

Paleoethnobotanical Primary Analysis of German Site

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Background

The German Site (11C377) is a Late Woodland Jersey Bluff Phase (ca AD 800-1300) habitation site located north of Crawford Creek, ~1.25 km west of the Illinois River and south of Kampsville, IL. Geophysical survey and excavation during the 2019 field season revealed a house basin (SQs 1, 2, 5, 6) and an earth oven (F2) among other residential features containing Jersey Bluff and other late Late Woodland sherds (Figure 1).

Methods and Materials

- We analyzed 67.75 L of flotation samples collected from the house basin units and the earth oven (Table 1) in order to compare the paleobotanical assemblages between these distinct contexts.
- The *light fraction* of each sample was completely sorted.
- The heavy fraction of each sample was completed sorted above 2 mm.
- Seeds were imaged using a Dino-lite and processed using imageJ.

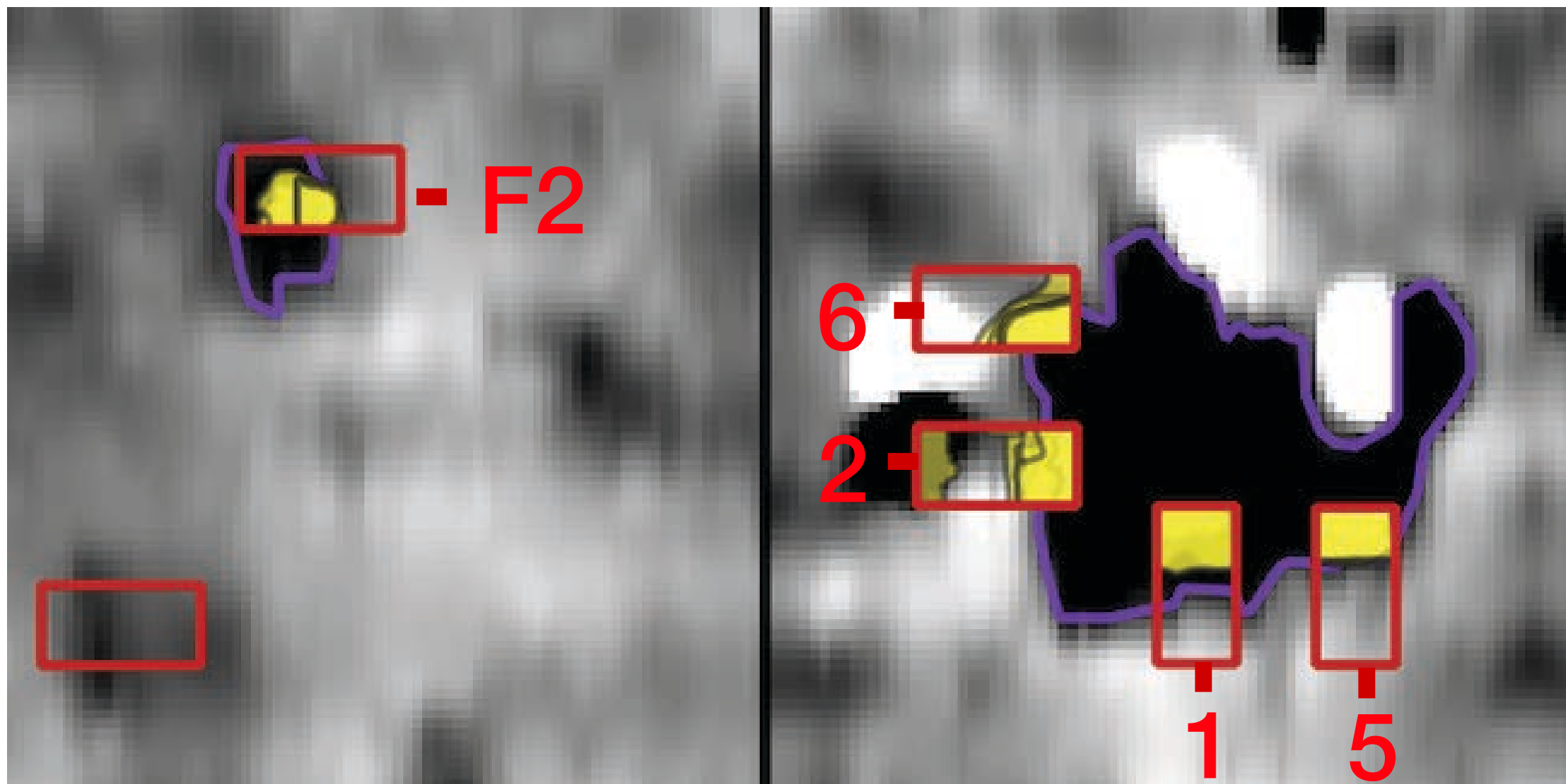


