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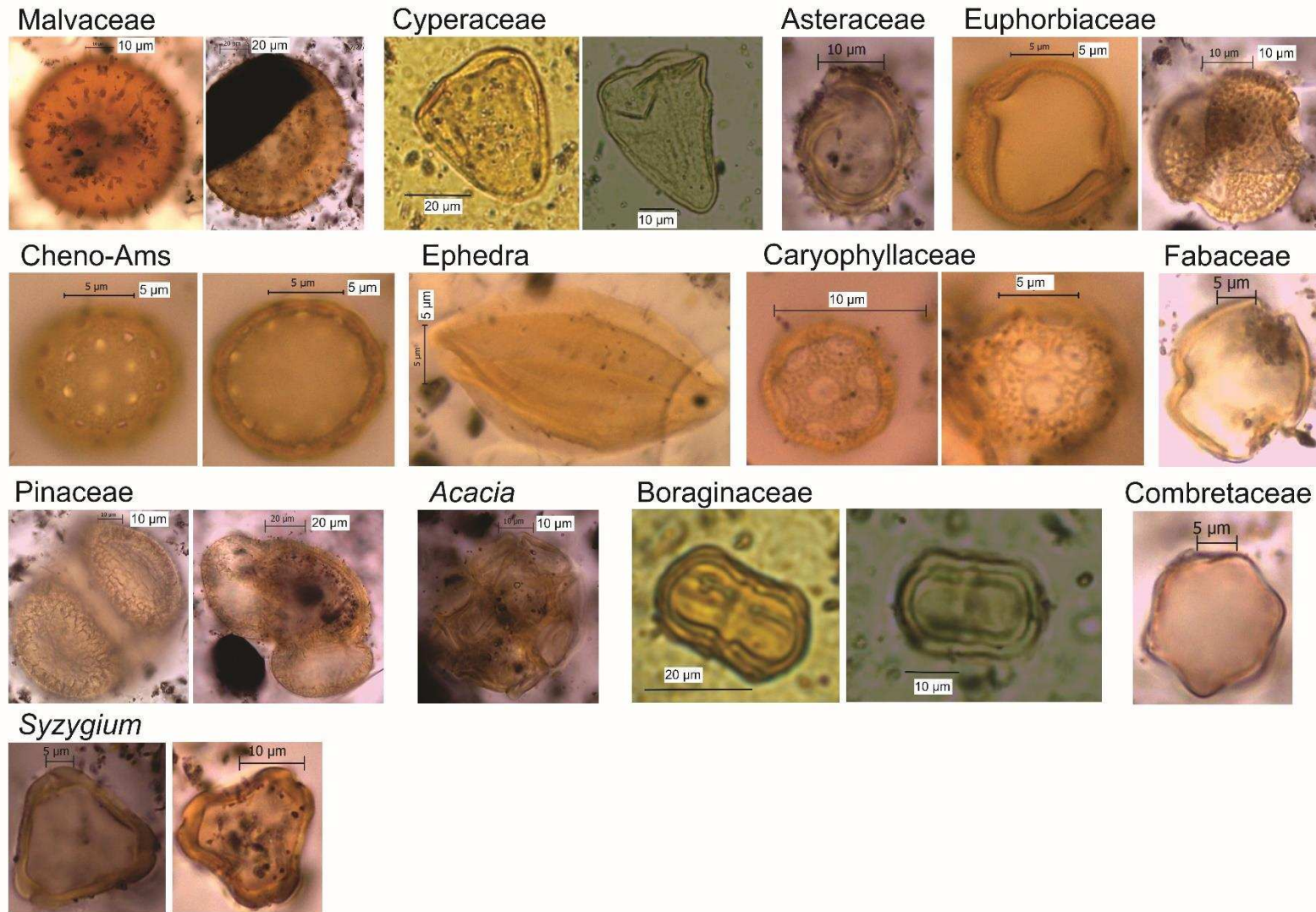
Multi-proxy evidence for an arid shift in the climate and vegetation of the Banni grasslands of western India during the mid to late Holocene

