THE CHAN PROJECT:
2008 SEASON

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TABLE OF CONTENTS

THE 2008 CHAN PROJECT LABORATORY SEASON: AN INTRODUCION

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The 2008 season was the second of three planned laboratory seasons (2007-2009) at the Chan site in Belize. The 2008 season and the final 2009 season are generously funded by the National Endowment for the Humanities.

During the 2002 to 2006 excavation and survey seasons at the Chan site the project collected a substantial dataset on the 2000 year history (1000/800 B.C. – A.D. 1150/1200) of the farming community of Chan. The accomplished goal of these prior seasons was the completion of horizontal excavations at (1)19 households (a 7% sample) representing the socio-economic and occupational variability in Chan's households, (2) all buildings in Chan's ritual and administrative core, and (3) terrace sets at different locations across the site's settlement. Standardized excavation procedures allowed the comparable collections of materials from all location and included the recovery of the macro-artifact materials traditionally collected from Maya sites, as well as soils from stratified contexts and micro-artifacts and carbonized remains recovered from flotation samples. The contextual analysis of excavated materials at Chan provides an ideal opportunity to explore the founding, development, long sustainability, and ultimate demise of an agrarian community.

To take advantage of this opportunity three laboratory seasons were designed to complete the analysis of the substantial collection of material remains from Chan. This analysis will allow us to address our two project goals (1) to assess the organization of the farming community across its over 2000 year occupation history, and (2) to examine how changes in farming community life affected and were affected by broader political-economic changes in Maya society, particularly the late rise of the nearby polity-capital of Xunantunich.

The 2008 Chan laboratory researchers included (1) Dr. Laura Kosakowsky (University of Arizona) who was assisted in her analysis of the Chan ceramics by Elise Docster (BA student, Northwestern University) and artist Carmen Ting (MA student, University College London), (2) Nick Hearth (MA, University of California – Riverside) who analyzed lithic materials, and (3) Anna Novotny (MA, Arizona State University) who analyzed human skeletal materials. The results of these three analytical projects are contained in this report. Additionally, Belizean high school student, Silvia Batty began a comprehensive analysis of the Chan ground stone collection. This analysis will be completed in 2009 and will be reported upon in that report.

PRELIMINARY REPORT ON THE ANALYSIS OF THE CERAMICS FROM THE CHAN PROJECT: 2008 Laboratory Season

Laura J. Kosakowsky
University of Arizona

INTRODUCION

The analysis of the Chan site ceramics continued the process begun in 2006 and 2007, with a focus this year on the site center (see Figure 1), including the western structure of the E-group (Structure 7) excavated in 2005 (Operation 13 in Robin et al. 2005), the L-shaped structure (Structure 8) in the western plaza of the Chan site excavated in 2005 (Operation 10 in Robin et al. 2005), and the southern range structure (Structure 6) also excavated in 2005 (Operations 11 and 12 in Robin et al. 2005). In addition, the posthole excavations conducted around the site center (Operation 3A in Robin et al. 2004) were analyzed, as were the ceramics excavated in postholes and test pits from the leading family residences east of the site core (Operations 23 and 25), and ceramics from postholes (Operation 24A) and excavations (Operation 28) from a limestone quarry area north of the site center excavated in 2006 (Robin 2006).

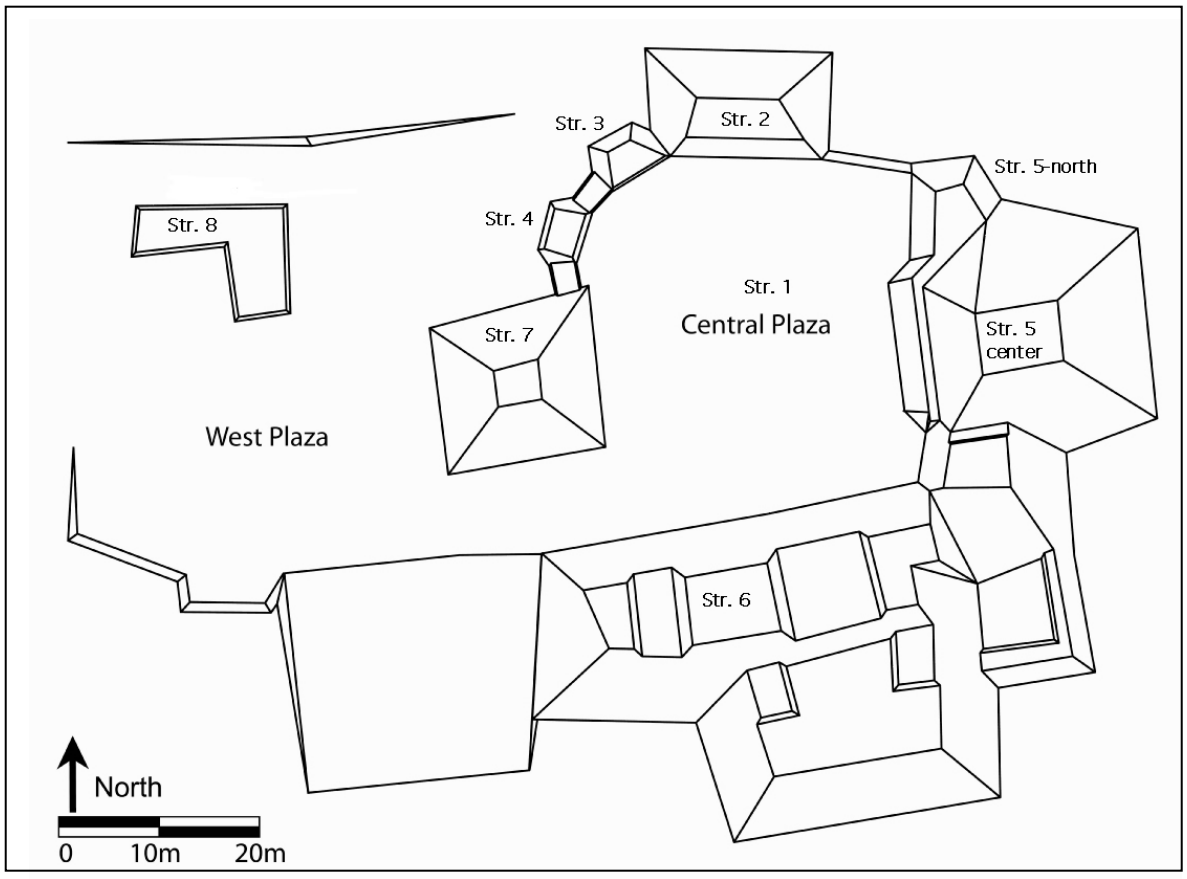


Figure 1: Chan Site Center (C-001)

As in 2006 and 2007, the methodology for the ceramic analysis involves sherds, which were laid out in stratigraphic sequences, beginning with the lowest levels of the excavation and moving upward, keeping all lots un-mixed (Kosakowsky 2006). All lots were pre-sorted into sherds with identifiable surface finish and decoration, which were separated from eroded and unslipped body sherds, with the assistance of Elise Docster (Northwestern University). The eroded and unslipped body sherds that were not identifiable were counted and re-bagged, in order to get some measure of what percentage of each lot was identifiable. The complete analysis proceeded using all rim sherds and body sherds with identifiable surface finish, decoration, or formal characteristics; body sherds recognized on the basis of paste characteristics (such as Mars Orange or Holmul Orange Wares, British Honduras Volcanic Ash Wares, and Vinaceous Tawny Wares, all of which are easily identifiable in the absence of preserved surfaces) were also included in the analysis. Within each lot complete counts by ceramic group were made, and as the analysis has progressed it has been possible to make some preliminary assignments to type and variety. Exemplar sherds for all identified ceramic groups were pulled from lot bags and were illustrated by Carmen Ting (University College London), and for a reference type collection.

CERAMIC CHRONOLOGY

CERAMIC CHRONOLOGY FOR THE CHAN SITE, BELIZE RIVER VALLEY, BELIZE

Time Period	Calendar Years, approximate*	Chan Ceramic Complexes**	Regional Ceramic Spheres
Early Postclassic	AD 900- 1150/ 1200(?)	(Not a complete complex)	New Town
Terminal Classic	AD 800/ 830 – 900	Vieras	Tepeu 3
Late Late Classic	AD 670 – 800/ 830	Pesoro	Tepeu 2
Early Late Classic	AD 600 – 670	Jalacte	Tepeu 1
Early Classic	AD 250 – 600	Burrell	Tzakol (1, 2, 3)
Terminal Preclassic	AD 100/ 150 – 250	Potts	Floral Park
Late Preclassic	300 BC – AD 100/ 150	Cadle	Chicanel
Middle Preclassic	650 BC – 300 BC	Boden	Mamom
Late Early Preclassic/ Early Middle Preclassic	1000(?) / 800 BC – 650 BC	(Not a complete complex)	“Cunil/ Kanocha” “Swasey/ Bladen” “Eb” & “Xe”***

* Until radiocarbon dates become available for the Chan sequence, approximate dates based on major site sequences are utilized here.

**Ceramic complexes at Chan are named for creeks in southern Belize.

***All the regional ceramic complexes for the Late Early Preclassic/ Early Middle Preclassic are listed in the above table because regional spheres have yet to be agreed upon for the Belize Valley.

As determined first in 2006, the Chan site appears to have been occupied from the Late Early Preclassic/ Early Middle Preclassic (ca. 1000/800 B.C.) until the Early Postclassic (ca. A.D. 1150/1200), although the major occupation falls between the Middle Preclassic and Terminal Classic, with only sparse evidence for the earliest phase and a population decline in the Terminal Classic, followed by abandonment in the Early Postclassic period (Kosakowsky 2006, 2007, 2008; Robin 2002, 2003, 2004). Radiocarbon dating on thirty-five samples (five from each major occupation period) will be done in 2009.

OPERATION 3A POSTHOLES

Operation 3A, completed in 2004, expanded a posthole testing strategy utilizing the systematic placement of postholes across supposed "vacant terrain" to collect archaeological and soil data (Robin et al. 2004). This approach has been used with great success (Robin 1999) to identify house lots, work areas and refuse areas, and pathways in the archaeological record, where in many cases permanent architecture did not exist. Op. 3A explored the large "vacant" spaces that surrounds Chan's central group C-001 (see Figure 1). A grid of 1037 postholes was placed at 5 m intervals, extending 50 m in each direction from the edges of the C-001 plaza (Robin et al. 2004). The ceramics in the majority of the postholes are small and highly eroded. Identifications were made on the basis of formal characteristics, when present, and paste, as slips were rarely preserved. The results are presented in the table below and suggest that the Chan site center was an important locus for activity as early as the Middle Preclassic and continuing through to the Terminal Classic period. The relatively high quantity of Middle Preclassic ceramics in the sample is most likely a function of the easy identification of Mars Orange Wares, even when eroded, and should not be interpreted as representing a large Middle Preclassic presence at the site. The same may be true for the easy identification of Belize Red in the Late Classic, which even when eroded or small in size is recognizable. Multiple entries with the same posthole number are from the same sample, but types and/or time periods are listed sequentially with counts for each.

Posthole #	Count	Identification
1	8	Belize Red- Late Classic
1	1	Cayo- Late Classic II
1	10	Unknown
1	11	Unknown Classic
3	3	Unknown
5	1	Belize Red- Late Classic
5	1	Cayo- Late Classic II
5	10	Unknown Classic
6	4	Unknown Classic
8	15	Unknown Classic
9	15	Unknown Classic
10	5	Unknown Classic
13	1	Unknown
14	2	Unknown

17	1	Unknown
19	1	Unknown Classic
20	2	Unknown
21	5	Unknown Classic
22	3	Unknown
22	2	Unknown Classic
23	1	Cayo- Late Classic II
23	11	Unknown Classic
25	13	Unknown Classic
27	6	Unknown
28	4	Unknown Classic
30	5	Unknown
31	1	Mars Orange- Middle Preclassic
34	1	Unknown
36	2	Unknown
37	2	Unknown
37	2	Unknown Classic
38	7	Unknown Classic
39	6	Unknown Classic
40	1	Unknown
41	8	Unknown Classic
42	4	Unknown Classic
43	3	Unknown
43	2	Unknown Classic
44	3	Unknown
45	10	Unknown Classic
45	3	Unknown Preclassic
46	5	Unknown Classic
50	1	Unknown
52	1	Unknown
53	3	Unknown Classic
54	1	Unknown
55	4	Unknown
55	2	Unknown Classic
56	3	Unknown Classic
57	1	Unknown
57	3	Unknown Classic
61	1	Late Classic
61	17	Unknown Classic
62	10	Unknown Classic
63	4	Unknown
64	1	Unknown Classic
65	1	Unknown
66	1	No ceramics-rock!
68	1	Unknown
72	4	Unknown Classic
73	3	Unknown Classic

76	3	Unknown
76	4	Unknown Classic
77	1	Unknown Classic
79	2	Unknown
79	1	Unknown Classic
80	1	Unknown
83	2	Unknown
85	1	Belize Red- Late Classic
85	14	Unknown Classic
89	10	Unknown Classic
90	3	Unknown
91	3	Unknown Classic
92	1	Jocote Orange Brown- Middle Preclassic
92	9	Mars Orange- Middle Preclassic
92	10	Unknown Preclassic
93	1	Mars Orange- Middle Preclassic
93	6	Unknown
93	4	Unknown Preclassic
94	2	Unknown
95	9	Unknown Classic
96	5	Unknown
96	21	Unknown Classic
96	2	Unknown Preclassic
97	1	Unknown
98	2	Unknown
102	2	Unknown
103	4	Unknown
104	2	Unknown
108	1	Unknown
114	3	Unknown Classic
116	1	Unknown Classic
118	3	Unknown Classic
119	1	Unknown
124	5	Unknown Classic
126	1	Belize Red- Late Classic
126	14	Unknown Classic
128	5	Unknown Classic
129	1	Belize Red- Late Classic
129	6	Unknown Classic
134	1	Unknown
136	2	Unknown
138	2	Unknown
139	9	Unknown Classic
140	2	Unknown
141	1	Early Classic
141	6	Unknown Classic
142	6	Unknown

142	1	Unknown Preclassic
143	1	Mars Orange- Middle Preclassic
143	7	Unknown
144	2	Mars Orange- Middle Preclassic
144	2	Unknown
144	2	Unknown Classic
146	3	Unknown
147	2	Unknown
149	3	Unknown Classic
151	1	Unknown
153	1	Unknown
154	1	Unknown
155	1	Unknown Classic
157	6	Unknown Classic
158	9	Unknown
163	2	Unknown Classic
166	3	Unknown
169	2	Unknown
171	1	Unknown Preclassic
173	1	Unknown Classic
174	2	Unknown
174	2	Unknown Classic
175	6	Unknown
176	1	Unknown
177	1	Polvero Black- Late Preclassic
177	2	Sierra Red- Late Preclassic
177	16	Unknown
178	4	Unknown
179	11	Unknown Classic
180	2	Unknown
180	20	Unknown Classic
182	1	Unknown
183	3	Unknown
183	2	Unknown Classic
184	4	Unknown Classic
186	8	Unknown Classic
187	1	Mt. Maloney II bowl rim
187	11	Unknown Classic
189	4	Unknown Classic
190	3	Mars Orange- Middle Preclassic
190	2	Unknown
190	7	Unknown Classic
192	20	Unknown Classic
192	6	Unknown Preclassic
195	7	Unknown Classic
198	6	Unknown
199	20	Unknown Classic

200	1	Belize Red- Late Classic
200	27	Unknown Classic
202	3	Unknown
203	1	Unknown
203	4	Unknown Classic
203	1	Unknown Preclassic
204	1	Belize Red- Late Classic
204	25	Unknown Classic
207	2	Unknown
208	3	Unknown Classic
209	1	Unknown
210	2	Unknown
211	1	Unknown
214	4	Unknown Classic
214	2	Unknown Preclassic
216	1	Belize Red- Late Classic
216	4	Unknown
216	4	Unknown Classic
217	1	Unknown
218	1	Unknown
219	2	Unknown
220	2	Unknown
220	7	Unknown Classic
222	1	Mars Orange- Middle Preclassic
222	1	Unknown
222	14	Unknown Classic
222	2	Unknown Preclassic
223	1	Late Preclassic
225	1	Belize Red- Late Classic
225	9	Unknown Classic
225	2	Unknown Preclassic
233	3	Unknown
235	1	Mars Orange- Middle Preclassic
235	7	Unknown
236	6	Unknown
236	2	Unknown Classic
237	3	Unknown
240	8	Mars Orange- Middle Preclassic
240	1	Sierra Red- Late Preclassic
240	5	Unknown
240	3	Unknown Preclassic
241	2	Unknown
242	7	Unknown Classic
245	1	Mt. Maloney II bowl rim
245	8	Unknown Classic
246	2	Unknown
249	1	Unknown

250	1	Unknown Classic
253	6	Unknown Classic
254	1	Mars Orange- Middle Preclassic
254	3	Unknown
257	6	Unknown Classic
260	1	Unknown Classic
263	5	Unknown
268	4	Unknown
285	3	Unknown Classic
286	3	Unknown
287	5	Unknown
288	1	Unknown Classic
289	20	Unknown Classic
295	1	Unknown
296	1	Unknown
301	2	Unknown
302	1	Unknown
304	1	Mars Orange- Middle Preclassic
304	7	Unknown
306	3	Unknown Classic
316	2	Early Classic
316	1	Unknown
317	1	Dolphin Head Red- Late Classic
317	1	Unknown Classic
318	1	Mars Orange- Middle Preclassic
322	1	Unknown
328	3	Unknown
328	1	Unknown Classic
330	2	Unknown Classic
330	1	Unknown Preclassic
331	2	Unknown
334	1	Unknown
335	2	Unknown Classic
340	1	Mt. Maloney I bowl rim
340	5	Unknown
340	1	Unknown Classic
341	1	Belize Red- Late Classic
341	3	Mars Orange- Middle Preclassic
346	1	Unknown
351	3	Unknown Classic
353	1	Belize Red- Late Classic
354	2	Early Classic
354	1	Unknown Classic
355	6	Unknown Classic
356	1	Unknown
358	1	Unknown
364	1	Unknown

