

POLLEN ANALYSIS OF EAGLE CAVE

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Eagle Cave is one of the archeological sites in the Amistad Reservoir excavated by the Texas Archeological Salvage Project. This site was one of the four sites chosen for palynological study.

A total of twenty-three soil samples representing all strata in the excavation were collected by Dr. John H. McAndrews and Vaughn M. Bryant, Jr. Each sample was collected from the cleaned vertical walls of the excavation with a trowel and placed in labeled polyethylene bags. Extreme care was taken to avoid contamination.

The samples were processed in the Palynological Laboratory of the Department of Botany, The University of Texas, using a digestion process very similar to the one described in the Devil's Mouth Report (Bryant, report herein). Pollen in significant amounts for analysis was obtained from eight of the twenty-three samples (Table 8). However, the eight samples yielding sufficient pollen represent an adequate record for Period II and the underlying culturally-sterile deposits. Samples representing time Periods III and IV were deficient of pollen probably because of oxidation by fire. Samples representing Periods V through VII were discarded because of evidence of significant strata disturbance by man.

Following digestion of soil and non-polleniferous plant fragments pollen residues were incorporated in silicone fluids of 2,000 cs viscosity and slides were made. Pollen counts were made by McAndrews at 400 and 1000 diameters. Identifications of pollen types were based upon material in the Amistad Pollen Reference Collection maintained by the Palynological Laboratory at The University of Texas.

The results of this study for the purposes of this report are shown in a list of identified types (Table 9) and a pollen diagram (Figure 29). Working with the time sequences outlined by Dr. Dee Ann Story it was found, as discussed in Appendix A of the Devil's Mouth report, that the pollen diagram is in basic agreement with the diagrams from Bonfire Shelter and the Devil's Mouth Site. It can be pointed out that three pollen types encountered in the samples from time Period II represent possible demonstration of plant use by primitive man. These types are Typha, Dasylicon, and Agave. Interestingly, these three types were encountered in Bonfire Shelter during the equivalent time period but are absent from the pollen record of the Devil's Mouth Site (Hevly, herein; Bryant, herein).

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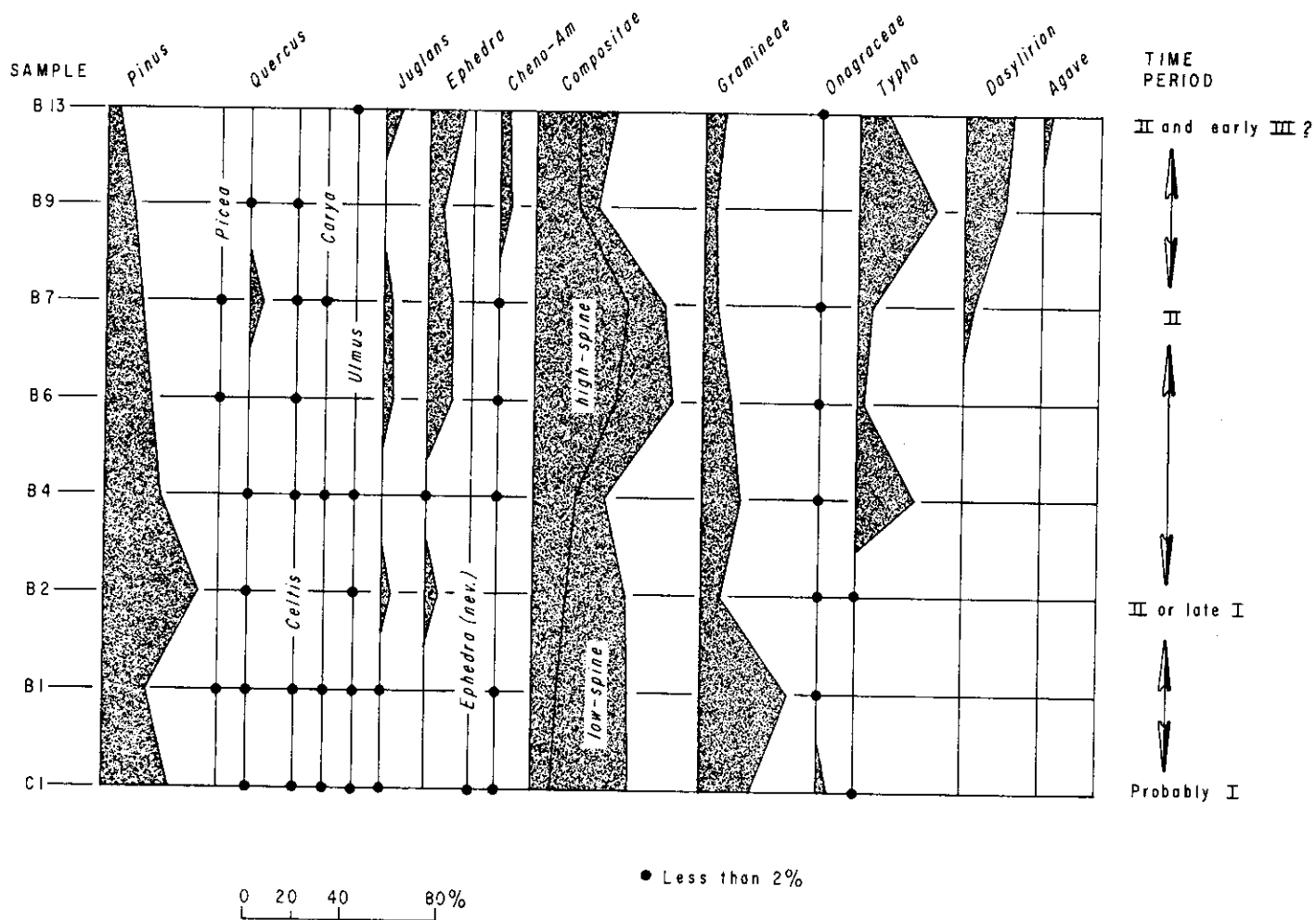


