APPENDIX D

TECHNICAL FLOTATION AND FLORAL REPORT

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ARCHEOBOTANICAL ANALYSIS
Thomas Dawson House Site (7K-C-414)

1. Introduction

A comprehensive program of soil flotation and macro-botanical analysis at the Thomas Dawson House Site (7K-C-414) has resulted in the recovery of abundant charred botanical material and significant data which contributes to key research issues defined for Phase III investigations at the site.

Archeobotanical studies have helped to illuminate the scope of agricultural pursuits on the Dawson farm, contributed to reconstruction of site environment, and aided in an exploration of food production and preference during the eighteenth-century.

Archival research has revealed the presence of a malt house adjacent to the primary dwelling at the Thomas Dawson House Site. It has been inferred that the Dawson family processed grains grown on the property and on neighboring farms into malt (Liebeknecht et al. 1997:10-17). Archeobotanical studies at the site document the kinds of grains being processed, and contribute to an understanding of the extent to which small-scale malting activities contributed to the economy of the site.

When assessing archeobotanical assemblages, it is necessary to keep in mind the biases inherent in quantifying largely biodegradable artifacts: The great majority of plant remains deposited historically decompose quickly, leaving a limited and grossly prejudiced sample of the original vegetative material deposited. This bias is due both to the cultural factors involved in deposition (where folks threw their garbage), and to the physical factors governing the differential preservation of plant remains deposited (biodegredation of organic remains).

Archeobotanists generally consider *only* charred seed specimens as legitimate archaeological constituents from open site environments, as the seed dormancy period for most plants is rarely more than 100 years (Harrington 1972). In order for seeds to persist in older archaeological contexts, they must be altered, i.e. by charring, dessication, or interment in a saturated, low oxygen environment (such as a bog). Only those vegetable remains subjected to charring would have been preserved in the loose alluvial and acidic soils characterizing the Thomas Dawson House Site. Non-carbonized, non-native seeds were recovered in abundance from eighteenth-century contexts at the Thomas Dawson House Site.

2. Methodology

a. Flotation Samples

Macro-botanical samples from 6 separate cultural features were systematically collected through routine soil sampling. Soil samples averaging 1.75 liters were retained in the field.

Twenty soil samples from 15 separate proveniences totaling 35 liters were collected and selected for flotation-processing and analysis based on their potential for yielding a representative sample of plant macro-fossils enduring at the Thomas Dawson House Site. Table 01 presents a description of cultural contexts from which macro-botanical remains were collected.

Soil samples were individually processed using a modified SMAP (Shell Mound Archaeological Project)-type flotation system (Watson 1976) equipped with 0.30mm fine fraction and 1.6mm coarse fraction screens. This system facilitates the separation and recovery of organic remains from the soil matrix through agitation in water. Processing results in a heavy and a light fraction of material. Floted portions were air-dried.

Sample matrices were composed of quartzitic gravel with crushed brick and coal and coal clinker. The heavy flotation fractions contained a variety of ecofacts and artifacts which were separated for analysis. Ceramics, iron hardware, glass, pipestem fragments and straight pins were noted, and fish, bird, mammal and shellfish remains were abundant. All archaeologically-derived plant remains recovered through flotation were combined and passed through a 2mm geological sieve, yielding fractions of 2 different sizes for analysis. Weights and sample descriptions of the resulting greater than or equal to 2mm and less than 2mm fractions were recorded. The greater than or equal to 2mm charcoal specimens were examined under low magnification (10X to 30X) and sorted into general categories of material (i.e. wood, nutshell, seeds, cultivated plant remains, etc.). Description, count and weight were taken for each category of the greater than or equal to 2mm material. The less than 2 mm size fractions were examined under low magnification, their general description recorded, and any remains of seeds and cultivated plant material (i.e. corn and wheat) were removed for identification.

Table 01: Description of Sampled Features.

Feature	Soil Sample Numbers	No. of samples	Feature Description
1	305, 306, 319, 320, 321, 342, 343	7	eighteenth-century cellar hole
7	189, 190, 191	3	tree hole used as eighteenth-century domestic trash dump
9	195	1	pit feature - probable tree hole
10	199	1	broad, shallow pit
18	262, 263	2	oblong pit - possible human burial
21	231	1	shallow pit feature

Identifications were routinely attempted on all seed, nut, and cultivated plant remains, and on a sub-sample of twenty randomly selected wood fragments from each sample containing *more* than twenty specimens, in accordance with standard practice (Pearsall 1989). Identifications of all classes of botanical remains were made to the genus level when possible, to the family level when limited diagnostic information was available, and to the species level only when the assignment could be made with absolute certainty. When botanical specimens were found to be in such eroded or fragmentary condition that classification was impossible, a variety of general categories were applied: Wood categories within the analyzed assemblages include *'ring porous'*, where specimens exhibited differences between early and late wood growth; *'diffuse porous', where specimens exhibited no difference between early and late wood growth; 'deciduous taxa'*, where specimens could be identified as having a porous vessel arrangement reflecting deciduous trees rather than a trachid arrangement indicative of coniferous taxa; and *'unidentifiable'*, where specimens were so fragmentary or minute that no clear section could be obtained upon which to base identification. Seed categories within the site assemblages included *'unidentifiable seed'* or *'unidentifiable seed coat fragment'* where specimens were highly eroded or fragmentary and lacked the minute structures required for identification (such as seed coat or embryo attachment area). The categories *'amorphous carbon'* and *'unidentifiable plant part'* were used in this report to classify carbonized remains which lacked any identifiable characteristics whatsoever.

All identifications were made under low magnification (10X to 30X) with the aide of standard texts (Edlin 1969; Kozlowski 1972; Martin and Barkely 1961; Panshin and deZeeuw 1970; Schopmeyer 1974), and checked against plant specimens from a modern reference collection germane to the flora of Kent County, Delaware. Specimen weights were recorded using an electronic balance accurate to 0.01 grams.

Figure 01: Flotation-recovered archeobotanical remains from the Thomas Dawson House Site are examined under a binocular dissecting microscope.

b. Hand-Collected Botanical Remains

In addition to flotation-recovered archeobotanical remains, isolated hand-collected plant macrofossils were also submitted for identification. Five samples from three cultural features (Features 1, 7 and 13) and one sample from non-feature contexts were analyzed.

3. Results

a. Floral Summary-Flotation Recovered Remains

One hundred percent of the flotation samples analyzed from the Thomas Dawson House Site yielded archeobotanical remains. Overall, carbonized plant remains were abundant, and the condition of recovered organic remains was good.

Flotation processing of 35 liters of soil yielded 52.25 grams of carbonized plant remains, or an average density of 1.49 grams of charcoal per liter of cultural fill analyzed. A variety of wild and cultivated plant remains were recovered. These include deciduous and coniferous wood, thick-walled hickory nutshell and beech nut hulls, carbonized seeds, non-carbonized seeds, corn and wheat, and miscellaneous plant materials including unidentifiable rind fragments, a woody thorn fragment, fungal fructifications and amorphous carbon.

A site summary of flotation-recovered plant remains by soil sample and arranged by cultural feature is provided in Table 02. Discussion of each class of plant material encountered within the Thomas Dawson House Site assemblage is provide below, followed by detailed descriptions of culturally significant taxa identified. The distribution of plant remains is then discussed by cultural feature.