366	1	Belize Red- Late Classic
366	1	Mt. Maloney II bowl rim
366	4	Unknown Classic
375	2	Unknown Classic
375	2	Unknown Preclassic
377	1	Unknown
377	2	Unknown Classic
379	1	Belize Red- Late Classic
379	3	Unknown Classic
380	5	Unknown Classic
383	2	Unknown
386	1	Unknown
387	3	Unknown Classic
391	1	Unknown Classic
392	1	Unknown
392	1	Unknown Classic
393	5	Unknown Classic
394	3	Unknown
397	3	Unknown
400	10	Belize Red- Late Classic
400	4	Cayo- Late Classic II/III
400	1	Mt. Maloney I bowl rim
400	3	Mt. Maloney II bowl rim
400	2	Mt. Maloney III bowl rim
400	72	Unknown Classic
401	3	Unknown Classic
403	3	Unknown Classic
405	2	Unknown
406	1	Mars Orange- Middle Preclassic
406	1	Unknown
408	7	Unknown Classic
409	2	Unknown Classic
410	1	Mt. Maloney II bowl rim
410	18	Unknown Classic
411	2	Belize Red- Late Classic
411	11	Unknown
412	21	Unknown Classic
413	13	Unknown Classic
418	2	Unknown Classic
421	7	Unknown Classic
422	4	Unknown Classic
423	2	Belize Red- Late Classic
423	1	Sierra Red- Late Preclassic
423	6	Unknown Classic
423	6	Unknown Preclassic
424	3	Belize Red- Late Classic
424	8	Unknown Classic

429	1	Cayo- Late Classic II
429	2	Unknown Classic
430	2	Unknown Classic
431	3	Unknown Classic
432	5	Unknown Classic
433	3	Chunhuitz Orange- Late Classic
433	1	Mt. Maloney II bowl rim
433	4	Unknown Classic
434	5	Unknown Classic
435	6	Unknown Classic
440	1	Unknown
441	3	Unknown Classic
442	3	Unknown Classic
443	5	Unknown
444	1	Unknown
445	15	Unknown Classic
446	10	Unknown Classic
448	7	Unknown Classic
449	2	Unknown Classic
451	2	Unknown
455	1	Unknown
456	4	Unknown Classic
458	1	Mt. Maloney II bowl rim
458	8	Unknown Classic
463	1	Unknown Classic
465	2	Unknown
466	1	Unknown
467	1	Unknown
469	2	Unknown
470	1	Unknown Classic
470	1	Unknown Preclassic
472	1	Unknown
476	1	Unknown Classic
477	1	Mt. Maloney II bowl rim
477	11	Unknown Classic
478	28	Belize Red- Late Classic
478	1	Cayo- Late Classic II/III
478	2	Dolphin Head Red- Late Classic
478	1	Late Classic
478	68	Unknown Classic
479	1	Unknown
483	1	Unknown Classic
486	2	Unknown Classic
489	1	Mt. Maloney II bowl rim
489	2	Unknown Late Classic
494	1	Unknown
497	2	Unknown

502	5	Unknown
507	2	Unknown
509	9	Unknown Classic
510	13	Unknown Classic
511	1	Belize Red- Late Classic
511	1	Mt. Maloney II bowl rim
511	6	Unknown Classic
516	1	Unknown
516	2	Unknown Classic
517	1	Mars Orange- Middle Preclassic
517	1	Unknown
518	1	Unknown
521	1	Unknown
523	6	Unknown Classic
524	1	Unknown
534	1	Cayo- Late Classic II/III
534	10	Unknown Classic
535	1	Belize Red- Late Classic
535	6	Unknown Classic
540	1	Unknown
542	3	Unknown
543	1	Unknown Classic
544	4	Unknown Classic
545	1	Belize Red- Late Classic
545	2	Unknown
545	4	Unknown Classic
546	2	Unknown Classic
548	2	Unknown
549	2	Unknown
550	1	Belize Red- Late Classic
550	2	Unknown Classic
551	1	Belize Red- Late Classic
551	6	Unknown Classic
552	2	Unknown
552	1	Unknown Classic
553	1	Unknown Classic
554	1	Belize Red- Late Classic
554	3	Unknown Classic
556	1	Mars Orange- Middle Preclassic
556	4	Unknown
557	2	Unknown
558	1	Mt. Maloney I bowl rim
558	2	Unknown Classic
562	1	Belize Red- Late Classic
562	1	Mt. Maloney II bowl rim
564	2	Unknown Classic
565	3	Unknown

568	2	Unknown
569	3	Unknown
570	2	Unknown
575	1	Unknown
576	2	Unknown Classic
578	1	Unknown Classic
580	1	Belize Red- Late Classic
580	2	Unknown Classic
581	3	Unknown Classic
583	2	Unknown Preclassic
585	2	Unknown
586	1	Sierra Red- Late Preclassic
586	4	Unknown Classic
599	1	Unknown
600	1	Unknown
603	2	Unknown Classic
604	3	Unknown
608	2	Unknown
614	2	Unknown
621	2	Unknown Classic
623	2	Unknown
634	1	Unknown Classic
634	2	Unknown Preclassic
646	1	Unknown
646	2	Unknown Classic
673	3	Unknown
673	12	Unknown Classic
673	1	Unknown Preclassic
674	3	Unknown
676	6	Unknown
677	16	Unknown Classic
678	5	Unknown
678	2	Unknown Preclassic
679	14	Unknown Classic
680	2	Unknown
681	2	Unknown
682	8	Unknown Classic
683	3	Unknown Classic
684	2	Belize Red- Late Classic
684	19	Unknown Classic
685	11	Unknown Classic
686	4	Unknown Classic
687	7	Unknown Classic
688	3	Unknown
689	9	Unknown Classic
690	1	Early Classic
690	3	Unknown Classic

691	5	Unknown
691	2	Unknown Classic
692	4	Unknown Classic
693	3	Unknown Classic
694	3	Unknown
695	1	Belize Red- Late Classic
695	3	Unknown
697	2	Unknown Classic
697	2	Unknown Preclassic
698	3	Unknown
698	3	Unknown Classic
700	2	Unknown
701	4	Unknown Classic
702	3	Unknown
703	1	Unknown Classic
706	1	Unknown Classic
708	1	Unknown
709	3	Unknown
712	1	Unknown
713	2	Unknown
714	2	Unknown
714	2	Unknown Classic
715	1	Unknown
716	1	Unknown
717	5	Unknown Classic
718	1	Belize Red- Late Classic
718	1	Mt. Maloney II bowl rim
719	6	Unknown Classic
722	6	Unknown Classic
723	2	Unknown
725	2	Unknown Classic
727	1	Mt. Maloney II bowl rim
727	1	Unknown
729	2	Unknown
733	1	Unknown
734	1	Belize Red- Late Classic
734	1	Unknown Classic
737	3	Unknown
738	1	Belize Red- Late Classic
739	1	Unknown
741	10	Unknown Classic
744	1	Unknown
745	7	Unknown Classic
745	3	Unknown Preclassic
746	3	Unknown
748	3	Unknown Classic
749	2	Unknown Classic

750	2	Unknown
752	2	Unknown
754	2	Unknown Classic
758	1	Belize Red- Late Classic
762	1	Unknown
762	1	Unknown Preclassic
765	1	Unknown
769	2	Unknown
774	1	Unknown Classic
778	2	Unknown
785	1	Unknown
785	2	Unknown Preclassic
786	4	Unknown Classic
787	5	Unknown
788	1	Mt. Maloney II bowl rim
788	15	Unknown Classic
789	6	Unknown Classic
790	6	Belize Red- Late Classic
790	13	Unknown Classic
791	5	Unknown
792	13	Unknown Classic
792	1	Unknown Late Classic
795	5	Unknown Classic
798	2	Belize Red- Late Classic
798	3	Unknown Classic
803	7	Unknown Classic
804	4	Unknown
805	13	Unknown Classic
806	1	Unknown
807	1	Belize Red- Late Classic
807	1	Unknown Classic
808	2	Belize Red- Late Classic
808	6	Unknown
809	4	Unknown Classic
810	2	Unknown Classic
811	2	Unknown Classic
812	2	Unknown
815	2	Unknown
817	2	Unknown
820	2	Unknown
822	1	Unknown
824	1	Sierra Red- Late Preclassic
824	4	Unknown
825	1	Belize Red- Late Classic
827	3	Unknown Classic
829	2	Unknown Classic
835	1	Unknown

837	6	Unknown
839	2	Unknown Classic
840	2	Unknown
843	1	Unknown
844	3	Unknown Classic
845	10	Unknown Classic
846	2	Unknown Classic
852	3	Unknown Classic
854	1	Unknown
857	1	Mountain Pine Red- Late Classic I
857	1	Unknown Classic
858	4	Unknown
861	1	Belize Red- Late Classic
861	1	Mars Orange- Middle Preclassic
861	1	Unknown Classic
861	1	Unknown Preclassic
862	1	Belize Red- Late Classic
862	10	Unknown Classic
862	1	Unknown Preclassic
866	2	Unknown
873	2	Unknown
874	1	Belize Red- Late Classic
874	1	Unknown
875	2	Unknown
876	2	Belize Red- Late Classic
876	7	Unknown Classic
879	1	Belize Red- Late Classic
879	2	Unknown
879	1	Unknown Classic
880	10	Unknown Classic
881	1	Unknown Classic
884	1	Cayo- Late Classic II/III
884	2	Unknown
885	2	Unknown Classic
887	4	Unknown Classic
891	2	Unknown
893	4	Unknown
894	3	Unknown
896	1	Mt. Maloney I bowl rim
896	5	Unknown Classic
900	5	Unknown Classic
903	1	Unknown
908	1	Mt. Maloney III bowl rim
908	1	Unknown
909	1	Unknown
910	5	Early Classic
910	3	Unknown Classic

911	6	Unknown Classic
913	1	Belize Red- Late Classic
913	8	Unknown Classic
925	6	Unknown Classic
926	1	Jocote Orange Brown- Middle Preclassic
926	3	Unknown
927	6	Belize Red- Late Classic
927	21	Unknown Classic
928	5	Unknown Classic
939	1	Unknown
940	1	Whistle Fragment- Unknown
942	1	Belize Red- Late Classic
942	1	Unknown
943	5	Unknown Classic
944	3	Unknown
945	6	Unknown Classic
946	2	Unknown Classic
947	2	Unknown Classic
958	8	Unknown Classic
959	5	Unknown
960	1	Belize Red- Late Classic
960	2	Unknown Classic
973	12	Unknown Classic
974	3	Unknown
975	1	Belize Red- Late Classic
975	1	Mt. Maloney II bowl rim
975	3	Unknown Classic
976	5	Unknown Classic
977	2	Unknown Classic
978	2	Unknown
979	7	Unknown Classic
980	2	Unknown
981	19	Unknown Classic
982	2	Late Preclassic
982	6	Unknown
983	1	Late Preclassic
983	1	Mt. Maloney I bowl rim
983	3	Unknown Classic
985	1	Belize Red- Late Classic
985	5	Mt. Maloney body sherds-Late Classic
985	17	Unknown Classic
986	2	Unknown
987	1	Cayo- Late Classic II/III
987	5	Unknown Classic
988	7	Unknown Classic
989	4	Unknown Classic
990	3	Unknown

991	4	Unknown Classic
992	1	Unknown
993	1	Unknown
994	1	Belize Red- Late Classic
994	1	Unknown Classic
995	1	Cayo- Late Classic II/III
995	5	Unknown
995	15	Unknown Classic
997	1	Unknown Classic
1001	5	Unknown
1002	4	Unknown Classic
1003	1	Belize Red- Late Classic
1003	23	Unknown Classic
1006	3	Unknown Classic
1008	1	Mt. Maloney I bowl rim
1008	3	Unknown
1008	13	Unknown Classic
1009	4	Unknown Classic
1012	4	Unknown Classic
1013	5	Unknown Classic
1014	8	Unknown Classic
1015	2	Unknown Classic
1020	2	Unknown Classic
1021	1	Unknown
1022	5	Unknown Classic
1023	1	Mountain Pine Red- Late Classic I
1023	8	Unknown Classic
1024	4	Unknown Classic
1027	11	Unknown Classic
1031	8	Unknown Classic
1032	2	Unknown
1032	2	Unknown Classic
1037	2	Mars Orange- Middle Preclassic
1037	3	Unknown Classic

OPERATION 10

Excavations were conducted in 2005 (Robin et al. 2005) in the open plaza area (see Figure 1) west of the Chan site's main group (C-001). Unlike Chan's central plaza, the open western plaza has no large flanking structures on its sides, and a broad stairway on its southern end, and test pits across the plaza did identify small surface structures and a series of plaza floors (Robin et al. 2005). The bulk of the construction in the western plaza area occurred during the Late to Terminal Classic. Continuing work in the western plaza (Cap 2008) has focused on the analysis of micro-artifacts to better identify the function of the space, as a hypothesized market and/or public ritual area.

Op. 10 Plaza Excavations

Op	List of Lots	Context	Ceramic Chronology
10	None	Fill 37	No ceramics
10	OO.3	Fill 28	**Pesoro** (8%) Jalacte (76%) Cadle (4%) Boden (12%)
10	I.4, I.5, J.3, K.4, K.5, L.4, L.5, M.3, M.4	Fill 3	**Vieras/** (3%) **Pesoro** (36%) Jalacte (37%) Cadle (<1%) Boden (3%) Unknown Classic (20%)
10	A.3, C.2, C.3, C.4, D.2, D.3, E.2, II.3, II.4, II.5, KK.3, LL.3, QQ.4	Fill 1	**Pesoro** (5%) Jalacte (39%) Cadle (12%) Boden (27%) Unknown Classic (15%) Unknown Preclassic (2%)
10	I.6, J.4	Fill 12	**Jalacte** (3%) Cadle (42%) Unknown Classic (50%) Unknown Preclassic (5%)
10	I.7, J.6, K.6, L.6, M.5	Floor 4	**Jalacte** (42%) Cadle (27%) Boden (8%) Unknown Classic (19%) Unknown Preclassic (4%)
10	I.8, J.7, K.7	Floor 6	Cadle (19%) Boden (51%) **Unknown Classic** (1%) Unknown Preclassic (1%) Unknown (28%)
10	None	Fill 21	No ceramics
10	A.6, I.9, J.8, K.8, L.8	Fill 2	**Cadle** (46%) Boden (43%) Cunil (<1%) Unknown Preclassic (11%)
10	None	Floor 8	No ceramics

Excavations in the west plaza also included the horizontal exposure of an L-shaped structure (Str. 8, Figure 1), with a complex architectural history (Robin et al. 2005), including three Late Classic (Jalacte/Pesoro) burials (Novotny and Kosakowsky 2008). The ceramic analysis is presented in the table below.

Op	List of Lots	D, Burial, Cache	A#	Context	Ceramic Chronology
10	A.1, A.2, AA.1, B.1, BB.1, C.1, CC.1, D.1, DD.1, E.1, EE.1, FF.1, GG.1, HH.1, I.1, II.1, II.2, J.1, JJ.1, K.1, K.2, K.3, KK.1, L.1, L.2, L.3, LL.1, M.1, M.2, MM.1, NN.1, O.1, O.3, OO.1, P.1, P.2, PP.1, Q, 1, Q.5, QQ.1, R.1, RR.1, S.1, SS.1, T.1, TT.1, U.1, UU.1, UU.2, UU.4, V.1, W.1, Y.1		10.RR.1.A20, 10.P.2.A21, 10.UU.2.A22	Humus 1	**Early Postclassic** **Vieras/** **Pesoro** Jalacte Burrell Cadle Boden
10	FF.2, GG.2, GG.5, I.2, I.3, J.2, JJ.2, JJ.4, KK.2, LL.2, NN.2, O.2, OO.2, PP.2, Q.2, QQ.2, QQ.3, R.2, RR.2, SS.2, SS.3, T.2, T.3, TT.2, TT.3, U.2, V.2, W.2, Y.2		10.V.2.A10	Collapse 1	Early Postclassic [?] (<1%) **Vieras** (5%) **Pesoro** (40%) Jalacte (47%) Cadle (<1%) Boden (<1%) Unknown Classic (7%) Unknown Preclassic (<1%)
10	EE.3			Fill 23	**Vieras/Pesoro** (60%) Jalacte (10%) Unknown Classic (20%) Unknown Preclassic (10%)
10	FF.4			Fill 24	**Vieras/Pesoro** (20%) Jalacte (20%) Unknown Classic (60%)
10	None			Floor 0	No ceramics
10	S.2,U.3,DD.2,EE.4			Fill 18	**Vieras/Pesoro** (35%) Jalacte (40%) Burrell (<1%) Cadle (2%) Boden (4%) Unknown Classic (17%) Unknown Preclassic (2%)
10	None			Floor 9	No ceramics
10	EE.5			Fill 29	**Pesoro** (27%) Jalacte (67%) Boden (2%) Unknown Classic (4%)
10	VV.1,VV.2	D2, Burial 18	10.VV.2.A26	Fill 30	**Pesoro** (41%) Jalacte (48%) Unknown Classic (11%)
10	None			Fill 22	No ceramics
10	None			Floor 7	No ceramics

10	Q.3,R.3,U.4,T.4,PP.3,S.3,U.5,WW.1,DD.5		10.T.4.A13	Fill 19	**Pesoro** (46%) Jalacte (39%) Burrell (1%) Cadle (1%) Boden (1%) Unknown Classic (10%) Unknown Preclassic (2%)
10	GG.9,HH.5,HH.7			Fill 25	**Jalacte** (100%)
10	None			Fill 27	No ceramics
10	None			Fill 33	No ceramics
10	None			Floor 10	No ceramics
10	HH.6,HH.8,GG.10			Fill 32	**Pesoro** (18%) Jalacte (64%) Boden (6%) Unknown Classic (6%) Unknown Preclassic (6%)
10	P.4			Fill 36	**Jalacte** (76%) Burrell (10%) Boden (4%) Unknown Preclassic (10%)
10	WW.2,WW.3,WW.4,WW.5,WW.6	D3, Burial 19		Fill 31	**Jalacte** (41%) Boden (6%) Unknown Classic (35%) Unknown Preclassic (18%)
10	N.3,N.4	D1, Burial 11		Fill 14	**Jalacte** (70%) Burrell (20%) Cadle (10%)
10	P.5			Floor 3	**Pesoro** (42%) Jalacte (35%) Unknown Classic (23%)
10	R.4,Q.4,V.3,P.6,P.7			Fill 16	**Pesoro** (17%) Jalacte (59%) Burrell (1%) Cadle (9%) Boden (1%) Unknown Classic (11%) Unknown Preclassic (1%)
10	P.8,T.5,U.6,UU.6			Fill 8	**Jalacte** (60%) Cadle (2%) Boden (3%) Unknown Classic (35%)
10	XX.3,XX.4,XX.5	D4, Burial 20		Fill 34	Cadle (21%) **Unknown Classic** (15%) Unknown Preclassic (64%)
10	None			Fill 35	No ceramics

10	FF.6,XX.1,XX.2			Fill 5	**Burrell** (5%) Cadle (10%) Unknown Classic (45%) Unknown Preclassic (40%)
10	None			Floor 1	No ceramics
10	None			Floor 11	No ceramics
10	GG.12			Fill 38	**Cadle** (43%) Boden (19%) Cunil (<1%) Unknown Preclassic (31%) Unknown (6%)

STR. 6, CHAN'S SOUTHERN RANGE STRUCTURE: OPERATIONS 11 AND 12

Structure 6 is the southern range structure of Chan's central group (see Figure 1). It is the only full masonry vaulted building in the 4 sq km area of the site. Excavations (Ops. 11 and 12) in 2005 demonstrated a complex construction sequence with 226 fill, floor, and wall contexts comprising a ten phase construction sequence, which in its penultimate construction phase consisted of an eleven room, corbel vaulted masonry superstructure, with north and south facing rooms and a rear private plaza/patio (Robin et al. 2005; Robin et al. 2008a). No burials were found in the excavations, although there were a number of caches with partial or reconstructible vessels, which are described below. The construction of the southern range structure spanned the period of time beginning in the Pesoro (Tepeu II) Complex and continuing into the Vieras (Tepeu III) Complex. Hence, in the following tables for Ops. 11 and 12, the ceramics from the Pesoro (Tepeu II) and Vieras (Tepeu III) complexes have been listed together. In the absence of vessel forms, many types are indistinguishable between the Tepeu II and Tepeu III complexes, although, formal differences in Mt. Maloney Black bowls are useful to differentiate the two complexes. This has been well documented by LeCount (1996) at Xunantunich (LeCount et al. 2002), and based on her micro-seriation most of the construction of Structure 6 at Chan probably occurred in the Pesoro Tepeu II Complex. However, there are some examples of Mt. Maloney bowl rims that overlap with more typical Tepeu III forms in the construction fills, and two Early Postclassic sherds found in the uppermost collapse/ humus layer.

