Online Supplementary Material for Fuller "Long and attenuated: comparative trends in the domestication of tree fruits"

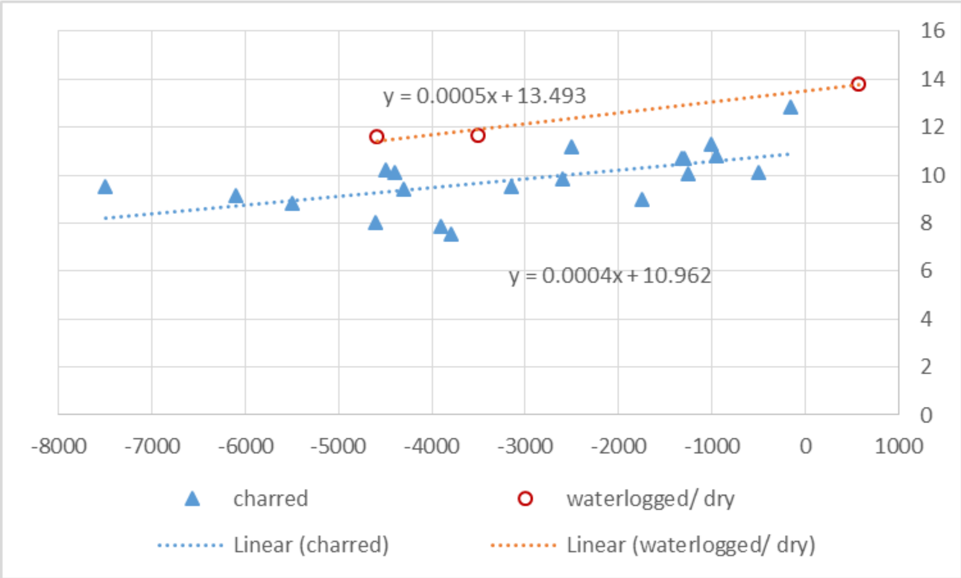


Fig. 1 Plot of charred and desiccated *Olea* stones against time. The difference between the trend line formulae suggest that charred specimens approach ca. 81% of the length of uncharred ones (i.e. 10.962/13.493). For data, see Table S5

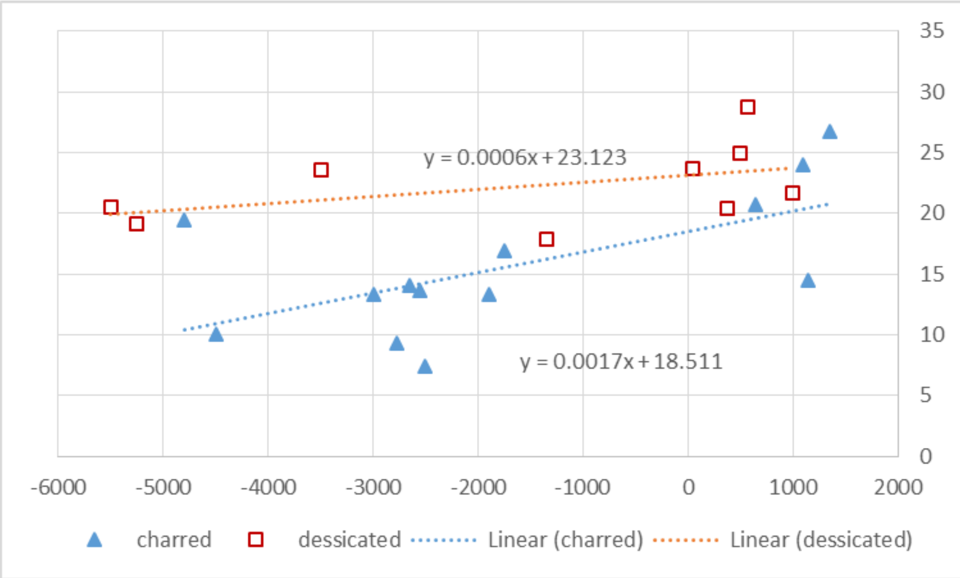


Fig. 2 Plot of charred and desiccated *Phoenix* stones against time. The difference between the trend line formulae suggest that charred specimens approach ca. 80% the length the length of uncharred ones (i.e. 18.511/23.123)