Figure 1. German house basin and earth oven, 2019 magnetic data. Excavation units are in red. Feature boundaries are in yellow.

House Basin

House Structure (Unit 1,2,5,6)	Count/Weight (g)	Density
Zea.Mays Cupule	2	0.042
Zea.Mays Kernel	4	0.084
Zea.Mays Kernel CF	12	0.252
Iva.Annua	1	0.021
Quercus	2	0.042
Carya	18	0.378
Rhus	1	0.021
Chenopodium	6	0.126
H.Pusillum	1	0.021
P.Caroliniana	3	0.063
Poaceae	1	0.021
Solacaceae	4	0.084
Unknown Seeds	24	0.505
Nutshell Weight (g)	0.05	0.001
Wood Weight (g)	2.57	0.054
Total Volume: 47.5 L		

Earth Oven

Earth Oven (F2)	Count/Weight (g)	Density
Zea. Mays Cupule	0	0
Zea. Mays Kernel	0	0
Zea. Mays Kernel CF	0	0
Iva.annua	0	0
Quercus	15	0.741
Carya	0	0
Rhus	0	0
Chenopodium	0	0
H.Pusillum	0	0
P.Caroliniana	0	0
Poaceae	0	0
Solacaceae	0	0
Unknown Seeds	42	2.074
Nutshell Weight (g)	0	0
Wood Weight (g)	34.91	1.723
Total Volume: 20.25 L		

Table 1. Density and Count/Weight of recovered paleoethnobotanical material.