Op	List of Lots	D, Burial, Cache	A#	Context	Ceramic Chronology
11	I.1, K.1, L.1,4, M.1, R.1, T.1, U.1, X.1.			Humus 1	**Vieras/Pesoro** (63%) Jalacte 10%) Burrell (7%) Unknown Classic (20%)
11	R.3			Mixed 301	**Vieras/Pesoro** (33%) Jalacte (44%) Unknown Classic (23%)

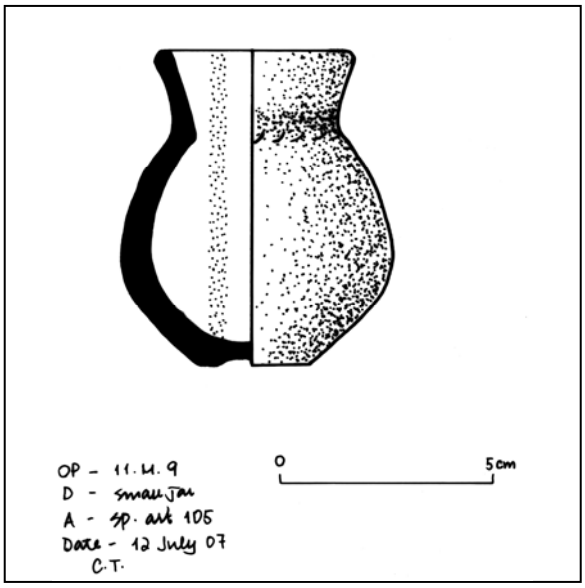
11	R.2			Collapse 300	**Vieras/Pesoro** (21%) Jalacte (32%) Burrell (4%) Unknown Classic (43%)
11	Q.2-3			Collapse 302	**Vieras/Pesoro** (9%) Jalacte (64%) Unknown Classic (27%)
11	Q.4.			Fill 301	**Vieras/Pesoro** (63%) Jalacte (8%) Burrell (2%) Cadle (4%) Unknown Classic (23%)
11	Q.5			Fill 300	**Vieras/Pesoro** (87%) Jalacte (3%) Cadle (5%) Boden (5%)
11	Q.7			Floor 317	No ceramics
11	Q.6			Fill 302	**Vieras/ Pesoro** (100%)
11	I.5			Collapse 100	**Vieras/ Pesoro** (100%)
11	N.1-3, J.2, I.4		1.N.3.A101	Collapse 101	**Vieras/Pesoro** (50%) Jalacte (40%) Unknown Classic (10%)
11	BB.1			Fill 108	**Vieras/Pesoro** (77%) Jalacte (15%) Burrell (8%)
11	K.2, M.2, O.1-2			Collapse 102	**Vieras/Pesoro** (45%) Jalacte (42%) Burrell (2%) Boden (2%) Unknown Classic (9%)
11	Z.1-2			Fill 104a	**Vieras/Pesoro** (18%) Jalacte (47%) Cadle (8%) Boden (27%)
11	AA.1			Fill 106	Unknown (100%)
11	AA.2-4			Fill 107	**Vieras/Pesoro** (65%) Jalacte (12%) Burrell (10%) Cadle (2%) Boden (<1%) Unknown Classic (10%) Unknown Preclassic (<1%) Unknown (<1%)
11	L.2-3, M.3-4			Collapse 103	**Vieras/Pesoro** (78%) Burrell (3%) Unknown Classic (19%)
11	M.5,6			Mixed 102	**Vieras/ Pesoro** (92%) Unknown Classic (8%)

11	M.7			Mixed 103	**Vieras/ Pesoro** (100%)
11	CC.1			Fill 110	**Vieras/ Pesoro** (100%)
11	M.8, EE.1			Fill 100	**Vieras/ Pesoro** (88%) Unknown Classic (12%)
11	CC.2			Fill 111	**Vieras/ Pesoro** (27%) Jalacte (7%) Unknown Classic (53%) Unknown Preclassic (13%)
11	Q.8			Fill 303	**Vieras/ Pesoro** (95%) Burrell (5%)
11	S.1			Mixed 302	**Vieras/ Pesoro** (96%) Jalacte (4%)
11	S.2	D300	11.S.2.D300.A300	Occupation 1	**Vieras/ Pesoro** (100%)
11	S.3			Wall 17	No ceramics
11	S.4			Fill 304	**Vieras/ Pesoro** (100%)
11	S.5			Floor 304	No ceramics
11	P.1		11.P.1.A104	Mixed 104	**Early Postclassic** (3%) **Vieras/Pesoro** (77%) Jalacte (20%)
11	P.3			Fill 105	**Vieras/Pesoro** (85%) Jalacte (5%) Burrell (5%) Unknown Classic (5%)
11	P.4			Fill 112	**Vieras/ Pesoro** (100%)
11	U.2-5			Collapse 105	**Vieras/ Pesoro** (52%) Unknown Classic (48%)
11	P.2			Fill 104b	**Vieras/Pesoro** (100%)
11	S.6, Q. 9			Fill 305	**Vieras/ Pesoro** (62%) Jalacte (21%) Unknown Classic (17%)
11	W.1			Mixed 200	**Vieras/Pesoro** (74%) Jalacte (10%) Burrell (5%) Unknown Classic (7%) Unknown Preclassic (4%)
11	L.5-6.			Collapse 106	**Vieras/ Pesoro** (87%) Jalacte 13%)
11	DD.1			Fill 201	**Vieras/ Pesoro** (23%) Jalacte (31%) Unknown Classic (46%)

11	Y.1			Fill 200	**Vieras/Pesoro** (65%) Jalacte (5%) Burrell (2%) Cadle (5%) Boden (5%) Unknown Classic (15%)
11	M.9-11, T.2-6	D100, D101, D102, D103	11.M.9.A105 11.T.6.D103.A106	Fill 101	**Vieras/Pesoro** (63%) Jalacte 23%) Burrell (1%) Unknown Classic (13%)
11	V.1-4.			Fill 102	**Vieras/Pesoro** (39%) Jalacte (53%) Burrell (2%) Unknown Classic (6%)
11	X.2			Fill 103	**Vieras/ Pesoro** (88%) Jalacte (6%) Unknown Classic (6%)
11	I.2-3			Mixed 100	Vieras/Pesoro
11	J.1			Mixed 101	Vieras/Pesoro
11	Q.1			Mixed 300	Unknown
11	A.1, B.1, C.1, D.1, E.1, F.1, G.1, H.1.			Disturbed 1	Early Postclassic Vieras/Pesoro Jalacte Burrell Cadle

Op. 11.M.9 A105
Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:
Paste, temper, and firing: Paste is medium to fine grained with visible quartz and calcite inclusions. Paste color is variable (see below).
Surface finish and decoration: Surfaces are unslipped and partially smoothed; irregular manufacture, with vessel sitting crookedly on base. Surface color reflects paste color (10 R5/8-red, 2.5YR 5/6, 5/8-red) with fireclouding to tan/brown, buff, gray, and orange (7.5YR 6/4- light brown, 7.5YR 5/2 brown, 5YR 6/2 pinkish gray, 5Y 6/6-reddish yellow).
Form: Miniature short-necked restricted orifice jar with irregular fingernail incisions/punctuates at neck body juncture, direct rim and squared lip. Base is slightly concave. Irregularly made.
Dimensions: Diameter: Orifice- 4.5 cm., Height: 7.5 cm., Vessel thickness: 0.8 cm.
Intrasite Distribution: Found in Fill 101. Miniature vessels have been found on other Late Classic fills throughout the Chan site.

Intersite Distribution: Similar in form to Kaway Impressed in the Spanish Lookout Complex (Tepeu II) at Barton Ramie (Gifford 1976), however there is no slip on this example. Miniature vessels such as this occur in both the Tiger Run (Tepeu I) and the Spanish Lookout (Tepeu II) Complexes at Barton Ramie (Gifford 1976).



The lowest levels in the Op. 12 excavations (Fills 22, 23 and 27) uncovered evidence of an ephemeral Middle Preclassic Boden occupation, confirming the importance of Chan's site center beginning in the Middle Preclassic.

Op	List of Lots	D, Burial, Cache	A#	Context	Ceramic Chronology
12	A.1, B.1, C.1, D.1, E.1, F.1, G.1, H.1, I.1, J.1, K.1, L.1, M.1, N.1, O.1, P.1, Q.1			Humus 1	**Vieras/** (32%) **Pesoro** (32%) Jalacte (20%) Unknown Classic (16%)
12	A.2, B.2-3, C.2-4, D.2-7, E.2-5, F.2-5, G.2-3, H.2-4, I.2-4, J.1-3, K.2-4,6,7,15, L.2-4, M.2,3,6,7, N.2-4, O.2, P.2, Q.2			Collapse 1	Early Postclassic (<1%) **Vieras** (16%) **Pesoro** (33%) Jalacte (24%) Burrell (<1%) Boden (<1%) Unknown Classic (26%) Unknown Preclassic (<1%)
12	P.3, Q.3, Q.4			Fill 6	**Vieras/** (10%) **Pesoro** (38%) Jalacte (33%) Boden (14%) Unknown Classic (5%)
12	G.4		G.4.A4	Mixed 1	**Vieras/** (36%) **Pesoro** (36%) Jalacte (24%) Unknown Classic (4%)

12	G.5, N.5, M.5			Fill 1	**Vieras/Pesoro** (71%) Jalacte (10%) Unknown Classic (19%)
12	K.5, K.8, K.9, K.10, K.11, K.12, K.13, K.14	K.10.D6/Burial 13	K.5.A5; K.10.D6.A6	Fill 2	**Vieras/Pesoro** (23%) Jalacte (69%) Unknown Classic (8%)
12	W.1			Fill 30	**Vieras/Pesoro** (17%) Jalacte (50%) Unknown Classic (33%)
12	U.1	D12		Fill 28	**Pesoro** (39%) Jalacte (42%) Burrell (2%) Unknown Classic (17%)
12	T.1			Fill 26	**Pesoro/Vieras** (40%) Jalacte (20%) Unknown Classic (40%)
12	V.1			Fill 29	No ceramics
12	S.1			Fill 25	**Vieras/Pesoro** (20%) Jalacte (63%) Boden (3%) Unknown Classic (14%)
12	X.1			Fill 31	**Vieras/Pesoro** (67%) Jalacte (33%)
12	P.4			Fill 8	**Vieras/Pesoro** (44%) Jalacte (19%) Boden (5%) Unknown Classic (32%)
12	Q.5, P.5			Fill 7	**Vieras/Pesoro** (24%) Jalacte (65%) Unknown Classic (11%)
12	O.6, P.6		O.6.A10	Fill 5	**Pesoro** (7%) Jalacte (46%) Unknown Classic (47%)
12	O.3, O.4, O.5, R.2			Fill 3	**Pesoro** (66%) Jalacte (17%) Unknown Classic (17%)
12	R.3, R.4			Mixed 13	**Pesoro** (15%) Jalacte (62%) Burrell 12%) Boden (2%) Unknown Classic (2%) Unknown Preclassic (7%)
12	O.7			Fill 11	**Pesoro** (40%) Jalacte (45%) Burrell (3%) Unknown Classic (9%) Unknown Preclassic (3%)
12	Q.7			Fill 9	**Pesoro** (44%) Jalacte (23%) Unknown Classic (33%)

12	O.12			Fill 13	**Pesoro** (36%) Jalacte (46%) Burrell (3%) Unknown Classic (15%)
12	P.9, Q.8, Q.9			Fill 10	**Pesoro** (9%) Jalacte (45%) Burrell (9%) Cadle (9%) Unknown Classic (28%)
12	P.12			Fill 16	**Burrell** (6%) Cadle **(**9%) Boden (1%) **Unknown Classic** (69%) Unknown Preclassic (15%)
12	R.7, R.8, P.11			Fill 15	**Burrell** (12%) Potts (2%) Cadle (45%) Boden (2%) Cunil (4%) **Unknown Classic** (33%) Unknown Preclassic (2%)
12	P.14			Fill 17	**Cadle** (38%) Boden (16%) Cunil (8%) Unknown Preclassic (38%)
12	O.15, O.16			Fill 18	**Cadle** (26%) Boden (74%)
12	R.12			Fill 19	**Cadle** (44%) Boden (44%) Unknown Preclassic (12%)
12	O.18, P.15			Fill 20	**Cadle** (33%) Boden (37%) Cunil (5%) Unknown Preclassic (25%)
12	R.13, R.14			Fill 21	**Cadle** (12%) Boden (80%) Cunil (3%) Unknown Preclassic (5%)
12	R15		R.15.A24	Fill 22	**Boden** (97%) Cunil (3%)
12	R.16			Fill 23	**Boden** (93%) Cunil (7%)
12	P.16			Fill 27	**Boden** (100%)
12	M.4		M.4.A7	Mixed 2	Burrell (33%) Unknown Classic (67%)
12	R.5, R.6, O.13	O.13.D8	O.13.D8.A13, 14, 15, 16	Mixed 19	**Vieras/Pesoro** (19%) Jalacte (27%) Burrell (9%) Cadle (<1%) Boden (2%) Unknown Classic (43%)

12	O.14, R.9	O.14.D9; O.14.D10	O.14.D9.A17, 18, 19, 20, 21; O.14.D10.A22 & 23	Mixed 21	**Jalacte** (15%) Burrell (15%) Cadle (13%) Boden (13%) **Unknown Classic** (41%) Unknown Preclassic (3%)

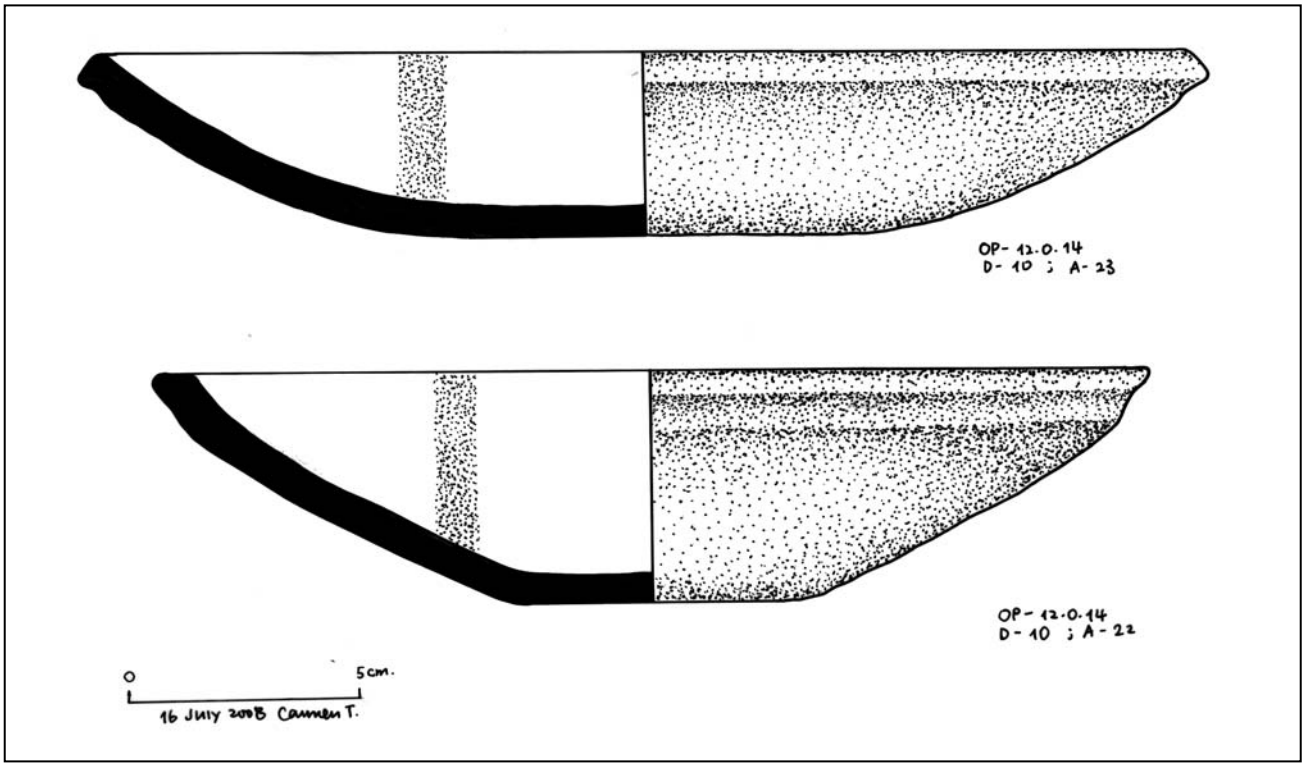
12.O.14 A22

Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:
Paste, temper, and firing: Paste is medium grained with visible calcite and quartz inclusions. Paste is incompletely oxidized with a faint dark gray core in places. Paste color is variable due to differential firing and fireclouding, ranging in color from reddish brown (2.5YR 5/4) to red (2.5YR 5/6, 5/8), light reddish brown 5YR 6/3), light brown (7.5YR 6/4), brown (7.5 YR 5/2), and gray (10YR 5/1).
Surface finish and decoration: Surfaces are only moderately well smoothed interiorly with partially smoothed surfaces exteriorly. Temper inclusions are visible on both surfaces. Surface color is variable and fireclouded, reflecting paste color (see above).
Form: Slightly flaring sided round bowl with flat bottom, slightly everted rim, and rounded lip. There is a shallow groove under the rim running horizontally around the exterior of the vessel. This vessel was the upper vessel in a lip-to-lip cache with 12.O.14 A23.
Dimensions: Diameter: 22 cm., Height: 4.6 cm., Vessel thickness: 6.5 cm.
Intrasite Distribution: Unslipped and poorly made cache vessels are common in both site center and hinterland contexts at Chan.
Intersite Distribution: Unslipped lip-to lip cache vessels have been identified in the Late Classic at Xunantunich (LeCount 1996).

