Perishable Artifacts from the Old Vero Site (8IR009), Indian River County, Florida

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Abstract

Despite depositional conditions inimical to the preservation of plant fiber artifacts, several such objects have been recovered during the ongoing re-excavations of the Old Vero Site (8IR009) in Florida. These include a fragment of charred, three-ply, braided cordage with a contiguous underlying date of ca. 9,000 calendar years ago and a specimen of charred, flexible basketry or textile directly dated to a an age of 7989 ± 19 ^{14}C cal yr BP. The technology of both specimens is consistent with analogous forms recovered from the celebrated Windover Bog site in Florida. The construction attributes of the Vero specimens are described and the potential significance is addressed.

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Site Setting and Description

The Old Vero Site (8IR009), also erroneously known as the Vero Man Site or the Old Vero Man Site, is a deeply stratified, multi-component open site located within the city limits of Vero Beach, Indian River County, Florida (Figure 1). The site area lies within the Eastern Valley section of the Atlantic Coastal Plain physiographic province (Figure 2). The Eastern Valley section lies between the Atlantic Ocean on the east and the terrace riser for the Talbot Marine Terrace to the west. The Eastern Valley section in the vicinity of the site is comprised of two distinct marine terraces. The lower and younger is the Silver Bluff Terrace, which lies at a nominal elevation of 5.18 m above sea level (msl) and forms the dune, beach, and wash-over landforms associated with the Atlantic Coastal Ridges. To the west, the section is comprised of the higher and older Pamlico Terrace, which extends westward to its intersection with the Talbot Terrace riser. The Silver Bluff Terrace is of Sangamon age (120,000 BP) and marks a period of time when sea level was 1–3 m higher than the present (Figure 3).

The general site area encompasses ca. 8,000 m^2, although the exact site boundaries are unknown due to recent construction. A now closed packing plant, Hogan and Sons, lies to the east and intrudes upon the site, the Indian River County Administrative Complex lies directly south and west, and the Vero Beach Municipal Airport lies directly north.

Currently, the elevation of the artificially infilled surface of the site is ca. 6 m above normal canal pool level and ca. 5 m above msl. Prehistorically, the elevation of the site was much higher above the depressed sea levels of the late Pleistocene.

History of Research

In early 1913, Florida State Geologist Elias H. Sellards appealed to the public for information on fossil finds across the state for a volume the Florida Geological Survey was compiling on the land animals of

Figure 1. Location of the Old Vero Site (8IR009).

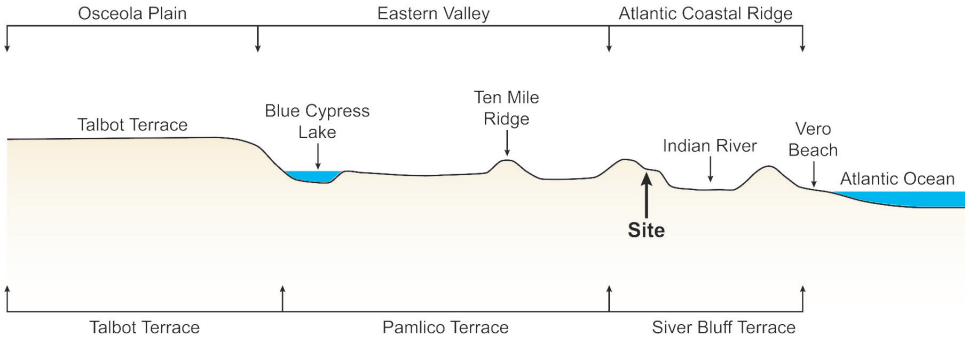

Figure 2. Location of the Old Vero Site within the Eastern Valley section of the Atlantic Coastal Plain phsyiographic province.