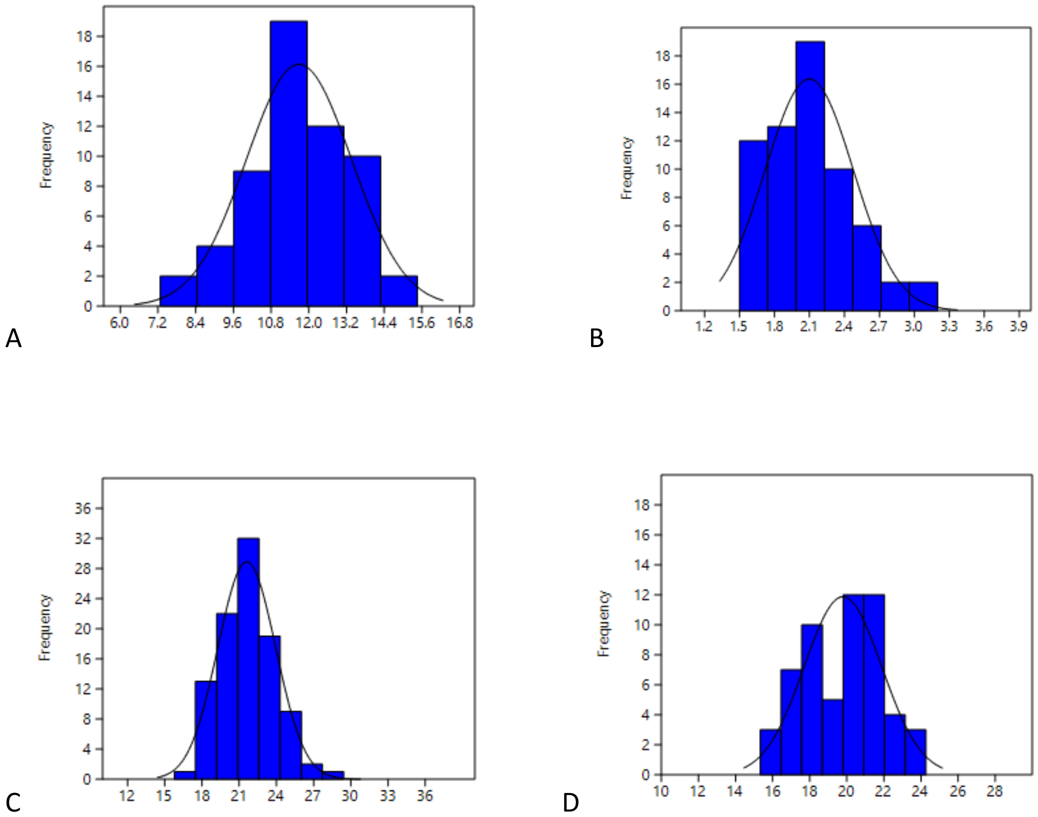


Fig. 3 Examples of assemblages that demonstrate approximation of normal distribution. A. *Olea europaea* length (mm) from Cave of the Treasure (7 bins); B. *Persea* stone length (cm) from Coxcatlan Cave TC50 VI (in 7 bins); C. *Prunus persica* stone length from Maoshan (in 8 bins); D. *Prunus persica* stone length (mm) from Kuahuqiao (in 8 bins)

Table 1 *Prunus persica* metrical data

Country	Ssite	Time	N	L.mean	L.min	L.max	Stdev	W.ave	W.min	W.max	W.std	Source
China: Zhejiang	Kuahuqaio	*-5700*	56	19.78768	15.34	24.26	2.097033	15.52018	13.07	18	1.131121	Zheng et al. 2014
China: Zhejiang	Tianluoshan	-4700	9	19.38	16.52	23.28	1.923421	15.25333	13.11	17.44	1.246224	Zheng et al. 2014
China: Jiangsu	Dongshan-cun	-3500	13	17.5	15	20	1	11.8	10	14.8	1.849324	Qin L, Deng Z, Fuller DQ (n.d.
China: Zhejiang	Maosahan	-2500	99	21.61061	15.78	29.42	2.329027	16.85889	13.27	21.27	1.553275	Zheng et al. 2014
China: Zhejiang	Bianjiashan	-2300	23	20.02913	17.14	25.49	2.265468	15.6013	13.26	18.02	1.414147	Zheng et al. 2014
China: Zhejiang	Qinshan-yang	-1400	7	26.19286	24.08	29.96	2.174164	18.78714	17.38	21.82	1.516187	Zheng et al. 2014
India: Kashmir	Burzahom	-1500	1	21.6			0					Lone et al. 1993
Japan	Ikiriki	-1200	8	26.19286	18.9	25.1	2.174164	17.8375	16.3	20.2	1.358505	Zheng et al. 2014
Italy	Modena	30	106	25.5	18	30.1	2.392865	19.6	12.6	23	2.056677	Sadori et al. 2009
Italy	Aquileia	150	162	24.2	21	28	1.308201	18.1	16	21	0.934429	Sadori et al. 2009
Italy	Vercelli	175	18	29	25.5	34	2.335126	21.9	18.5	26	2.060406	Sadori et al. 2009
Italy	Rome	360	253	23.8	14	35.3	3.772516	19	11.7	27.8	2.851526	Sadori et al. 2009
Italy	Imola	1440	92	25.6	15.1	31.3	3.269233	20.3	13	25.7	2.562918	Sadori et al. 2009
Italy	Moncalieri	1470	26	25	18	31	3.279251	19.8	17	22.5	1.387375	Sadori et al. 2009
England	London	250	1	24.5			0	20.5				Willcox 1977
Egypt	Quseir al-Qadim	950	1	23				16				Van der Veen 2011
Egypt	Kom el-Nana	575	1	30			0	22.35				Smith 2003

Mann-Kendall trend test of ave.L. all *Prunus persica,* p(no trend): 0.020958*
Mann-Kendall trend test of ave.L. *Prunus persica,* 3500-1200 BC*,* p(no trend): 0.028*

Table 2 *Prunus persica* domestication episode data for haldanes calculation

Site	Age	n	L.ave	Stdev	s-terms (stdev^{2}x (n-1))	n-terms (n-1)	Generations (10 yr)	x/σ
Dongshancun	-3500	13	17.5	1	12	12	0	3.960318
Maosahan	-2500	99	21.61061	2.329027	531.588	98	120	3.576138
Bianjiashan	-2300	23	20.02913	2.265468	112.9116	22	220	4.416144
Qinshanyang	-1400	7	26.19286	2.174164	28.36194	6	240	4.092968
				Sum:	684.8615	138		
				σ (s sum/ n sum)	4.962764			