12.O.14 A23 (partial)

Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:

Paste, temper, and firing: Paste is medium grained with visible calcite and quartz inclusions. Paste is completely oxidized. Paste color is a fairly consistent red (2.5YR 5/6, 5/8).
Surface finish and decoration: Surfaces are only moderately well smoothed interiorly with partially smoothed surfaces exteriorly. Temper inclusions are visible on both surfaces. Surface color reflects paste color (see above), particularly on the interior of the vessel. Surface color is a fairly consistent red, reflecting paste color (see above). The exterior is a little more variable ranging from red (2.5YR 5/6, 5/8) to reddish brown (2.5YR 5/2).
Form: Slightly flaring sided open round bowl with flat bottom, slightly everted rim, and square lip. There is a shallow groove under the rim, running horizontally around both the interior and the exterior of the vessel. This vessel was the lower vessel in a lip-to-lip cache with 12.O.14 A22.
Dimensions: Diameter: 24 cm., Height: 4.0 cm., Vessel thickness: 6.5 cm.
Intrasite Distribution: Unslipped and poorly made cache vessels are common in both site center and hinterland contexts at Chan.
Intersite Distribution: Unslipped lip-to lip cache vessels have been identified in the Late Classic at Xunantunich (LeCount 1996).



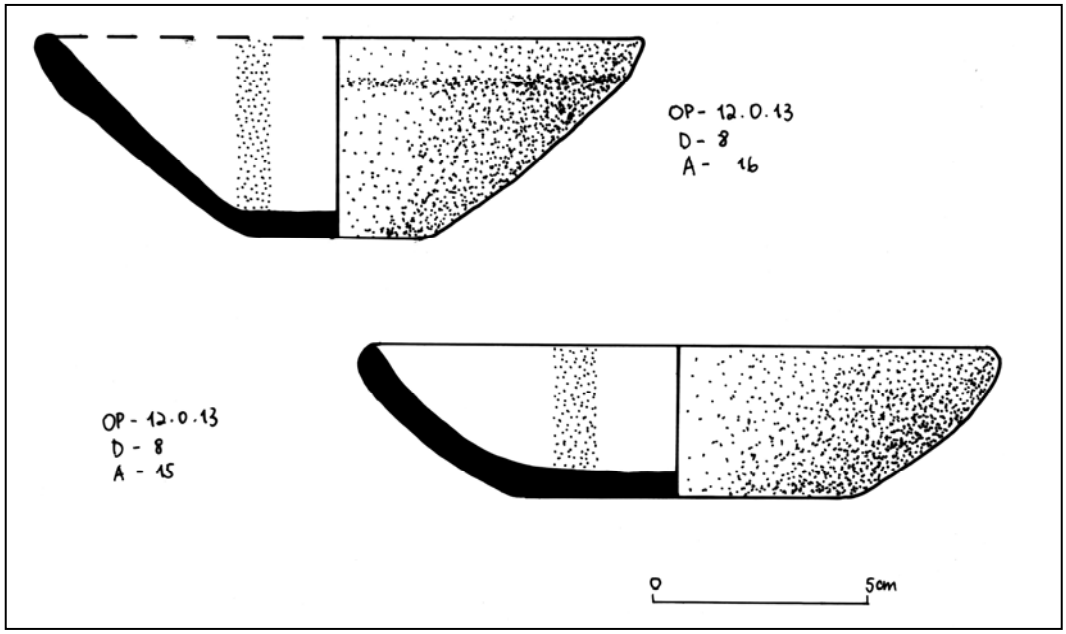
12.O.13 D8 A15 (partial)
Type: Cayo Unslipped
Variety: Unspecified

Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:
Paste, temper, and firing: Paste is medium to coarse grained with visible quartz and calcite inclusions, some quite large and apparent on surfaces of vessel. Paste is incompletely oxidized with a light gray core and surfaces are variable in color reflecting differential firing and fireclouding. Color ranges from red (2.5YR 5/8), to reddish yellow (7.5YR 6/6), and strong brown (7.5YR 5/6).
Surface finish and decoration: Surfaces reflect paste color (see above). Interior is barely lightly smoothed and exterior is unsmoothed. Inclusions are visible on both interior and exterior surfaces.
Form: Small "finger" bowl; round sided open shallow form, with flat base, and direct rim and rounded lip. Not very well made. This vessel was the upper vessel in a lip-to-lip cache with 12.O.13 A16.
Dimensions: Diameter: 24 cm., Height: 4.0 cm., Vessel thickness: 7.0- 7.5 cm.
Intrasite Distribution: Unslipped and poorly made cache vessels are common in both site center and hinterland contexts at Chan.
Intersite Distribution: Unslipped lip-to lip cache vessels have been identified in the Late Classic at Xunantunich (LeCount 1996).

12.O.13 D8 A16 (partial)
Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II

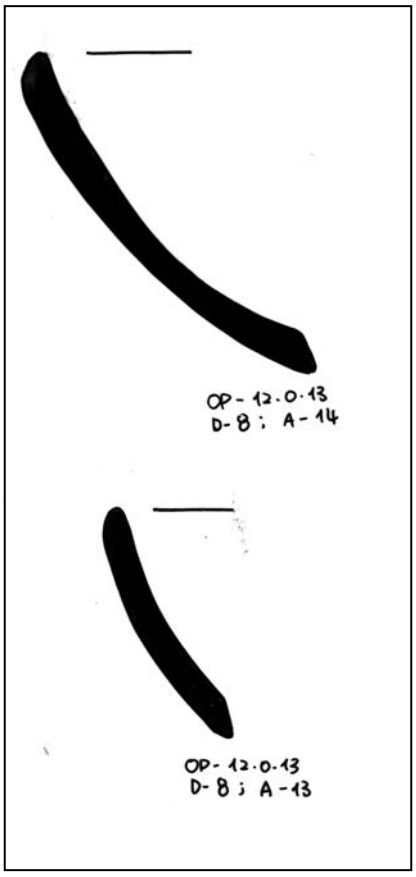
Principal Identifying Attributes:
Paste, temper, and firing: Paste is medium to coarse grained with visible quartz and calcite inclusions, some quite large and apparent on surfaces of vessel. Paste is incompletely oxidized with a light gray core and surfaces are variable in color reflecting differential firing and fireclouding particularly on the exterior. Color ranges from light brown (7.5YR 6/4) to reddish yellow (7.5YR 6/8) and fireclouded on exterior of base to very dark gray (7.5YR N3/ and black (7.5YR N2/).
Surface finish and decoration: Surfaces reflect paste color (see above). Interior is barely lightly smoothed and exterior is unsmoothed. Inclusions are visible on both interior and exterior surfaces.
Form: Small "finger" bowl; round sided open shallow form, with flat base, and direct rim and rounded lip. Not very well made. This vessel was the lower vessel in a lip-to-lip cache with 12.O.13 A15.

Dimensions: Diameter: 13. 8 cm., Height: 4.25 cm., Vessel thickness: 6.4-6.8 cm.
Intrasite Distribution: Unslipped and poorly made cache vessels are common in both site center and hinterland contexts at Chan.
Intersite Distribution: Unslipped lip-to lip cache vessels have been identified in the Late Classic at Xunantunich (LeCount 1996).



12.O.13 A13 & A14 (partials: less than ¼ of each vessel)
Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:
Paste, temper, and firing: Paste is medium to coarse grained with visible quartz and calcite inclusions, some quite large and apparent on surfaces of both partial vessels. Pastes are incompletely oxidized with a light gray core and surfaces are variable in color reflecting differential firing and fireclouding. Color ranges from red (2.5YR 5/8), to reddish yellow (7.5YR 6/6), strong brown (7.5YR 5/6), and light brownish gray (10YR 6/2).
Surface finish and decoration: Surfaces reflect paste color (see above). Interior is barely lightly smoothed and exterior is unsmoothed. Inclusions are visible on both interior and exterior surfaces.
Form: Small "finger" bowls; round sided open shallow form, with flat base, and direct rims and rounded lips. Not very well made. These are incomplete but according to excavation notes were a lip-to-lip cache.
Dimensions: Unknown but diameters not more than about 15 cm. for each partial vessel, and vessel thicknesses of 6.4-6.5 cm.

Intrasite Distribution: Unslipped and poorly made cache vessels are common in both site center and hinterland contexts at Chan.
Intersite Distribution: Unslipped lip-to lip cache vessels have been identified in the Late Classic at Xunantunich (LeCount 1996).



12.O.14 D9 A17 (partial)
Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:
Paste, temper, and firing: Medium to coarse grained paste with visible inclusions of angular quartz and calcite. Incompletely oxidized with a thin dark gray core. Paste color is a fairly consistent red (2.5 YR 5/6, 5/8, 4/8).
Surface finish and decoration: Surface color reflects paste color (see above) and surfaces are only partially smoothed on the interior and unsmoothed exteriorly, with

visible temper particles of quartz and calcite on both surfaces. Poorly made with an irregular rim.
Form: Shallow flaring sided bowl with flat base, direct rim and slightly squared lip. There is a very shallow almost indiscernible groove running horizontally, on the exterior of the vessel below the rim.
Dimensions: Diameter: 18 cm., Height: 3.0 cm., Vessel thickness: 5.8 cm.
Intrasite distribution: Topmost vessel in a stack of five, placed upside down upon each other, in association with 12.O.14 A18-21.
Intersite Distribution: Unslipped and poorly crafted cache vessels have been identified in the Late Classic elsewhere in the Belize Valley (Gifford 1976; LeCount 1996).

12.O.14 D9 A18 (partial)
Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:
Paste, temper, and firing: Medium to coarse grained paste with visible inclusions of angular quartz and calcite. Incompletely oxidized with a thin dark gray core. Paste color is a fairly consistent red (2.5 YR 5/6, 5/8, 4/8). There is minimal fireclouding to dark gray (5YR 4/1) on interior of vessel.
Surface finish and decoration: Surface color reflects paste color (see above) and surfaces are only partially smoothed on the interior and unsmoothed exteriorly, with visible temper particles of quartz and calcite on both surfaces. Poorly made with an irregular rim.
Form: Shallow flaring sided bowl with flat base, direct rim and slightly squared lip. There is a very shallow almost indiscernible groove running horizontally, on the exterior of the vessel below the rim.
Dimensions: Diameter: 17 cm., Height: 3.0 cm., Vessel thickness: 5.8 cm.
Intrasite distribution: Fourth vessel in a stack of five placed upside down upon each other, in association with 12.O14 A 17, 19-21.
Intersite Distribution: Unslipped and poorly crafted cache vessels have been identified in the Late Classic elsewhere in the Belize Valley (Gifford 1976; LeCount 1996).

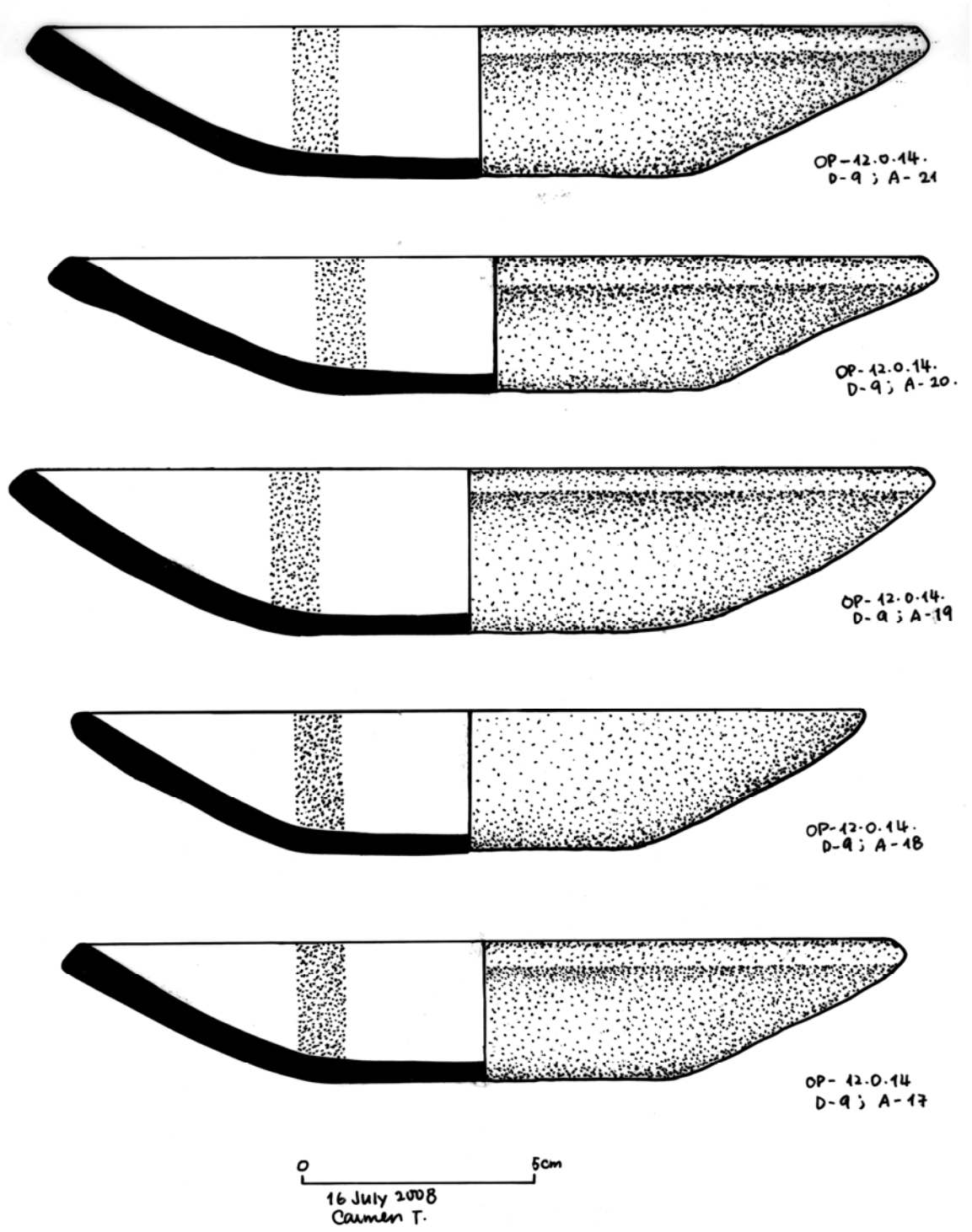
12.O.14 D9 A19 (partial)
Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped

Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:
Paste, temper, and firing: Medium to coarse grained paste with visible inclusions of angular quartz and calcite. Incompletely oxidized with a thin dark gray core. Paste color is a fairly consistent red (2.5 YR 5/6, 5/8, 4/8). There is minimal fireclouding to pale brown (10YR 6/3) on interior rim of vessel running exteriorly to the base.
Surface finish and decoration: Surface color reflects paste color (see above) and surfaces are only partially smoothed on the interior and unsmoothed exteriorly, with visible temper particles of quartz and calcite on both surfaces. Poorly made with an irregular rim.
Form: Shallow flaring sided bowl with flat base, direct rim and slightly squared lip. There is a very shallow almost indiscernible groove running horizontally, on the exterior of the vessel below the rim.
Dimensions: Diameter: 19.5 cm., Height: 3.5 cm., Vessel thickness: 6.0 cm.
Intrasite distribution: Third vessel in a stack of five placed upside down upon each other, in association with 12.O14 A 17, 18, 20, 21.
Intersite Distribution: Unslipped and poorly crafted cache vessels have been identified in the Late Classic elsewhere in the Belize Valley (Gifford 1976; LeCount 1996).

12.O.14 D9 A20 (partial)
Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:
Paste, temper, and firing: Medium to coarse grained paste with visible inclusions of angular quartz and calcite. Incompletely oxidized with a thin dark gray core. Paste color is a fairly consistent red (2.5 YR 5/6, 5/8, 4/8). There is minimal fireclouding to pale brown (10YR 6/3) on interior rim of vessel running exteriorly to the base.
Surface finish and decoration: Surface color reflects paste color (see above) and surfaces are only partially smoothed on the interior and unsmoothed exteriorly, with visible temper particles of quartz and calcite on both surfaces. Poorly made with an irregular rim.
Form: Shallow flaring sided bowl with flat base, direct rim and slightly squared lip. There is a very shallow almost indiscernible groove running horizontally, on the exterior of the vessel below the rim.
Dimensions: Diameter: 19 cm., Height: 3.0 cm., Vessel thickness: 6.0 cm.
Intrasite distribution: Second vessel in a stack of five, placed upside down upon each other, in association with 12.O14 A 17-19, 21.

Intersite Distribution: Unslipped and poorly crafted cache vessels have been identified in the Late Classic elsewhere in the Belize Valley (Gifford 1976; LeCount 1996).

12.O.14 D9 A21 (partial)
Type: Cayo Unslipped
Variety: Unspecified
Established as a type or variety: Smith and Gifford (1966).
Group: Cayo
Ware: Uaxactun Unslipped
Complex: Pesoro
Sphere: Tepeu II
Principal Identifying Attributes:
Paste, temper, and firing: Medium to coarse grained paste with visible inclusions of angular quartz and calcite. Incompletely oxidized with interior of core light gray and exterior of core a tan or brown. Paste color is fairly inconsistent, ranging from reddish yellow (7.5YR 7/6), to pinkish gray (7.5YR 6/2), brown (7.5YR 5/2), and pale brown (10YR 6/3).
Surface finish and decoration: Surface color reflects paste color (see above) and surfaces are only partially smoothed on the interior and unsmoothed exteriorly, with visible temper particles of quartz and calcite on both surfaces. Poorly made with an irregular rim.
Form: Shallow flaring sided bowl with flat base, direct rim and slightly squared lip. There is a very shallow almost indiscernible groove running horizontally, on the exterior of the vessel below the rim.
Dimensions: Diameter: 19.5 cm., Height: 3.4 cm., Vessel thickness: 6.0 cm.
Intrasite distribution: Bottom most vessel in a stack of five, placed upside down upon each other, in association with 12.O14 A17-20.
Intersite Distribution: Unslipped and poorly crafted cache vessels have been identified in the Late Classic elsewhere in the Belize Valley (Gifford 1976; LeCount 1996).


OP-12.0.14.
D-9 ; A-21
OP-12.0.14.
D-9 ; A-20.
OP-12.0.14.
D-9 ; A-19
OP-12.0.14.
D-9 ; A-18
OP-12.0.14
D-9 ; A-17
0
5cm
16 July 2008
Carmen T.