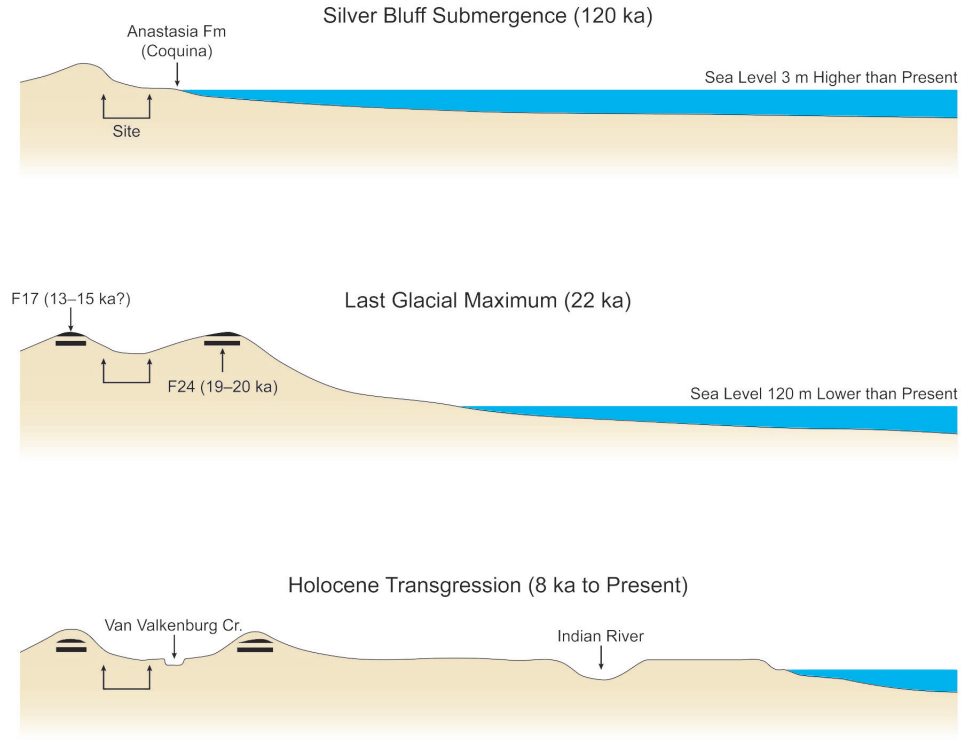

Figure 3. Geologic evolution of the general project area from the Sangamon Interglacial to the present.

Florida. In a *St. Lucie Tribune* article (21 February 1913), Sellards alerted readers to the specific species and skeletal elements they might encounter.

Isaac Weills, who assisted Sellards and many other workers at the Vero site, was interviewed by the *Indian River Farmer* (5 November 1914). Weills spoke about the faunal remains he was finding near the spillway of the Vero canal and indicated that several bones had already been identified by Sellards. Weills also noted that he was arranging to have Sellards visit the site. Shortly thereafter, the *Fort Pierce News* (19 February1915) carried a brief note discussing the Sellards visit and some of the Pleistocene faunal remains they had recovered. This newspaper article chronology confirms that Sellards not only knew of the site, but had also visited and collected below the spillway *prior* to the site becoming a locus of archaeological investigation. Sellards later stated that at the time Vero was brought to his attention, it was one of about 10 sites under study in the area (Sellards 1917a, 1917b).

The first publication of Vero fossil material from the canal excavation also predates the discovery of human remains and artifacts. The *Florida Geological Survey 7th Annual Report* includes an article by Sellards (1915:25–116) that provides several pictures and descriptions of extinct horse (*Equus* sp.) and giant armadillo (*Holmesina septentrionalis*) skeletal elements recovered from Vero.

Vero evolved from a Pleistocene fossil locus to an early man archaeological site in October 1915, when Frank Ayers found in situ human bones eroding from the canal wall. In early February, Sellards had returned to the site and discovered additional in situ human remains with the help of Ayers, Weills, and others (*Fort Pierce News*, 18 February 1916). These discoveries set in motion additional fieldwork throughout the year as well as site visits by a considerable number of the Early Man "authorities" of the time. Sellards announced the Vero Man site to the world in the 1 July 1916 issue of *Science* and published an open invitation to examine the site (Sellards 1916:1–18).

