvador, Bahamas, utilizando guías previamente desarrolladas por Mary Jane Berman y la autora para el sitio Pigeon Creek (SS1) en la misma isla. Después de una discusión del tipo de tejido y variación, una comparativa análisis de los datos de los sitios Palmetto Grove y Pigeon Creek darán algunas diferencias notables, pero revelarán una homogeneidad general que refleja una sola tecnología cestera. La variabilidad interna y entre estos sitios ilumina la utilidad de este tipo de análisis en las preguntas concernientes a la gramática y los materiales de cestería como marcadores funcionales, personales o de grupo, así como preguntas de cestería y producción de cerámica. Este artículo representa etapas tempranas en un proyecto de largo alcance en las Islas Bahamas.

Résumé
La céramique avec des impressions négatives de vannerie peut fournir des moyens indirects d’étudier la technologie de vannerie préhistorique en l’absence des restes de vannerie dans les Antilles. Cet article présente les données des impressions de vannerie sur tessons en céramique du site de Palmetto Grove (SS3), San Salvador, Bahamas, utilisant des directives précédemment développées par Mary Jane Berman et l’auteur pour le site de Pigeon Creek (SS1) sur la même île. Après une discussion du type de tissage et de variation, une analyse comparative des données des sites de Palmetto Grove et de Pigeon Creek montreront des différences frappantes, tout en révélant une homogénéité globale reflétant une seule technologie de vannerie. La variabilité à l’intérieur et entre ces sites jette un nouveau jour sur l’utilité de ce type d’analyse dans les questions concernant la grammaire et les matériaux comme fonctionnels, personnels ou indicateurs de groupe, ainsi que des questions de production et de technologie de vannerie et de poterie. Cet article représente les premières étapes d’un projet à longue durée dans les îles Bahamas.
INTRODUCTION

Prehistoric fiber traditions the world over are poorly represented in the archaeological record, except in unusual circumstances of climate and deposition. Traditionally, basketry and other fiber material culture are poorly understood, and are often given little or no attention in archaeological models where more durable artifacts predominate. Basketry does not survive well in the subtropics of the Bahama archipelago, but is represented in the archaeological record in the form of negative impressions on Palmetto ware ceramics. Basketry is known to play an integral role in the lives of neo-tropical populations on technological and aesthetic levels (Berman and Hutcheson 1997). New approaches and techniques are beginning to allow researchers to investigate these archaeologically “invisible” aspects of cultures. However, before extensive interpretive analyses can take place, the distribution, classification, variation, technology, and composition of the prehistoric Bahamian basketry industry must be better understood.

This paper will present the results of ongoing research designed to help gain an understanding of the basketry industry of the prehistoric Bahamians. A basketry typology will be presented for the Palmetto Grove site (SS3), San Salvador, Bahamas. In addition to creating a descriptive typology for the basketry, this research is concerned with the range of variation and distribution of basketry types and materials within and between Lucayan sites in the Bahamas. An original aim of this research concerned the possible use of basketry as a form of personal or group markers (Berman and Hutcheson 1997). However, until more examples are analyzed from numerous localities, projections on the sociocultural ramifications of the basketry impressions will not be understood. Currently, the analysis focuses on identifying, describing, and establishing the distribution of the basketry impressed ceramics and the weaves represented thereon.

After a description of the data from the Palmetto Grove site is given, a comparison will be made between the Palmetto Grove (SS3) and Pigeon Creek (SS1) sites, both on San Salvador (153.6 Sq. km; 60 Sq. mi.) in the central Bahama archipelago and only 12.9 km (eight miles) apart (Figure 1). Berman and Gnievecki report radiocarbon dates for Palmetto Grove as cal. A.D. 1410 ± 80 (Beta-67064) and cal A.D. 1483 ± 60 (Beta-66089) (1995:429). Richard Rose reports radiocarbon dates for the Pigeon Creek [dune 1] occupation as “between AD 1000 – AD 1560” (Beta 17839 (840 ± 60 B.P.), Beta 17840 ± 790 B.P.), IM 2274 (620 ± 70 B.P.), UM 2273 (580 ± 90 B.P.), UM 2733 (540 ± 60 B.P.), UM 2738 (480 ± 70 B.P.), UM 2736 (390 ± 60 B.P.))(1987:325, note 19 p.331). The assemblages for Pigeon Creek (dune 1) and Palmetto Grove are comparable. Thus, a cautious assumption can be made that areas within the two sites were contemporaneous, allowing for reasonable comparisons.