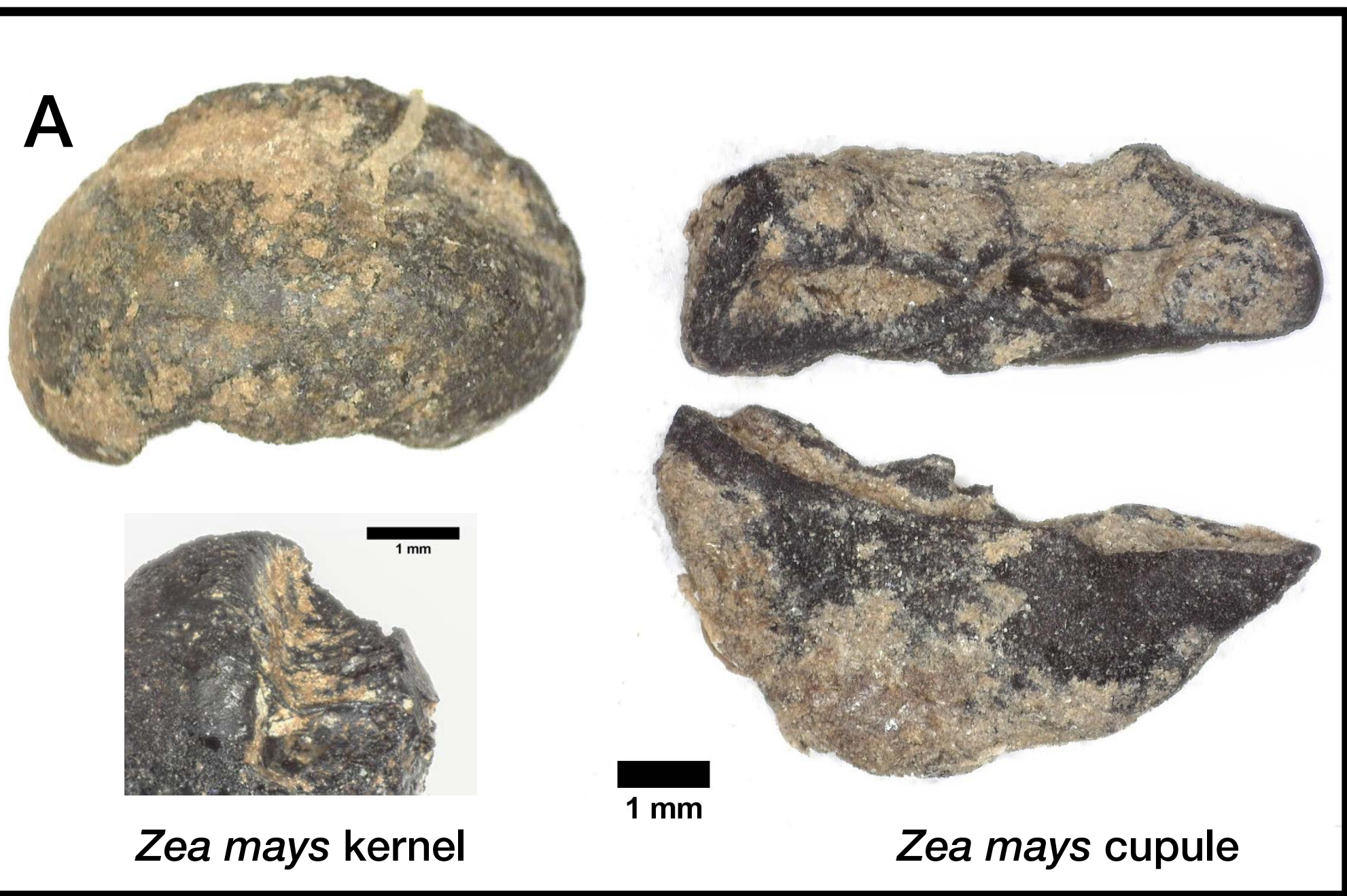


Figure 2A. Pictures of recovered carbonized maize kernels and cupule (above).