TABLE 8. SOIL SAMPLES FROM EAGLE CAVE

<u>Column B</u>		
<u>Sample</u>	<u>Depth Below Surface</u>	<u>Stratum</u>
1	8.8	Sterile stratum
2	7.8	" "
3	7.7	" "
4	7.3	V
5	7.3	V
6	7.4	V
7	6.9	V
8	6.5	V
9	6.1	IV
10	5.8	IV
11	5.4	III
12	5.1	III
13	5.6	III
14	3.5	IIId
15	3.5	IIId
16	2.8	IIc
17	2.2	IIb
18	1.0	IIa
19	1.5	IIa
20	.5	I
21		surface

<u>Column C</u>		
<u>Sample</u>	<u>Depth Below Surface</u>	<u>Stratum</u>
1	9.5	Sterile stratum
2	10.0	Sterile stratum

TABLE 9. EAGLE CAVE POLLEN COUNT

Stratum	Sterile Layer below V			V			IV	III
	Sample No.							
Pollen Types	C1	B1	B2	B4	B6	B7	B9	B13
<u>Pinus</u> (undif.)	63	35	110	48	41	33	23	14
<u>Pinus</u> (diplox. t.)	-	-	1	3	6	7	3	-
<u>Pinus</u> total	63	35	111	51	47	40	26	14
cf. <u>Picea</u>	-	*	-	-	1	1	-	-
<u>Quercus</u>	1	1	3	1	-	11	4	-
<u>Celtis</u>	1	3	-	2	1	1	1	1
<u>Carya</u>	2	1	-	3	-	1	-	-
<u>Ulmus</u>	1	5	4	-	-	-	-	2
<u>Juglans</u>	3	4	8	-	8	8	-	15
<u>Ephedra</u> (nev. t.)	1	-	-	-	-	-	-	-
<u>Ephedra</u> (tor. t.)	-	-	12	7	20	20	9	18
Rhamnaceae	-	-	1	-	-	-	-	-
<u>Fraxinus</u>	-	-	-	-	2	1	1	1
cf. <u>Maclura</u>	-	-	-	-	1	-	-	1
cf. <u>Lonicera albiflora</u>	-	-	-	-	2	-	-	-
cf. <u>Acacia</u>	-	-	-	-	-	1	-	-
cf. <u>Diospyros</u>	-	-	-	-	-	1	-	-
cf. <u>Forestiera</u>	-	-	-	-	-	1	-	-
<u>Koeberlinia</u> t.	-	-	-	-	-	1	-	-
cf. <u>Acer</u>	-	-	-	-	-	4	-	-

TABLE 9 (cont'd)

Stratum Pollen Types	Sample No.	Sterile Layer below V			V			IV	III
		C1	B1	B2	B4	B6	B7	B9	B13
<u>Morus</u>		-	-	-	-	-	-	2	-
<u>Alnus</u>		1	*	4	1	-	-	1	-
Cheno-Ams		1	1	-	1	2	4	8	10
Liguliflorae		-	*	-	2	-	-	-	-
Compositae (hi-spine)		19	25	32	33	86	99	38	44
<u>Iva ambrosiaefolia</u> t.		26	12	41	10	38	26	8	9
<u>Ambrosia</u>		39	59	11	14	17	4	5	7
<u>Iva texensis</u> t.		-	4	4	-	-	3	-	-
<u>Xanthium</u>		-	-	1	-	-	1	-	-
<u>Artemisia</u>		6	8	28	-	4	2	-	2
Compositae total		90	88	117	59	145	135	51	62
Gramineae		40	96	21	34	11	15	15	30
Onagraceae (undif.)		4	-	5	2	5	3	-	1
cf. <u>Gaura</u>		1	1	1	-	-	-	-	-
cf. <u>Jussiaea</u>		1	-	-	-	-	-	-	-
cf. <u>Oenothera lamp.</u>		-	1	-	-	-	-	-	-
cf. Cactaceae		2	-	-	-	-	-	-	-
<u>Sphaeralcea</u> t.		2	1	-	1	-	-	3	1
<u>Typha domingensis</u> t.		3	-	2	48	5	9	60	32
Cruciferae		-	-	-	-	1	-	-	-
<u>Erodium</u>		-	2	-	-	-	-	-	-

TABLE 9. (cont'd)

Stratum	Sample No.	Sterile layer below V						IV	III
		C1	B1	B2	B4	B6	B7	B9	B13
<u>Pollen Types</u>									
<u>Dasyliirion</u>		-	-	-	-	-	7	35	40
Polypodiaceae (trilete)		-	3	1	4	4	-	3	2
cf. Rosaceae		-	-	1	-	-	-	-	-
cf. <u>Phacelia</u>		-	-	-	1	-	-	-	-
<u>Dalea</u> t.		-	-	-	-	-	-	2	13
<u>Gilia</u>		-	-	-	-	-	-	1	-
cf. <u>Agave lech.</u>		-	-	-	-	-	-	-	12
cf. <u>Oxybaphus</u>		-	-	-	-	-	-	-	1
cf. <u>Yucca</u>		-	-	-	-	-	-	-	1
TOTALS		218	262	291	214	256	263	221	247

t. = type

* = trace

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