The original research design has been expanded to identify actual basketry materials based upon their impression in the ceramics. This supplementary database can assist in answering questions concerning non-technofunctional aspects of basketry within the Lucayan population, such as personal or group choices, boundary markers, as well as certain ecological issues.

BACKGROUND HISTORY AND SIGNIFICANCE

Early historical and ethnohistorical accounts give indications of the complexity and extensive nature of the fiber industries in the Native populations of the Americas. From these accounts, we know that both raw and processed fibers were used to create items of basketry, fabric, netting, cordage, and so forth, for both mundane and ceremonial usage (Mason 1900, Fewkes 1909, O’Neale 1949, Taylor, et. al. 1997, and others). An items intended use alone does not always express its social and cosmological significance. This can be seen in South American cultures such as the Warao (Wilbert 1975), Desana (Reichel-Dolmatoff 1985), and the Yekuana (Guss 1989) where the entire production process of material goods, inclusive of selection of design elements, hold ritual and social meaning. David Guss (1989:70) indicates that for the Yekuana, material actions, such as basketry production, are always tied to ritual ones with “every functional design participat[ing] in a greater cosmic one.” Peter Riviere (1992:147) indicates that in the Amazon, basketry is a more expressive medium than pottery. We cannot yet demonstrate this association for the prehistoric Lucayans of the Bahama archipelago. We do know that basketry was an important aspect of daily life throughout the Caribbean region (Fewkes,
This research phase records design and materials evidence that will eventually be used to establish what criteria may be technologically and socioculturally significant.

Basketry impressions on Palmetto ware have been reported from numerous sites on most of the major islands throughout the Bahama Archipelago (Sears and Sullivan 1978, Keegan 1997). This includes Cat (MacLaury 1970), Crooked (Granberry 1952, Winter 1978), San Salvador (Hoffman 1967; Rose 1982, 1987; Berman and Hutcheson 1997), Great Abaco, Eluthera (Granberry and Winter 1995), New Providence (B.A.T. 1982/83:15), and Grand Brahma (Perry L. Gnivecki, personal communication 1998). These impressed sherds are also reported from several sites in the Turks and Caicos (Keegan 1997). Julian Granberry (1956:130) first reported their existence in the southern and central islands as uniquely Bahamian, and deemed them impressions of “twined material”. It was not until Charles Hoffman (1967, 1970) conducted excavations on San Salvador at the Palmetto Grove site in 1965 that this ceramic style was formally studied and described (Granberry 1980). It is now known that basketry impressions occur on ceramics to varying degrees in areas of the South American Lowlands, inclusive of British Guyana (Evans and Meggers 1960), and Venezuela (Rouse and Cruxent 1963). They also occur sporadically throughout the Caribbean in Saladoid and post-Saladoid contexts (Petersen, et al. 1997).

Negative basketry impressions in most cases are reported to occur on the bases of low walled vessels, probably bowls, and the exterior of griddles, regardless of time or place in the Caribbean (Petersen, et al. 1997), with some exceptions. Petersen, et al. (1997:7) report basketry impressions from Saladoid period contexts on Montserrat: one on the interior of “some sort of ceramic mask” from the Dagenham Beach site (MS-A2) and one on a vessel that may not be a griddle at the Trants (MS-G1). The Pigeon Creek site has three taller vessels with impressions occurring sporadically on the upper and lower sidewalls, e.g. 2186 (Berman and Hutcheson 1997).

METHODOLOGY AND TECHNIQUES

Definitions and Terminology

The methods employed here for the analysis of the ceramics were developed for the Lucayan Ecological Archaeology Project (L.E.A.P.) field school under the direction of Mary Jane Berman and Perry Gnivecki. This author developed the basketry impression analysis while working with L.E.A.P. on Pigeon Creek materials from three excavation projects. Rose (1982:134) reports 14% impressed sherds for his portion of this material (N 3,226). L.E.A.P. has not finished a comprehensive cataloguing of these sherds; therefore this study follows Rose for per cent impressed at this site.