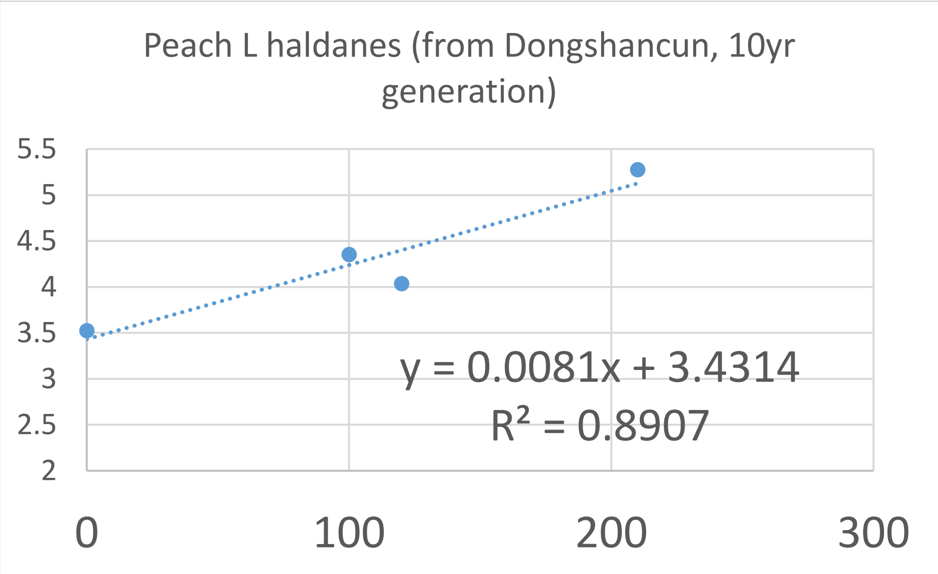


Fig. 4 Graph of Haldane rate estimate for *Prunus persica*

Table 3 *Phoenix dactylifera* metrical data

Region	Site	Preserv./ correction	Age median	n	L ave	L min	L max	Stdev	n	B ave	B min	B max	Stdev	Source
Pakistan	Mehrgarh IB	Mineral.?): -20%	-5500	2	16.44	16.32	16.56	0.1697	2	6.08	6	6.16	0.1131	Costantini 1985; Clapham and Stevens 2009
Jordan	Tuleilat Ghassul	charred	-4500	7	10	9	11	0.63		5	5	5	0	Lipshitz & Bonani 2001
Kuwait	Sabiyah H3	mineralized : -20%	-5250	3	15.28	12	18	3.0353	3	6.933 333	6.16	7.6	0.7259	Beech 2003; Clapham and Stevens 2009
Iran	Tepe Gaz Tavila	charred	-5200						1	7.5			0	Beech 2003; Clapham and Stevens 2009
UAE	Dalma	charred/im pressions	-4800	2	19.5	19	20	0.8862	4	7.175	7	7.6	0.2914	Beech 2003; Clapham and Stevens 2009
Israel	Cave of the Treasure	desiccated: -20%	-3500	9	18.84444	15.92	21.52	2.1106	9	6.924 444	6.48	7.68	0.3625	Zaitschek 1980 (estimated from image)
UAE	Hili 8 IB	charred	-3000	5	*13.35*	12.7	14	*0.5589*	5	*6.7*	6.2	7.2	*0.4299*	Costantini 1985; Clapham and Stevens 2009
Israel	Qumran Cave	charred	-2770	7	9.28	8	11	0.994		4.9	4.5	6	0.494	Lipshitz & Bonani 2001
Iraq	Ur	charred	-2650	1	14.1				4	5.6	4.8	7.2	1.0677	Costantini 1985; Clapham and Stevens 2009
UAE	Hili 8 IIC	charred	-2550	15	*13.65*	11.1	16.2	*1.4690*	15	*5.95*	5.1	6.8	*0.4897*	Costantini 1985; Clapham and Stevens 2009
Pakistan	Miri Qalat	charred	-2500	16	7.4	5.5	8.7	0.9060	16	4.3	3.2	5.2	0.5663	Beech 2003; Clapham and Stevens 2009
Oman	R’as al-Jinz 2	charred	-2300	39	14.68	9.21	18.15							Costantini and Audisio 2000
Bahrain	Saar	charred	-1900	16	13.33	10.4	19.5	2.5765	16	5.97	4.6	7.2	0.7361	Nesbitt 1993; Clapham and Stevens 2009
Kuwait	Failaka	charred	-1750	4	16.95	14.8	18.7	1.8944	4	6.51	5.7	7.5	0.8743	Rowley-Conwy 1987; Clapham and Stevens 2009
Egypt	Amarna	desiccated: -20%	-1345	945	14.272	7.704	24.024	2.5289	945	6.2	3.592	7.904	0.6682	Clapham and Stevens 2009
Israel	Qumran Cave	desiccated: -20%	50	6	18.928	18.4	23.2	2.384		5.928	5.6	6.4	0.2744	Lipshitz & Bonani 2001
Egypt	Qasr Ibrim	desiccated: -20%	375	337	16.34	9.20	26.40	2.95	337	6.03	3.6	8.00	0.75	Clapham and Stevens 2009

Israel	En Boqeq Castle	charred	500	12	20.00	12.00	25.60	5.59		8.24	5.6	16.00	3.44	Lipshitz & Bonani 2001
Egypt	Kom el-Nana	desiccated: -20%	575	2	23.00	21.50	24.50	2.12	2	8.04	8	8.08	0.06	Smith 2003
Israel	Evrona	charred	650	4	20.70	15.00	27.00	5.83	4	7.50	6	8	0.97	Lipshitz & Bonani 2001
Egypt	Quesir al-Qadim	desiccated: -20%	1000	13	17.32	13.60	23.20	3.08	13	6.12	5.6	7.2	0.5	van der Veen 2011
Syria	Qaryat Medad	Charred	1150	1	14.5				4	5.625	5	6.5	0.75	Samuel 2001
Mali	Gao	Charred	1100	1	24				1	9				Fuller 2000
Mali	Essouk	Charred	1350	1	26.7				1	11				Nixon et al 2011

Mann-Kendall trend test of ave.L. all *Phoenix dactylifera*, p(no trend): 0.0094809*
Mann-Kendall trend test of ave.L. *Phoenix dactylifera,* 3000 BC-AD 650 , p(no trend): 0.0018617*

Table 4 *Phoenix dactylifera* domestication episode data for haldanes calculation

Site	Age	n	L.ave	stdev	s-terms (stdev^{2}x (n-1))	n-terms (n-1)	generations (5 yr)	x/σ
Hili 8 IB	-3000	5	*13.35*	*0.55892*	4	1.249549	0	1.886788
Qumran Cave	-2770	7	9.28	0.994	6	5.928216	46	1.311565
Ur	-2650	1	14.1		0	0	70	1.992788
Hili 8 IIC	-2550	15	*13.65*	*1.46897*	14	30.21005	90	1.929188
Miri Qalat	-2500	16	7.4	0.906007	15	12.31274	100	1.04586
R'as al-Jinz 2	-2300	39	14.68					
Saar	-1900	16	13.33	2.576459	15	99.57208	220	1.883962
Failaka	-1750	4	16.95	1.894353	3	10.76572	250	2.395585
Amarna	-1345	945	14.272	2.528919	944	6037.288	331	2.017097
Qumran Cave	50	6	18.928	2.384	5	28.41728	610	2.675141
Qasr Ibrim	375	337	16.336	2.950652	336	2925.333	675	2.308807
En Boqeq Castle	500	12	20	5.592	11	343.9751	700	2.826649
Kom el-Nana	575	2	23	2.12132	1	4.5	715	3.250646
Evrona	650	4	20.7	5.82878	3	101.924	730	2.925582
				Sum:	1357	9601.475		
				σ (s sum/ n sum)	7.075516			

Mann-Kendall trend test of ave.L. all *Phoenix dactylifera, p*(no trend): 0.0094809*
Mann-Kendall trend test of ave.L. *Phoenix dactylifera,* 3000 BC-AD 650 *, p*(no trend): 0.0018617*