Wood charcoal was the most abundant and ubiquitous class of material recovered, comprising 93 percent (by weight) of the site sample. A total of 4,100 carbonized wood fragments weighing 48.42 grams was recovered. Of the total wood remains, a sub sample of 315 fragments (a maximum of 20 fragments per sample) was randomly selected for identification. The site wood sample revealed a predominance of white oak *(Quercus sp. [LEUCOBALANUS group])* (52 percent, by count [n=315]), red oak *(Quercus sp. [ERYTHROBALANUS group])* (14 percent), hickory *(Carya sp.)* (8 percent), unclassified oak species *(Quercus sp.)* (7 percent), tulip poplar *(Liriodendron tulipifera)* (3 percent), and yellow or hard pine *(Pinus sp.)* (2 percent). The following species were identified in less than 1 percent of the sample: American chestnut *(Castanea dentata)*, dogwood *(Cornus florida)*, ash *(Fraxinus sp.)*, american holly *(Ilex opaca)*, black walnut *(Juglans nigra)*, and black locust *(Robinia pseudoacacia)*. Poorly preserved specimens were assigned to the categories *'ring porous'* (3 percent), *'diffuse porous'* (1 percent), *'deciduous taxa'* (4 percent) and '*unidentifiable'* (3 percent).

A total of four nutshell or nut hull fragments weighing 0.05 grams were identified from the Thomas Dawson House Site flotation samples. Three fragments of thick-walled hickory *(Carya sp.)* nutshell and a single American beech *(Fagus grandifolia)* nut hull fragment were recovered. All nut remains were recovered from a Feature 7, Stratum A.

Carbonized seed remains totaled 14 specimens, which were present in 40 percent of the flotation samples analyzed. Carbonized seed remains were confined to flotation samples retained from Feature 1 and Feature 7. Six identifiable seed types were recovered. These include goosefoot *(Chenopodium sp.)* (1 seed), spurge *(Euphorbia sp.)* (1 seed), erect knotweed (*Polygonum erectum)* (2 seeds), common purselane *(Portulaca oleracea)* (1 seed), cherry *(Prunus sp.)* (3 fragments) and 3 seeds belonging to the grass family *(POACEAE)*. Three seeds were recovered

Table 02: Inventory of Flotation Recovered Plant Remains: Thomas Dawson House Site (7K-C-414)

Soil Sample Number		189	190	191	195	199	231	262	263	305	306	319	320	321	342	343
Feature		7	7	7	9	10	21	18	18	1	1	1	1	1	1	1
Strata		A	A	B	A	A	A	B	B	B	D	B	D	D	B	D
Level		1	1	2	1	1	1	2	2	2	4	2	4	4	2	4
Soil Sample Volume (liters)		4	2	2	1	2	2	2	4	4	2	2	2	2	2	2
Total Charcoal Weight (grams)		12.1	1.17	0.73	0.69	2.3	0.49	0.03	0.2	7.38	5.51	8.95	5.56	2.39	2.3	2.45
WOOD CHARCOAL	(total count	760	114	51	43	210	49	2	39	836	261	649	479	190	212	205
	total weight (grams)	11.58	0.96	0.67	0.47	2.08	0.38	0.01	0.13	7.34	3.55	8.73	5.56	2.31	2.29	2.36
Betula sp. (birch)													1			
Carya sp. (hickory)		6		1			6				2		1	1	4	1
Castanea dentata (american chestnut)												1				
Cornus florida (dogwood)														2		
Fraxinus sp. (ash)		1														
Ilex opaca (american holly)														1		
Juglans nigra (black walnut)																1
Liriodendron tulipifera (tulip poplar)					7		3									
Pinus sp. (yellow or hard pine group)		2							5							
Quercus sp. (red group)		6		2			3	1	1	7		10			7	8
Quercus sp. (white group)		19	20	8	3	20	2	1	2	23	8	8	18	16	5	10
Quercus sp. (unspecified)				7	3		4		1		5				1	
Robinia pseudoacacia (black locust)											1					
diffuse porous					2					1						
ring porous				2	2				1		3	1			2	
deciduous taxa		4			3		2			1	1				1	
unidentifiable				.					10	1						
total identified fragments		40	20	20	20	20	20	2	20	33	20	20	20	20	20	20
NUT REMAINS	(total count	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	total weight (gram	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fagus grandifolia (beech)		1														
Carya sp. (hickory-thick walled)		3														
CARBONIZED SEED REMAINS	(total count	1	3	0	0	0	0	0	0	0	0	4	2	2	0	2
	total weight (grams)	<0.01	<0.01	0	0	0	0	0	0	0	0	0.01	<0.01	<0.01	0	<0.01
Chenopodium sp. (goosefoot)			1													
Euphorbia sp. (spurge)																1
Polygonum erectum (erect knotweed)													2			
Portulaca oleraceae (common purselane)																1
Prunus sp. (cherry) fragment												3				
POACEAE entire (grass family)		1	2													

Table 02: Inventory of Flotation Recovered Plant Remains: Thomas Dawson House Site (7K-C-414)

Soil Sample Number	189	190	191	195	199	231	262	263	305	306	319	320	321	342	343
Feature	7	7	7	9	10	21	18	18	1	1	1	1	1	1	1
Strata	A	A	B	A	A	A	B	B	B	D	B	D	D	B	D
Level	1	1	2	1	1	1	2	2	2	4	2	4	4	2	4
Soil Sample Volume (liters)	4	2	2	1	2	2	2	4	4	2	2	2	2	2	2
Total Charcoal Weight (grams)	12.1	1.17	0.73	0.69	2.3	0.49	0.03	0.2	7.38	5.51	8.95	5.56	2.39	2.3	2.45
Unidentifiable seed													2		
Unidentifiable seed coat fragment											1				
NON-CARBONIZED SEED REMAINS (total count)	103	47	30	7	37	78	54	776	20	5	1	5	1	1	2
Chenopodium sp. (goosefoot)	2					2	6	25	2			2		1	2
Crotolaria sp. (crotolaria)													1		
Eleusine indica (goose grass)								4							
Mollugo verticillata (carpetweed)	99	42	29	7	37	75	44	740	18	5	1				
Oxalis stricta (sheepsorrel)	1	3						1							
Phytolacca americana (poke)						1						1			
Polygonum sp. (knotweed)		2						2							
Portulaca oleracea (common purselane)							1					1			
Solanum sp. (nightshade)								2							
Solanum rostratum (buffalobur)							3	1							
Stellaria media (chickweed)								1							
POACEAE (grass family)		2													
SOLANACEAE (nightshade family)	1														
Unidentifiable seed			1												
Unidentifiable seed coat fragment												1			
FIELD CROPS (total coun	26	20	10	0	30	13	0	0	1	120	8	1	24	0	3
total weight (grams)	0.13	0.15	0.06	0	0.22	0.1	0	0	<0.01	1.9	0.02	<0.01	0.04	0	0.02
Zea mays (corn)															
kernel fragment	8				1										
cupule with glume attached										1					
cupule	4	6	3		10	2				18	2		7		3
cuple fragment	8	14	6		18	11			1	96	5		16		
glume	5									1					
cob segement										4			1		
Triticum aestivum (wheat) entire	1		1		1						1				
Triticum aestivum (wheat) fragment												1			
OTHER PLANT REMAINS (total count	60	9	0	15	1	1	3	7	6	8	15	0	7	3	5
total weight (grams)	0.34	0.06	0	0.22	<0.01	0.01	0.02	0.07	0.04	0.06	0.19	0	0.04	0.01	0.07
amorphous carbon	53	7		15			3	7	6	8	14		7		5