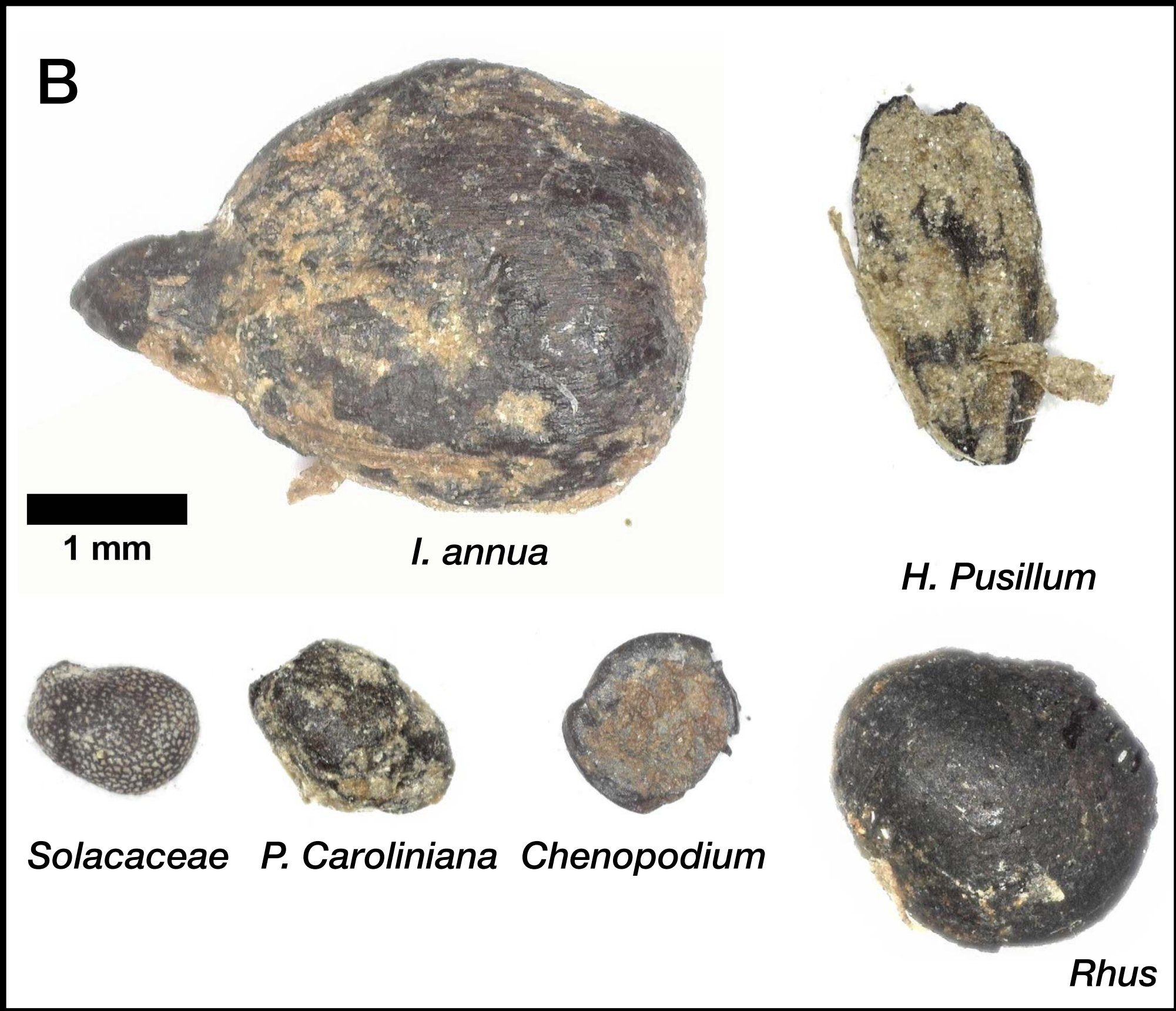


Figure 2B. Pictures of recovered carbonized seeds (right).