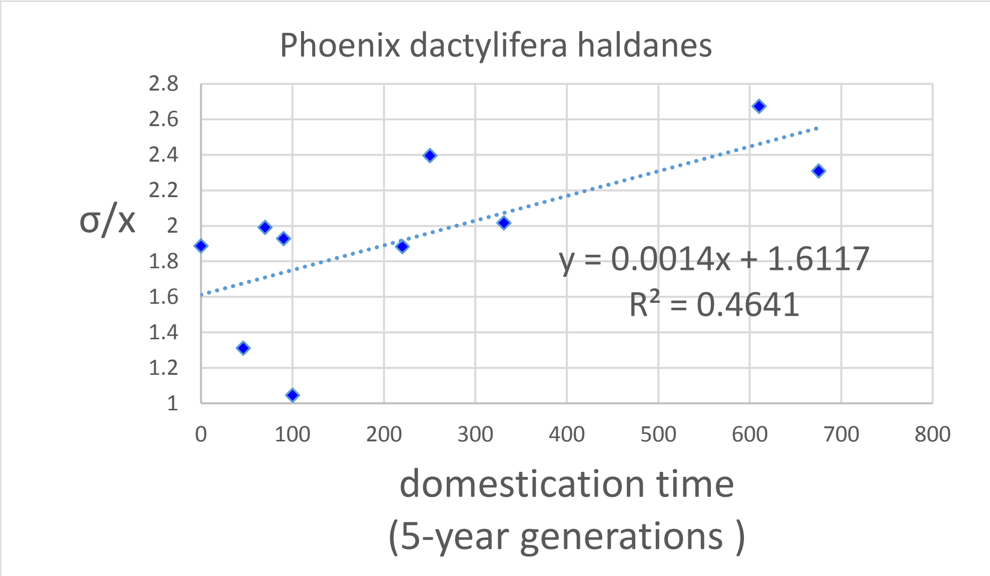


Fig. 5 Graph of Haldane rate estimate for *Phoenix dactylifera* (5 year generation)

Table 5 *Olea europaea* metrical data

Country	Site	Phase	Age	Preser-vation	N	L.ave	L.min	L.max	stdev	Th. Ave	Th. Min	Th. max	stdev	L/Th	Source
Cyprus	Khirokitia	Neolithic	-5500	Charred	1	8.8			0	6				1.466667	Miller 1984
Israel	Kfar Samir	Chalcolithic	-4590	-20% (waterlog.)	100	9.272	6	13.064	1.408521	5.552	4.264	7.2	0.585421	1.670029	Liphschitz et al 2013
Israel	Nahal Zehora II	Chalcolithic	-4600	charred	10	8.05	7	9.5	0.82	5	3.5	6	0.97	1.61	Liphschitz and Bonani 2000
Jordan	Teleilat Ghassul	Chalcolithic	-4500	Charred	10	10.2	*7.1*	13.3	1.66	6.2	4.3	6.5	0.63	1.645161	Liphschitz et al 2013
Jordan	Abu Hamid	Chalcolithic	-4400	Charred	4	10.1	8.2	10.8	*1.2629*	6.1	5.3	6.7	*0.68002*	1.655738	Liphschitz et al 2013
Jordan	Pella	Chalcolithic	-4300	charred	34	9.42	*6.5*	*12*	1.476	5.69	*3.9*	*7.5*	0.755	1.655536	Dighton et al 2017
Israel	Nevallat	Chalcolithic	-3900	Charred	36	7.84	5.5	11.5	1.33	4.58	3.5	6.5	0.69		Van den Brink et al 2001
Israel	Shoham	Chalcolithic	-3795	Charred	23	7.52	5	10	1.19	4.8	3.5	6	0.7	1.566667	Liphschitz et al 2013
Israel	Cave of the Treasure	Chalcolithic	-3500	-20% (desicc.)	58	9.35	5.82	12.36	1.34	4.87	3.64	5.82	0.50	1.918919	Zaitchek 1980 [from photo]
Jordan	Pella	EBA	-3150	charred	5	9.50	*7.20*	*10.50*	1.14	6.34	*5.90*	*6.80*	0.61	1.498423	Dighton et al 2017
Jordan	Tell esh Shuna	EBA	-2600	Charred	70	9.83	7	13.3	1.324999	6.2	5.3	7.2	0.399603	1.585253	Liphschitz et al 2013
Israel	Lachish	EBA	-2500	Charred	20	11.2	9	13.2	1.124513	5.7	5	6.2	0.321289	1.964912	Helbaek 1958
Jordan	Pella	MBA	-1750	charred	1	8.99				5.29				1.699433	Dighton et al 2017
Jordan	Pella	LBA	-1325	charred	41	10.72	*8.4*	*13*	0.999	6.12	*5*	*7.25*	0.529	1.751634	Dighton et al 2017
Israel	Tel Jerisheh	LBA	-1300	Charred	28	10.71	9	12.5	0.97	5.65	5	6.5	0.45	1.895575	Liphschitz et al 2013
Greece	Tiryns	LBA	-1250	Charred	25	*10.05*	5.1	15	2.51868	*5.75*	3.6	7.9	1.093972	1.747826	Runnels & Hansen 1986
Israel	Tell Keisan	Iron Age	-1000	Charred	100	11.31	8.33	13.33	0.996971	6.46	4.83	7.17	0.466583	1.73	Kislev 1995
Jordan	Pella	Iron Age	-950	charred	171	10.78	*7.4*	*13*	1.095	6.26	*4.3*	*7.8*	0.529	1.722045	Dighton et al 2017
Israel	Lachish	Iron Age	-500	Charred	25	10.1	8.2	12.6	1.119413	5.7	5.1	6.4	0.330736	1.77193	Helbaek 1958
Israel	Gamla	Hellenistic	-150	charred	64	12.85	10	14.5	1.19	6.39	5	8	0.7	2.010955	Liphschitz et al 2013
Egypt	Kom el-Nana	Byzantine	575	-20% (desicc.)	10	11.04	8.96	13.76	1.40905	5.952	4.8	7.36	0.694563	1.854839	Smith 2003, Fig. 3.21
Greece	Corinth	Iron Age	-450	charred	5	7.24	5.6	8	1.004	3.56	2.6	4.2	0.6	2.033708	Bookidis et al 1999: Fig. 22

Mann-Kendall trend test of ave.L. all *Olea europaea, p*(no trend): 0.014397*

Mann-Kendall trend test of ave.L. Olea inferred domestication episode, p(no trend): 0.017221*

