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DEPARTMENT OF ANTHROPOLOGY
WESTERN MICHIGAN UNIVERSITY

REPORT OF INVESTIGATIONS NO. 62

1983

ARCHAEOBOTANICAL REMAINS FROM EIGHT SITES IN THE
NORTHFIELD, BURNING STAR MINE # 4, PERRY COUNTY, ILLINOIS

William M. Cremin

The Northfield research area of Consolidation Coal

Company's Burning Star Mine # 4 flanks Upper Galum Creek,

a tributary of the Big Muddy River in Perry County, Illinois. It is situated within the Southern Till Plains Division (Mt.

Vernon Hill Country), an area of mature topography evidencing low relief, gently rolling hills, and broad alluvial valleys.

Although, floristically speaking, the Galum Creek drainage is included within the Oak-Hickory Forest Region of the Western

Mesophytic Forest (Braun 1950), the local vegetative pattern is best described as prairie-forest ecotone.

The seven prehistoric sites from which botanical samples were collected are scattered along either side of Upper Galum

Creek for a distance of about 3.6 km above this stream's confluence with Bonnie Creek. Phase II test excavations

conducted by Staff of American Resources Group, Ltd. of Carbondale, Illinois indicate that the majority of these sites

constitute small encampments yielding relatively low artifact densities, small numbers of subsurface features, and components

ranging from Paleo-Indian through Late Woodland in time. However, 21C4-9 is identified as a Mississippian mortuary site,

and 21C4-123 evidences a Woodland burial mound and what appears to be a palisade wall site. The final site from which a

botanical sample was retrieved, 21C4-273H, is thought to be the location of an animal-powered grist mill, possibly with

an associated structure(s), built by a Levi Green about 1837. The prehistoric sites, with the singular exception of

21C4-27, occupy ridge top positions overlooking the Galum

Creek floodplain and are situated in the slope woodland zone: Slope forest is estimated to comprise 53% of the study area and is characterized by a dominance of white oak, but with some black oak, red oak, and pignut hickory being present. However, the position of these sites is clearly intermediate between all resource zones in the drainage, providing the resident populations with easy access to the rich and varied floral and faunal resources comprising the local biotic community.

Site 21C4-27 is located at the confluence of Galum, Bonnie, and Rock Fork creeks in the bottomland forest zone. Comprising approximately 20% of the study area, this resource zone at the time of Euro-American settlement offered a varied and dense plant community, including dominants such as the pin oak, white oak, ash, elm, and gum, together with lesser numbers of black walnut, hackberry, wild black cherry, shagbark hickory, shell-bark hickory, and bitternut hickory. In terms of wild plant resource potential, the bottomland forest zone probably afforded prehistoric residents of this drainage with the best opportunity for plant food procurement.

The plant residues presented in Table 1 are few in number and very fragmentary, making both positive identification to the species level and accurate assessment of the role of the various species in the prehistoric diet difficult at best. Be that as it may, there is nothing in the botanical remains that is inconsistent with opportunities afforded the sites' residents in the immediate site environs or, for that matter, what this analyst has observed in the wild plant food spectrum from sites

Table 1: Plant remains from eight sites in the Northfield, Burning Star Mine # 4, Perry County, IL.

<u>Lot no.</u>	<u>ARG no.</u>	<u>Provenience</u>	<u>Sample Volume</u>	<u>Contents wt(g)/ct</u>	<u>Comments</u>
<u>21C4-9</u>					
1	1	U-300, L-1 (Feature 3)	10 1	0.02	1 <u>Prunus serotina</u> (black cherry) stone
2	2	U-301, L-1 (Feature 4)	8 1		(one small fungal nodule and an uncarbonized seed of unknown affiliation)
3	3	Unit 307 (Feature 7)	10 1	0.04	5 <u>Carya sp.</u> (hickory nut-shell)
4	4	Unit 307 (Burial 3)	14 1	0.10	1 <u>Carya sp.</u> (probably <u>C. ovata</u> -shagbark hickory)
5	7	Feature 16	10 1	0.15	2 fragments of what appear to be a much distorted seed of persimmon (<u>D. virginia</u>) particles of charcoal
6	9	Feature 9	8 1	0.08 0.01	6 1 <u>Carya sp.</u> <u>Euphorbia dentata</u> (seed of spurge)
7	20	U-323, 0-20 cm	10 1		(uncarbonized seed of <u>Chenopodium sp.</u>)
8	26	Feature 24	10 1	0.20 0.05	8 7 <u>Carya sp.</u> (probably <u>C. ovata</u>) fragments of charcoal
9	27	Feature 23	10 1	0.10	4 <u>Carya sp.</u>