The basketry analysis is adapted from Adovasio (1977:99), who indicates that “twilling”, “herringbone”, “chevron”, and “diagonal plaiting” are all expressions of the weaving subclass of “twill plaiting”. Irene Emery (1994:196) comments that there are difficulties with terminology between cloth, fabric, and basketry. This author believes that there are terminology difficulties when describing negative impressions versus actual basketry artifacts as well due to the lack of information on fiber composition, thickness, processing and other characteristics available with basketry samples. Thus, a broader range of descriptive terms is needed. Appropriate terminology has not been established to differentiate between the same interlacing structures with very different appearances in the negative impressions. Without basketry specimens to give data for interpreting these visual differences, it was deemed necessary to describe them. Therefore, a descriptive terminology that reflects the variation encountered in Palmetto ware basketry impressed ceramics has been created, while still following the basic definitions set forth by Adovasio (1977) for plaiting, twining, and coiling.

Plaiting occurs when both vertical and horizontal elements are flexible, usually of the same material, and they interlace or weave, instead of wrap or sew, around one another. One subclass of plaiting is simple plaiting (Figures 2a and 3), with interlacing or weaving generally at 1-over-1 intervals (1/1). Simple plaiting, also known as “plain” or “checker” weave, may have one or more elements acting as a single unit, interlacing with one or more opposing elements acting as a unit. Twill plaiting (Figures 2b, c, d and 4a, b, d, e, f, h) indicates that two or more elements interlace with two or more opposing elements at a staggered interval usually with a principle of 2-over-2 sequencing (2/2). Wickerwear
(Figures 2e and 4i, k) constitutes a “simple” interval of interlacing (1/1) with one or both sets of elements being rigid as opposed to flexible. Twining (Figures 2g and 4g) constitutes 2 or 3 weft (horizontal) elements wrapping around passive warps (vertical), while coiling (Figure 2f) is a sewn basketry where the active vertical element stitches stationary horizontal or foundation elements together (Adovasio 1977).

A shift is an intentional or unintentional alteration in interlacing sequence. Intentional shifts create a pattern or design. Shifts are expressed by indicating the principle interval just prior to and following the altered sequence, as when a 2/2 twill introduces a 2/3 interval and then goes back to the principle interval (2/3/2) (Adovasio 1977:105; see Figures 5 and 6). In addition to these basic definitions, the terms low relief and high relief, and with and without intentional shifts, are used to express visual variation within the twilling sample. For example: the subdivision of twill plaits exhibiting “topography” and purposeful shifts in the impression surface is expressed as high relief twill with intentional shifts (Figure 4e). Examples showing the same interlacing intervals and shifts, but with a relatively level smooth surface are designated as low relief twill with intentional shifts (Figure 5. Unintentional shifts are relatively rare in this sample (PG n 2; PC n 10) and are described separately within the appropriate high or low relief category (Figure 4b).

All twilling examples thus far observed in the Bahamas by this writer have a 2-over-2 primary interval. Palmetto Grove sherds consistently display only one intentional shift sequence, forming a four row repeat pattern (Figure 5) which creates a visual change in direction, even though the actual weaving continues straight across. This shift also predominates at Pigeon Creek. Visual zigzags, chevrons, diamonds, quartered and halved fields, and meandering patterns are executed through this shift. Color may have been used to highlight these patterns in the original weaving. For ease of discussion, it has been useful to name this shift mechanism the “A-pattern”. This shift can orient to perpendicular or horizontal, as well as go towards or away from the center to create very complex designs (Figure 6). Several sherds from both sites express multiple directions in close proximity creating intricate patterns.

Within the basketry impressions themselves, there is a wide range of variation in element width, appearance, and depth of impression within and between the weave types. One factor should be borne in mind when evaluating the actual elements: they are impressions made on wet plastic clay, which has subsequently been dried and fired, thus causing shrinkage of the impression. Information on the actual fiber makeup of the elements is extremely difficult to evaluate, largely due to the fact that one is attempting to describe a three-dimensional object from a fused representation of only a portion of one surface. Element shape (Figure 4) based upon appearance is purely descriptive, and has been divided into five basic types: flat; semi-round; possibly rounded, “ribbed” and “fibrous”. Semi-round elements look as if they have a rounded surface, but are clearly not round (Figure 4f, h, j) nor do they have crisp cut edges, as do most of the flat elements (Figure 4b, e, k). The fibrous elements have no evidence of spin or twist, and appear “textured”. Only Pigeon Creek (n 9) clearly showed “ribbed” examples (Figures 3 and 7).