Table 6 *Olea europea* domestication episode data for haldanes calculation

	Site	**Period**	**Median Age**	**n**	**L. ave**	**L. stdev**	**s-terms (stdev^{2}x (n-1))**	**n-terms (n-1)**	**Gener-ations (10-yr)**	**x/σ**	**Site**	**Period**
Israel	Nahal Zehora II	Chalcolithic	-4600	10	8.05	7	9.5	0.82	6.0516	9	0	5.034316
Israel	Kfar Samir	Chalcolithic	-4590	100	9.272	6	13.064	1.408521	196.4092	99	10	5.798531
Jordan	Teleilat Ghassul	Chalcolithic	-4500	10	10.2	*7.1*	13.3	1.66	24.8004	9	100	6.378885
Jordan	Abu Hamid	Chalcolithic	-4400	4	10.1	8.2	10.8	*1.2629*	4.784766	3	200	6.316347
Jordan	Pella	Chalcolithic	-4300	34	9.42	6.5	12	1.476	71.89301	33	300	5.891088
Israel	Nevallat	Chalcolithic	-3900	36	7.84	*5.5*	*11.5*	1.33	61.9115	35	700	4.902986
Israel	Shoham	Chalcolithic	-3795	23	7.52	5	10	1.19	31.1542	22	805	4.702864
Israel	Cave of the Treasure	Chalcolithic	-3500	58	9.35	5.82	12.36	1.34	102.3494	57	1100	5.846037
Jordan	Pella	Early Bronze Age	-3150	5	9.50	*7.20*	*10.50*	1.14	5.1984	4	1450	5.941118
Jordan	Tell esh Shuna	Early Bronze Age	-2600	70	9.83	7	13.3	1.324999	121.138	69	2000	6.1466
Israel	Lachish	Early Bronze Age	-2500	20	11.2	9	13.2	1.124513	24.02606	19	2100	7.004266
Jordan	Pella	LBA	-1325	41	10.72	*8.4*	*13*	0.999	39.92004	40	3275	6.704083
Israel	Tel Jerisheh	LBA	-1300	28	10.71	9	12.5	0.97	25.4043	27	3300	6.697829
Greece	Tiryns	LBA	-1250	25	*10.05*	5.1	15	2.51868	152.25	24	3350	6.285078
Israel	Tell Keisan	Iron Age	-1000	100	11.31	8.33	13.33	0.996971	98.40121	99	3600	7.073057
Jordan	Pella	Iron Age	-950	171	10.78	*7.4*	*13*	1.095	203.8343	170	3650	6.741606
Israel	Lachish	Iron Age	-500	25	10.1	8.2	12.6	1.119413	30.07407	24	4100	6.316347
Israel	Gamla	Hellenistic	-150	64	12.85	10	14.5	1.19	89.2143	63	4450	8.036144
					824				sums	1288.815	806	
									σ (s sum/ n sum)	**1.599026**		

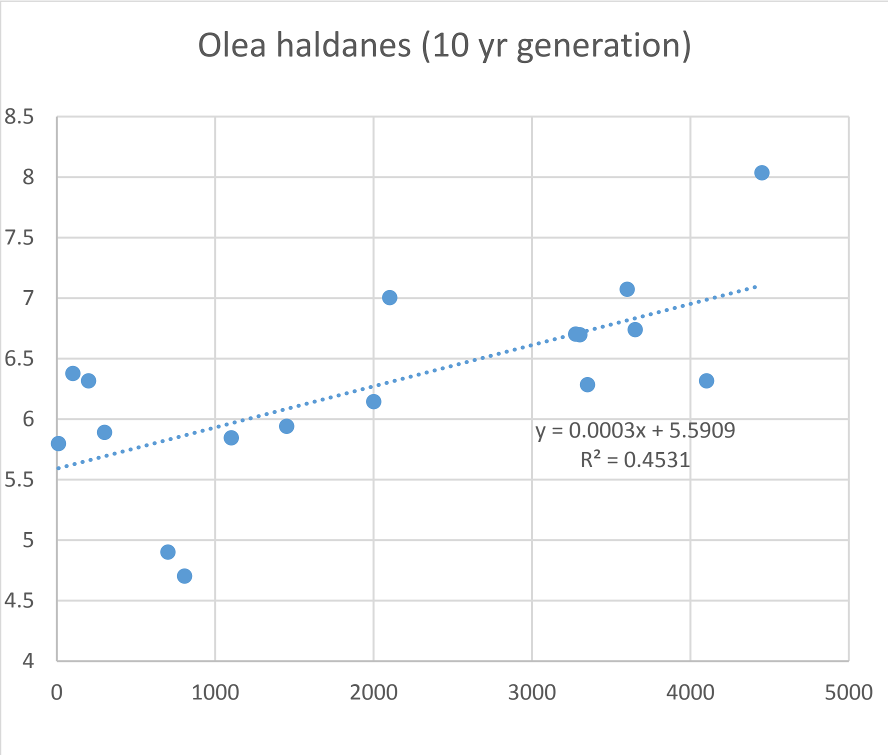


Fig. 6 Graph of Haldane rate estimate for *Olea europea,* based on a generation time of 10 years

Table 7 Metrical data on avocado (*Persea americana*) seeds. Measurements from C. Smith 1966; 1969, with ages re-estimated on the basis of B. Smith 2005

Region	Site	Period	Strati-graphic phase	Preserv.	Median date estimate	N	L. ave	L. min	L. max	stdev	W. ave	W. min	W. max	stdev	source
Tehuacan	Coxcatlan Cave	Abjas and Coxcatlan	pre-ceramic	charred	-3000	4	1.95	1.8	2.1	0.1291	1.7	1.4	2.1	0.2944	Smith 1966
Tehuacan	Coxcatlan Cave	Santa Maria	TC 50 VII	charred	-400	14	2.2071	1.4	2.8	0.3812	2	1.2	2.8	0.4788	Smith 1966
Tehuacan	El Riego Cave	Santa Maria	TC 35e E	charred	-300	2	2.3	1.6	3	0.9900	1.75	1.6	1.9	0.2121	Smith 1966
Tehuacan	Coxcatlan Cave	Palo Blanco	TC 50 IV-V	charred	250	19	2.0053	1.3	3.4	0.5254	1.93	1.5	3	0.4056	Smith 1966
Tehuacan	Coxcatlan Cave	Palo Blanco	TC 50 VI	charred	-50	64	2.0984	1.5	3.2	0.3786	1.8	1.1	3.5	0.6034	Smith 1966
Tehuacan	Purron Cave	Palo Blanco (includes Snta Maria)	TC 272 D	charred	200	7	2.3857	1.9	3.1	0.4180	1.885714	1.4	3	0.5900	Smith 1966
Tehuacan	El Riego Cave	Palo Blanco	TC 35e D	charred	250	4	2.625	2.2	2.9	0.3100	1.775	1.5	2.1	0.2500	Smith 1966
Tehuacan	El Riego Cave	Palo Blanco	TC 35e C	charred	600	6	2.5167	1.8	3.5	0.5776	1.766667	1.4	2	0.2582	Smith 1966
Oaxaca	Guila Naquitz	Monte Alban IIIb-IV	OC-43 Zone A	-10% (desicc.	700	118	2.385	1.53	2.97	0.2806	1.845	1.35	2.25	0.1754	Smith 1969
Tehuacan	Coxcatlan Cave	Venta Salada	TC 50 III-I	charred	1200	16	2.3875	1.7	3.8	0.6281	2.075	1.3	3.1	0.4768	Smith 1966
Tehuacan	El Riego Cave	Venta Salada	TC 35e B	charred	1300	6	2.5333	1.8	3	0.4457	1.783333	1.2	2.4	0.5154	Smith 1966
Tehuacan	El Riego Cave	Venta Salada	TC 35e A	charred	1450	4	2.65	1.7	3.3	0.6807	2.05	1.5	2.5	0.4123	Smith 1966