The first of two small Vero symposia was held in October 1916, and attended by O. P. Hay, R. Chamberlin, A. Hrdlicka, G. G. McCurdy, T. W. Vaughn, E. H. Sellards, and several local individuals. This meeting led to a special January issue of *Geology* in which the conflicting interpretations of the site's geology, archaeology, and physical anthropology were aired (*The Journal of Geology* 1917:1–3). A second smaller conference was held at the site in March 1917, and attended by botanist E. W. Berry, E. H. Sellards, H. Gunter, and R. T. Chamberlin.

These conferences were followed by a veritable torrent of claims, counterclaims, and contradictions. Chamberlin correctly described the unrelated, undisturbed, upland geologic sequence west of the fossil and putative human remains bearing pond/creek deposits. Hrdlicka created enough doubt in the context of the recovered material to achieve a victory, at least in his own mind. McCurdy and William H. Holmes pronounced the artifacts to be recent. Hay attributed many of the faunal remains from the site to new, previously unknown species and declared the human occupation to be hundreds of thousands of years old. Sellards correctly described the pond/creek basin sediments but did not accurately interpret the extent of post-depositional disturbances. Close examination of the published literature, surviving archival notes, and known collections of materials unequivocally demonstrate that the precise age of all stratigraphic layers at Vero was unknown. Furthermore, the actual age of the human remains and artifacts has remained problematic to the present.

Interest in the site was renewed in 2008, when plans to develop a water treatment plant threatened negative impacts on a considerable portion of the site. Compliance inquiries by then State Archaeologist Ryan Wheeler and research activity by Barbara Purdy prevented the destruction of the site and generated considerable local interest that ultimately initiated new professional archaeological scrutiny. Site coring and trench examinations by G. Doran, T. Stafford, and B. Purdy between 2008 and 2010 indicated that although considerable disturbance had occurred, large pockets of intact sediments still existed (McFadden et al. 2012). In 2010, a citizen group called The Old Vero Ice Age Sites Committee (OVIASC) was formed to promote new research at the site. In 2012, OVIASC contracted with C. A. Hemmings and Mercyhurst Archaeological Institute (MAI) to conduct excavations and attendant analyses at the site in 2013–2014. In 2014, Harbor Branch Oceanographic Institute of Florida Atlantic University (FAU) joined OVIASC and MAI as a third partner in the new ongoing Vero research. The 2016 and forthcoming 2017 excavations are jointly sponsored by FAU and OVIASC.

Theoretical Considerations

In the present context, perishable artifacts are defined as organic objects of anthropogenic manufacture which under "normal" circumstances of deposition in open archaeological contexts would normally decay quickly. As a somewhat arbitrary class of materials, perishable artifacts in ideal depositional conditions

(i.e., dry caves or rockshelters, or paradoxically, permanently inundated sites) may include such diverse forms as items of plant fiber construction, wood, leather, or, in some cases, bone, or shell-derived forms, and even coprolites and human tissue. In this rendering, perishable artifacts subsume *only* plant fiber-derived specimens including specifically basketry/textiles and cordage.

In the first edition of *Basketry Technology* (Adovasio 1977), as in the present contribution, I offered a definition of basketry which essentially viewed it as a variety or class of textile which encompassed a wide range of items including containers (bowls, trays, jars, ollas, etc.) of widely varying flexibility; matting; bags; and such "non-basket" forms as hats, cradles, and fish traps/weirs, to name but a few. I further noted, following Driver (1961), that these diverse items were fundamentally similar because they were woven by hand without any frame, loom, or other auxiliary apparatus. Herein, frame encompasses all stationary, or rather fixed, perishable production devices. These include such vertical or horizontal constructions as four-sided nonheddle looms (see Kent 1983:Figures 40 and 58), three-sided (backstrap) nonheddle looms, strings stretched between two pegs (one-sided) or four pegs (two sided), and solitary stakes or pegs. Further, it is also possible to employ a living tree branch as a simple frame. Since they are woven, baskets are textiles in a strict sense, but in the absence of any frame or loom as well as the continuous plane surfaces which may be produced thereupon, they are a different kind of textile. It is true that certain varieties of basketry—notably, mats and large, flexible bags—may occasionally be constructed on simple ground frames or with the aid of warp-weighted hanging devices. Additionally, such items may also exhibit extensive plane surfaces. In all cases, however, the ground frames or hanging devices do not employ heddles and, though often large, the plane surfaces are not continuous.