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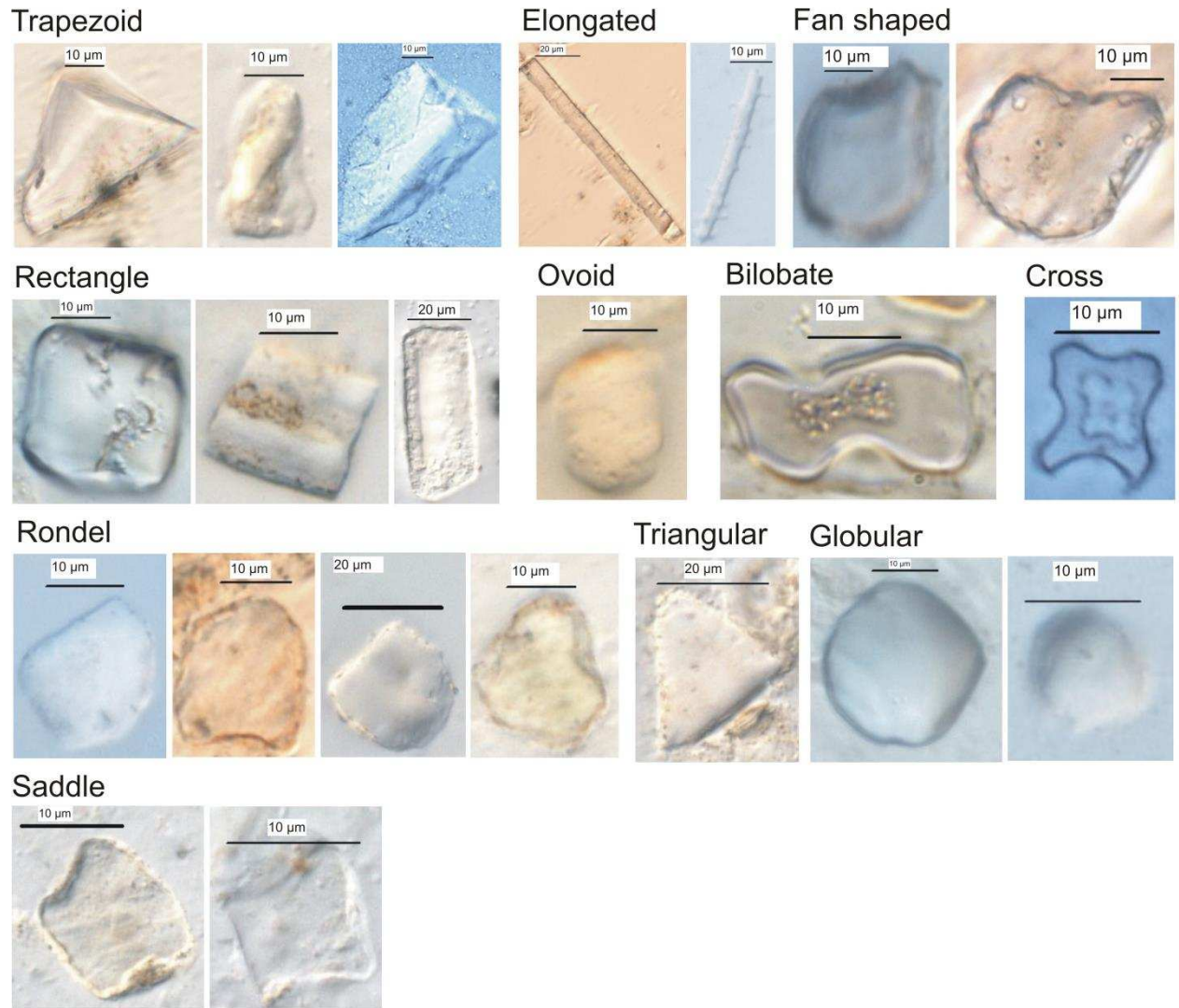
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Supplementary Table 1					
Sampling site	Depth (cm)	Material	Laboratory code	¹⁴ C Age (yr BP)	Age cal yr BP (99.7%)
Chachi	25	Organic sediment	ULA-5049	1595±20	1472±40
	60	Organic sediment	ULA-5050	1895±20	1844±25
	108	Organic sediment	ULA-5051	2770±20	2862±35
	134	Organic sediment	ULA-3988	3910±20	4350±40
Luna	24	Organic sediment	ULA-5229	600±15	602±30
	54	Organic sediment	ULA-4844	1015±15	938±10
	80	Organic sediment	ULA-5230	1085±15	995±30