Mann-Kendall trend test of ave.L. all *Persea americana, p*(no trend): 0.003192*
Mann-Kendall trend test of ave.L. *Persea americana* 400 BC-1450AD*, p*(no trend): 0.012731*

Table 8 *Persea americana* domestication episode data for haldanes calculation

Site	Period	Median Age	n	L. ave	L. stdev	s-terms ($stdev^2$x (n-1))	n-terms (n-1)	Gener-ations (10-yr)	x/σ
Coxcatlan Cave	Santa Maria	-400	14	2.207143	0.381221	2.98	13	10	13.60965
El Riego Cave	Santa Maria	-300	2	2.3	0.989949	0.045	1	20	14.18222
Coxcatlan Cave	Palo Blanco	250	19	2.005263	0.525435	2.961053	18	75	12.36482
Coxcatlan Cave	Palo Blanco	-50	64	2.098438	0.378591	22.94	63	45	12.93935
Purron Cave	Palo Blanco (includes Snta Maria)	200	7	2.385714	0.418045	2.088571	6	70	14.71075
El Riego Cave	Palo Blanco	250	4	2.625	0.30957	0.1875	3	75	16.18623
El Riego Cave	Palo Blanco	600	6	2.516667	0.577639	0.333333	5	110	15.51823
Guila Naquitz	Monte Alban IIIb-IV	700	118	2.385	0.280571	3.597755	117	120	14.70635
Coxcatlan Cave	Venta Salada	1200	16	2.3875	0.628092	3.41	15	170	14.72176
El Riego Cave	Venta Salada	1300	6	2.533333	0.44572	1.328333	5	180	15.621
El Riego Cave	Venta Salada	1450	4	2.65	0.680686	0.51	3	195	16.34038
					Sums	40.38155	249		
					σ (s sum/ n sum)	0.162175			

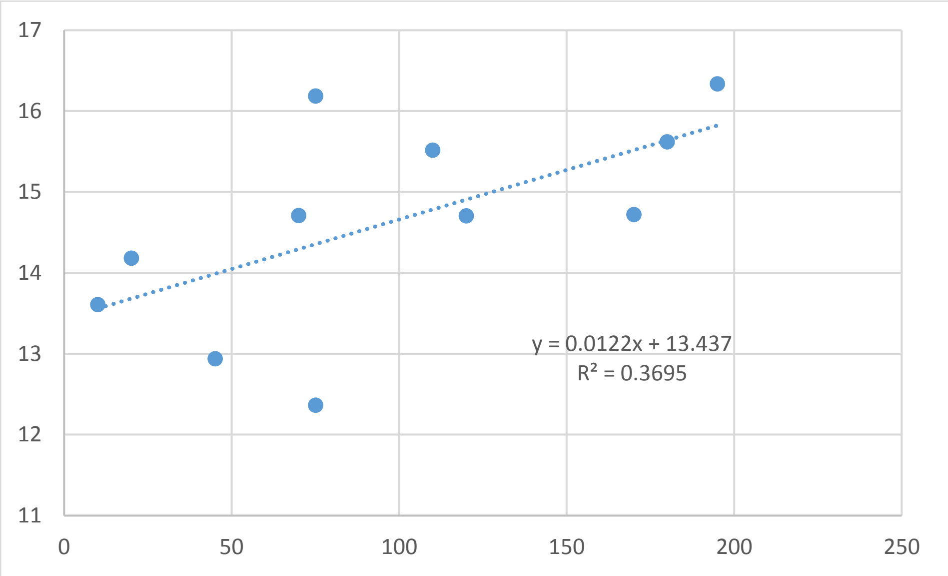


Fig. 7 Graph of Haldane rate estimate for *Persea americana,* based on a generation time of 10 years

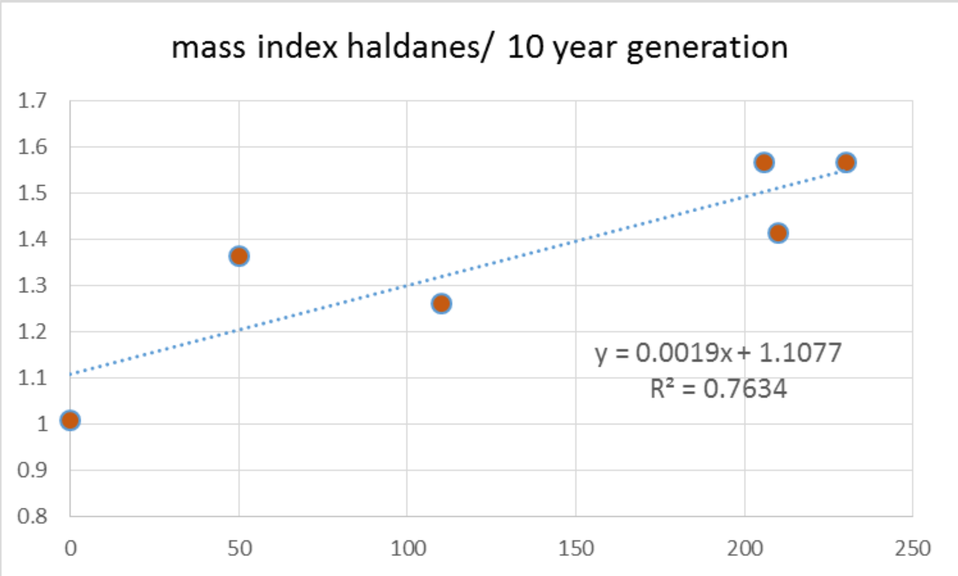
Table 9 *Castanea crenata* metrical data. Yoshikawa (2011) provided raw measurements, while Nishiro and Sasaki (2014) provided derived calculations of nut mass index (square root of length x width) for a larger number of sites