OPERATION 13

Excavations (Op. 13) in the western structure of Chan's E-group, Str. 7 (see Figure 1) were conducted in 2005 (Robin et al. 2005). The single pyramidal structure had suffered extensive looting along the summit and midline, and tunneling into the building, however stairways were identified on the north and east sides of the structure (Robin et al. 2005; Robin et al. 2008b), suggesting the building could be surmounted on all four sides, as is typical for western structures of E-groups (Aimers and Rice 2006; Aveni and Hartung 1989; Ricketson 1928). Despite the extensive looting, the excavations documented a long construction history, and identified five burials (Novotny 2008; Novotny and Kosakowsky 2008) and four caches that were not looted. The reconstructible and partial vessels from the burials and caches are described below and the construction history is presented in the following table. As was the case with the eastern temple of Chan's E-group (Str. 5), the earliest construction phase was in the Late Preclassic Cadle Complex. Architectural modifications proceeded throughout the Classic period with construction continuing probably at least through the Late Late Classic Pesoro Complex, although the heavy looting has obfuscated the final construction sequence, and there are Terminal Classic Vieras Complex ceramics in the topmost humus layers. The construction sequence of the western shrine appears somewhat unique in that through time the facades were dismantled and replaced with newer ones rather than leaving the prior facades intact. This process maintained the size of the central plaza as the construction of the eastern shrine encroached upon it from the west (Robin et al. 2008; Novotny and Kosakowsky 2008).

Op	List of Lots	D, Burial, Cache, Altar	A#	Context	Ceramic Chronology
13	F.1, D.1, E.1, G.1, H.1, I.1, J.1, K.1, M.1, N.1, O.1, P.1, Q.1, R.1, S.1, CC.1, DD.1, EE.1			Humus 1	**Vieras/ Pesoro** (38%) Jalacte (27%) Burrell (1%) Potts (<1%) Cadle (7%) Boden (4%) Unknown Classic (7%) Unknown Preclassic (6%) Unknown (9%)
13	I.3,R.2,H.3,P.2,J.3,O.2	D2	13.O.2.A13 13.P.2.A14	Mixed 4	**Vieras/ Pesoro** (95%) Jalacte (5%)
13	F.2, D.2, E.3, E.4, E.2, K.2, S.2, M.2, Q.2, H.2, I.2, N.2, G.3, J.2, S.3, EE.2			Collapse 1	**Pesoro** (26%) Jalacte (44%) Burrell (3%) Cadle (8%) Boden (1%) Unknown Classic (4%) Unknown Preclassic (2%) Unknown (12%)

13	M.3			Fill 4	**Pesoro** (13%) Jalacte (8%) Cadle (33%) Boden (7%) Unknown Classic (13%) Unknown Preclassic (9%) Unknown (8%)
13	N.3, P.3			Fill 5	**Pesoro** (33%) Jalacte (48%) Cadle (1%) Unknown Classic (7%) Unknown Preclassic (5%) Unknown (6%)
13	H.5, P.7, AA.1, AA.2			Fill 9	**Pesoro** (12%) Jalacte (12%) Cadle (50%) Boden (6%) Unknown Classic (1%) Unknown Preclassic (1%) Unknown (18%)
13	Q.3, R.4, P.5		13.Q.3.A15	Fill 7	**Jalacte** (13%) Burrell (9%) Potts (3%) Cadle (44%) Boden (21%) Unknown Classic (<1%) Unknown Preclassic (10%)
13	P.4, P.6			Fill 8	**Jalacte** (6%) Burrell (33%) Potts (16%) Unknown Classic (33%) Unknown Preclassic (6%)
13	I.5, J.7, J.8			Fill 14	**Jalacte** (19%) Burrell (5%) Potts (<1%) Cadle (51%) Boden (14%) Cunil (<1%) Unknown Classic (3%) Unknown Preclassic (2%) Unknown (6%)
13	M.6			Fill 10	**Burrell** (3%) Cadle (30%) Boden (13%) Unknown Classic (24%) Unknown Preclassic (27%) Unknown (3%)
13	S.4			Fill 13	**Burrell** (28%) Potts (6%) Cadle (18%) Boden (6%) Unknown Preclassic (9%) Unknown (33%)

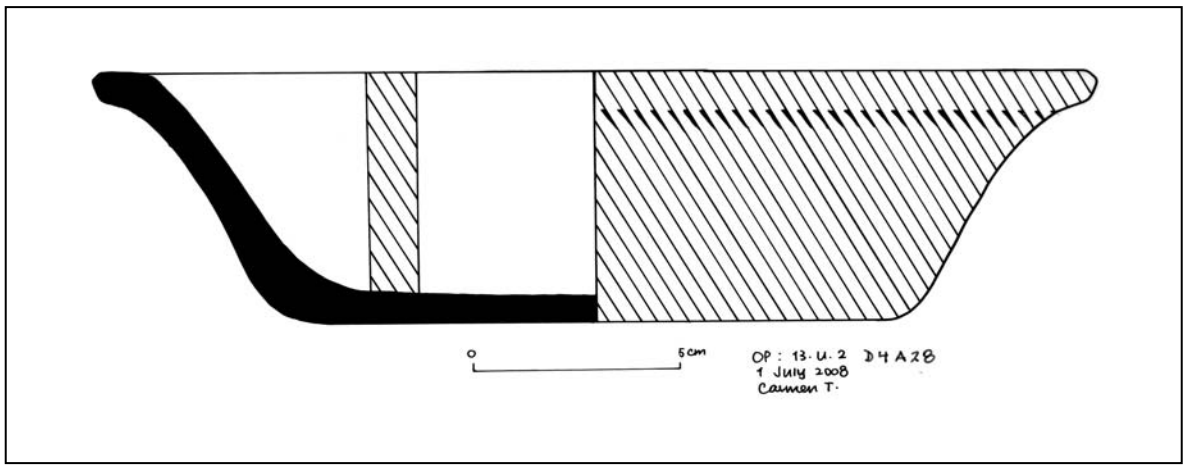
13	K.5			Wall 4	No ceramics
13	M.5, K.4			Fill 6	**Burrell** (3%) Potts (4%) Cadle (58%) Boden (11%) Unknown Preclassic (16%) Unknown (8%)
13	I.4, J.6, K.7			Fill 11	**Burrell** (9%) Potts (<1%) Cadle (41%) Boden (18%) Cunil (4%) Unknown Preclassic (7%) Unknown (21%)
13	L.3			Fill 17	**Burrell/Potts** (4%) Cadle (66%) Boden (21%) Unknown Preclassic (9%)
13	L.4			Fill 18	**Burrell/Potts** (1%) Cadle (51%) Boden (34%) Unknown Preclassic (14%)
13	L.5			Fill 26	**Potts** (1%) **Cadle** (51%) Boden (34%) Unknown Preclassic (14%)
13	X.2, L.7, Y.1			Fill 27	**Cadle** (81%) Boden (22%) Unknown Preclassic (11%)
13	Y.3			Fill 37	No ceramics
13	Y.2,4			Fill 35	**Cadle** (70%) Boden (13%) Cunil (3%) Unknown Preclassic (14%)
13	U.1, U.2	Burial 14, D4	13.U.2.A28	Fill 15	**Cadle** (83%) Boden (3%) Cunil (3%) Unknown Preclassic (11%)
13	J.7	Burial 14, D4	13.J.7.A24		**Boden**
13	W.1	Burial 16, D6		Surface 2	No ceramics
13	W.2, W.3, W.4	Burial 16, D6		Fill 23	**Cadle** (63%) Boden (21%) Unknown Preclassic (16%)
13	V.1	Burial 15, D5		Surface 1	**Cadle** (77%) Unknown Preclassic (23%)

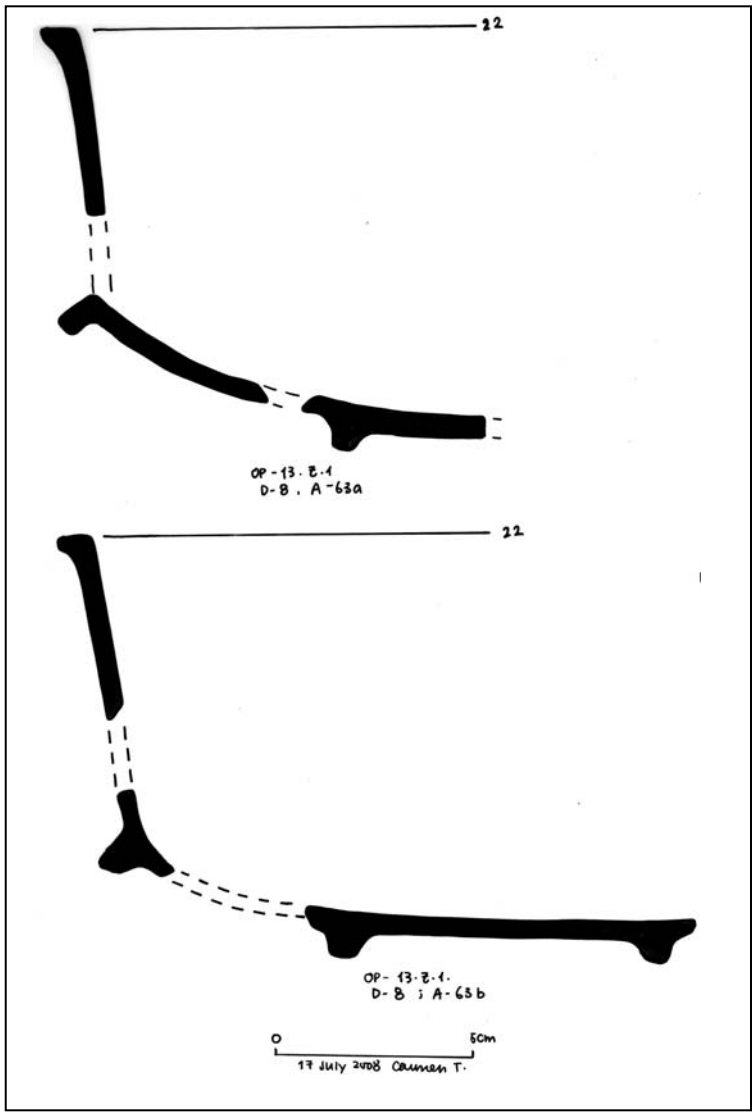
13	V.2	Burial 15, D5		Fill 21	**Cadle** (30%) Boden (65%) Unknown Preclassic (5%)
13	X.8			Fill 51	**Cadle** (58%) Boden (29%) Cunil (8%) Unknown Preclassic (5%)
13	X.10			Wall 11	No ceramics
13	L.6, X.1, I.6, X.3			Fill 28	**Cadle** (50%) Boden (39%) Cunil (4%) Unknown Preclassic (7%)
13	X.9			Fill 52	**Cadle** (47%) Boden (38%) Cunil (5%) Unknown Preclassic (10%)
13	H.6, AA.3		13.AA.3.A65	Fill 31	**Cadle** (62%) Boden (25%) Cunil (2%) Unknown Preclassic (11%)
13	I.7, X.4, I.11			Fill 29	**Cadle** (55%) Boden (24%) Cunil (2%) Unknown Preclassic (19%)
13	I.8, X.5, I.10, I.12			Fill 30	**Cadle** (17%) Boden (63%) Cunil (5%) Unknown Preclassic (15%)
13	I.9, I.13, X.6		13.I.9.A55; 13.I.9.A56; 13.I.13.A60	Fill 32	**Cadle** (34%) Boden (39%) Cunil (10%) Unknown Preclassic (17%)
13	X.7, X.12		13.X.7.A66	Fill 48	**Cadle** (44%) Boden (46%) Cunil (<1%) Unknown Preclassic (9%)
13	X.13		13.X.13.A68	Fill 54	**Cadle** (22%) Boden (54%) Unknown Preclassic (24%)
13	I.14			Fill 33	**Cadle** (21%) Boden (57%) Cunil (9%) Unknown Preclassic (13%)

13	I.16, X.14			Fill 40	**Cadle** (33%) Boden (16%) Cunil (22%) Unknown Preclassic (29%)
13	AA.5			Fill 50	No ceramics
13	I.15			Fill 46	**Cadle** (100%)
13	Z.1, Z.2	D8	13.Z.1.A63a & b	Fill 41	**Burrell** (92%) Boden (5%) Unknown Preclassic (3%)
13	T.1, T.2, T.3	Burial 12, D3		Fill 12	**Burrell/Potts** (3%) Cadle (34%) Boden (58%) Unknown Preclassic (5%)
	G.6			Fill 39	**Burrell/Potts** (2%) Cadle (38%) Boden (40%) Cunil (10%) Unknown Preclassic (5%) Unknown (5%)
13	AA.4			Fill 42	**Cadle** (20%) Boden (50%) Unknown Preclassic (30%)
13	BB.1, BB.2	Burial 17, D9		Fill 47	**Cadle** (40%) Boden (60%)
13	A.1, A.2, B.1, C.1, L.1, L.2, G.5, G.4, H.4		13.A.1.A3 & 13.A.1.A61	Disturbed 1	**Vieras/ Pesoro** Jalacte
13	EE.3			Fill 200	**Jalacte** (79%) Unknown Classic (21%)
13	EE.4			Fill 100	**Pesoro** (58%) Jalacte (11%) Burrell (5%) Boden (9%) Unknown Classic (17%)
13	EE.5			Fill 101	Unknown Classic (97%) Unknown Preclassic (3%)
13	EE.6			Fill 102	**Jalacte** (5%) Cadle (10%) Boden (51%) Unknown Classic (5%) Unknown Preclassic (5%) Unknown (24%)

13	F.5			Fill 1	**Jalacte** (46%) Unknown Classic (27%) Unknown (27%)
13	F.6			Fill 3	**Cadle** [1 sherd] (100%)
13	F.4, F.7			Fill 2	**Jalacte** (28%) Cadle (20%) Boden (40%) Unknown Classic (6%) Unknown (6%)

13.U.2 D4 A28 (partial vessel)
Type; Sierra Red: Sierra Variety
Variety: Unspecified Variety
Established as a type or variety: Smith and Gifford (1966).
Group: Sierra
Ware: Paso Caballo Waxy Ware
Complex: Cadle
Sphere: Chicanel
Principal Identifying Attributes:
Paste, temper, and firing: Paste is light red in color 2.5YR6/8, 10R 6/8, and incompletely oxidized with a dark gray core (5YR4/2 dark reddish gray). Paste is medium grained with calcite inclusions.
Surface finish and decoration: Surfaces are well smoothed and covered with a fairly consistent waxy red slip, and when preserved it is also slightly lustrous (10R 4/8, 5/8- red and 2.5YR 4/8, 5/4- red). On eroded surfaces it would appear to have some fireclouding as well.
Form: Flaring sided dish with flat bottom, everted rim, and round lip.
Dimensions: Diameter: 24.5 cm, Height: 7.0 cm , Vessel thickness: 0.8-1.0 cm.
Intrasite Distribution: Similar Sierra Red vessels have been found in Late Preclassic Cadle burials in the eastern structure of the E-Group, as well as in architectural fills.
Intersite Distribution: Sierra Red is the most common ceramic type in all sites throughout the Maya Lowlands in the Late Preclassic.





13.Z.1 D8 A63 & A64 (partial vessels)
Type; Pucte Brown or Highly eroded Balanza Black
Variety: Unspecified Variety
Established as a type or variety: Type established by Smith and Gifford (1966) for both Pucte and Balanza. Unspecified varieties of both established by Gifford (1976).
Group: Pucte/ Balanza
Ware: Peten Gloss Ware
Complex: Tzakol
Sphere: Early Classic Tzakol
Principal Identifying Attributes:
Paste, temper, and firing: Fine grained paste with calcite, quartz, and mica inclusions. Paste is a reddish orange color and fairly well sorted. Paste is 2.5YR 4/8 (red).
Surface finish and decoration: Surfaces are well smoothed and highly eroded and are a grayish brown color. It is difficult to tell if the original slip was intended as a true black or a brown. In places the reddish paste color shows through. Slip color is 10 YR 4/1 (dark gray). Basal flange bowls are more common on Balanza Black types but this example is not a typical Balanza Black paste.
Form: Thin walled basal flange bowl with small flange and exteriorly bolstered and everted rim and round lip, and with shallow annular base.
Dimensions: Diameter: 22 cm. Height: 6.5 cm (hypothesized), Vessel thickness: 0.8. cm. Flange: 1.3 cm. Annular base diameter: 7.8 cm.
Intrasite Distribution: These two vessels were found as lip-to-lip caches, a common pattern at Chan beginning in the Classic period.
Intersite Distribution: Basal flange bowls are a common form in the Early Classic throughout the Maya Lowlands (Smith and Gifford 1966), although Balanza Black and Pucte Brown are not common types in the Belize Valley (Gifford 1976).

OPERATIONS 23 AND 25: EXCAVATIONS AT CHAN'S LEADING FAMILY RESIDENCES

Post hole testing was conducted in 2006 (Robin 2006) at 5 meter intervals radiating 35 meters out from the two mound groups (C-002 and C-003) that comprise Chan's leading family residences adjacent to the site's main plaza. These post holes identified four midden areas, two of which were excavated with 2m by 2m excavations (Op. 23). Additionally, ceramics from the excavations in C-002 (Op. 25) were analyzed in 2008, while the ceramics from the Op. 26 excavations in C-003 will be analyzed in 2009.

Op. 23

The two midden areas appear to be comprised of largely Tepeu II Pesoro and Tepeu III Vieras ceramics, with little earlier material, and the results are presented in the table below.

Op	List of Lots	D, Burial, Cache	A#	Context	Phase	Ceramic Chronology
23	B.1, C.1, D.1			Humus 1	1st	**Vieras** (<1%) Pesoro (41%) Jalacte (48%) Cadle (<1%) Boden (<1%) Unknown Classic (11%)
23	B.2			Refuse 1	1st	**Vieras** (1%) Pesoro (40%) Jalacte (45%) Cadle (1%) Unknown Preclassic (<1%) Unknown Classic (12%)
23	B.3			Refuse 2	1st	**Pesoro** (34%) Jalacte (58%) Boden (2%) Unknown Preclassic (3%) Unknown Classic (3%)
23	C.2, D.2			Refuse 3	1st	**Pesoro** (49%) Jalacte (48%) Unknown Preclassic (<1%) Unknown Classic (2%)
23	C.3, D.3			Refuse 4	1st	**Pesoro (62%)** Jalacte (34%) Cadle (1%) Unknown Classic (3%)
23	D.4			Refuse 5	1st	**Pesoro (72%)** Jalacte (24%) Unknown Classic (4%)

23	D.5			Refuse 6	1st	**Pesoro** (43 %) Jalacte (43%) Unknown Classic (14%)

Op. 25

Excavations in group C-002, Structure 1 demonstrate a construction sequence in the Early Classic Burrell Complex, with some earlier redeposited material. While no later material was encountered in the construction, some Tepeu I Jalacte Complex ceramics were identified in the looters' trenches.

