

Supporting Information

Smith and Yarnell 10.1073/pnas.0901846106

SI Text

Note on New World Domesticates. Discussions of the independent domestication of plants in different regions of the New World rarely consider the bottle gourd (*Lagenaria siceraria*) because it was a “utilitarian” domesticate rather than a food plant. Highly prized for its strong, lightweight fruits, which made for excellent containers and vessels of various shapes and sizes, the bottle

gourd was carried from Asia to the Americas by either ocean currents or, more likely, Paleoindian colonists (along with another utilitarian domesticate, *Canis familiaris*), reaching the New World by 10,000 B.P. (1). It reached eastern North America by 7300 B.P. (2) and is frequently recovered in association with eastern North American domesticates, particularly before the development of ceramic vessels in the region.

1. Erickson D, Smith BD, Clarke A, Sandweiss D, Tuross N (2005) An Asian origin for a 10,000-year-old domesticated plant in the Americas. *Proc Natl Acad Sci USA* 102:18315–18320.

2. Doran G, Dickel DN, Newsom LA (1990) A 7,290-year old bottle gourd from the Windover site, Florida. *Am Antiq* 55:354–359.

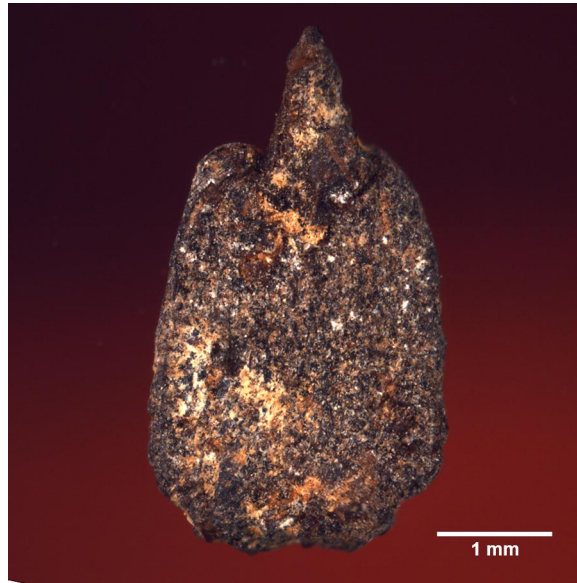


Fig. S2. Riverton site marshelder kernel (*Iva annua* var. *macrocarpa*) from Fig. 2, Feature 29, block excavation Unit X. The specimen is identified as domesticated *I. annua* based on its large size, length-to-width ratio, and seed outline in comparison with wild relatives and the seeds of other eastern seed plants. A fragment of pericarp is intact on one “shoulder” showing distinctive “hunched shoulder” morphology.

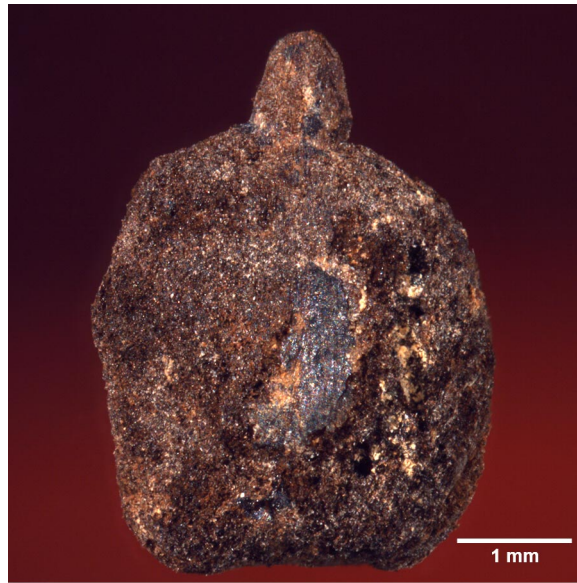


Fig. S3. Riverton site marshelder kernel (*I. annua* var. *macrocarpa*) (pericarp absent) from Fig. 2, Feature 29, block excavation Unit X. The specimen is identified as domesticated *I. annua* based on its large size, length-to-width ratio, and seed outline in comparison with wild relatives and the seeds of other eastern seed plants.