Site	Period	age	n	L. ave	stdev	W.ave	stdev	n	mass index √(HxW)	Stdev
Awazu Kotei	Initial Jomon	-7425						8	*16*	*2.10733*
Torihama	Early Jomon	-3800						17	22	2.787161
Sannai Maruyama	Early Jomon	-4050	15	19	4.9	24.5	7.4	46	22	3
Ofune C	Middle Jomon	-3000						84	20	3
Wadai	Middle Jomon	-2500						18	27	3
Benten-ike	Late Jomon	-1900	6	25.3	4.2	25.1	3.4	6	25	4
Noji	Final Jomon	-955	33	28.9	4.7	29.1	5.9			
Yachi	Final Jomon	-900						33	28	5
Yonaizumi	Final Jomon	-945	8	29.6	3.2	31.7	3.6	8	31	3
Aota	Final Jomon	-700	46	30.4	6.1	33.5	8.3	63	31	6
Shimokanomizu	Final Jomon	-1000						85	22	3

Mann-Kendall trend test of nut mass index. all *Castanea crenta, p*(no trend): 0.0046*

Table 10 *Castanea crenata* domestication episode data for haldanes calculation based on nut mass index

Site	Period	N	Median Age	mass index √(HxW)	stdev	s-terms (stdev^{2}x (n-1))	n-terms (n-1)	Gener-ations (10-yr)	x/σ
Ofune C	Middle Jomon	84	-3000	20	3	747	83	0	1.011043
Wadai	Middle Jomon	18	-2500	27	3	153	17	50	1.364908
Benten-ike	Late Jomon	6	-1900	25	4	80	5	110	1.263804
Yachi	Final Jomon	33	-900	28	5	800	32	210	1.41546
Yonaizumi	Final Jomon	8	-945	31	3	63	7	205.5	1.567117
Aota	Final Jomon	63	-700	31	6	2232	62	230	1.567117
					Sums	4075	206		
					σ (s sum/ n sum)	19.78155			



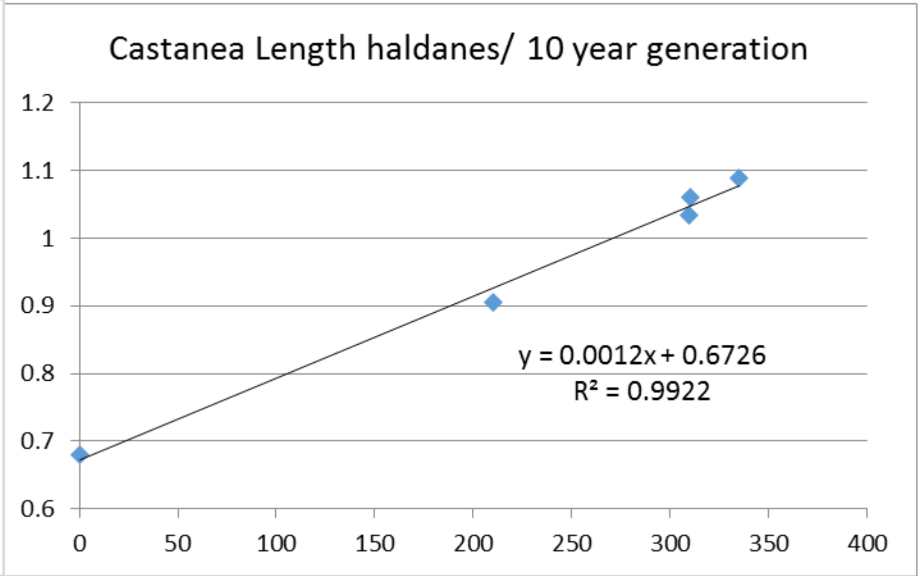


Fig. 8 Graphs of haldane rate estimates for *Castanea crenata* using nut mass index (left) and fruit length (right), based on a generation time of 10 years

Table 11 Metrical data and Haldane calculations for *Canarium* sp. from Talepakamalai (based on Lepofsky et al 1998)

							Max diameter (mc)				**s-terms**	**n-terms**	**Generation (5-year)**	**x/σ**
Per.	**Age**	**n**	**L. ave**	**min**	**max**	**stdev**	**D.ave**	**min**	**max**	**stdev**				
Early	-1500	107	3.8	2.2	5	0.5	2.1	1.3	2.7	0.2	4.24	106	0	93.74005
Mid.	-1000	79	4	3	5	0.4	2.1	1.3	2.7	0.2	3.12	78	100	98.67374
Late	-700	3	4	3.5	4.4	0.5	2	1.7	2.2	0.3	0.18	2	160	98.67374
										Sums	7.54	186		
										σ (s sum/ n sum)	0.040538			

Mann-Kendall trend test of ave.L. all *Canarium,* including modern reference material reported by Lepofksy et al. 1998, *p*(no trend): 0.042*

Table 12 Metrical data and Haldane calculations for *Spondias* sp. from Talepakamalai (based on Lepofsky et al 1998)

Period	**Age**	**n**	**L. ave**	**min**	**max**	**stdev**	**D.ave**	**min**	**max**	**stdev**	**s-terms**	**n-terms**	**Generation (5-year)**	**x/σ**
Early	-1500	39	2.1	1	3	0.4	2	1.4	2.8	0.3	5.67	63	0	26.85279
Middle	-1000	64	2.3	1.5	3.3	0.3	2.1	1.1	2.7	0.3	1.89	21	100	29.18782
Late	-700	22	2.5	1.9	3	0.3	2.3	1.8	3.2	0.3	0.32	8	160	30.35533
										Sums	7.88	92		
										σ (s sum/ n sum)	0.085652			

Mann-Kendall trend test of ave.L. all *Spondias,* including modern reference material reported by Lepofksy et al. 1998, *p*(no trend): 0.042*

References cited in supplementary material

Beech M (2003) Archaeobotanical evidence for early date consumption in the Arabian Gulf. In: Al-Swaidi JS (ed) The date palm: from traditional resource to green wealth. The Emirates Center for Strategic Studies and Research, Abu Dhabi, pp 11-31