RECOVERY AND ANALYSIS METHODS

The recovery of the basketry patterns for analysis was accomplished by creating positive molds of the basketry impressions with a dental alginate molding compound, Jeltrate Plus®. The negative impressions of the sherds can cause optical illusions making identification of the basketry construction difficult. A dental alginate was selected due to its nontoxic properties, ease of release from friable artifacts, and excellent reproduction of details. Plaster casts were made from each mold to create positive representations of the sherd. Both the mold and cast are useful for weave type and fiber identification. Hutcheson constructed samples of each weave type using a wide variety of materials (figure 7); these were then impressed into plastic clay, fired, in some cases molds were created, and comparisons were made to the molds and casts of the artifacts. A number of these were examined with a 10x binocular microscope, along with known plant materials, for plant morphology markers to use as a baseline in fiber identification (Hutcheson and McWeeney 1999).
This study provides data on basketry impressed ceramic sherds, curated at the Department of Archives, Nassau, from the Palmetto Grove site (SS3). A total of 3,027 sherds was examined with 205 (6.8%) bearing discernible basketry impressions. Hoffman (1967, 1970) reports a ceramic count of 5,025 from this site; therefore this sample represents 60.2% of his total, which was all that was available for study. Palmetto Grove impressions occur on vessel bases, most likely low-sided bowls, and the undersides of griddles, but not all vessel bases or griddles bore these impressions. Basketry types identified are twill plaiting (63.4%, n 130), wickerwear (17.1%, n 35), simple plaiting (4.4%, n 9), and twining (.5%, n 1). Coiling was not identified in this collection. Additionally, there were non-woven plant material impressions on six examples (2.9%). Twenty-four sherds (11.7%) were impressed, but were too worn and/or eroded to make positive weave identification possible. The most prevalent basketry type, twill plaiting, has been divided into subgroups. Two-over-two low relief twilling without intentional shifts (54.6%, n 112) is by far the most prevalent form of twill plaiting, and weaving in general, in the entire assemblage. This is followed by 2/2 low relief twilling with intentional shifts (6.8%, n 14). High relief twilling subgroups contained a total of four examples: one was without shifts (no. 147), while three (1.5%) express regular intervals of the ubiquitous A-pattern shift (nos. 371, 354, 423).

The overall range of variation in element width is 1–13.7 mm, with a mean of 4 mm and a median of 5.9 mm (Figure 8). Simple plaiting was the only basketry group with widths above 7.6 mm, although some of the non-woven plant material reached widths of 10 mm. The wickerwear consistently had the narrowest elements ranging from 1.4–4.2 mm. All of the twilling averaged between 4–5 mm, ranging from 1–7.6 mm. The single example of twining had a consistent element width of 1.6 mm.

When looking at element shape, flat elements predominate in both samples (PG n 123; PC n 144). The two possibly round elements found at Palmetto Grove are confined to the twined (n 1) and wicker (n 1) types. The four fibrous examples are all found in the low relief twilling without intentional shifts and range from 2.5–5 mm. One sherd (no. 319) has both fibrous and flat elements, with one set acting as the “warp” and the other as the “weft”. Forty-four molds indicate semi-round looking elements, but this type seems the most ambiguous. In this context, element shape is extremely tenuous and requires caution. Depth of impressions ranged from .2–1.9 mm with 147 sherds measuring at less than 1 mm (mean .6 mm) and 34 over 1 mm in depth (mean 1.2 mm). Generally, even the shallow impressions are clear and distinct in the molds, though not necessarily on the sherds. These measurements were not taken on the Pigeon Creek samples, eliminating direct comparison; however, the overall impression is that they are very similar.

Two final areas of investigation were undertaken. The first concerns the relationship of weave type to vessel. The information available at present indicates that there is no specific correlation between vessel type with any particular weave at either of the two sites studied. Fiber analysis, as discussed below, is at a very preliminary stage.

**DISCUSSION**

The dominant interlacing pattern in San Salvadorian negative basketry impressed ceramics is two-over-two twilling and is found at both sites discussed here. There is no evidence of other twilling multiples such as 3/3 or 4/4 at either site. As already noted, identical interlacing sequences may have very different visual characteristics. These seem, in part, to represent differing materials used in basketry production. The A-pattern shift is the only systematically used shift interval in either of these assemblages. It is present in 17% (n 49) of all the twilling thus far examined for both sites. At Palmetto Grove, this shift is present in 13% (n 17) of the twill, while it occurs in 20% (n 32) of the twilling at Pigeon Creek.