Table 02: Inventory of Flotation Recovered Plant Remains: Thomas Dawson House Site (7K-C-414)

Soil Sample Number	189	190	191	195	199	231	262	263	305	306	319	320	321	342	343
Feature	7	7	7	9	10	21	18	18	1	1	1	1	1	1	1
Strata	A	A	B	A	A	A	B	B	B	D	B	D	D	B	D
Level	1	1	2	1	1	1	2	2	2	4	2	4	4	2	4
Soil Sample Volume (liters)	4	2	2	1	2	2	2	4	4	2	2	2	2	2	2
Total Charcoal Weight (grams)	12.1	1.17	0.73	0.69	2.3	0.49	0.03	0.2	7.38	5.51	8.95	5.56	2.39	2.3	2.45
unidentifiable rind fragment	6					1					1				
fungal fructification	1	2													
woody thorn fragment					1										

Table 02: Inventory of Flotation Recovered Plant Remains: Thomas Dawson House Site (7K-C-414)

Soil Sample Number		TOTALS
Feature		15 samples
Strata		
Level		
Soil Sample Volume (liters)		35
Total Charcoal Weight (grams)		52.25
WOOD CHARCOAL	(total count	4100
	total weight (grams)	48.42
Betula sp. (birch)		1
Carya sp. (hickory)		24
Castanea dentata (american chestnut)		1
Cornus florida (dogwood)		2
Fraxinus sp. (ash)		1
Ilex opaca (american holly)		1
Juglans nigra (black walnut)		1
Liriodendron tulipifera (tulip poplar)		10
Pinus sp. (yellow or hard pine group)		7
Quercus sp. (red group)		45
Quercus sp. (white group)		163
Quercus sp. (unspecified)		21
Robinia pseudoacacia (black locust)		1
diffuse porous		3
ring porous		11
deciduous taxa		12
unidentifiable		11
total identified fragments		315
NUT REMAINS	(total count	4
	total weight (gram	0.05
Fagus grandifolia (beech)		1
Carya sp. (hickory-thick walled)		3
CARBONIZED SEED REMAINS	(total count)	14
	total weight (grams)	0.01
Chenopodium sp. (goosefoot)		1
Euphorbia sp. (spurge)		1
Polygonum erectum (erect knotweed)		2
Portulaca oleraceae (common purselane)		1
Prunus sp. (cherry) fragment		3
POACEAE *entire* (grass family)		3

Table 02: Inventory of Flotation Recovered Plant Remains: Thomas Dawson House Site (7K-C-414)

Soil Sample Number		TOTALS
Feature		15 samples
Strata		
Level		
Soil Sample Volume (liters)		35
Total Charcoal Weight (grams)		52.25
Unidentifiable seed		2
Unidentifiable seed coat fragment		1
NON-CARBONIZED SEED REMAINS (total count)		1167
Chenopodium sp. (goosefoot)		42
Crotolaria sp. (crotolaria)		1
Eleusine indica (goose grass)		4
Mollugo verticillata (carpetweed)		1097
Oxalis stricta (sheepsorrel)		5
Phytolacca americana (poke)		2
Polygonum sp. (knotweed)		4
Portulaca oleracea (common purselane)		2
Solanum sp. (nightshade)		2
Solanum rostratum (buffalobur)		4
Stellaria media (chickweed)		1
POACEAE *(grass family)*		2
SOLANACEAE *(nightshade family)*		1
Unidentifiable seed		1
Unidentifiable seed coat fragment		1
FIELD CROPS	(total coun	256
	total weight (grams)	2.64
Zea mays (corn)		0
	kernel fragment	9
	cupule with glume attached	1
	cupule	55
	cuple fragment	175
	glume	6
	cob segement	5
Triticum aestivum (wheat) entire		4
Triticum aestivum (wheat) fragment		1
OTHER PLANT REMAINS	(total count	140
	total weight (grams)	1.13
amorphous carbon		125

Table 02: Inventory of Flotation Recovered Plant Remains: Thomas Dawson House Site (7K-C-414)

Soil Sample Number	TOTALS
Feature	15 samples
Strata	
Level	
Soil Sample Volume (liters)	35
Total Charcoal Weight (grams)	52.25
unidentifiable rind fragment	8
fungal fructification	3
woody thorn fragment	1

which were not classified taxonomically due to their eroded nature. These include 2 unidentifiable seeds and one unidentifiable seed coat fragment. Additionally, a single peach *(Prunus persica)* pit was hand-recovered during excavation of Feature X (Stratum X).

Non-carbonized seed remains were present in ubiquitous abundance within flotation samples from all features sampled at the Thomas Dawson House Site. Non-carbonized seeds were recovered from 100 percent of the flotation samples analyzed. A total of 1,167 non-carbonized seeds were recovered, representing 14 identifiable taxa. Non-carbonized seed remains were identified as goosefoot *(Chenopodium sp.)* (42 seeds), rattlebox *(Crotolaria sp.)* (1 seed), goosegrass *(Eleusine indica)* (4 seeds), carpetweed *(Mollugo verticillata)* (1,097 seeds), sheep sorrel/wood sorrel *(Oxalis stricta)* (5 seeds), poke *(Phytolacca americana)* (2 seeds), knotweed *(Polygonum sp.)* (4 seeds), purselane *(Portulaca oleracea)* (2 seeds), nightshade *(Solanum sp.)* (2 seeds), buffalobur *(Solanum rostratum)* (4 seeds), chickweed *(Stellaria media)* (1 seed), and members of the grass *(POACEAE)* (2 seeds) and nightshade *(SOLANACEAE)* (1 seed) families. One unidentifiable small seed and one unidentifiable seed coat fragment were also present. Recovered non-carbonized seeds include both native and non-native species. Table 03 presents the taxa recovered, the percentage of total flotation samples within which fresh seeds were encountered, and the native/non-native status of each taxa.