Supplementary Figure 1. Images of common pollen types in the Chachi and Luna sediment profiles.



Supplementary Figure 2. Images of common phytolith morphotypes in the Chachi and Luna sediment profiles.

Supplementary Data:

Pollen and Phytolith data for Chachi

Chachi	Depth range (cm)	Age (cal yr BP)	Ratio of mesic to arid taxa	Grass phytolith count	Pollen percentages												
					Cyperaceae	Malvaceae	Asteraceae	Euphorbiaceae	Caryophyllaceae	Ephedra	Chenopodiaceae	Pinaceae	Fabaceae	Acacia-polyad	Syzygium	Combr etaceae	Legumes
Ca1	0-8	0	1.85	145	4.74	1.46	0.46	6.93	4.11	1.09	71.17	0.00	3.83	0.00	0.00	0.00	3.83
Ca2	8-15	432	0.79	185	16.43	0.48	7.73	2.66	2.90	1.21	66.67	0.00	0.00	0.00	0.00	0.00	0.00
Ca3	15-20	859	0.29	190	9.09	0.40	0.40	1.58	0.79	0.59	84.19	0.00	0.00	0.40	0.00	0.79	0.40
Ca4	20-25	1164	2	275	6.33	0.00	11.31	0.45	0.90	0.00	80.54	0.00	0.00	0.00	0.00	0.00	0.00
Ca5	25-30	1468	0.91	415	9.93	0.11	0.95	4.01	4.12	1.16	437.28	0.32	2.01	0.00	0.00	0.00	2.01
Ca6	30-35	1522	0.6	115	23.73	1.69	15.25	0.00	0.00	0.00	57.63	0.00	0.00	0.00	0.00	0.00	0.00
Ca7	35-40	1576	0.19	240	11.72	2.76	2.41	0.34	0.00	0.69	79.31	0.00	0.00	0.00	0.00	1.38	0.00
Ca8	40-45	1630	0.84	160	5.17	0.00	0.09	2.73	1.50	0.47	87.03	0.00	0.00	0.09	0.00	0.09	0.09
Ca9	45-50	1684	0.19	45	18.86	1.71	1.48	1.17	1.33	0.86	73.34	0.00	0.08	0.16	0.00	0.00	0.23
Ca10	50-55	1738	0.93	60	5.52	0.26	1.38	3.19	0.78	1.38	85.34	0.00	0.00	0.34	0.00	0.17	0.34
Ca11	55-60	1792	0.67	125	8.99	0.76	3.58	2.06	0.87	1.08	81.47	0.00	0.00	0.00	0.00	0.00	0.00
Ca12	60-65	1846	0.42	110	7.57	0.00	1.83	1.38	0.00	0.23	87.61	0.00	0.00	0.00	0.00	0.00	0.00
Ca13	65-70	1952	0.45	140	7.30	0.18	0.72	0.63	1.98	0.45	81.88	0.00	0.00	0.09	0.00	0.00	0.09
Ca14	70-74	2058	0.75	105	5.54	0.33	0.78	1.88	1.77	0.89	86.49	0.11	0.22	0.00	0.11	0.11	0.22
Ca15	74-78	2143	0.31	235	7.97	3.35	0.32	2.55	0.64	0.48	81.82	0.16	0.00	0.32	0.00	0.00	0.32
Ca16	78-82	2227	0.2	160	11.92	2.92	1.22	1.22	0.49	1.22	80.05	0.24	0.00	0.00	0.00	0.00	0.00
Ca17	82-86	2312	0.77	125	2.86	0.10	0.76	1.53	0.00	0.48	94.18	0.00	0.00	0.00	0.00	0.00	0.00
Ca18	86-90	2397	0.34	220	5.76	0.09	0.00	1.22	0.79	0.61	91.54	0.00	0.00	0.00	0.00	0.00	0.00
Ca19	90-94	2482	0.65	260	3.11	0.60	0.72	1.44	0.24	0.60	92.81	0.12	0.00	0.00	0.00	0.00	0.00
Ca20	94-100	2588	0.34	285	6.46	0.72	0.54	1.08	0.81	0.00	89.95	0.00	0.00	0.00	0.00	0.00	0.00