The weave types at Pigeon Creek seem more balanced. However, twill plaiting also predominates here, as seen with the following weave distribution: twilling 60% (n 159), simple plaiting 25.7% (n 68), wickerwear 10.9% (n 29), possibly coiled .75% (n 2), selvage edges .75% (n 2), and non-woven plant material 1.9% (n 5). Unlike Palmetto Grove, there is evidence of 180° self-selvages and two examples that may be coiled. The twilling sample is divided into low relief without shifts 40% (n 106), low relief
with intentional shifts 9.4% (n 25), high relief without intentional shifts 7.9% (n 21), and high relief with intentional shifts 2.7% (n 7).

Both sites express the A-pattern not only in simple zigzag or “chevron” patterns, but also as quartered and halved fields. Palmetto Grove has two high relief twill examples where the A-pattern indicates chevrons and one strongly suggesting a quartered field (Figure 6). Pigeon Creek has several twilled examples with the A-pattern indicating complex design elements with at least two running along the diagonal thereby altering the regular a and b row repeats of this shift sequence. The single most complex impression is from Pigeon Creek (no. 3000), showing several design elements producing mirrored images with zigzags above and below (Berman and Hutcheson 1997). Pigeon Creek also has the only impression (no. 2804) with a non A-pattern shift demonstrating a four row repeat sequence in which two rows from each direction simultaneously shift to create a diagonal division or border on the basketry surface. The bulk of these artifacts are too fragmentary to determine more than the fact that the shift is present. Any individual basketry piece may or may not have contained additional designs or design elements.

Simple plaiting is the second most prevalent weave (25.7%, n 68) at Pigeon Creek while it is present only 4.4% (n 9) of the time at Palmetto Grove. Regardless of prevalence, both sites show the broadest range of element width in this category. The element width range is greater at Pigeon Creek running from 2–17 mm while it is 1–13.7 mm at Palmetto Grove. There is yet another difference between these sites concerning element variation in that Pigeon Creek exhibits another element type, “ribbed” (Figure 3), while none are clearly demonstrated at Palmetto Grove.

Members of the SAA Perishable Fibers Interest Group in Chicago (April 1999) have independently identified the one example of twining as being compact countered twining (Penelope Drooker and Lynn Teague, personal communication 1999; see also Emery 1994:195-212). While examining basketry molds for plant morphology, Lucinda McWeeney, Yale-Peabody Museum, identified evidence of S-spin on the twined fibers and verified compact countered twining with alternating S and Z twist rows (personal communication 1999). Petersen, et al. (1997:9) have reported three examples of twining from Montserrat, possibly made from cotton, with similar element widths (1.5–2.5 mm) to the San Salvador impression (1.6 mm). We are currently unable to determine the identity of the fiber used in this fabric fragment.

Granberry (1956:130) refers to the impressions in local Bahamian ceramics as “twined fabric”. Winter (1978:232) describes one example from the McKay site, Crooked Island, as “fabric” in a “zig-zag pattern” although there has been no elaboration on this. Hoffman (1970:12) states that there is no reason for identifying the impressions as “fabric”, but rather they are from “basketry”. These confusing and seemingly conflicting statements reflect some of the problems with a crossover of terms between textiles and basketry. Twining, using traditional basketry materials can produce basketry, although countered twining is not generally seen in basketry (Harvey 1997:58). However, when “textile fibers” are used it is difficult to warrant this classification according to Emery (1994:200). At the present time, this Palmetto Grove example seems to be the only positively identified twined impression from the Bahama archipelago (Grace Turner, personal communication 1999). It is fabric while the remaining impressions are basketry.

The final discussion concerns preliminary investigations of plant fiber identities utilizing alginate molds from impressed ceramics. This area of investigation demands extreme caution as none of the actual fibers have survived. McWeeney examined seven cases from Pigeon Creek and twelve from Palmetto Grove under 7-10x magnification with a binocular-dissecting microscope. Some of the basketry impressions are very clear and veining patterns are visible in certain molds, while smooth surfaces were exhibited in others. Known basketry materials, in a growing fiber study collection, were examined to familiarize us with characteristics of usual basketry fibers. A fossilized pollen taxa from North Storrs Lake site (SS4) (Jones 1997:3) was consulted for possible Lucayan basketry materials. North Storrs Lake lies between Palmetto Grove and Pigeon Creek and has a similar artifact assemblage.