Op	List of Lots	D, Burial, Cache	A#	Context	Phase	Ceramic Chronology
25	D.1			Humus 1	4th	**Burrell** (94%) Unknown Classic (6%)
25	D.2			Collapse 1	4th	Unknown Classic (100%)
25	D.3, D.4			Fill 1	4th	**Burrell** (100%)
25	A.2, D.5			Fill 2	3rd	**Burrell** (54%) Cadle (7%) Boden (1%) Unknown Classic (38%)
25	E.1, E.2			Fill 8	1st	**Burrell** (43%) Potts (8%) Cadle (8%) Boden (8%) Unknown Classic (8%) Unknown Preclassic (25%)
25	A.1, B.1			Disturbed 1		Jalacte Burrell Potts Cadle Boden
25	C.1			Disturbed 2		Jalacte Burrell Potts Cadle Boden

OPERATIONS 24A AND 28: LIMESTONE QUARRY EXCAVATIONS

Chan's limestone quarries, excavated in 2006, are located on hilltop locations north of Chan's central group (Kestle 2008; Robin 2006). The ceramics from posthole testing (Op. 24A) and excavations (Op. 28) of Chan's limestone quarries and associated household group C-091 are presented in the tables below.

Op. 24A Postholes

Ceramics from the postholes were identified on the basis of paste or formal characteristics. Multiple listings from the same posthole represent different types or time periods from the same posthole, and the posthole testing again demonstrates a population present in this area beginning in the Middle Preclassic and continuing through the Terminal Classic. Once again, the ease of identifying both eroded Middle Preclassic Mars Orange Ware, and Late Classic British Honduras Ashware (Belize Red) probably presents a slightly inflated presence for both time periods.

Posthole #	Count	Identification
1	1	Unknown Classic
2	3	Unknown
3	17	Unknown Classic
4	7	Unknown
6	4	Unknown Classic
8	1	Mt. Maloney II/ III bowl rim
8	4	Unknown Classic
10	2	Unknown Classic
12	1	Cayo II/III Jar
12	1	Unknown Classic
13	1	Unknown Classic
13	1	Unknown Preclassic
14	2	Unknown Classic
15	5	Unknown
16	3	Unknown Classic
19	5	Unknown Classic
21	4	Mars Orange- Middle Preclassic
21	9	Unknown
22	2	Unknown
23	16	Unknown Classic
24	14	Unknown Classic
28	5	Unknown Classic
30	1	Unknown
31	1	Belize Red- Late Classic
32	1	Unknown Classic
37	1	Mars Orange- Middle Preclassic
37	3	Unknown
39	1	Unknown
40	3	Unknown
41	2	Unknown
43	5	Unknown
45	1	Unknown

48	5	Mars Orange- Middle Preclassic
50	1	Unknown
52	1	Mars Orange- Middle Preclassic
52	2	Unknown
52	1	Unknown Classic
58	1	Unknown
59	1	Early Classic/Late Classic 1
60	3	Unknown
64	1	Unknown
66	1	Unknown
68	1	Mars Orange- Middle Preclassic
68	4	Unknown Classic
68	1	Unknown Preclassic
73	4	Unknown Classic
74	1	Unknown
75	1	Unknown
75	1	Unknown Preclassic
76	1	Belize Red- Late Classic
76	5	Unknown Classic
78	21	Unknown Classic
79	3	Unknown Classic
80	3	Mars Orange- Middle Preclassic
80	4	Unknown Classic
81	1	Early Classic/Late Classic 1
81	2	Unknown Classic
84	4	Unknown Classic
90	4	Unknown Classic
92	1	Unknown Classic
93	1	Unknown
94	8	Unknown Classic
95	1	Belize Red- Late Classic
95	6	Unknown Classic
97	4	Unknown Classic
98	3	Unknown Classic
100	1	Cayo II/III Jar
100	1	Unknown Classic
102	1	Belize Red- Late Classic
102	2	Unknown Classic
106	1	Mt. Maloney I bowl rim
106	5	Unknown Classic
107	1	Unknown Classic
109	2	Unknown Classic
110	1	Eroded flange- Early Classic
110	5	Unknown Classic
111	1	Sierra Red- Late Preclassic
111	3	Unknown Classic
113	2	Unknown Classic

114	3	Unknown
119	4	Unknown
120	2	Unknown Classic
121	1	Belize Red- Late Classic
121	2	Unknown
121	13	Unknown Classic
123	1	Belize Red- Late Classic
123	4	Unknown Classic
124	4	Unknown Classic
129	3	Unknown Classic
130	2	Unknown Classic
132	4	Unknown Classic
135	9	Unknown Classic
137	3	Unknown Classic
139	3	Unknown Classic
140	5	Unknown Classic
141	3	Unknown Classic
143	1	Mt. Maloney II bowl rim
143	2	Unknown Classic
144	7	Unknown Classic
151	1	Belize Red- Late Classic
151	16	Unknown Classic
152	1	Belize Red- Late Classic
152	1	Mt. Maloney I/II bowl rim
152	1	Silver Creek Impressed- Late Classic
152	55	Unknown Classic
153	1	Belize Red- Late Classic
153	5	Unknown Classic
153	20	Unknown Classic
164	2	Unknown Classic
175	1	Mars Orange- Middle Preclassic
180	2	Unknown Classic
184	1	Unknown
187	2	Unknown Classic
189	1	Unknown
193	5	Unknown Classic
208	1	Unknown Late Classic

Op. 28

Excavations also were conducted in household group C-091, structures 1 and 2, and the associated terraces involved in limestone quarrying at the Chan site (Kestle 2008; Robin 2006). The analysis of the ceramics identified a Pesoro/Vieras (Tepeu II/III) construction sequence, with minimal earlier material redeposited in mixed fills.

Op	List of Lots	D, Burial, Cache	A#	Context	Phase	Ceramic Chronology
28	A.1, B.1, C.1, D.1, E.1, F.1, G.1, H.1, I.1, J.1, K.1, L.1, M.1, N.1, O.1, P.1, P.2, Q.1, S.1, T.1, U.1, V.1, W.1, X.1, Y.1, Z.1, AA.1, BB.1, CC.1, DD.1, EE.1, EE.2, FF.1, GG.1, GG.2, GG.3, HH.1, HH.2, HH.3, II.1, MM.1, NN.1, OO.1, PP.1, PP.2, PP.3			Humus 1		**Vieras** (11%) Pesoro (27%) Jalacte (19%) Burrell (1%) Boden (<1%) Unknown Classic (41%)
28	Q.2, S.2, S.3			Collapse 1	post 2nd	**Vieras** (5%) **Pesoro** (40%) Jalacte (14%) Burrell (3%) Potts (<1%) Cadle (<1%) Unknown Classic (37%)
28	R.1			Fill 4	2nd	**Vieras** (5%) **Pesoro** (30%) Jalacte (15%) Unknown Classic (50%)
28	S.4			Fill 5	1st	**Vieras** (<1%) **Pesoro** (13%) Jalacte (26%) Burrell (14%) Cadle (1%) Unknown Classic (45%)
28	R.2, S.5, R.3, R.4			Fill 6	1st	**Vieras** (<1%) **Pesoro** (21%) Jalacte (16%) Burrell (11%) Cadle (2%) Boden (1%) Unknown Classic (36%) Unknown Preclassic (5%) Unknown (8%)
28	Q.3			Fill 3	1st or earlier	**Pesoro** (24%) Jalacte (12%) Burrell (1%) Unknown Classic (63%)
28	A.2, A.3, D.2, N.2, Q.4, S.6			Fill 1	1st or earlier	**Vieras** (10%) **Pesoro** (20%) Jalacte (26%) Burrell (1%) Unknown Classic (43%)
28	N.3, N.4			Fill 2	1st or earlier	**Vieras** (21%) **Pesoro** (15%) Jalacte (14%) Unknown Classic (50%)

28	U.2, U.3, Z.2			Collapse 2	post 3rd	**Vieras** (2%) **Pesoro** (52%) Jalacte (20%) Cadle (2%) Unknown Classic (24%)
28	Y.2, X.2, X.3, KK.1			Fill 7	3rd	**Vieras** (5%) **Pesoro** (15%) Jalacte (21%) Burrell (1%) Unknown Classic (57%) Unknown Preclassic (<1%)
28	V.2, W.2, JJ.1, LL.1			Fill 8	3rd	**Vieras** (<1%) **Pesoro** (7%) Jalacte (21%) Burrell (<1%) Cadle (<1%) Unknown Classic (70%)
28	LL.2			Fill 15	3rd	Jalacte (11%) **Unknown Classic** (89%)
28	II.2			Floor 2	2nd	no ceramics
28	KK.2, II.3, JJ.2			Fill 13	2nd	**Vieras** (13%) **Pesoro** (25%) Jalacte (6%) Unknown Classic (56%)
28	JJ.3, II.4			Fill 14	2nd	**Jalacte** (33%) Unknown Classic (67%)
28	KK.3			Fill 17	1st	**Jalacte** (100%)
28	Z.3			Fill 9	1st or earlier	**Jalacte** (40%) Unknown Classic (60%)
28	MM.2, NN.3, NN.4, NN.5			Fill 16	1st or 2nd	**Vieras** (21%) **Pesoro** (7%) Jalacte (14%) Cadle (4%) Unknown Classic (50%) Unknown Preclassic (4%)
28	NN.2, NN.6, OO.2, OO.3			Collapse 3	post 1st	**Vieras** (20%) **Pesoro** (25%) Jalacte (35%) Unknown Classic (20 %)
28	NN.7, OO.5			Fill 18	1st	**Unknown Classic**
28	OO.6, OO.4			Natural 1	1st or earlier	**Pesoro** (4%) Jalacte (27%) Unknown Classic (69%)
28	FF.2			Fill 11	1st	**Vieras** (5%) **Pesoro** (57%) Jalacte (24%) Unknown Classic (14%)

FUTURE DIRECTIONS IN CHAN CERAMIC RESEARCH

In 2009 the ceramic analysis will focus on completing the final excavation sequences that are not yet analyzed. These include Op. 2, the north structure at Chan's central plaza; Op. 5, the ancillary Str. 3 at Chan's central plaza; Op. 7, the ancillary Str. 4 at Chan's central plaza; and Op. 26, excavations of C-003, one of the leading family residences east of Chan's site core. These analyses will complete our knowledge of the construction history of excavated portions of the Chan site. Ultimately the ceramic analysis will include a complete inventory and descriptions, and illustrations (done by Ms. Carmen Ting) of all ceramic types and varieties encountered in all of Chan's ceramic complexes.

A secondary focus of the ceramic analysis will include an INAA/ICP project examining paste groups of the Middle and Late Preclassic, Terminal Preclassic and Classic periods, to be conducted in conjunction with Ms. Nicole Little, of the Smithsonian Center for Material Research, in Washington, DC. In 2008, eighty-four samples were taken focusing on red, orange, black and polychrome slipped sherds, including examples of ostensibly locally produced ceramics (Savana Orange, Sierra Red, British Honduras Ashwares, Mt. Maloney Black) and potential non-local ceramics (Aguila Orange, Balanza Black, Dos Arroyos and Saxche Orange Polychromes). Additional samples will be taken in 2009, and the project is expected to start in 2010.

Finally, ceramic special artifacts will receive careful analysis beginning in 2009 with the assistance of Ms. Elise Docster. These include Middle Preclassic figurine fragments that were encountered as heirloom pieces in Late Preclassic burials, censer or stove prongs (Ball and Taschek 2007), and various worked sherd disks. The wide range of architectural and spatial contexts sampled at Chan, as evidenced by the analysis conducted this season, will continue to inform on both domestic and ritual sets of behaviors within the site throughout its almost 2,000 year history, but also serve to place Chan within a wider geopolitical framework in and beyond the Belize Valley.

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ANALYSIS OF LITHIC ARTIFACTS FROM VARIOUS CONTEXTS AT CHAN, BELIZE

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PURPOSE

The primary purpose of the 2008 season was to conduct analysis of flaked lithic artifacts from the site of Chan, Belize. This analysis continues the author's previous analysis of flaked lithic artifacts from Households C-199 and C-304 (Hearth 2007). This analysis is part of ongoing dissertation research by the author examining the political economy and technology of flaked-stone resources at Chan.

Research questions focus on production and consumption of lithic resources as they vary between households of different economic status. For present purposes, household size is considered as a rough proxy for economic status as larger house mounds are considered to have a greater economic status due to the increase labor that goes into their construction. This season's analyzes the cryptocrystalline silicate assemblages from middens at households C-304 (Wyatt 2004), the Northeast group (Blackmore 2004, 2008), C-002 & C-003 (Robin 2006), CN-1 of the Chan Nòohol group (Robin 1999), and the Mul Chichem Household (C-199). The second purpose was to analyze the obsidian artifacts from various contexts to identify obsidian tool consumption and potential tool production. This analysis was conducted prior to XRF source analysis to be conducted during 2008-2009 academic year at the Chicago Field Museum and the University of Illinois, Chicago by James Meirhoff.

METHODS

A modified version of the Replicative Systems Analysis (RSA) conducted in 2007 (Hearth 2007) was used in 2008. This followed the general principles outlined by other lithic analysts (Crabtree 1968; Flenniken, et al. 1992; Flenniken 1981, 1989; Hintzman 2000; Wilke 1993, 1996), in using experimentally recreated tools and debitage as an analogy to analyzing archaeological collections. Unfortunately no manuals or how-to guides currently exist to completely explain this analytical method. I will briefly outline the concepts here. RSA attempts to answer three fundamental questions of lithic assemblages, what arrived at the site, what kind of lithic reduction happened, and what left the site. No experimental replications were conducted in the in the field, but my previous knowledge of knapping stone allowed the foundation of the terminology, techniques, and principles necessary to conduct analysis. Experimentally created analogs to archaeological collections have been and will continue to be created in the future. Attempts were made to create more meaningful and condensed units of analysis as compared to what I did previously with recording flake attributes individually (Hearth 2007). Lithic artifacts were examined flake by flake.

The first step is to divide the collection into material types. The cryptocrystalline silicate artifacts within each lot were graded according to a visual inspection of the material type as I had previously outlined and followed Frondel's (1962) material classification. Identification of obsidian was easy due to the unique properties of this material such as luster, opacity, etc.

Debitage attributes were typed following Wilke (1993) to describe the technology used for flake core reduction and biface manufacture. Three main categories describe the dorsal side of the flake: completely-cortical, partially-cortical and non-cortical. These three categories generalize the stage of reduction evident in a collection. The preponderance of completely cortical and partially cortical flakes would indicate early stage flake core production and preparation. This would be contrasted to partially cortical and non-cortical flakes which are indicative of flake core reduction for the production of flake tools.

I chose not to separate my category of partially cortical into a percentage of remnant cortex because the amount of cortex is not a strict indicator of the stage of reduction (c.f. (McAnany and Peterson 2004). My experience knapping indicates the presence or absence of cortex is only a general indicator of reduction-stage. The general stage of reduction is indicated in the cortex of the population of flakes, not the strict ascription, for example, that a flake with 75% of the cortex remaining on the dorsal surface of the flake would indicate that the flake came from a core that was 25% manufactured. Furthermore, for example, almost completely cortical flakes could foreseeable come from a core in an attempt at core rejuvenation though the core has been substantially reduced. Lastly, a percentage of remnant cortex on a flake is not always a clear indicator of a stage or reduction because sometimes cortex is a desirable attribute to have upon a nearly finished tool, like axes (Hearth 2007). I prefer to examine what were the potential reasons why a certain flake was removed.

Platform configuration further separated the cortex categories, see Appendix 1. Platform preparation techniques are an important attribute because it is an indicator of the kind of technology of core configuration. For example, a cortical platform would indicate an early stage of reduction if identified on a completely or partially cortical flake or a flake core with a cortical platform in the case of partially or non-cortical flakes. Single facet platforms would be indicative of earlier stages of core reduction and a single facet, single direction flake core technology. Multifaceted platforms indicate a multi-staged faceting procedure to remove flakes from cores. This reduction strategy could be implemented on cores without desirable platform angles. If a flake was nearly complete with only the platform absent then this too was recorded.

Sometimes even if a platform was present, the termination of the flake would give more information about the technology, reduction techniques and core configuration. *Outrépassé* or overshot terminations indicate the removal of the distal portion of a core. This can be done intentionally to correct configuration problems. Edge-preparation flakes prepare the margin of a core and are usually twice as wide as long. Alternate flakes remove square edges. Undulation removal flakes remove undulations in the ventral side of a flake. Bulb removal flakes are removed when a flake blank has a pronounced bulb of force on the ventral side. Bulb removal, alternate and undulation removal flakes are all indicative of the creation of a biface or flake cores from a flake blank or cobble sections.

Biface technology was divided into early or late percussion and pressure flaking. Early percussion flakes are from earlier in the reduction process, when the biface is more curved in cross-section, might still have cortex on the dorsal surface of the flakes. Their platforms have fewer facets and are less likely to be abraded. Late-stage percussion flakes are flatter in cross section because the bifaces are flatter and are less likely to have cortex. Their platforms have more arrises and are more likely to be abraded due to the weaker margin of a thinner biface. Early pressure flakes have less regularized ventral surfaces. Later pressure flakes have more regularized arrises and ventral surfaces.

Like in flake core reduction, the terminations from biface thinning flakes are also important in determining biface configuration. *Outrépassé* or overshot flakes capture the opposite margin of the biface and create a square margin on the opposite from the flakes platform. They can be either errors or intentional depending on the overall reduction strategy. Margin removal flakes on bifaces are likely almost always a failure because they create a square margin on the biface when removed. They are created by striking too far to the midline of the biface and not on the margin. An edge preparation flake is often twice as wide as it is long and when removed from a biface will capture a bifacial margin. It moves the margin to the opposite surface of the biface. Alternate flakes from a biface are ones that capture a square (non-bifacial) margin and part of a bifacial margin. Bulb removal flakes remove the remnant bulb from a flake blank stage of reduction that would still be apparent after the piece has been turned into a biface. Both alternate and bulb removal flakes from bifaces are likely rare because both kinds of flakes are removed to turn non-bifacial pieces into bifaces, not from bifaces that are all ready configured.

Obsidian artifacts were typologized following the catagories of Hintzman's master's thesis (2000) in which he examined obsidian blade production at the site of El Pilar, Belize. His typology was chose over others' (Clark 1997; Clark and Bryant 1997) due to geographic nearness of the El Pilar workshop to Chan and consequent likelihood of similar reduction strategies being employed at Chan. Only minor additions we made to his typology as it is largely complete for obsidian blade production contexts in the Maya lowlands. Hintzman's (2000) methods follow the concepts of RSA.

With the help of fellow Chan Project member, Dr. Angela Keller, we created a Microsoft Access database to manage the data and the calculations presented in Appendices 2 and 3 were performed with Access and Microsoft Excel.

CONTEXTS

The non-obsidian artifacts were chosen for analysis based upon the presence middens with of Late Classic ceramics. Similar temporal timeframes increased the probability of temporal comparison. Fill contexts were not chosen to be analyzed at present. Lithic artifacts are sharp and have been ethnographically noted to be thrown away in places farther removed from immediately adjacent to houses (Clark 1991). However, production of lithic tools likely took place within houses as Clark (1991) has ethnographically demonstrated, then the spaces within the houses i.e. fill, could be locations of manufacture and would likely have some microdebitage (Clark 1986, 1990). The mound groups associated with these middens are outlined below (see Figure 1). Descriptions of the mound sizes discussed below Table 1.