Ca21	100-104	2694	0.58	220	7.33	1.24	2.57	1.90	0.48	0.10	84.57	0.10	0.00	0.00	0.00	0.00	0.00
Ca22	104-108	2779	0.16	91	10.17	0.32	0.00	0.87	0.87	0.76	86.69	0.11	0.00	0.00	0.00	0.00	0.00
Ca23	108-112	2864	0.47	70	6.07	0.87	0.87	1.66	0.72	0.65	88.07	0.22	0.00	0.07	0.07	0.00	0.07
Ca24	112-116	3093	0.24	185	18.82	2.40	1.03	2.48	1.63	0.09	72.97	0.26	0.00	0.00	0.17	0.00	0.00
Ca25	116-120	3322	0.2	20	15.60	0.79	0.79	1.38	1.09	1.09	76.31	0.69	0.00	0.00	0.00	0.00	0.00
Ca26	120-126	3551	0.28	75	21.10	3.06	1.29	4.03	1.45	0.64	66.67	0.64	0.00	0.16	0.00	0.00	0.16
Ca27	126-130	3894	0.27	40	15.56	1.72	1.26	1.83	1.60	0.11	76.89	0.57	0.00	0.00	0.00	0.00	0.00
Ca28	130-134	4123	0.28	55	17.29	2.52	2.30	1.31	1.86	1.09	72.87	0.22	0.00	0.00	0.00	0.00	0.00
Ca29	134-138	4353	0.32	360	7.04	0.72	0.40	1.48	0.63	0.36	86.06	0.36	0.31	0.00	0.04	0.09	0.31
Ca30	138-142	4582	0.43	435	9.68	1.19	1.86	2.39	0.40	0.80	82.63	0.27	0.00	0.00	0.00	0.00	0.00

Pollen data for Luna

Luna	Depth range (cm)	Age (cal yr BP)	Grass phytolith count	Tree phytolith count	Pollen percentage						
					Cyperaceae	Cheno-Ams	Boraginaceae	Asteraceae	Ephedra	Acacia-polyad	Fabaceae
Lb1	0-6	0	186	0	27	50	4	2	7	2	4
Lb2	6-12	109	174	48	64	28	7	0	0	0	0
Lb3	12-18	274	168	90	55	39	2	0	3	0	0
Lb4	18-24	438	228	0	27	49	8	1	4	6	2
Lb5	24-30	603	402	192	40	54	2	0	3	0	0
Lb6	30-36	670	348	156	49	47	3	1	0	0	0
Lb7	36-42	737	276	0	45	52	0	0	2	0	0
Lb8	42-48	804	216	24	33	50	0	0	17	0	0
Lb9	48-54	871	306	0	27	66	6	0	1	0	0
Lb10	54-60	937	162	0	53	42	0	0	5	0	0
Lb11	60-65	951	210	42	67	28	0	0	5	0	0

Lb12	65-70	962	138	12	57	43	0	0	0	0	0
Lb13	70-75	973	318	0	34	62	2	2	0	0	0
Lb14	75-80	984	174	18	38	53	8	0	2	0	0
Lb15	80-85	995	306	36	60	40	0	0	0	0	0