Initial examinations suggest that Palmetto (Sabal palmetto), listed in the pollen taxa, was used in basketry construction at the Pigeon Creek site. Interestingly, there is no evidence that this was the case at the Palmetto Grove site. S. palmetto has distinct patterns of prominent veining on both sides of the frond. This veining is visible in the molds and the impressions have been closely aligned with actual
CONCLUSIONS

With comparative data from two sites, Palmetto Grove (6.8% impressed sherds, n 205) and Pigeon Creek (14% impressed sherds [Rose 1982:134]), it is possible to begin to see inter-site variation within a single basketry technology. Both sites have the same predominant weave, 2/2 twill, apparently using palms of different species in complex designs. It is important to distinguish between the high and low relief in these patterns, as they represent identical interlacing sequences but have very different visual characteristics. The data suggests, in part, differential usage of materials inter- and intra-site. Whether this variation reflects availability due to differing environmental options, proximity, individual and/or group choice, or simply deposition, preservation, and sampling factors is as yet undetermined.

Generally, this comparison shows more complexity and greater variety at Pigeon Creek, even though similar materials and design elements are seen at both sites. The exception is one example of twined fabric found at Palmetto Grove, the only such example identified to date in the Bahamas. Exactly what these differences mean in terms of sociocultural ramifications are, as yet, unclear. This particular area of investigation bears close scrutiny, as they indicate great promise of providing clues about the use of basketry as cultural markers. The complexity of the more complete impressions speaks of a weaving tradition that is developed far beyond mere technical ability. This beginning typology and descriptive terminology should provide a basis for comparison of future sites. It is believed that as an archipelago wide study proceeds, patterns will develop that can provide a basis for more complete interpretation of the diversity of form, function, and perhaps, symbolic importance of basketry to the native Lucayans of the Bahama archipelago and, ultimately, the Caribbean peoples at large.

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Figure 1. Map of San Salvador, Bahamas with Lucayan sites in this report (P. L. Gnivecki 1999).

Figure 2. Weave types: a, 1/1 simple plaiting; b, 2/2 low relief twill without intentional shifts; c, 2/2 high relief twill without intentional shifts; d, 2/2 low relief twill with intentional shifts (A-pattern shift); e, wickerwear; f, coiling; g, close two-strand countered weft twining (ill. B. Moats 1996, computer imaging L. Arcure 1999).

Figure 3. Illustration of 1/1 simple plaiting (2542) showing a ribbed element (A. Johnson 1999).

Figure 4. Positive molds of Palmetto Grove basketry impressions showing variations: a, 2/2 twill low relief without shifts, semi-round element; b, 2/2 twill low relief without intentional shifts, thin flat element; c, non-woven plant material over weaving; d, 2/2 low relief twill without shifts, flat element; e, 2/2 high relief twill with shifts, flat element; f, 2/2 high relief twill with shifts, semi-round element; g, compact countered twining; h, 2/2 low relief twill without shifts, semi-round element; i, wicker, narrow element; j, 1/1 simple plaiting, wide semi-round element; k, wicker, flat element (C. D. Hutcheson 1998).

Figure 5. Schematic illustration and positive mold, low relief, indicating the A-pattern shift sequence by row: a, 2-over-1-under-2-over; b, 2-over-3-under-2-over; c, 2-under-1-over-2-under; d, 2-under-3-over-2-under (ill. A. Johnson, computer imaging L. Arcure 1999).

Figure 6. Extrapolated A-pattern quartered field design based upon the mold (no. 371); the mold fragment is superimposed over the extrapolation (C. D. hutcheson, imaging L. Arcure 1999).

Figure 7. Typha latifolia (broadleaf cattail) in a 1/1 simple plaiting construction compared to a Pigeon Creek site (SS1) mold (no. 2542) (C. D. Hutcheson 1999).

Figure 8. Element variation table showing comparison between Palmetto Grove site (SS3) and Pigeon Creek site (SS1) (tabulated and compiled by C. D. Hutcheson 1998).
Figure 1. Map of San Salvador, Bahamas with Lucayan sites in this report (P. L. Gnivecki 1999).

Figure 2. Weave types: a, 1/1 simple plaiting; b, 2/2 low relief twill without intentional shifts; c, 2/2 high relief twill without intentional shifts; d, 2/2 low relief twill with intentional shifts (A-pattern shift); e, wickerwear; f, coiling; g, close two-strand countered weft twining (ill. B. Moats 1996, computer imaging L. Arcure 1999).
Figure 3. Illustration of 1/1 simple plaiting (2542) showing a ribbed element (A. Johnson 1999).