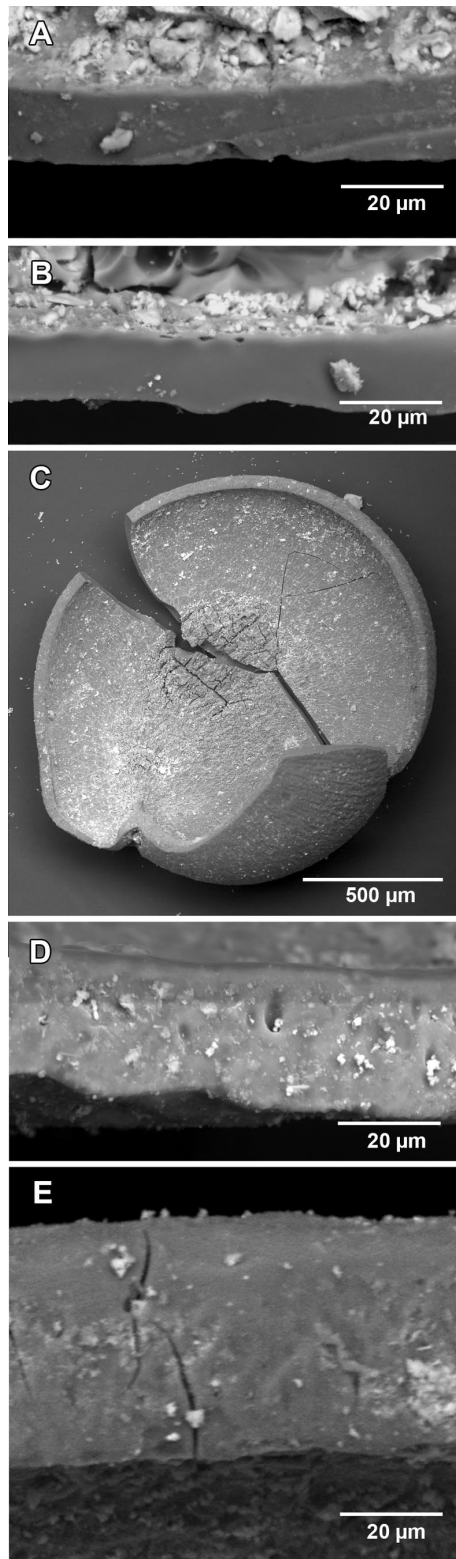


Fig. S4. Scanning electron micrographs of thin-testa domesticated chenopodium (*Chenopodium berlandieri* ssp. *jonesianum*) (A and B) and weed morph *C. berlandieri* (C–E) specimens from the Riverton site. (A and B) Testa cross-sections of thin-testa domesticated *C. berlandieri* seeds from Fig. 2, Feature 8A. (C) Interior view of *C. berlandieri* seed from Feature 29 showing rounded margin configuration and less-pronounced beak characteristics of the weed morph. (D) Testa cross-section of weed morph seed from Feature 29. (E) Testa cross-section of weed morph seed shown in C, from Feature 29.

Table S1. The earliest occurrence of indigenous domesticated seed crops in ENA

Domesticated plant species	Age, AMS-calibrated calendar years B.P.		Age, radiocarbon years B.P.	Laboratory sample no.	Archaeological site and provenience
	Intercept	1 σ age range			
<i>Pepo</i> squash (<i>C. pepo</i> ssp. <i>ovifera</i>)	5,025	5,290–4,870	4,440 \pm 75	β 47293	Phillips Spring (Unit K ²)
Sunflower (<i>H. annuus</i>)	4,840	4,860–4,830	4,265 \pm 60	β 45050	Hayes (Level 14)
Marshelder (<i>I. annua</i>)	4,400	4,420–4,290	3,920 \pm 40	β 216463	Napoleon Hollow (Fig. 2, Feature 20)
Chenopod (<i>C. berlandieri</i>) ("naked")	3,820	3,830–3,700	3,490 \pm 40	β 253114	Riverton (Fig. 2, Feature 1B)
Chenopod (<i>C. berlandieri</i>) (thin-testa)	3,700	3,900–3,490	3,450 \pm 150	β 11348	Cloudsplitter (F.S. 1361)
Chenopod (<i>C. berlandieri</i>) (thin-testa)	3,690	3,810–3,640	3,440 \pm 40	β 253117	Riverton (Fig. 2, Feature 8A)
Chenopod (<i>C. berlandieri</i>) (thin-testa)	3,640	3,840–3,460	3,400 \pm 150	β 11347	Newt Kash (EI 1114)