Table 03: Occurrence of non-carbonized seeds recovered from flotation samples.

common name	scientific name	status	occurrence
goosefoot	*Chenopodium sp.*	native	53%
rattlebox	*Crotolaria sp.*	native	6%
goose grass	*Eleusine indica*	non-native (European)	6%
carpetweed	*Mollugo verticillata*	non-native (tropical America)	73%
sheep sorrel/wood sorrel	*Oxalis stricta*	native	20%
poke	*Phytolacca americana*	native	13%
knotweed	*Polygonum sp.*	native	13%
common purselane	*Portulaca oleracea*	native? non-native (Eurasian)?	13%
nightshade	*Solanum sp.*	native/non-native	6%
buffalobur	*Solanum rostratum*	non-native (Eurasian)	13%
chickweed	*Stellaria media*	non-native (Europe)	6%
grass family	*POACEAE*	native/non-native	6%
nightshade family	*SOLANACEAE*	native/non-native	6%

non-carbonized seeds occur in 100 percent of the flotation samples analyzed

The recovery of large quantities of non-carbonized ruderal seeds from historic contexts at the

Thomas Dawson House Site is troublesome, as it is unlikely that non-carbonized seeds dating to eighteenth-century occupations at the site would have persisted archaeologically. Although the persistence of non-carbonized plant remains from rare contexts such as consistently xeric or inundated environments is not uncommon (Hastorf and Popper 1988; Minnis 1981; Pearsall 1989), such soil conditions do not characterize the project area. The presence of non-carbonized seed remains within flotation samples from open-site environments is usually considered evidence of modern seed contamination caused by plowing, seed rain, rodent or crustacean burrowing, root action, soil erosion and deposition -- or by a combination of these factors (Minnis 1981; Keepax 1977). Historic deposits at the Thomas Dawson House Site may have been intruded upon such forces which introduced modern material into an otherwise undisturbed archaeological record: This would explain the recovery of both archeobotanical and modern plant remains from the same flotation sample. A similar pattern of non-carbonized (and non-native) seed remains from archaeological contexts has been observed at other historic sites on Delaware's coastal plain (Custer, Watson and Silber 1996; Custer, Riley and Mellin 1996; Grettler et al. 1996; LeeDecker et al. 1996,1998). It may be that loose coastal plain sediments common to these sites permit the movement of minute modern materials (i.e. small seeds) into archaeological contexts. For the purposes of this study, all non-carbonized botanicals will be considered modern in origin and as such have been omitted from the interpretation of historic plant use at the Thomas Dawson House Site.

Abundant field crop remains were recovered from Features 1, 7, 10 and 21 at the Thomas Dawson House Site. A total of 5 wheat *(Triticum aestivum)* specimens and 251 corn *(Zea mays)* specimens were identified. Both entire kernels (4) and kernel fragments (1) of wheat were recovered. Corn remains identified include kernel fragments (9), cupules (55), cupule fragments (175), cupules with glume attached (1), glumes (6), and cob segments (5).

A variety of miscellaneous archeobotanical materials were also identified. These include 8 unidentifiable rind fragments, 3 fungal fructifications, one woody thorn fragment and 125 fragments of amorphous carbon.

b. Floral Summary - Hand Collected Plant Remains

The five hand-collected macro-botanical samples were composed entirely of nutshell. Interestingly, much of these remains were non-carbonized, or only partially carbonized. Perhaps the density of the nutshell, and its oily composition facilitated preservation. However, no non-carbonized nutshell was encountered in the flotation-recovered plant assemblage. Identified nut species included thick-walled hickory *(Carya sp.)* and black walnut *(Juglans nigra)*. The results of analysis of the hand-collected plant remains is presented in Table 04.

c. Discussion of Culturally Significant Taxa Encountered

Potentially useful plant species identified within the Thomas Dawson House Site archeo-botanical assemblage are discussed below:

Birch *(Betula sp.)*. Particular species of Betula cannot be separated with certainty on the basis of either gross structure or minute anatomy (Panshin and deZeeuw 1980:552). River birch

Table 04: Inventory of Hand-Recovered Plant Remains

catalog #	97/60/209	97/60/121	97/60/208	97/60/188	97/60/314	TOTAL
Unit		97			169	
Feature	13W		13E	79	1	
Strata	A	A	A	A	A	
Level	1	1	1	1	1	
Sample Wt (g)	0.24	0.45	0.19	0.30	0.12	1.3 grams
Nutshell	pc	nc	pc	c	nc	23
Carya sp. (Thick-walled hickory)	3		4			7
Juglans nigra (black walnut)		7		8	1	16

c=carbonized
nc=non-carbonized
pc=partially carbonized

(Betula nigra) would have been a minor forest component in Delaware's coastal plain along fresh water streams at low elevations. The wood is heavy, hard, strong, and close grained. It has historically been used for furniture, turned articles, butcher blocks, agricultural implements, interior construction and as fuel.

Hickory (Carya sp.). The hickories (Carya sp.) include a variety of native species divided generally into two types, the 'true' or 'thick-walled' hickories, and the 'pecan' or 'thin-walled' hickories (Panshin and deZeeuw 1970:541). Hickories are native only to North America, and seeds were sent to Europe by early American colonists before 1630 for cultivation there (Leach 1984). Carya species occupy a variety of ecological zones, and produce a heavy nut crop which ripens during September and October (Munson 1986). A dominant tree throughout the Eastern Woodlands (Eyre 1980), the prevalence of hickory remains from pre-historic and colonial archeological contexts attests to the importance of the species to human subsistence, and the accessability of the resource to local populations. While European settlers along the eastern seaboard preferred the taste of walnuts (genus Juglans) and pecan hickory ([C. illinoensis] - which was introduced to the eastern seaboard form its native range in the south-central United States) to the native hickory nuts, hickory nuts nonetheless were consumed in quantity by people and their livestock. Hickory nutmeats offer a high-protein, high-fat and low-carbohydrate storable food (Wainio and Forbes 1941:634). Hickory nuts (referred to as **'walnuts'**) are mentioned in early historic accounts of Algonquian diets (Lorant 1946:250; Quinn 1955:351), and the prevalence of hickory trees in the virgin forests of the eastern United States is noted by Hariot "..there are vary many walnuts; we saw some growing above fourscore feet, straight and without a bough. They make excellent timber four or five fathoms long." (Lorant 1946:256). Hickory wood has a high caloric value, and serves as an excellent firewood (Graves 1919).

American chestnut *(Castanea dentata)*. American chestnut was once a major component in the oak/chestnut forest dominating Piedmont areas of the mid Atlantic region, and a minor component in oak/hickory forests of the coastal plain. Early historic accounts of tidewater Virginia (Barbour 1986; Lorant 1946:250) mention the great abundance of American chestnut trees in some areas, and contain descriptions of the preparation and consumption of chestnuts by native inhabitants. Colonists also enjoyed the fruit of the chestnut, and harvested the abundant nuts from native forests (Leach 1984:10). American chestnut is nearly extinct today due to the ravages of the chestnut blight, a disease caused by the ascomycete fungus, *Endothia parasitica*. The fungus was introduced to New York City in 1904 and quickly decimated the American chestnut throughout the Eastern Woodlands of the United States (Little 1980). Historically, chestnut lumber made durable fence posts and lasting rails and was used in the construction of homes and outbuildings. The species also provided the principal domestic source of tannin for the preparation of animal hides for leather. The species is poor as a fuel source (Graves 1919).

Goosefoot *(Chenopodium sp.)*. Goosefoot is a starchy-seeded annual or perennial herb common to a variety of open field and 'edge' settings. Goosefoot is an opportunistic weedy species which quickly establishes itself on disturbed soils such as those created on frequently inundated floodplains, cultivated fields and roadsides (Brown and Brown 1984). Entire young plants were used extensively as a pot herb by historic Native American groups and European settlers (Erichsen-Brown 1979:414-415. The greens of *Chenopodium album* were thought by the Forest Potowatomi to cure and prevent scurvy. Studies by Smith (1933) found that whole young plants of *Chenopodium album* collected in early spring contained high levels of vitamin C (twice that of oranges or spinach). Chenopodium species bear common names such as "lamb's quarters, pigweed, fat-hen and sow-bank" which reveal the historic use of these weedy plants as popular forage for domestic animals.