Table 1, cont.

<u>Lot no.</u>	<u>ARG no.</u>	<u>Provenience</u>	<u>Sample Volume</u>	<u>Contents wt(g)/ct</u>	<u>Comments</u>
<u>21C4-27</u>					
10	1	U-2, 25-45 cm	10 1	0.41	27 <u>Carya</u> sp.
11	13	U-30, 20-30 cm	10 1	0.02	1 <u>Carya</u> sp.
12	14	Unit 28 (Feature 4)	10 1	0.88	45 <u>Carya</u> sp. (some hulls are <u>C. ovata</u>)
13	15	U-29, 40-50 cm	10 1	0.01 0.03	1 <u>Carya</u> sp. 1 <u>Celtis laevigata</u> (hack- berry) drupe
14	16	Unit 28 (Feature 4)	10 1	0.70	48 <u>Carya</u> sp. (probably <u>C. ovata</u>)
15	17	U-31, 20-30 cm	10 1	0.34	15 <u>Carya</u> sp.
16	18	Feature 7	10 1	0.09	5 <u>Carya</u> sp.
<u>21C4-55</u>					
17	11	Feature 29	20 1	21.95	256 <u>Carya</u> sp. (probably including <u>C. ovata</u> , <u>C. tomentosa</u> , and <u>C. glabra</u>) 3 <u>Juglans nigra</u> (black walnut hulls)

Table 1, cont.

<u>Lot no.</u>	<u>ARG no.</u>	<u>Provenience</u>	<u>Sample Volume</u>	<u>Contents wt(g)/ct</u>	<u>Comments</u>
<u>21C4-60</u>					
18	6	U-30, 30-40 cm	10 1	0.57	19 a fragment of <u>Juglans</u> sp. and the remainder <u>Carya</u> sp.
19	7	U-29, 20-30 cm	10 1	0.15	7 <u>Carya</u> sp.
20	8	U-32, 20-30 cm	10 1	0.97	9 <u>Carya</u> sp. (a flake of chert-0.04 g)
21	9	Feature 3	10 1	0.07	2 <u>Carya</u> sp.
22	15	U-31, 20-30 cm	10 1	0.18	4 <u>Carya</u> sp.
23	16	Feature 4	10 1	0.85	43 <u>Carya</u> sp.
24	17	Feature 7	40 1	8.70	390 <u>Carya</u> sp. (some <u>C. ovata</u>) 1 <u>Juglans</u> sp. 1 particle of charcoal
25	19	Feature 7	--	0.55	5 <u>Carya ovata</u>
26	20	Feature 6	10 1	0.28	12 <u>Carya</u> sp.
27	21	Feature 15	8 1	0.75	39 <u>Carya</u> sp. (one small fungal nodule)
28	22	U-24, 20-40 cm	--	0.42	9 <u>Carya</u> sp. (probably <u>C. ovata</u> or <u>C. laciniosa</u>) (four fungal nodules)

Table 1, cont.