Because of this material class's uncommon diversity and concomitantly broad range of forms, I shall not offer any redefinition of basketry nor attempt to deconstruct its relationship to, or place within, the greater sphere of textiles writ large. What I do wish to stress is that all of these related plant fiber-derived crafts, as well as the production of cordage and cordage by-products, are far more ancient than I ever imagined in 1977. I also wish to reiterate, as I have many times before, that within the realm of basketry there are three major sub-classes of production techniques that are, for the most part, mutually exclusive: twining, coiling, and plaiting.

Twining denotes a sub-class of basket weaves manufactured by passing moving horizontal elements, called wefts, around stationary vertical elements, called warps. In the twining process, the wefts are active while the warps are passive. Twining techniques may be employed to produce containers, mats, and bags, as well as fish traps, cradles, hats, clothing, and a wide variety of other objects. Coiling denotes a sub-class of basket weaves manufactured by sewing a stationary horizontal element or set of elements, called the foundation, with moving vertical elements, called stitches. The stitches are active while the foundation is passive. As noted by Morris and Burgh (1941:61), the structural unit of coiled basketry is the coil, which consists of the foundation enclosed in a sheath formed by successive stitches. In the strictest sense, a basket contains a single coil, continuous from center to rim. The term is generally used, however, to designate a single circuit around a basket. Coiling techniques are used almost exclusively for producing containers, hats, and very rarely, bags. Mats and other forms are seldom, if ever, made by coiling.

Plaiting denotes a sub-class of basket weaves in which all elements are active. Single elements or sets of elements, called strips, pass over and under each other at a more or less fixed angle (about 90º) without any other form of engagement. For this reason, plaited basketry is technically unsewn. Generally, all of the elements in a given specimen are the same composition and possess the same degree of flexibility. In some instances, however, two sets with widely divergent composition and degrees of flexibility may be employed. Plaiting with notably rigid elements is sometimes called wickerware, but that term has also been applied to many different types of rigid twining, making it imprecise and taxonomically useless.

It should be noted that in fully flexible textiles or woven fabrics, plaited specimens with a crossing interval of 1/1 (one-over-one) are usually called plain weave. If the weaving elements are the same diameter and exhibit similar spacing, vis-à-vis one another, such specimens are called balanced plain weave (see below).

Only twining and plaiting/plain weave are currently represented from the Old Vero Site.

Methodology

Cordage Defined

Cordage is a class of elongate fiber constructions that consist of elements twisted or braided together to form a cylindrical and generally flexible strand of potentially unlimited length (c.f., Emery 1966:8-14; Scholtz 1975:9; Wendrich 1991:3). Such constructions are generally subsumed under the English terms string and rope.

Analytical Procedures

The Old Vero Site perishable artifacts have only been analyzed preliminarily. Inspection of each specimen was conducted via unaided eye or with a variable power Leitz stereoscopic microscope equipped with a digital camera connected to a high-resolution monitor. If these analyses were complete, the Old Vero Site perishable specimens would be measured with a needle-nosed dial caliper and all measurements recorded in the metric system on standardized forms. In this paper, *no* measurements are provided.

Criteria of Classification

The basketry/textile and cordage specimens from the Old Vero Site are insufficiently numerous to assign to formal numbered types. However, using the classificatory and descriptive protocols outlined in Adovasio (1977, 2010) or Andrews et al. (1986), they are individually described below.

The Old Vero Site Perishable Artifact Assemblage

Cordage

Only one variety of cordage was recovered from the Old Vero Site.

Three-Strand Braid (Figure 4)

Number of Specimens: 1.

Technique and Comments: Three strands or bunches of fibrous material were initially S-spun, then braided by sequentially crossing each subsidiary component in a right-over-left fashion. The specimen exhibits no splices, crepe-twisting, or rat tailing and is totally carbonized. The braided strands *may* be composed of the fibers of a member of the palm family (*Arecaceae*), either cabbage palm (*Sabal* sp.) or saw palmetto (*Serenoa repens*).