Flowering dogwood *(Cornus florida)*. This small, flowering tree with short trunk and spreading crown is a common understory species in the mixed forests of Delaware's coastal plain. The wood is hard, close-grained and nearly white (Brown and Brown 1972) and is extremely shock-resistant, making it useful for spools, pulleys, mallet heads, spoons, cogs of wheels and blocks. A red dye can be produced from dogwood root (Little 1980), and a black ink can be produced with the bark. Zeisberger, writing of the Delaware Indians, states that *"Dogwood is also found in these parts. The rind of the root is used in the apothecary shops in place of Jesuit-bark (quinine)."* (1779:133). The bark of the root, stem and branches was used historically as a tonic, astringent, antiseptic, corroborant and stimulant. This powdered bark had medicinal uses in treating fevers, typhus and febrile disorders, and also in veterinary applications (Erichsen-Brown 1979:141).

American beech *(Fagus grandifolia)*. This large hardwood species would have been common to colonial forests in Delaware (Tatnall 1946). The tree grows to 30 meters and has a unique smooth and slightly blueish bark. The fruit is a prickly husk opening to four parts which contains two triangular nuts. The fruits ('beechnuts') are edible, and provided small but tasty fare. Early settlers commonly obtained oil from native nuts through pressing or distillation. Colonists in the Middle Atlantic discovered an alternative method of extracting oil from beechnuts (Lawson 1714:96, Johnson 1849:159): After the first frost sent beechnuts falling to the forest floor, farmers would turn their swine out into local forests where they would forage for beechnuts. Hogs stored the oil from the nuts in a subcutaneous secretion. If slaughtered immediately, this thick layer of fat could be collected and rendered into oil over low heat. Historic uses for the wood of the species include charcoal production, slack cooperage (largely for vegetable and fruit barrels), for boxes and crates, furniture, and flooring (Panshin and deZeeuw 1980:558-559). American beech is an excellent fuel wood (Graves 1919). A decoction made from steeping the nuts is an *"expeditious cure for wounds which arise from burning or scalding, as well as a restorative for those members that are nipped by the frost"* (Carver 1778:501).

Ash *(Fraxinus sp.)*. Ash species native to the project area include green ash *(Fraxinus pennsylvanica)* and white ash *(F. Americana)*. Both these species are common to moist alluvial soils along streams, slopes and flood plain forests. The wood is stiff, straight of grain, hard and strong with good bending qualities and a capacity for wearing smooth with use. Ash woods are suitable for handles, bent furniture parts, oars and paddles, agricultural implements, ship and boat building, dairy, poultry and apiary supplies and vehicle parts (Millspaugh 1892:192; Panshin and deZeeuw 1980:625). Various species of ash had medicinal application during colonial times (Erichsen-Brown 1979:85-87).

American Holly *(Ilex opaca)*. American holly, a broadleaf evergreen tree, is a common under story component to the native forests of coastal Delaware. Holly wood is of medium density, close grained, and pale in color when fresh but darkening with age. The pale wood takes a dye well (Peattie 1991:447-449).

Black walnut *(Juglans nigra)*. Black walnut trees were abundant in eastern forests during the eighteenth-century. European settlers coveted the tree for its beautiful timber and useful nuts. Black walnuts are available for harvest during October and November from local woodlands, but benefit from ripening in the husk for several months. Black walnuts yield an oil said to be equal to olive oil, which was useful in cooking and as an ingredient in paint (Leach 1984:15). Husks of the black walnut provide a rich, durable purple/brown dye for fabric, leather and basketry (Brooklyn Botanic Garden 1964:29). The unique purple-brown timber of this native hardwood has been preferred for fine woodworking since colonial times, and has been referred to as *"Unquestionably our finest domestic cabinet wood"* (Panshin and deZeeuw 1970:540). Historically, black Walnut was favored for exacting work requiring stability and strength, as in the construction of fine furniture and cabinetry. Panshin and deZeeuw (1970:540-41) extol the virtues of black walnut for the construction of caskets and coffins due to its excellent working qualities, fine appearance, and durable nature.

Tulip poplar *(Liriodendron tulipifera)*. This large deciduous tree would have been a major forest component in Delaware's historic forests. Valuable soft woods used in furniture, crates, cabinetwork, millwork, fixtures (Panshin and deZeeuw 1980:586). Native American's and colonists used a single log to make a long, lightweight canoe, hence the species common name 'canoe wood' (Erichsen-Brown 1979:107). Decoctions made from dried root bark were used as a tonic and stimulant (Millspaugh 1892:12; Erichsen-Brown 1979:107).

Pine *(Pinus sp.)*. The pine fragments recovered from the Thomas Dawson House Site were identified as yellow, or hard pine species. These pines of the southern and eastern United States cannot be separated on the basis of minute wood structure (Panshin and deZeeuw 1970:456-457). The southern pine group includes the following species: longleaf pine (*Pinus palustris*), shortleaf pine (*Pinus echinata*), loblolly pine (*Pinus taeda*), slash pine (*Pinus elliottii*), pitch pine (*Pinus rigida*), and pond pine (*Pinus serotina*). Contemporary lumber trade classifies Southern pines according to structural density, with longleaf and slash pines frequently exhibiting multiple late-wood bands measuring up to 0.2 inches in diameter in contrast to 0.1 inches or less for other southern pines (Kukachka 1960:43:887-896). Such classification does not translate well to pine specimens recovered from archaeological contexts, as considerable shrinkage of the wood structure over time is common. Although pine species are common throughout the project area today, it has been suggested (Brown et al 1986:753) that pine was not a major component in Delaware's native forests. It is speculated that prevalence of pine species in the region has increased considerably as a result of historic clearing of native hardwood forests.

Purselane *(Portulaca oleracea)*. Purslane is a prostrate, fleshy plant common to open field settings. The native status of purselane is a subject of some dispute. It is generally believed that purslane was adopted in Europe from India as an esteemed salad vegetable, then brought to the Americas by early settlers who cultivated the plant in their kitchen gardens. However, based on archeobotanical evidence it is quite probable that purselane was introduced from the south into North America prehistorically (Chapman et al. 1974:411). Regardless, the use of *Portulaca oleracea* as a potherb and salad vegetable (raw) during colonial times has been well established (Erichsen-Brown 1979:417-419). Kalm (1770) reported from Philadelphia in 1748 that *"The Portulaca which we cultivate in our gardens grows wild in great abundance in the loose soil amongst the corn"* (p 90). Documented folk-medicinal uses for purselane include its application to remove warts and tumors (Hartwell 1970) in the treatment of worms, gonorrhea, syphilis, and ulcers (Rafinesque 1828;252).