<u>Lot no.</u>	<u>ARG no.</u>	<u>Provenience</u>	<u>Sample Volume</u>	<u>Contents wt(g)/ct</u>	<u>Comments</u>
<u>21C4-98</u>					
29	1	Feature 1	10 1	0.36 0.24	29 8 <u>Carya</u> sp. small fragments of carbonized rootwood
<u>21C4-123</u>					
30	2	U-201, 0-20 cm	10 1	0.01	3 <u>Carya</u> sp.
31	5	U-226, Mound 1	10 1		(two uncarbonized parts of a bulrush seed)
32	6	U-218, 10-20 cm	10 1	0.10 0.01	7 2 <u>Carya</u> sp. wood charcoal
33	9	U-227, Mound 1	10 1		(an uncarbonized seed of pokeweed)
34	13	U-230, Mound 1	10 1	0.01	1 <u>Carya</u> sp.
35	19	U-230, Mound 1	10 1	0.10	5 <u>Carya</u> sp.
36	27	U-236, 20-30 cm (Feature 9)	10 1	0.24 0.01	9 1 <u>Carya</u> sp. (probably <u>C. ovata</u>) carbonized but unidentified seed coat fragment (three fungal nodules)

Table 1, cont.

<u>Lot no.</u>	<u>ARG no.</u>	<u>Provenience</u>	<u>Sample Volume</u>	<u>Contents wt(g) / ct</u>	<u>Comments</u>
<u>21C4-129</u>					
37	5	U-22, 20-30 cm	10 1	0.46 0.06	20 3 <u>Carya</u> sp. wood charcoal
38	7	U-26, 10-20 cm	10 1	0.05	1 <u>Carya</u> sp. (probably <u>C. glabra</u>)
39	10	U-32, 20-30 cm	10 1	0.30	13 <u>Carya</u> <u>ovata</u>
<u>21C4-273H</u>					
40		Unit 62	--		(two uncarbonized seeds of persimmon)

Note:

-- indicates a hand picked rather than a flotation sample

in the nearby White Walnut Creek (Deep Strip # 3 of Burning Star Mine # 2) study area (Cremien 1980, 1982a, 1982b).

The plant material submitted on this occasion consists of both fresh and carbonized specimens and was collected in 37 cases through the processing of soil samples by the tub agitation method and in three instances by hand picking through soil during excavation. Both feature fill and samples from excavation unit levels are included. Although flotation samples range in size from 8-40 μ , only lot nos. 17 and 24 contain plant remains in greater than trace quantities. And in both instances, carbonized nutshell constitutes the identified residues.

Of 40 samples, 35 yielded carbonized residues. Plant food species, together with their frequency of occurrence in the sample, are as follows: Carya sp. (hickory nutshell) -33; Juglans sp. (walnut hulls) -3; Prunus sp. (wild black cherry stone) -1; Diospyros sp. (persimmon seed) -1; and Celtis sp. (hackberry drupe) -1.

Without exception, the plant remains identified in the sample from these sites can be anticipated to have occurred in the immediate site environs and to have been harvested by the sites' residents during the autumn of the year. The ubiquity (if not abundance) of nutshell comes as no surprise, given the desirability of this wild foodstuff as a source of calories and good protein and its presence in the various forested zones flanking Galum Creek. It is, perhaps, interesting to note that oak trees, which constitute dominants throughout the study area, are not represented by acorn residues in a

single sample. Given the prevalence of this potential food resource in this drainage, it is probably appropriate to regard this observation as reflecting human selection against the acorn; which in contrast to the hickory nut and walnut is best viewed as a source of starch or carbohydrates, being low in both protein and fat content. Furthermore, the acorn does require special processing to render it edible (Cremitt 1978). Alternatively, this observation may reflect differential preservation of the thin acorn shell, in contrast to the often thick and very dense shell of the other nuts. It is not impossible, then, to attribute the presence of only hickory nutshell and walnut hulls to their greater ability to withstand the combustion process.

In the final analysis, the botanical sample affords direct evidence of the prehistoric human utilization of the local nut crop and some possibly concomitant harvesting of autumn ripening fleshy fruits (wild black cherry, hackberry, and persimmon). But from the evidence at hand it is not possible to accurately assess the role of wild plant resources in the diet of the prehistoric residents of the Upper Galum Creek drainage.

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