Type	Description of Mound Group
0	no mounds
1	isolated mounds 1 m or less in height
2	informally arranged groups of 2 or more mounds, 1 m or less in height
3	formally arranged groups of 2 or more mounds, 1 m or less in height
4	formally or informally arranged groups of 2 or more, 1 to 2 m in height
5	platform groups with 4 or more mounds, 1 to 2 m in height
6	platform groups with 4 or more mounds; one mound is 2 to 5 m in height
7	platform groups with 4 or more mounds; at least one mound is 5 m in height

Table 1: Mound Descriptions

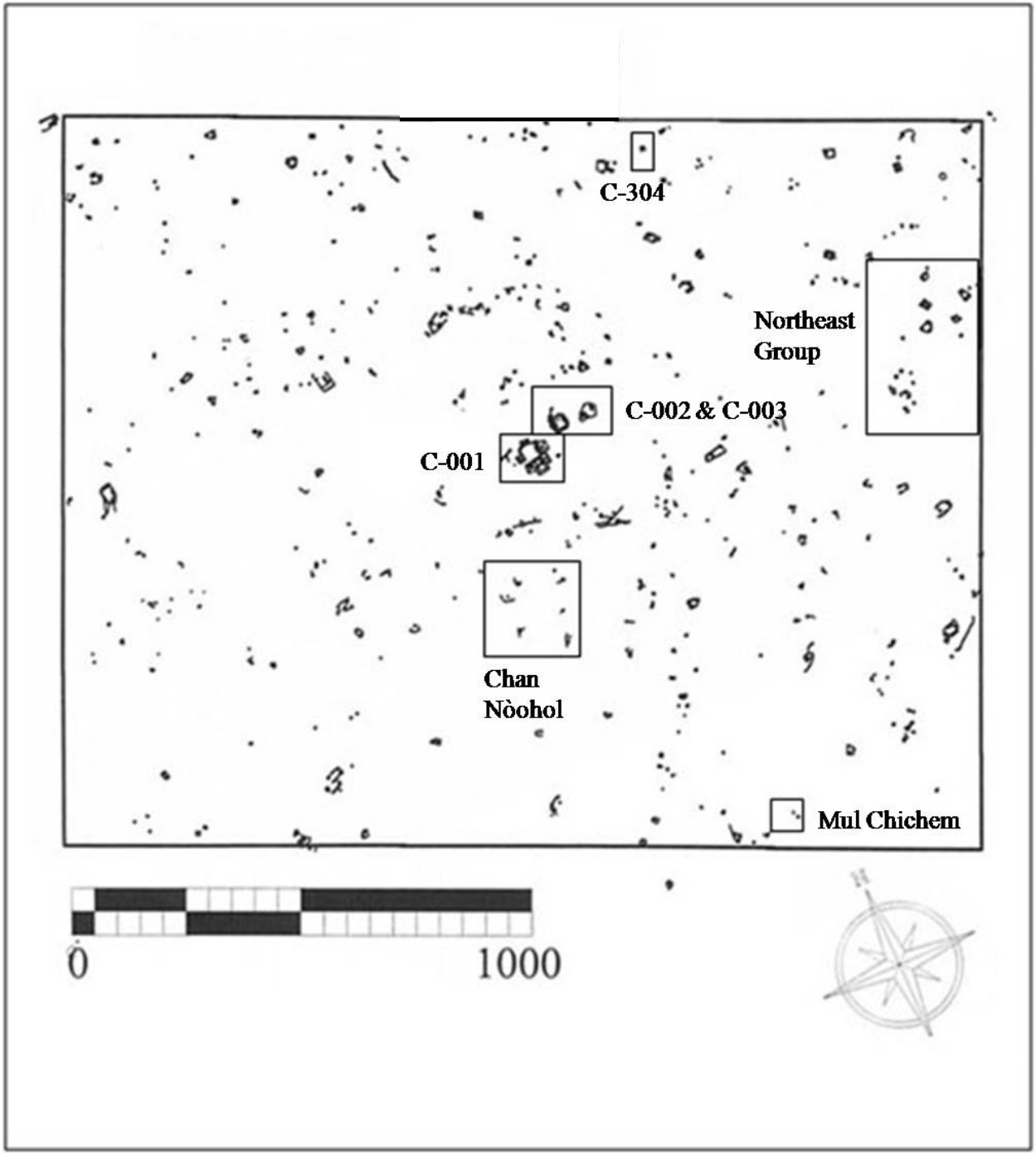

Figure 1: Chan with areas discussed in this report, modified from Robin 2004:3

C-001

C-001 is a cluster of the largest mounds at Chan and composes the site's center, see Figure 2. It likely was the rulers' administrative and ritual center (Robin, Hetrick, et al. 2008). The largest structure within C-001 is 5.6 meters in height. C-001 is a Type 7 mound group (Middleton, et al. 2003) and (see Table1). Type 7 groups are composed of 4 mounds or platforms, greater than 5m in height, and have formal layout and focus.

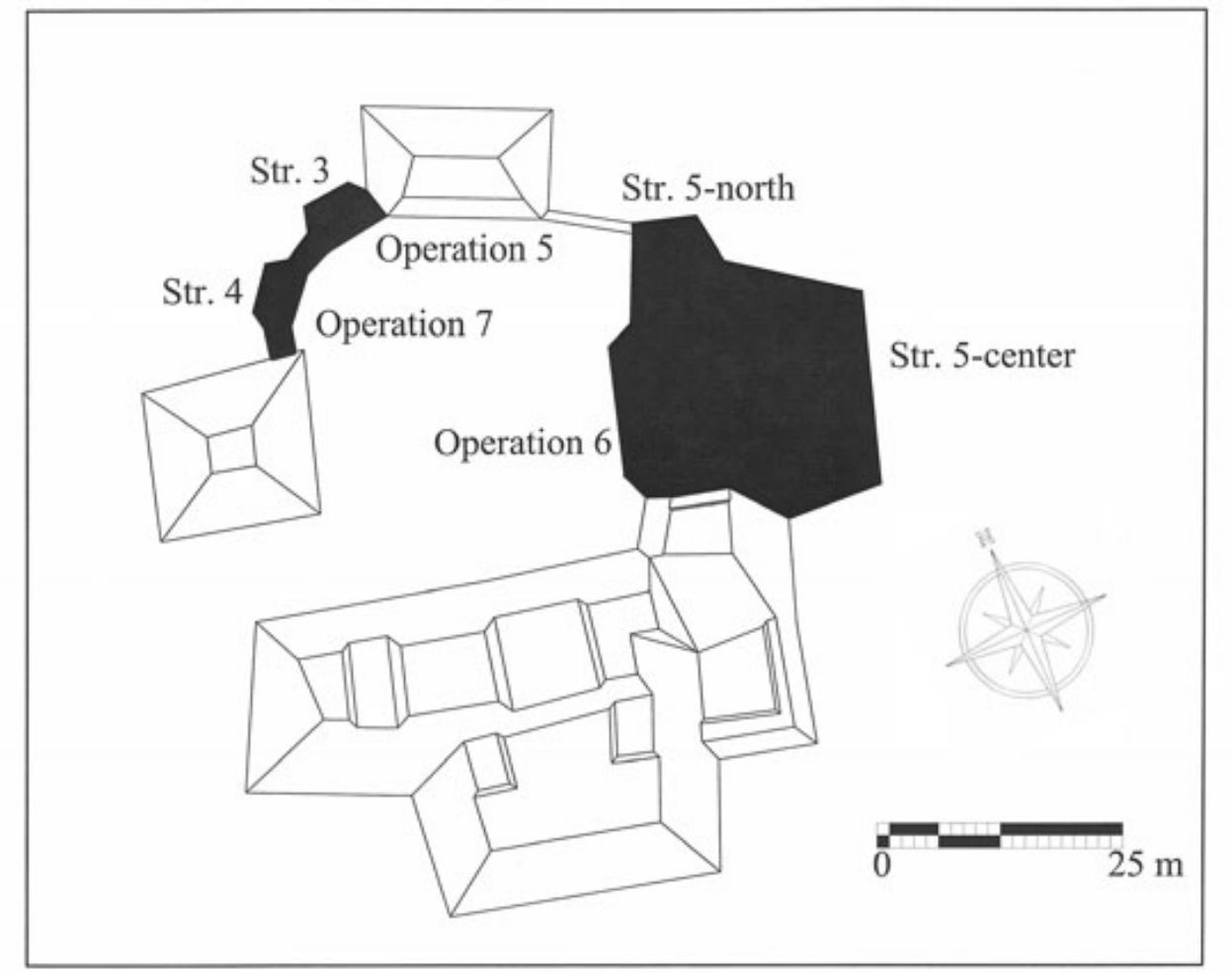

Figure 2: C-001, central group

C-001 has a deep occupational history dating from the Middle Preclassic to the Early Postclassic periods (Kosakowsky 2006, 2007; Robin, Meierhoff, et al. 2008).

Obsidian artifacts were recovered from Operations 1, 2, 3, 5, 6, 7, 11, 12, and 13. Operation 1 excavations were located in the center of the C-001 plaza where ritual deposits spanning C-001 history were identified (Blackmore 2003). Operations 2 and 5 explored the northern most building where Chan's leading family residence was likely located (Latsch 2003, 2004). Proceeding clockwise around the plaza, Operation 6 exposed the C-001 eastern ancestral shrine (Kestle 2004; Meierhoff, et al. 2004; Robin, et al. 2008). Operations 11 and 12 together exposed the southern range structure of the C-001 plaza, Chan's likely administrative building (Robin, et al. 2008; Robin, et al. 2005). On the west side of the C-001 plaza, Operation 13 explored Chan's western shrine (Robin, et al. 2005). Operation 7 was an excavation in the northwestern corner of C-001 to explore Structure 4. Structure 3 and 4 excavated in Operations 5 and 7 respectively, likely were potentially ancillary buildings or kitchens (Latsch 2004). Outside of C-001, Operation 3 was a 50 meter grid of postholes placed 5 meters apart from one another.

C-002 & C-003

Households C-002 and C-003 were likely the leading family or families' residences' at Chan as they are closely located to the C-001, the site's center. Lithic artifacts were recovered from three operations in and around C-002 and C-003. Operation 23 consisted of a 40 meter grid of postholes placed at 5 meter intervals around both groups. The posthole testing identified middens which were subsequently investigated further. Operation 25 explored two looters' trenches at C-002 and Operation 26 undertook areal exposures of architecture and plazas at C-003.

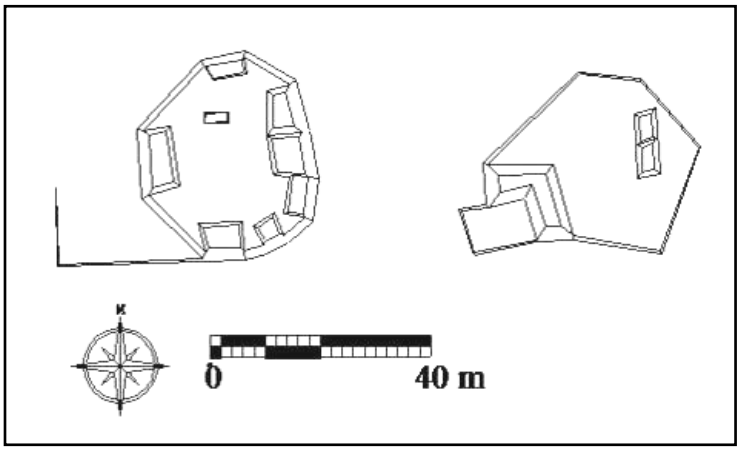

Figure 3: C-002 and C-003

Northeast Group

The Northeast group is composed of six mound clusters of approximately 1km from the Chan's center. It is grouped together as a neighborhood because of the spatial cohesion and surface characteristics of the mounds (Blackmore 2004). Post hole excavations on a six meter grid across the Northeast group (marked on Figure 4) revealed middens containing high concentration of artifacts including lithic artifacts. Excavation units were placed next to the postholes which had identified dense concentrations of artifacts (see Blackmore 2004:69 for a summary of these posthole excavations). The use of these middens for trash deposits primarily date to the Late Classic period.

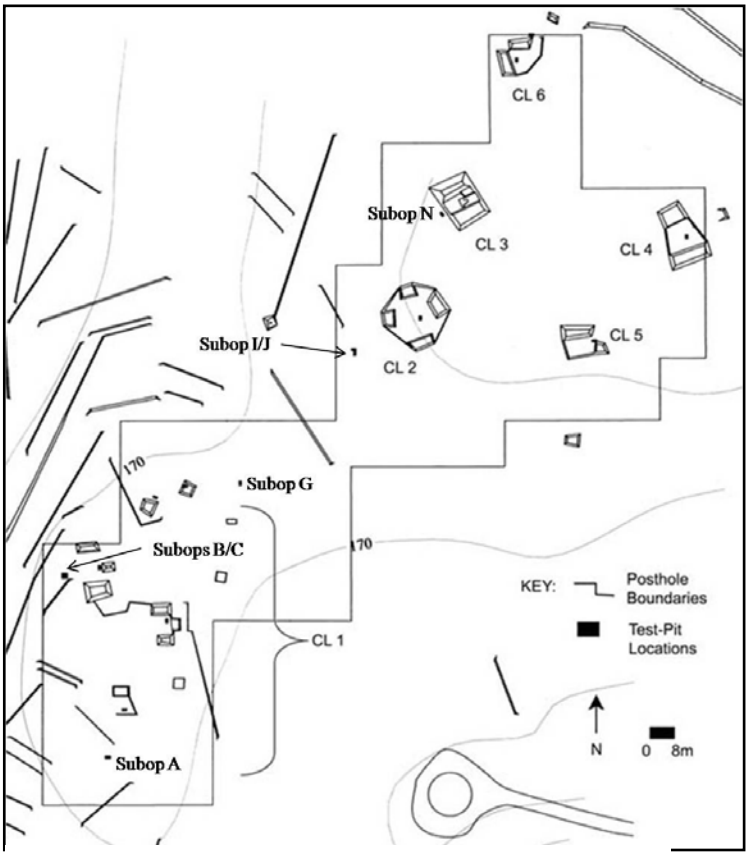

Figure 4: Northeast Group; from Blackmore 2004:68 Figure 1

The middens were excavated as Operation 9 and are associated with house mounds of different sizes. Operation 9 Suboperation G excavated a midden associated with C-155, a type 4 household (see Table1).Suboperation 9.N was the excavation within a midden associated with C-156, a type 4 household. Suboperations 9.I and 9.J

excavated a midden associated with C-157, a type 4 household. Suboperations 9.A, and 9.B/C were excavations located in a midden associated with C-154 a type 5 household. The analysis presented in Appendices 2 and 3 combine all the Suboperations in Operation 9, but I included the Suboperations to specify location of recovery in Figure 4.

Chan Nòohol

Chan Nòohol was the first neighborhood of intensive excavation at Chan (Robin 1999). Chan Nòohol is located approximately 340 meters to the southwest of Chan's center. It is composed of seven small residential units labeled CN1 –CN7, see Figure 5. Units are spatial discrete in relation to each other and are composed of one or two structures along with one to three terraces.

Non-obsidian lithic artifacts were made available to the author by the Xunantunich Archeological Project. These artifacts come from middens and a chultun around household CN-1, a type 1 household (see Table1). These refuse excavations include Operation 224, suboperations W, D, and Q, see Figure 5. Suboperation D is located with a chultun. These primarily date to the end of the Late Classic.

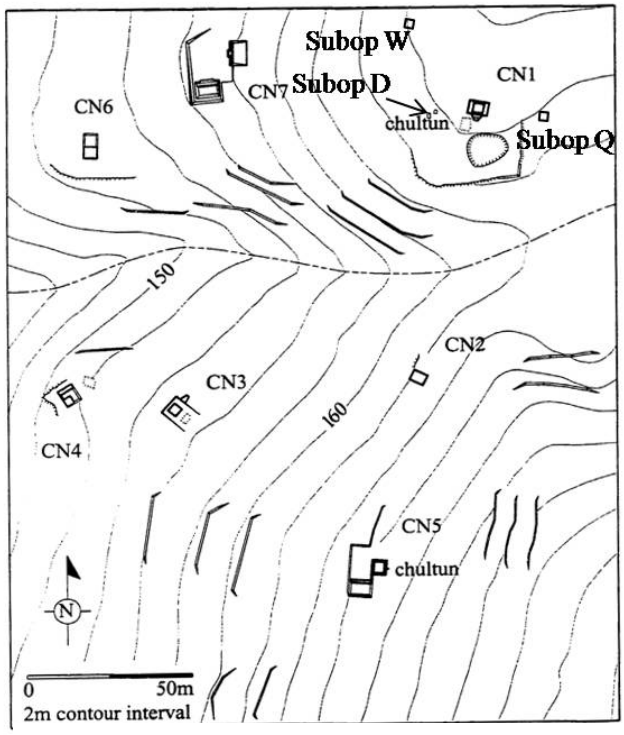

Figure 5: Chan Nòohol modified from Robin 1999:130, 164

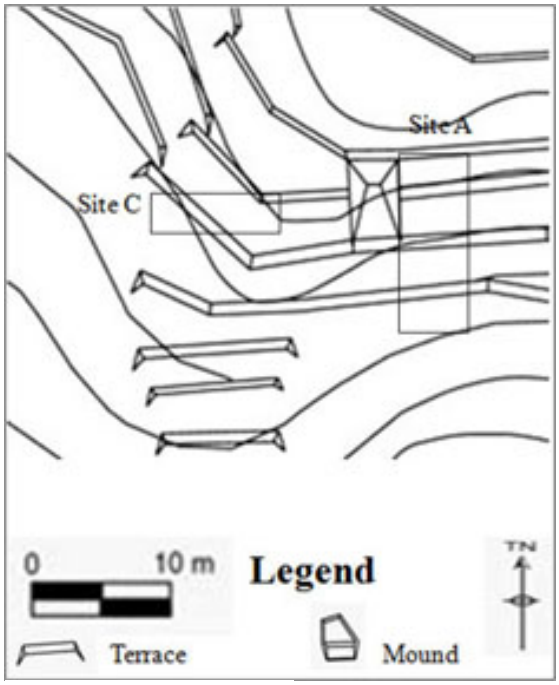

Figure 6: C-304

C-304

Mound group 304 is located approximately 1 km north-northwest of Chan's site center. Mound C-304 is a type1 household, see Table1. Excavations at C-304 were conducted by Andrew Wyatt as Operation 4 (Wyatt 2004). The lithic artifacts analyzed from this household come from middens within the excavation are marked site A and C see Figure 6.