Provenience and Chronology: This specimen was exposed in situ on the 24.5 cm floor of the 2A3 horizon (Field Designation F5) at the Old Vero Site. As detailed in Hemmings et al. (2016:18), this horizon documents a long period of slow overbank deposition and flood plain stability on the site. The base of this horizon is dated at 9620 ± 40 ^{14}C yr BP. This, in turn, suggests that the cordage specimen is maximally ca. 9000 calendar years old.

Figure 4. Three-strand braid in situ on the 24.5 cm floor of the 2A3 horizon (Field Designation F5) at the Old Vero Site.

Basketry/Textiles

Three varieties of basketry/textiles were recovered from the Old Vero Site.

Open Simple Twining, Paired Z-Twist Wefts (Figure 5)

Number of Specimens: 1.

Technique and Comments: Single warps are simple (plain) twined by paired wefts. Weft rows are intentionally spaced at intervals to expose the warps. Warp and weft elements are flattish split reeds of an unknown genus/species. Warps are untwisted while wefts are slightly S-twisted. Weft rows exhibit a Z-slant. Texture is semi-flexible. There are no warp or weft splices and the specimen exhibits no mends or decoration. The specimen is completely carbonized and the original form is unknown.

Provenience and Chronology: This specimen derives from the disturbed overburden (Field Designation F3) at the Old Vero Site and was recovered from the screens. The specimen was directly assayed via AMS and yielded a date of 7170 ± 30 ^{14}C yr BP (UGAMS-25412).

Close Diagonal Twining, Trebled Z-Twist Wefts (Figure 6)

Number of Specimens: 1.

Technique and Comments: Paired warps are diagonally (twill) twined by trebled wefts. Weft rows are intentionally spaced to conceal warps. Warps and wefts are single ply, S-spun elements. Weft rows exhibit an Z-slant. While both faces (i.e., surfaces) of the open twined specimen described above are identical, the two surfaces of this specimen are dissimilar due to the use of three weft plies. Texture is semi-flexible. There are no warp or weft splices and the specimen exhibits no mends or decoration. The specimen is completely carbonized and the original form is unknown. Like the three-strand braided cordage from the Old Vero Site, the warps and wefts of this specimen *may* be composed of fibers of a member of the palm family (*Arecaceae*), either cabbage

Figure 5. Close-up of Open Simple Twining, Paired Z-twist Wefts from the disturbed overburden (Field Designation F3) at the Old Vero Site. This specimen was directly dated to 7170 ± 30 ^{14}C yr BP (UGAMS-25412). A schematic of this technique is available in Adovasio (2010:Figure 7d).

palm (Sabal sp.) or saw palmetto (*Serenoa repens*). Adherent to one surface of this specimen is a segment of simple plaiting/balanced plain weave which is described below.

Provenience and Chronology: This specimen derives from the disturbed overburden (Field Designation F3) at the Old Vero Site and was recovered from the screens. The specimen was directly assayed via AMS and yielded a date of 6330 ± 30 ^{14}C yr BP (UGAMS-2460).

Simple Plaiting/Balanced Plain Weave (Figure 7)

Number of Specimens: 1

Technique and Comments: Single elements of equal dimensions pass over and under each other in a 1/1 interval. The angle of crossing is 90˚. The specimen is fully flexible and was probably produced on a hanging or horizontal nonheddle frame or loom. The opposing sets of plaiting elements are appropriately referred to as warps and wefts. Each weft element passes over and under successive warp elements, and each successive weft reverses the procedure of the one before it. All warps that lie above one passage of the wefts lie below the next passage, and so on. The number, diameter, and spacing of the warp and weft elements are equal; hence, the use of the term "balanced" for this variety (cf., Emery 1966). Warps and wefts are single ply, S-spun elements. No accidental or intentional shifts are present. There are no selvages, mends, or decorations. The original form is unknown. The plaiting elements (warps and wefts) of this specimen *may* be composed of fibers of a member of the palm family (*Arecaceae*), either cabbage palm (Sabal sp.) or saw palmetto (*Serenoa repens*).