Figure 4. Positive molds of Palmetto Grove basketry impressions showing variations: a, 2/2 twill low relief without shifts, semi-round element; b, 2/2 twill low relief without intentional shifts, thin flat element; c, non-woven plant material over weaving; d, 2/2 low relief twill without shifts, flat element; e, 2/2 high relief twill with shifts, flat element; f, 2/2 high relief twill with shifts, semi-round element; g, compact countered twining; h, 2/2 low relief twill without shifts, semi-round element; i, wicker, narrow element; j, 1/1 simple plaiting, wide semi-round element; k, wicker, flat element (C. D. Hutcheson 1998).
Figure 5. Schematic illustration and positive mold, low relief, indicating the A-pattern shift sequence by row: a, 2-over-1-under-2-over; b, 2-over-3-under-2-over; c, 2-under-1-over-2-under; d, 2-under-3-over-2-under (ill. A. Johnson, computer imaging L. Arcure 1999).

Figure 6. Extrapolated A-pattern quartered field design based upon the mold (no. 371); the mold fragment is superimposed over the extrapolation (C. D. Hutcheson, imaging L. Arcure 1999).
Figure 7. *Typha latifolia* (broadleaf cattail) in a 1/1 simple plaiting construction compared to a Pigeon Creek site (SS1) mold (no. 2542) (C. D. Hutcheson 1999).

<table>
<thead>
<tr>
<th>Weave Type</th>
<th>No.</th>
<th>Mean mm</th>
<th>Median mm</th>
<th>Mode mm</th>
<th>Range mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>205</td>
<td>4.0</td>
<td>5.9</td>
<td>3.0; 5.0</td>
<td>1.0 – 13.7</td>
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<tr>
<td>Simple Plaiting</td>
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<td>6.8</td>
<td>5.5</td>
<td>N/A</td>
<td>3.0 – 13.0</td>
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<tr>
<td>Twill Plaiting LR /s shift</td>
<td>112</td>
<td>4.3</td>
<td>4.2</td>
<td>5.0</td>
<td>1.0 – 7.6</td>
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<tr>
<td>Twill Plaiting LR /w shift</td>
<td>14</td>
<td>4.4</td>
<td>4.7</td>
<td>3.8; 5.0</td>
<td>2.0 – 6.1</td>
</tr>
<tr>
<td>Twill Plaiting HR /s shift</td>
<td>1</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
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<tr>
<td>Twill Plaiting HR /w shift</td>
<td>3</td>
<td>4.9</td>
<td>4.6</td>
<td>N/A</td>
<td>4.5 – 5.5</td>
</tr>
<tr>
<td>Wicker Wear</td>
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<td>2.0</td>
<td>1.4 – 4.2</td>
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<tr>
<td>2 strand Counter Twinning</td>
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<td>1.6</td>
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<td>1.6</td>
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<tr>
<td>Non-woven Plant Material</td>
<td>6</td>
<td>5.0</td>
<td>6.6</td>
<td>1.0</td>
<td>1.0 – 10</td>
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<tr>
<td>Unknown Weaves</td>
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<td>4.1</td>
<td>4.0</td>
<td>2.0 – 13.7</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Weave Type</th>
<th>No.</th>
<th>Mean mm</th>
<th>Median mm</th>
<th>Mode mm</th>
<th>Range mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
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<td>6.3</td>
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<td>2.0 – 17.0</td>
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<td>5.0; 6.5</td>
<td>2.8 – 17.0</td>
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<td>2.5 – 11.5</td>
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<td>5.5</td>
<td>5.5</td>
<td>3.0 – 12.5</td>
</tr>
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<td>5.5; 9.0</td>
<td>2.5 – 10.0</td>
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<tr>
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<td>5.5; 5.5</td>
<td>4.5 – 7.0</td>
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<tr>
<td>Wicker Wear</td>
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<td>2.0 – 5.5</td>
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<tr>
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<td>5.0 &amp; 7.0</td>
</tr>
<tr>
<td>Non-woven Plant Material</td>
<td>5</td>
<td>8.9</td>
<td>7.0</td>
<td>7.0</td>
<td>6.0 – 12.5</td>
</tr>
</tbody>
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Figure 8.