Cherry *(Prunus sp.)*. The cherry pit fragments recovered from the Thomas Dawson House Site could belong to a cultivated cherry *(P. avium or P. cerasus)*, or to the native wild black cherry *(P. serotina)* which is common throughout the project area. It is probable that all manner of cherry fruits were consumed in colonial Delaware. Considering that cherries were an orchard favorite in English gardens, colonists were at first delighted to find a country teeming with wild cherries. This initial excitement faded quickly as the fruits of the wild cherry were tasted. Early colonial gardeners warned of the wild cherries "furring" the throat and being "as wild as the Indians" (Leighton 1986a). Although suitable for making wines, cordials, and preserves, it was quickly obvious that the American cherries would not serve colonial gardens, and that importing cherry stock from England was imperative. According to Downing (1857), wild black cherries were preferred for making *"cherry bounce"*, a favorite liquor concocted by putting the fruit along with sugar in a cask of the best old rum. *P. serotina* is a large tree to 30 meters high and to over 1 meter in diameter. This native cherry has remained a common forest and field-edge species throughout the Middle Atlantic since colonial times. The leaves (especially if wilted) contain a cyanide-type poison and are extremely toxic if ingested by farm animals. Lumber from the species is one of the most handsome of our domestic woods because of its color and luster when properly finished (Panshin and deZeeuw 1980:592-593). Historically, cherry lumber was used for furniture manufacturing, scientific instruments, piano actions, interior trim, woodenware, novelties and toys. Dried cherry bark and a decoction of the crushed root had a multitude of medicinal applications (Erichsen-Brown 1979-158-162).

Peach *(Prunus persica)*. Peaches were an important and highly desired fruit tree in the colonial landscape. Peach trees were propagated from stones sent to and traded among the early settlers, and were highly regarded by Native Americans as well (Leighton 1986a; 1986b). Although it is not known for certain which varieties of peaches were commonly cultivated in the seventeenth-century, early accounts mention the following kinds: The Alberza, Newington Peach, The Grand Carnation Peach; The Carnation Peach; The Romane; The Island Peach; Peach du Troy; Temerature, Vertues, Blacke Peach, Melocotone, White and The Queenes Peach (Gerard 1633; Johnson 1654; Parkinson1904). The popularity of the peach increased in the eighteenth and nineteenth centuries, as evidenced in the considerable growth in available varieties. *"Parkison in 1629 gives us twenty-one named peaches. Miller in 1768 gives us thirty-one. By 1850, Downing could list over two hundred and fifty named peaches."* Leighton 1986b:237. Virginian Thomas Jefferson was peach fancier, and collected and propagated many varieties of the fruit. Medicinally, the peach tree had many uses in colonial America (Culpeper 1652; Gerard 1633; Parkinson 1904). The leaves of the peach tree were boiled in milk or ale and the decoction administered to children for the treatment of worms; A tea made from peach flowers was used as a purgative; Sap from the peach tree was mixed with coltsfoot and used as a cough syrup; The powdered leaves were said to sty the bleeding of open wounds; And the ground kernels of peach stones were used in the treatment of urinary tract infections

The Oaks *(Quercus sp.)*. Wood fragments belonging to both the red and white oak groups were encountered within the assemblage. Although segregation of the particular species of oak is not possible based on their minute anatomy (Panshin and deZeeuw 1970:586-587), the structure of these two groups of the genus *Quercus* can be accurately identified: The red oak group *(ERYTHROBALANUS)* contains such species as southern red oak (*Quercus rubra*), black oak (*Quercus velutina*), shumard oak (*Quercus shumardii*), scarlet oak (*Quercus coccinea*), pin oak (*Quercus palustris*) and willow oak (*Quercus phellos*). The white oak group *(LEUCOBALANUS)* contains such species as white oak (*Quercus alba*), bur oak (*Quercus macrocarpa*), post oak (*Quercus stellata*), and overcup oak (*Quercus lyrata*). The presence of oak species within this archeobotanical assemblage is consistent with the regional forest cover of the region for the period of site occupation (Eyre 1980, Tatnall 1946). Oak species exhibit positive qualities for construction, tool and implement manufacture, and for firewood (Panshin and deZeeuw 1970; Graves 1919).

Black locust *(Robinia pseudoacacia)*. It is proposed (Little 1980:522) that the black locust was not native to Delaware's coastal plain, but that Virginia Indians *"made bows of the wood and apparently planted the tree eastward"*. *R. pseudoacacia* is today a common species in Delaware - and is especially prevalent on abandoned pasture land and farms. The wood of the locust tree is hard, strong, very durable in contact with the soil, and historically was a preferred species for fenceposts. Black locust is heavy and makes excellent fuel (Graves 1919). The tree produces edible flowers in April, and the ensuing young pods are also edible.

Wheat *(Triticum aestivum)*. The varieties of wheat grown during the American colonial period were fairly limited, and in accord with what was being grown at the time in western Europe

(Colwell 1979). The full range of varieties of European wheat imported to colonial America are uncertain. We do know that the common bread wheat *(Triticum aestivum)* identified at the Thomas Dawson House Site was widely cultivated in northern Europe during the seventeenth and eighteenth centuries. The English wheat varieties known as Red Lammas (Red May) and White Lammas were probably brought to the early colonies. The white wheat variety Red Chaff (also known as Goldcoin) was documented in 1798 (Ball 1930:53). Percy (1978:2) reports that spelt wheat was also grown in the Virginia colonies during the late 1600's. Wheat yields during the eighteenth-century averaged 8 to 30 bushels of wheat per acre on raw land (Leach n.d.), and provided a dietary staple in the mid-Atlantic colonies (Percy 1978). The wheat remains recovered at the Thomas Dawson House Site may indicate that this grain was being used in malting operations at the site. Wheat, along with barley and field corn was a common ingredient in malt (Clark 1949). In the production of malt for fermentation, grains were soaked in a water for 2 or 3 days - this process served to impart a sweet flavor and to plump the grains for easy separation from their husk. After soaking, grains were dried, then lightly crushed to release the mellow extract required for brewing.

by local Native American populations who engaged in field cultivation of corn, beans, and squash, colonists in the mid-Atlantic region appropriated the consumption and cultivation of these plants upon settling. Along with other field crops, corn thrived on the Delaware's fertile coastal plain. Historic records indicate that the cultivation of corn was critical to the rural economy of eighteenth-century Delaware (Bausman and Monroe 1946).

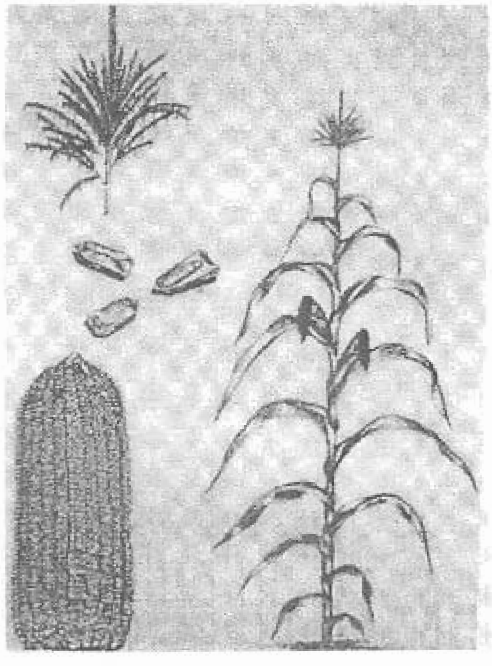

Figure 02: Southern Gourdseed Corn. *From Wallace and Brown, Corn and Its Early Fathers, Michigan State University Press*