Provenience and Chronology: As noted above, this specimen was adherent to one surface of the specimen of Close Diagonal Twining, Trebled S-Twist Wefts. As such, it also derives from

Figure 6. Close-up of Close Diagonal Twining Trebled Z-twist Wefts from the disturbed overburden (Field Designation F3) at the Old Vero Site, obverse surface. The specimen was directly assayed via AMS and yielded a date of 6330 ± 30 ^{14}C yr BP (UGAMS-2460). Schematics of this technique are available in Andrews et al. (2002:Figures 6.13 and 6.14). Note the weft row slant of the Vero specimen (Z) is the opposite of the weft row slant of the Windover specimens of this type. Replicas of this technique are shown in Andrews et al. (2002:Figures 6.15 and 6.16), again with the opposite weft slant.

the disturbed overburden (Field Designation F3) at the Old Vero Site and was recovered from the screens. It is assumed that the AMS date for that specimen also obtains for this specimen.

Overview

Though numerically diminutive in size, the perishable artifacts from the Old Vero Site *do* illuminate a seldom recovered aspect of aboriginal central Florida non-durable technology. While presently represented by only four specimens, the Old Vero Site collection does demonstrate that cordage as well as basketry/textiles were aboriginally produced and/or used in this portion of Florida. Though the original forms of these specimens as well as their functions are also unknown, the potential diversity of possible applications is great.

Conversely, the range of raw materials employed in the production of the Old Vero Site perishable artifacts is highly circumscribed—if these are representative of aboriginal "reality." Currently only an unknown reed and one or another species of the palm family seem to be exploited as construction media.

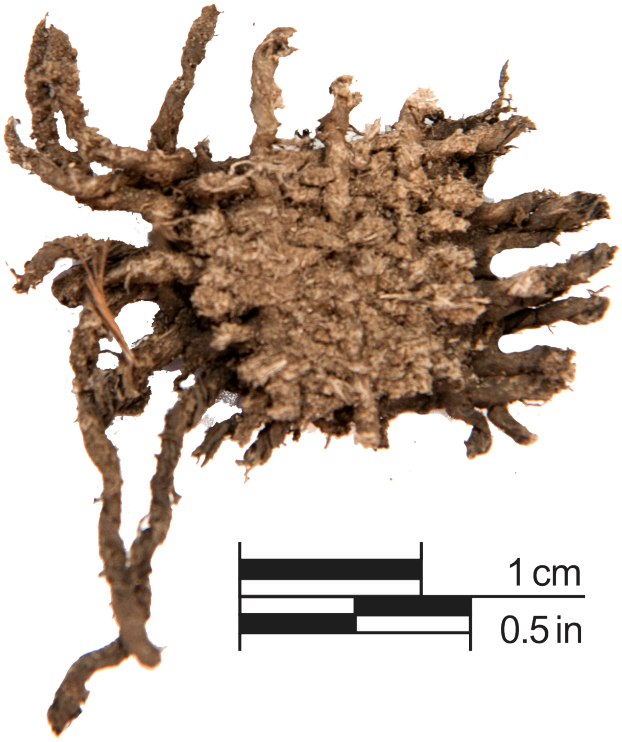

Figure 7. Close-up of the reverse surface of Figure 6, showing adherent Simple Plaiting/Balanced Plain Weave. This specimen is assumed to be the same age as the Figure 6 specimen. A schematic of this specimen is available in Andrews et al. (2002:Figure 6.38, Figure 6.39 [replica]).

Finally, though the assemblage from the Old Vero Site may be profitably compared to other such assemblages both earlier and later from inside and outside of Florida (see Andrews et al. 2002:160–163), time and space constraints as well as the ongoing status of the Vero excavations and the incomplete state of these analyses precludes such comparisons. With a notable (and probably significant) exception of the final twining weft slant, the perishable technology represented at the Old Vero Site is generally consistent with and, indeed, would be basically lost within the penecontemporaneous perishable assemblage from the Windover Site in Brevard County (Andrews, et al. 2002). Like the much more extensive Windover perishable artifact collection, the Old Vero Site assemblage does underscore the nature of the complex non-durable technology utilized by middle Holocene populations in Florida, and by extension, probably the entire Southeast.

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