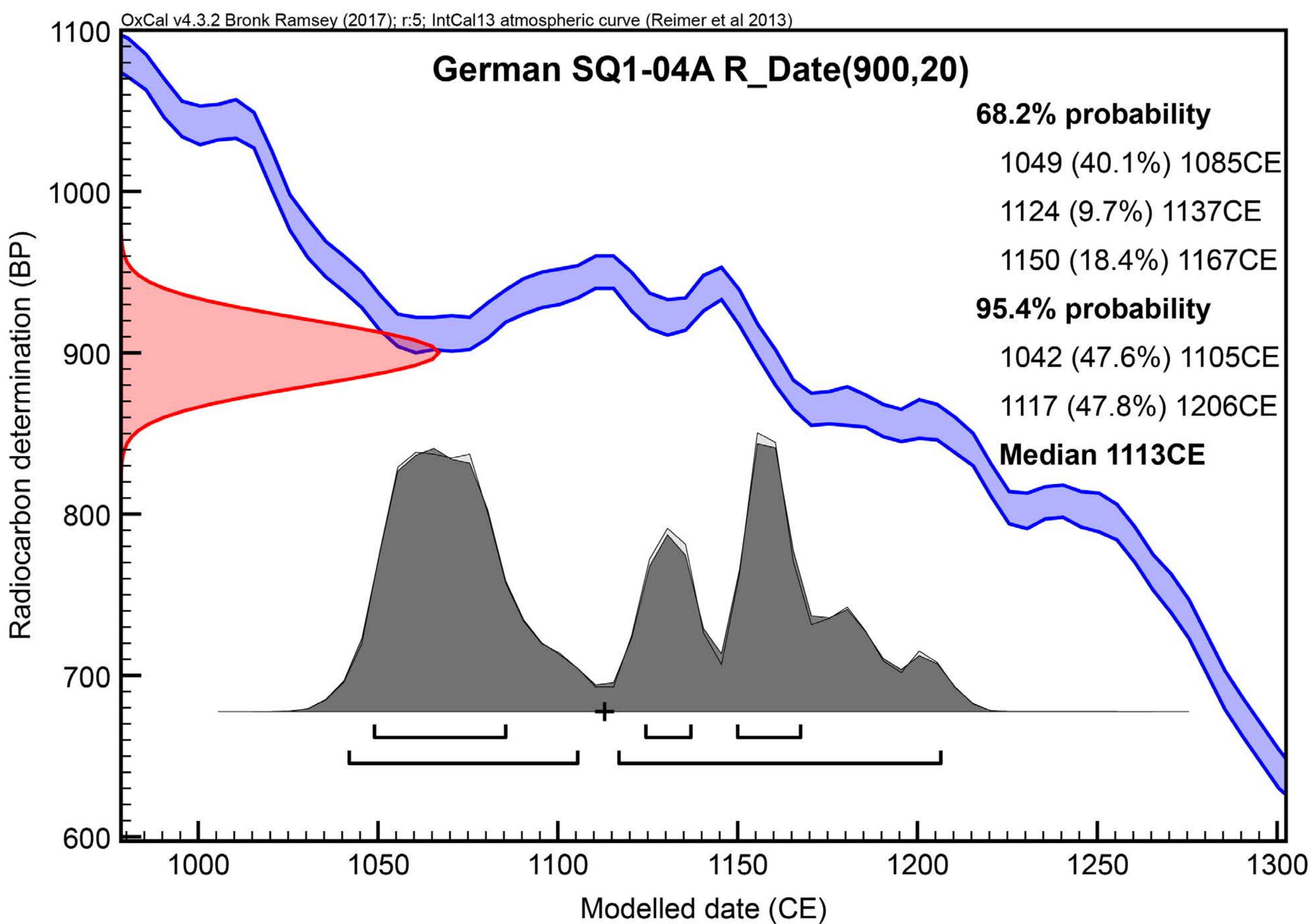


Figure 3. German *Z. mays* radiocarbon AMS date results.

Results

- Feature 2, the earth oven, produced exclusively wood charcoal and nutshell (Table 1).
- Carbonized samples of *Chenopodium*, *Hordeum pusillum*, *Iva annua*, and *Phalaris caroliniana* were found throughout the house basin (Table 1, Figure 2B).
- Carbonized maize kernels and cupules were recovered from the upper levels of the house basin (Figure 2A).
- A *Z. mays* kernel was submitted to Center for Applied Isotope Studies, University of Georgia, for radiocarbon AMS dating (Figure 3) and dates 1052-1206 cal CE.

Discussion

The house basin and earth oven botanical assemblages are distinct, reflecting different activities. The absence of ancient seeds suggests the earth oven was used for preparing non-plant foods.

The house basin paleobotanical assemblage is consistent with other Jersey Bluff Phase houses, reflecting use of local domesticates as well as *Z. mays*.

The *Z. mays* radiocarbon results suggest the house basin was occupied during the latter half of the Jersey Bluff Phase.

Acknowledgements

Thank you to the Center for American Archeology, National Science Foundation, Women in Archeology Interns, ASU Field School, CAA High School Field School students, and our fellow REU students.