Measurement of intact cupules and cob segments from eighteenth-century contexts at the Thomas Dawson House Site was conducted to determine the type of corn used at the site. The Dawson House corn specimens were somewhat eroded and accurate measurement was difficult. The corn remains recovered from the Thomas Dawson House Site *appear* to represent a high row-number (16 to 30) maize variety indicative of southeastern dent corn (Dent 1979:51). The many-rowed, soft-starch southern corn included the historic varieties 'gourdseed' and 'shoepeg'. These varieties are late-flowering and tall, with short, thick ears and many rows of thin, deep kernels. It has been postulated that the southeastern dents were introduced to the United States from Mexico by the Spanish (Galinat 1985:270).

c. Discussion of Archeobotanical Remains by Context

i. Feature 1

Feature 1 was a cellar hole located adjacent to, and partially obliterated by U.S. Route 13 in the center of the site. Based on recovered ceramics, Feature 1 has been dated to the early years of the site's occupation (first half of the eighteenth-century). Five fill episodes (strata) were apparent within Feature 1. Of these, the most artifact-rich strata (Strata B and D) were sampled for archeobotanical remains. Stratum B consisted of a group of charcoal-rich lenses. Artifact recovery from Stratum B was high. Stratum D was a layer of dark grayish brown soil with inclusions of ash and oyster shell with abundant artifacts. A total of 16 liters of fill were floated from Feature 1: 8 liters each from Strata B and D. Soil Sample No. 343, from Stratum D, Level 4 contained large quantities of crushed calcine bone. Flotation processing yielded 34.54 grams of carbonized plant remains, or an average density of 2.16 grams per liter of feature fill. Recovered plant remains include wood charcoal (predominantly white oak, red oak and hickory), carbonized seeds (spurge, erect knotweed, purselane and cherry), the remains of corn and wheat, an unidentifiable rind fragment and unidentifiable amorphous carbon. Non-carbonized seeds representing both native and non-native taxa were identified within the Stratum B and Stratum D samples. Stratum D, Level 4 (Soil Sample No. 306) yielded heavy concentrations of corn remains. 120 specimens identified as cob material of *Zea mays* were recovered from this single sample. As Stratum D contained large quantities of ash and the remains of popular fuel woods, and as no corn kernel (edible) remains were recovered, it is likely that these corn remains represent residue from a cooking or heating fire, where corn cobs were used as tinder. In addition to flotation-recovered plant remains, a single fragment of non-carbonized black walnut shell was hand-recovered from Stratum A. The good preservation of plant remains within this context may have been augmented by their proximity to oyster shells, which serve to counteract the naturally acidic quality of site soils.

ii. Feature 7

Feature 7 was a large, irregular pit which has been interpreted as a tree hole. Located just 10 meters southeast of Feature 1, it is likely that site residents removed a tree adjacent to their dwelling and used the available hole for the disposal of domestic trash . Historic artifacts and faunal remains were abundant, and recovered ceramic remains date the feature to early in the site's history (pre-1760's). Feature 7 contained two fill layers, both of which were sampled for archeobotanical remains.

A total of 8 liters of Feature 7 fill were submitted for flotation processing. Six liters of soil were retained from Stratum A, a dark organic rich fill. Two liters of cultural fill were retained from Stratum B, a layer of mixed subsoil and topsoil. 14.0 grams of carbonized plant material were recovered from Feature 7 (an average of 1.75 grams per liter of feature fill). Recovered plant remains include wood charcoal (mostly white oak, hickory and red oak), a beechnut hull fragment and pieces of thick-walled hickory nutshell, carbonized seeds (goosefoot and unidentified grass), the remains of corn and wheat, fungal fructifications, unidentifiable rind fragments and amorphous carbon. Non-carbonized seeds were abundant throughout all Feature 7 samples analyzed. Within Feature 7, archeobotanical remains were concentrated in sediments retained from the north ½ of Stratum A, Level 1 (Soil Sample No. 189) -- these sediments contained 86 percent of the plant remains (by weight) recovered from the feature. In addition to flotation-recovered plant remains, 8 fragments of carbonized black walnut shell were recovered from Stratum A, level 1, on the south side of Feature 7.

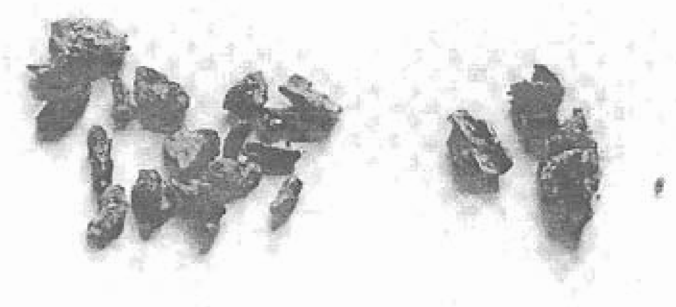

Figure 03: Corn *(Zea mays)* remains recovered from Feature 1, Stratum D, level 4.

iii. Feature 9

Feature 9 was an irregular pit feature which is thought to be a tree hole. Feature fill was characterized by copious brick rubble, artifacts and faunal remains. A single 1 liter soil sample was secured from Feature 9 for the recovery of macro-botanical remains. Flotation processing yielded 0.69 grams of carbonized plant remains. These include wood charcoal (predominantly tulip poplar and oak) and amorphous carbon. Non-carbonized carpetweed seeds were also identified.

iv. Feature 10

Feature 10 was a broad, shallow pit located east of Feature 1 which showed evidence of subsurface disturbance and compaction. A single 2 liter soil sample was collected from Feature 10. Flotation processing yielded 2.3 grams of charcoal, or an average density of 1.15 grams of charcoal per liter of feature fill. Recovered plant remains include white oak wood charcoal, the remains of corn and wheat, and a woody thorn fragment. Non-carbonized carpetweed seeds were also identified.

v. Feature 13

Feature 13 was a shallow pit containing eighteenth-century artifacts. Plant remains recovered from Feature 13 were limited to 7 fragments of partially carbonized thick-walled hickory nutshell. These remains were hand-recovered.

vi. Feature 18

Feature 18 was an oblong pit which has been heavily disturbed by previous road construction activities. Feature 18 may represent the remains of a shallow grave, however, this interpretation is inconclusive. Two flotation samples were retained from Stratum B of Feature 18. Flotation processing of 6 liters of soil yielded a scant 0.23 grams of carbonized plant material, or an average density of 0.04 grams of charcoal per liter of cultural fill. Recovered wood remains included pine and oak, and amorphous carbon was also noted. Non-carbonized seeds were abundant within the Feature 18 samples, with a probable rodent cache of 740 carpetweed seeds recovered from a single flotation sample.

vii. Feature 21

Feature 21 was a shallow pit containing scant eighteenth-century artifacts. Flotation processing of 2 liters of cultural fill from Feature 21 yielded only 0.49 grams of carbonized plant remains, an average density of 0.02 grams per liter of feature fill. Plant remains recovered from Feature 21 include wood charcoal (dominated by hickory, oak and tulip poplar), corn remains, and an unidentifiable rind fragment. Non-carbonized seeds were abundant.

4. Discussion

Overall, carbonized plant remains recovered from the Thomas Dawson House Site were abundant, with a site average of 1.49 grams of charcoal per liter of feature fill. A variety of carbonized plant remains were recovered, representing both wild and cultivated taxa. The condition of these remains was good, considering the acidic nature of site soils. In addition to carbonized plant macro-remains, the site botanical assemblage includes non-carbonized native and non-native seeds from intact cultural features.