Bookidis N, Hansen J, Snyder L, Goldberg P (1999) Dining in the Sanctuary of Demeter and Kore at Corinth. Hesperia: The Journal of the American School of Classical Studies at Athens 68:1-54

Clapham AJ, Stevens CJ (2009) Dates and confused: does measuring date stones make any sense? In: Ikram S, Dodson A (eds) Beyond the Horizon: Studies in Egyptian Art, Archaeology and History in Honour of Barry J. Kemp. Supreme Council of Antiquities, Cairo, pp 9-27

Costantini L (1985) Considerazioni su alcuni reperti di palma da dattero e sul centro di origine e l'area di coltivazione della Phoenix dactylifera L. In: Gnoli G, Lanciotti L (eds) Orientalia Josephi Tucci memoriae dicata. Serie Orientale 56. Istituto Italiano per il Medio ed Estremo Oriente, Rome, pp 209-218 (in Italian)

Costantini L, Audisio P (2000) Plant and insect remains from the Bronze Age site of Ra's al-Jinz (RJ-2), Sultanate of Oman. Paleorient 26(1): 143-156

Dighton A, Fairbairn A, Bourke S, Faith JT, Habgood P (2017) Bronze Age olive domestication in the north Jordan valley: new morphological evidence for regional complexity in early arboricultural practice from Pella in Jordan. Veget Hist Archaeobot 26:403-413

Fuller DQ (2000) The Botanical Remains. In: Insoll T (ed) Urbanism, Archaeology and Trade. Further Observations on the Gao Region (Mali): The 1996 Fieldseason Results. BAR S829. Archaeopress, Oxford, pp 28-35

Helbaek H (1958) Plant Economy in Ancient Lachish. In: Tufnell O (ed) Lachish IV: The Bronze Age. Oxford University Press, Oxford, pp 309-317

Kislev ME (1995) Wild Olive Stones at Submerged Chalcolithic Kfar Samir, Haifa, Israel. J Israel Prehist Soc 26:134-145

Lepofsky D, Kirch PV, Lertzman KP (1998) Metric analyses of prehistoric morphological change in cultivated fruits and nuts: an example from Island Melanesia. J Archaeol Sci 25:1,001-1,014

Liphschitz N, Bonani, G (2000) Dimensions of Olive (*Olea europaea*) stones as a reliable parameter to distinguish between wild and cultivated varieties: further evidence. Tel Aviv 27:23-25

Liphschitz N, Bonani G (2001) Wild and Cultivated Date Palm (*Phoenix dactylifera*) from Qumran Cave 24. Tel Aviv 28:305-309

Liphschitz N, Gophna R, Bonani G, Feldstein A (2013) Wild olive (*Olea europaea*) stones from a chalcolithic cave at shoham, Israel and their implications. Tel Aviv 23:135-142

Lone FA, Khan M, Buth GM (1993). Palaeoethnobotany. Plants and ancient man in Kashmir. Oxford & IBH Publishing Co., New Delhi

Miller NF (1984) Some Plant Remains from Khirokitia, Cyprus: 1977 and 1978 Excavations. In : LeBrun A (ed) Fouilles récentes à Khirokitia (Chypre) 1977-1981. Mémoire 41. Editions Recherches sur les civilisations, Paris, pp 183-188

Nesbitt M (1993) Archaeobotanical Evidence for Early Dilmun Diet at Saar, Bahrein. Arabian Archaeology and Epigraphy 4:20-47

Nixon S, Murray MA, Fuller DQ (2011) Plant use at an early Islamic merchant town in the West African Sahel: the archaeobotany of Essouk-Tadmakka (Mali). Veget Hist Archaeobot 20:223-39

Noshiro S, Sasaki Y (2014) Pre-agricultural management of plant resources during the Jomon period in Japan—a sophisticated subsistence system on plant resources. J Archaeol Sci 42:93-106

Rowley-Conwy P (1987) Remains of date (*Phoenix dactylifera*) from Failaka, Kuwait. In: Højlund F (ed) Danish archaeological investigations on Failaka, Kuwait. The second millenium settlements. Jutland Archaeological Society Publications, pp 181-183

Runnels CN, Hansen J (1986) The olive in the prehistoric Aegean: the evidence for domestication in the early Bronze Age. Oxford J Archaeol 5:299-308

Sadori L, Allevato E, Bosi G, Caneva G, Castiglioni E, Celant A, Di Pasquale G, Giardini M, Mazzanti M, Rinaldi R, Rottoli M (2009) The introduction and diffusion of peach in ancient Italy. In: Morel, J-P, Mercuri AM (eds) Plants and culture: seeds of the cultural heritage of Europe. Edipuglia, Bari, pp 45-61

Samuel D (2001) Archaeobotanical evidence and analysis. In: Berthier S (ed) Peuplement rural et amenagements hydroagricoles dans la moyenne vallee de l'Euphrate fin VIIe-XIXe siecle. Institut Français d'Etudes Arabes de Damas, Damascus, pp.343-481

Smith BC (2005) Reassessing Coaxcatlan Cave and the early history of domesticated plants in Mesoamerica. PNAS 102:9,438-9,445

Smith CEJ (1966) Archaeological evidence for selection in avocado. Econ Bot 20:169-175

Smith CEJ (1969) Additional notes on pre-conquest avocados in Mexico. Econ Bot 23:135-140

Smith W (2003) Archaeobotanical Investigations of Agriculture at Late Antique Kom el-Nana (Tell el-Amarna). Egypt Exploration Society, London

Van den Brink EC, Liphschitz N, Lazar D, Bonani G (2001) Chalcolithic dwelling remains, cup marks and olive (*Olea europaea*) stones at Nevallat. Israel Exploration Journal 51:36-43

Van der Veen M (2011) Consumption, trade and innovation. Africa Magna Verlag, Frankfurt

Willcox G (1977) Exotic plants from Roman waterlogged sites in London. J Archaeol Sci 4:269-282

Yoshikawa M (2011) Dispersal of *Castanea crenata* pollen and distribution of *C. crenata* forest around the Sannai-maruyama site during the Jomon period. Jpn J Hist Bot 18:65-76 (in Japanese)

Zaitschek DV (1980). Plant remains from the cave of the treasure. In: Bar-Adon P (ed) The cave of the treasure. Jerusalem, pp 223-227

Zheng Y, Crawford GW, Chen X (2014) Archaeological evidence for peach (*Prunus persica*) cultivation and domestication in China. PloS one 9:e106595