9MEB3 ARCHAEOBOTANICAL REPORT

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A total of 342 plant specimens were submitted for identification to Dr. Amber VanDerwarker at the paleoethnobotany laboratory at UCSB in June 2009. This report provides the summary of results of the identifications made by Dr. VanDerwarker, including taxonomic identification and seasonality information.

Recovery and Preservation Bias

The circumstances under which plants preserve best archaeologically involve extreme conditions (e.g., exceptionally wet, dry, or cold environments) that prohibit decomposition of organic matter (Miksicek 1987). Plants can also preserve through exposure to fire, which can transform plant material from organic matter into carbon (Miksicek 1987). It is extremely rare that plant remains preserve for any length of time in open air sites if they have not been subject to fire and thus carbonized. The seeds from 9Meb3 were not carbonized (with the exception of a single wood/stem fragment). Given the Historic period designation of the feature (Feature #30) from which the seeds derive and the feature's depth (50-95 cmbd), however, it is probable that these uncarbonized specimens preserved as part of the original deposit; they are probably not modern intrusions. If the majority of the seeds were composed of wind-born weed seeds, then it would be more likely that these seeds were modern in origin; however, most of the identified specimens are fruit pits/seeds, indicating intentional disposal of food refuse.

Laboratory Procedures

Botanical materials were identified with reference to the Paleoethnobotany comparative collection at the University of California, Santa Barbara. A seed identification manual (Martin and Barkley 1961) was also used when specimens could not be identified using the comparative collection. All plant specimens were identified to the lowest possible taxonomic level. Genus/species-level identification was not possible with all specimens—some specimens did not have counterparts represented in the UCSB comparative collection, and identification based on seed pictorials is always less certain than comparison with an actual known taxon. As a result, these specimens were classified as "cf." when identification to family, genus, or species was not certain; "cf." is a Latin abbreviation that translates as "comparable to" or "compares favorably with". Once the plant specimens were identified, I recorded counts, weights (in grams), and state of preservation (whether it was carbonized or not).

Results

Five seed types were sent to my lab at UCSB. Seed types 1 and 3-5 all represented discrete taxonomic groups. Seed type 2, however, included a mix of four different plant

taxa, in addition to a small bone fragment. Table 1 lists the results of the seed identifications, including its original "type" designation, common name, taxonomic name, state of preservation, count, weight, and additional comments.

Seed Type 1:
The specimens designated as Type 1 were identified as hackberry (*Celtis mississippiensis*). Hackberry is a small fruit/berry that is ripe and available for collection in the fall and winter (Scarry 2003:55).

Seed Type 2:
The specimens designated as Type 2 were identified as four different taxa, discussed here as 2a, 2b, 2c, and 2d.

Type 2a was identified as cherry, probably choke cherry (*Prunus* cf. *virginiana*). The reason for the uncertainty at the species level is because of the Historic-period designation of the deposit. Choke cherry is a native New World species, but it is also possible that these pits might represent Old World cherries. Native cherries ripen and are available for collection in mid-summer through the fall (Scarry 2003:55). Cherries are a good source of carbohydrates and dietary fiber.

Type 2b was identified as possible hawthorn (cf. *Crataegus* sp.) fruit. The identification was made based on the seed identification manual cited above. The external surfaces of these specimens are a clear match to the pictorial guide, but without an actual specimen for comparison, it is impossible to match based on its unique internal structure. This fruit ripens and is available for collection through the summer and fall seasons (Scarry 2003:55).

Type 2c was identified as acorn (*Quercus* sp.) nutshell. Acorn mast ripens and becomes available for collection in the fall (Scarry 2003:55). Acorn nuts require some processing before they can be consumed. Acorn processing depends upon whether the nuts derive from white or red oak trees. Nuts from the red oak are high in tannin and are extremely bitter as a result. White oaks, however, yield sweeter nuts; the nutmeats from these acorns can be used for cooking immediately after extraction from the shell (Scarry 2003). The tannin present in the bitter acorns, however, requires an additional processing step. Leaching the tannin from acorns can be accomplished either by soaking them in water, or parching and then boiling them with an alkaline substance such as wood ash. In prehistoric times, processed acorns were generally ground into a fine meal, which could then be used to make gruel, bake bread, or thicken stews. Less often, acorns were boiled and the oil extracted (Swanton 1946:260, 277).

Type 2d was identified as a fragment of wood/stem. This was the only carbonized specimen in the seeds sent for identification.

Seed Type 3:
The specimens designated as Type 3 were identified as possibly belonging to the thistle family (cf. Asteraceae).

Seed Type 4:
The specimens designated as Type 4 were identified as greenbriar (*Smilax hispida*). Greenbriar was exploited by native southeasterners for its edible root/tuber. While roots and tubers are available year-round, they are more tender and nutritious (especially in carbohydrates) if exploited from late fall to early spring (Scarry 2003:72).

Seed Type 5:
The specimens designated as Type 5 were identified as pokeweed (*Phytolacca americana*). Pokeweed, also referred to simply as poke, was exploited by prehistoric native groups of the southeastern United States for its edible greens and served as an excellent source of vitamins and minerals (Scarry 2003:73). The primary seasons of poke collection are the spring and summer months (Scarry 2003:56).

References Cited

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Table 1. Inventory of Seed Identifications for 9Meb3.

Original designation	**Common Name**	**Taxonomic Name**	**State of preservation**	**Count**	**Weight**	**Comment**
Seed Type 1	Hackberry	*Celtis mississippiensis*	uncarbonized	264	1.69	
Seed Type 2 (2a)	Cherry (cf. choke cherry)	*Prunus* cf. *virginiana*	uncarbonized	11	0.14	species not certain/could be an Old World cherry given the deposits Historic period designation
Seed Type 2 (2b)	cf. Hawthorn	cf. *Crataegus* sp.	uncarbonized	50	0.4	identification uncertain/based on seed guide/no Hawthorn in comparative collection
Seed Type 2 (2c)	Acorn	*Quercus* sp.	uncarbonized	3	0.02	
Seed Type 2 (2d)	Wood/Stem		carbonized	1	0.01	
Seed Type 3	cf. Thistle family	cf. Asteraceae	uncarbonized	5	0.03	
Seed Type 4	Greenbriar	*Smilax hispida*	uncarbonized	5	0.26	
Seed Type 5	Pokeweed	*Phytolacca americana*	uncarbonized	3	0.01	