Geochemistry data for Chachi

Chachi	Depth range (cm)	Age (cal yr BP)	Geochemistry								
			Al ₂ O ₃ (%)	Fe ₂ O ₃ (%)	MgO(%)	CaO(%)	Na ₂ O(%)	K ₂ O(%)	TiO ₂ (%)	MnO ₂ (%)	P ₂ O ₅ (%)
Ca1	0-8	0	21.26	12.2	3.67	8.37	1.51	3.37	1.13	0.08	0.5
Ca2	8-15	432	20.15	13.7	3.43	6.87	1.41	3.31	1.05	0.09	0.35
Ca3	15-20	859	19.41	12.23	3.57	6.9	1.38	3.32	1.09	0.09	0.35
Ca4	20-25	1164	19.84	12.47	3.64	7.11	1.43	3.27	1.06	0.09	0.39
Ca5	25-30	1468	19.64	12.49	3.7	6.85	1.28	3.84	1.09	0.09	0.36
Ca6	30-35	1522	19.6	12.6	3.65	6.57	1.42	3.27	1.07	0.09	0.38
Ca7	35-40	1576	19.23	12.57	3.47	7.11	1.27	3.45	1.06	0.08	0.39
Ca8	40-45	1630	19.65	12.95	3.76	6.63	1.23	3.24	1.06	0.08	0.39
Ca9	45-50	1684	19.73	13.16	3.87	5.9	1.32	3.32	1.14	0.09	0.35
Ca10	50-55	1738	20.17	13.2	3.93	6.44	1.3	3.4	1.05	0.09	0.37
Ca11	55-60	1792	19.15	12.13	3.59	6.49	1.24	3.36	1.09	0.09	0.35
Ca12	60-65	1846	17.57	11.1	3.79	5.71	1.81	3.62	0.95	0.08	0.39
Ca13	65-70	1952	19.63	12.98	3.76	6.37	1.63	3.86	1.06	0.09	0.38
Ca14	70-74	2058	20.26	13.21	3.78	5.42	1.24	3.19	1.11	0.09	0.38
Ca15	74-78	2143	20.96	13.74	3.86	6.16	1.18	3.82	1.12	0.09	0.38
Ca16	78-82	2227	20.89	13.21	3.57	6.27	1.15	3.81	1.11	0.08	0.39
Ca17	82-86	2312	21.02	14.05	3.85	6.34	1.16	3.59	1.13	0.09	0.39
Ca18	86-90	2397	21.66	14.79	3.69	6.14	1.42	3.08	1.11	0.08	0.35
Ca19	90-94	2482	21.09	14.3	3.67	6.38	1.15	3.75	1.16	0.08	0.4
Ca20	94-100	2588	22.19	15.31	3.71	5.89	1.09	3.16	1.13	0.08	0.36

Ca21	100-104	2694	21.66	14.87	3.18	6.38	1.15	3.08	1.19	0.07	0.37
Ca22	104-108	2779	22.54	15.72	3.6	6.03	1.14	3.21	1.15	0.08	0.36
Ca23	108-112	2864	22.29	15.35	3.61	5.95	1.11	3.31	1.16	0.08	0.4
Ca24	112-116	3093	21.96	15.53	3.45	5.69	1.12	3.03	1.19	0.08	0.41
Ca25	116-120	3322	22.76	16.21	3.54	5.59	1.11	2.91	1.17	0.08	0.4
Ca26	120-126	3551	22.77	16.26	3.65	5.53	1.06	3.35	1.2	0.08	0.44
Ca27	126-130	3894	22.9	16.45	3.58	5.33	0.98	2.81	1.1	0.07	0.44
Ca28	130-134	4123	20.95	14.9	3.56	4.34	1.12	3.14	1.19	0.07	0.42
Ca29	134-138	4353	22.35	16.05	3.64	4.07	1.51	3.43	1.11	0.06	0.38
Ca30	138-142	4582	20.51	14.77	3.59	3.63	2.06	3.18	0.99	0.05	0.25