A variety of useful wild and cultivated plants were recovered from the Thomas Dawson House Site, indicating that site residents used wild plant resources from field and forest (vegetable greens and tree mast) and relied on and probably produced corn and wheat. Utilization of hickory nuts (perhaps as tinder) and beechnuts is suggested by the recovery of scant nutshell remains from Feature 7. The recovery of ruderal seed species identified as purselane, pigweed and goosefoot may indicate the consumption of field greens as pot herbs (Brown and Brown 1984; Stuart 1989). These edible weedy taxa identified are problematic as they are scant and scattered throughout multiple levels of two separate cultural features, which may suggest that these specimens are only incidental inclusions not associated with site subsistence. Regardless, the recovered specimens attest to the local availability of these edible plant resources. Corn remains recovered from across the site evidence the domestic consumption of these grains and the probable use of corn cobs as tender to cooking and/or heating fires. Based on our knowledge of the economic stature of the Dawson family, the on-site production of garden vegetables and orchard fruits as a measure of self-reliance would be expected. Cherry pit fragments recovered from Feature 7 represent either wild or cultivated cherries - either would have played an important role in eighteenth-century foodways. The hand-recovered peach pit from Feature X also attests to the consumption of domestic fruits at the site.

The presence of non-carbonized seeds and seeds of European and/or Asian origin raise some interpretive questions regarding the integrity of cultural deposits at the Thomas Dawson House Site. The recovery of goosegrass, carpetweed, purselane (?), buffalobur and chickweed seeds from historic features may be attributable to isolated post-depostional disturbance such as rodent burrowing or root action.

Overall, the botanical remains recovered from historic occupations at the Thomas Dawson House

Site are consistent with those recovered from other eighteenth-century sites in Delaware (Kline et al. 1984; Catts et al. 1995; Bedell et al 1998). The predominance of oak and hickory species in the wood assemblage concurs with the pattern of wood selection established at other sites in the region, and the cultivation of the field crops corn and wheat is also consistent with our understanding of eighteenth-century agriculture in Delaware (Bausman and Monroe 1946) and other eighteenth-century archeo-botanical assemblages (Bedell et al. 1998; Catts et al. 1995).

The location of the Thomas Dawson House Site would have permitted residents easy access to the productive potential of a variety of micro-environmental zones associated with the dominant aquatic feature of the Cooper's Corner area: Nixon's fulling-mill pond, Walkers Branch, Puncheon Run and the St. Jones River. Forested uplands, wooded bottom lands, tidal freshwater marshes, fertile flood-plain areas and open water settings would have offered a plethora of wild plant resources necessary to eighteenth-century rural life.

The landscape of the Thomas Dawson House Site during the period site occupation probably consisted of agricultural fields and a mixed hardwood forest dominated by willow oak *(Quercus phellos)*, white oak *(Q. alba)*, post oak *(Q. Stellata)*, black oak *(Q. velutina)* northern red oak *(Q. rubra)*, southern red oak *(Q. falcata)*, chestnut oak *(Q. prinus)*, scarlet oak *(Q. cocinea)*, tulip poplar *(Liriodendron tulipifera)*, mockernut hickory *(Carya tomentosa)*, bitternut *(C. Cordiformis)*, pignut *(C. glabra)*, beech *(Fagus grandifolia)* and red and silver maple (*Acer rubrum* and *A. saccharinum*) with a minor component including chestnut *(Castanea dentata)*, loblolly pine *(Pinus taeda)*, persimmon *(Diospyros virginiana)*, black gum *(Nyssa sylvatica)* and ash *(Fraxinus americana)*. Forest understory would have been dominated by various viburnums *(Viburnum sp.)*, holly *(Ilex opaca)* and dogwood *(Cornus florida)*. Wood remains identified from historic features at the Thomas Dawson House Site reveal an overwhelming predominance of oak and hickory woods. Also identified were minor amounts of yellow or hard pine, tulip poplar, birch, American chestnut, dogwood, tulip poplar, black walnut, and black locust. These taxa are generally consistent with historic regional forest cover (Sargent 1884), and all represent useful tree species with a variety of cultural applications. Figure 04 illustrates the species composition of wood charcoal identified from historic contexts. Recovered wood remains from across the site reveal a preference for oak and hickory species which have a high caloric value and are most desirable fuel-woods.

Local agriculture is indicated by the recovery of corn and wheat remains. Identification of ruderal seed species such as spurge, knotweed, purselane and goosefoot which prefer open, disturbed habitats suggest that the Dawson house lot was maintained in a yard-like setting. A kitchen-garden may have provided produce, as indicated by the peach pit, possible cherry and purselane recovered archaeologically. The paucity of ornamental plants in this assemblage suggests that the Dawson's had little surplus time or money for the propagation of luxury landscape features.

Dietary reconstruction for the eighteenth-century inhabitants of the site can be approached based on analytically significant edible plant resources recovered. achieved based on the extremely limited food plant remains recovered during these investigations. Presumably, the residents of the Thomas Dawson House Site used a broad range of plant species from the local landscape for their dietary requirements. The recovery of hickory and beech nuts attest to the local availability of these taxa, and may indicate that site residents were securing oil from these sources, or consuming the nutmeats directly. The recovered archeobotanical assemblage provides evidence for a reliance on cultivated plants including wheat and corn.

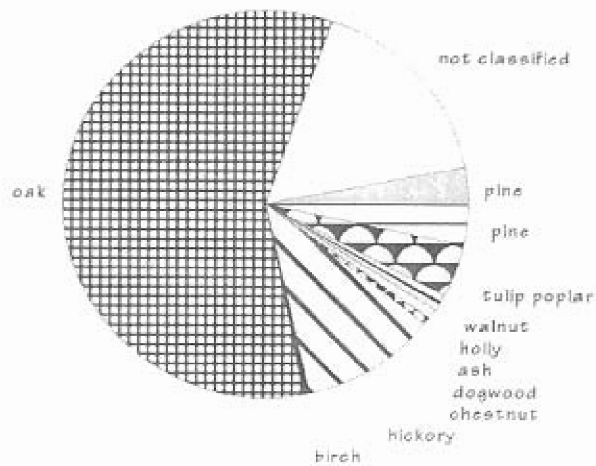

Figure 04: Species composition of wood charcoal recovered.

The existence of a malt house at the Thomas Dawson House Site during the middle 1700's has been documented archivally, although no archaeological evidence has been found. In England, the brewhouse was as important to farm operations as the dairy (Fussel 1992), and European colonists to the New World brought with them an ancient heritage of brewing techniques centered on their familiar wheat-culture. Corn was abundant in colonial Delaware, and it was soon mixed with more traditional brewing grains (wheat and barley) to produce American beer. Operation of a malt house at the Thomas Dawson House Site would have provided residents with the most popular and necessary drink of the day (Bradley 1736) and may have constituted a small-scale commercial venture serving the Cooper's corner area. Malt production and brewing at the site would have required locally-produced grains (wheat, corn and barley). Based on the archeobotanical data at hand, it is possible that the recovered corn and wheat contributed to malting operations, but it is not possible to determine to what extent small-scale commercial malting contributed to the economy of the site.

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