Mul Chichem

Analysis of the Mul Chichem (C-199) mound assemblage continued this season (Hearth 2007). The purpose of excavation in 2006 at C-199 was to (a) excavate portions of a dense deposit of lithic artifacts and (b) posthole test the surrounding area observed while on survey (Meierhoff 2007). As I have described (Hearth 2007, 2008) elsewhere, the Mul Chichem household (a type 2 household, see Table 1) likely was a site of lithic biface production. Evidence supporting this includes a substantial midden composed nearly entirely of chert debitage, potential quarries and the presence of microdebitage within this midden. No similar kind of midden has been noted on survey at Chan (Cynthia Robin, Personal Communication).

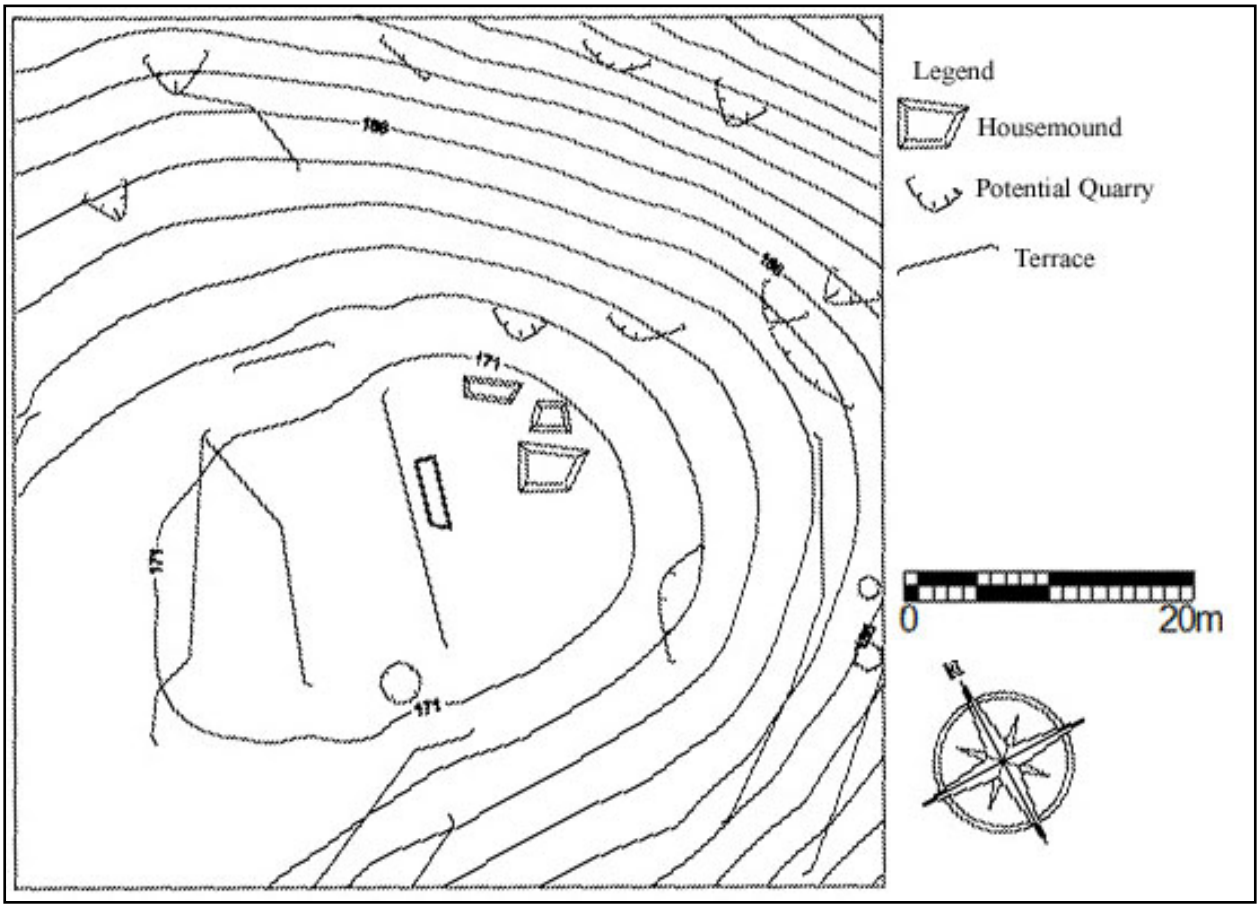

Figure 7: Mul Chichem Household

RESULTS

The results of this ongoing research are preliminary. They do not include the previous year's analysis of debitage and tools from households C-304 and Mul Chichem (C-199). Future work will synthesize these and future data sets.

C-001

RSA were conducted upon the obsidian artifacts recovered from Chan's central precinct. For the sake of simplicity all recovered obsidian from the numerous operations of C-001 will be grouped together. Future research will tease out the specific locations of lithic debitage types in an attempt to specify more exact locations of activities such as tool production.

Two patterns arrise from the obsidian artifacts recovered from the Chan's central precinct. In C-001, obsidian artifacts tended to be blade fragments with most being trapezoidal in cross-section. Trapezoidal blades would be expected at an archaeological site like Chan because of the distance to the obsidian source. The farther reduced a core is, triangular blades become rarer. Secondly, a surprising bit of evidence exists however for low intensity pressure blade production occurring at C-001 due to the presence of debitage related core maintenance activities. The evidence is consistent with cores coming into the household nearly exhausted and some core rejuvenation happening. Though only a preliminary assessment, if low levels of obsidian blade production are happening at C-001, then the social organization of this production needs to be investigated.

No non-obsidian debitage was examined from C-001. Future research will examine these collections.

C-002 and C-003

Analyzed non-obsidian debitage came only from Operation 23. Obsidian analysis came from Operations 23, 25, and 26.

The collection of obsidian artifacts is consistent with these households primarily being consumer sites of obsidian blades. Little to no evidence for obsidian blade production is present from these households. Obsidian blades tended to be trapezoidal in cross section with a much smaller percentage of blades and blade segments being triangular in cross section. The preponderance of trapezoidal blades over triangular blades indicates that the blades were removed from cores later in the reduction process.

Non-obsidian artifacts were almost entirely of chert. Future analyses will describe the quantities of chert to other flaked-stone materials. The non-obsidian flaked stone artifacts of this household were dominated by partially cortical and non-cortical single-facet flakes. This kind of assemblage is expected with single-platform, single-directional flake core reduction. In this kind of reduction strategy, cores have a non-cortical, single-facet platform. Flakes are removed down the sides of the core for flake tools. Little to no evidence was available to support the production of the flake cores from this household as the amounts of completely cortical flakes were so low. Likely, flake cores were brought into the household with the non-cortical, single-facet platforms already established. This pattern of single facet platforms and likely single facet platform cores mirrors the other households, excluding the Mul Chichem (C-199) household, at the site.

Northeast Group

Obsidian artifacts were not analyzed by the author as these collections were previously analyzed by C. Blackmore as part of her dissertation research.

Non-obsidian artifacts from the middens of the Northeast group like other contexts were primarily of chert. Future analysis will expand upon this assertion. Just over 1,100 non-obsidian artifacts were analyzed this season from the Northeast Group. Single facet, partially cortical and non-cortical flakes were the most common kind of flakes. This would lend credence to single direction, single facet flake core reduction being employed in the household like C-002 and C-003 above.

The Northeast Group differs from other houses however because it has a higher percentage of multifaceted flakes than the other households examined. These kinds of flakes can be created in the early stages of biface manufacturing or in a core reduction strategy that requires the faceting of the platforms previous to desired flake removal. Biface manufacturing is unlikely though as a very limited number of biface production flakes (see below, Mul Chichem Operation 29 for a comparison of the quantities of biface and multifaceted platform flakes). What is more likely happening at the Northeast group, in terms of lithic reduction, is that multifaceted platform flake cores are being reduced to make flakes for tools.

Chan Nòohol

The lithic artifacts from Chan Nòohol were nearly entirely of chert though; again future analysis will expand upon this assertion. No obsidian artifacts were analyzed as part of this analysis as these collections were not available to me as they are part of the collection from the Xunantunich Archaeology Project.

Non-obsidian artifacts again were primarily single-facet platform, partially cortical and non-cortical flakes. Multifaceted platform flakes were also prevalent. The existence of these kinds of flakes speaks to either (a) single-facet platform flake cores and multi-facet platform flake cores being reduced or (b) some potential bifacial tool production also taking place in the household. The evidence of some biface reduction flakes from this context does give some support to the later of these two assertions, though these flakes could be there due to bifacial resharpening. Without a larger quantity of biface reduction flakes, bifacial tool production failures, and microdebitage form Chan Nòohol, I find it difficult to completely support this assertion. What is more likely is that both single-facet platform and multi-facet platform flake cores were reduced to make flakes for flake tools.

C-304

The lithic material recovered from mound C-304 shows a primary high percentage of single facet platform flakes and a secondary percentage of multifaceted platform flakes. The single facet platform flake core technology apparently was the preferred reduction strategy in this household, though multifaceted platforms on flake cores were also present. This indicates that flake cores were being reduced in the household, likely for flake tools.

There are very few bifacial flakes from this context. The few that are there would be consistent with some bifacial resharpening occurring within the household, but not actual biface manufacture. It appears that C-304 was a location of biface consumption and resharpening, not

production. This seasons findings are consistent with my previous findings concerning no biface manufacture within the house (Hearth 2007, 2008), though evidence of resharpening of bifacial tools is now also apparent.

Obsidian artifacts are rare in comparison to the quantities of chert recovered from mound C-304, see Appendix 2. Obsidian artifacts are nearly all blades with only one platform tablet or faceting flake present. Platform faceting flakes could be one material correlate to begin to identify obsidian blade production at a locality. However, since no other directly ascribable production related debitage is present, the obsidian artifacts are consistent with an interpretation of Household C-304 as a site of obsidian blade consumption.

Mul Chichem

Previously, I have argued that the Mul Chichem household (C-199) is a location of biface manufacture (Hearth 2007, 2008). The continued analysis of the lithic artifacts from this household is congruous with that interpretation. Due to time constraints, I was only analyzed a small portion of the unanalyzed collection.

The Mul Chichem household has a much denser concentration of chert flakes in its midden than in other locations around Chan. Though field collection methods were different at this household than at other households at Chan, the presence of microdebitage (<1/8") and small debitage (<1/4 but >1/8) indicates C-199 as the location of lithic reduction because the smaller artifacts tend to be ground into the knapping floor except in the most extreme debitage disposal practices.

The debitage is consistent of a location of bifacial preform or thick biface manufacture. The higher quantities of multifaceted flakes and early stages of biface production flakes from this household would support the idea that axes or chisels (bifaces with thickness of cross section as a desired attribute) were manufactured at this locality. In the manufacture of thinner bifaces, like ones for projectile points or knives, the tendency is to also make late stage percussion biface thinning flakes. These flakes would have less proximal to distal curvature than early biface percussion flakes. I have observed this same pattern in my replicative experiments of thick axes and chisels vs. thin knives and projectile points. Missing from current purview is a deposit of biface manufacturing failures. I previously calculated (Hearth 2008) that there are over 80,000 flakes recovered from excavations within the lithic debitage midden at this site. I am not suggesting that the ancient knappers who created this debitage midden were so good at their craft that they didn't make production failures.

Also of note from the Mul Chichem household is the nearly total lack of completely cortical flakes compared to the other households analyzed this season. This evidence would likely further support an argument concerning at least part time craft specialization (Hearth 2008) occurring at this household. Lithic craft specialists would likely make a point to acquire better material (less cortical) to work as this increases the efficiency and predictability of the work.

CONCLUSIONS AND FUTURE RESEARCH

The lithic economy during the Late Classic period at Chan is a bit clearer after conducting this analysis. Production of chert bifaces for out-of-household consumption likely was only occurring at the Mul Chichem household. Potentially, obsidian blade production was

happening in and around C-001, Chan's likely administrative and ritual center. Obsidian blade production debitage was also observed at or near the site center of Ojo de Agua, Chiapas (Clark 1997; Clark and Bryant 1997). Flake core technology within Chan was predominantly a single facet platform core reduction strategy in all the contexts examined. Though only a preliminary assessment and based upon reflection of the assemblage, there seems to be no debitage associated with the manufacture of flake cores. This would indicate that flake core production was happening outside of household, but the sample size however seems to limit the certitude of that argument.

More work is needed though because of some the inexactness of the current synthesis of specific contexts. For example, the specific location of possible blade production is important to determine the possibility obsidian blade production happening at the site. The social and economic organization of obsidian blade production will be addressed by an examination of specific contexts. Other areas of needed research include further excavation at the Mul Chichem household. The assemblage is currently incomplete for an expected full repertoire of biface manufacturing for exchange outside the household. No cache of biface production failures has been discovered. Likely location for such a deposit would be within the structures that are immediately adjacent to the lithic debitage midden.

Another area of future research and one that will be fundamental to my work at Chan will be the experimental creation of a complete household lithic assemblage. The creation and analysis of an experimentally created debitage set and tools will allow for verification of assertions as to the assertions about flake morphology and what the removal of the flake accomplished. An intimate understanding of knapping is necessary to analyze lithic artifacts.

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Appendix 1 Glossary of Debitage Types and References

Type Name	Description	Original Name	Reference Source
BB	Biface-reduction flake with a bulb remnant from parent flakes on its dorsal surface	BT/Bulb	Wilke 1993
BE	Biface-reduction flake with characteristics of an edge preperation flake	BT/Edge	Wilke 1993
BEC	Biface-reduction flake resulting from early-stage percusion	BT/Eperc	Wilke 1993
BEP	Biface-reduction flake resulting from early-stage pressure	BT/Epres	Wilke 1993
BLC	Biface-reduction flake resulting from late-stage percusion	BT/Lperc	Wilke 1993
BLP	Biface-reduction flake resulting from late-stage pressure	BT/Lpres	Wilke 1993
BM	Biface-reduction flake with a margin removal-removal flake	BT/Marg	Wilke 1993
BO	Biface-reduction flake with characteristics of outre-passe/overshot termination	BT/Outr	Wilke 1993
BPA	Biface-reduction flake resulting from early-stage percussion work but missing its platform.		
Burin Spall	Part of a blank that has been detached by the burin blow technique.		Inizan et al. 1999:132
CA	Completely cortical flake with characteristics of an alternate flake	CC/Alt	Wilke 1993
CAMFP	Completely cortical flake with an abraded mulit-facet platform	CC/AbrMFP	Wilke 1993
CE	Complety cortical flake with characteristics of an edge-preperation flake	CC/Edge	Wilke 1993
CMFP	Completely cortical flake with a multi-facet platform	CC/MFP	Wilke 1993
CNP	Completely coritical flake with a natural/coritcal platform	CC/NP	Wilke 1993

CO	Completely cortical flake with an outre passe/overshot termination	CC/Outr	Wilke 1993
CPA	Completely cortical flake with platform absent (can grade into biface-production of an edge preperation flake and also into debitage resulting from production of a bulbular uniface)	CC/PA	Wilke 1993
CSFP	Completely cortical flake with a single facet platform; includes diagnostic debitage from bulbular uniface production	CC/SFP	Wilke 1993
ER	Eraillure (contact-lens shaped)	ERRAIL	Wilke 1993
FC	Flake Fragment with some cortex	FF/C	Wilke 1993
FN	Flake Fragment with no cortex	FF/NC	Wilke 1993
JAN	Popout or Janus flake or resulting from bending of flake or blade; appears to have a bulb on both its dorsal and ventral surfaces; same platform as parent flake from which it was liberated	POPOUT	Wilke 1993
LAN	Spindle-shaped flake freed as ejecta by compression during bending of the flake or blade	LANGUETTE	Wilke 1993
MFPB	fragments. These elments are	MinutePresBldFrgs	Hintzman 2000:125
MICRO	Microdebitage <1/8 inch in size		
NA	Non-cortical flakewith charcteristics of an alternate flake	NC/Alt	Wilke 1993
NAMFP	Non-cortical flake with a culturally abraded multi-facet platform	NC/AbrMFP	Wilke 1993
NASF	A noncortical abraded single facet platform flake.		
NB	Non-cortical flakewith charcteristics of an bulb-removal flake	NC/Bulb	Wilke 1993

NBPPASPB	This is similar to the NBPSPB excecpt that the platform itself is not present		
NBPSPB	Platform Segment from a		
NE	Non-coritcal flake with characterists of an edge-preperation flake	NC/Edge	Wilke 1993
NECPB	This is a non-cortical pressure blade to correct an error on the face of the core. This category includes "reversals," where a blade was removed from the distal end of the core towards the platform to remove the remnant of a failed blade from the face of	NC/PresBldErrCorrect	Hintzman 2000:125
NESPB	Non cortical pressure blade that was removed as one fo the first pressure blades detached from the core. These elements can be identified as they have a complex dorsal topography that contains evidence of percussion-blade detachments	NC/PresBldEarlySer	Hintzman 2000:126
NIDOPB	The distal segment of a non-cortial pressure blade that is triangular in cross section. This blade overshot the distal end of the core removing it. This element is valuable in providing some information about core form and methods that may have been emp	NC/PresBldTriDistOST	Hintzman 2000:124
NIDPB	The distal segment of a non-cortical pressure blade that is triangular in cross-section. Though not in Hintzman 2000, I would add that this kind of blade segment would have a feather termination	NC/PresBldTriDist	Hintzman 2000:124

NIDSPB	The distal segment of a non-cortical pressure blade that is triangular in cross section and that has a single facet element on its distal termination.	NC/PresBldTriDistSFT	Hintzman 2000:124
NIMPB	the Medial segment of a non-cortical pressure blade that is triangular in cross section.	NC/PresBldTriMed	Hintzman 2000:124
NIPB	A complete pressure blade that is non-cortical and triangular in cross section	NC/PressBldTri	Hintzman 2000:124
NIPPB	The Proximal segment of a non-cortical pressure blade that is triangular in cross section. The proximal and distal segments may indicate blade trimming before the blade was used as a tool	NC/PresBldTriProx	Hintzman 2000:124
NMFP	Non-cortical flake with a multi-facet platform	NC/MFP	Wilke 1993
NNP	Non-cortical flake with a natural or cortical platform (can include Topaz Mountain production flake)	NC/NP	Wilke 1993
NO	Non-cortical cortical flake with an outre-passe/overshot termination	NC/Outr	Wilke 1993
NOT	Notching flake from a bifacial preform (such as a projectile point)	NOTCH	Wilke 1993
NPA	Non-cortical flake with platform absent (can grade into biface-production of an edge preperation flake and also into debitage resulting from production of a bulbular uniface)	NC/PA	Wilke 1993
NPCB	Non cortical proximal blade fragement from a percussion blade core. This category exhibit percussion blade scars, not pressure blade scars on its dorsal surface		

NPFF	Noncortical platform faceting flake		
NPICP	Non-cortical platform-isolation element that was detached from a percussion-blade core. This percussion flake is detached for the specific purpose of straightening a ridge and for isolating a platform of a percussion blade	NC/PlatIsoPercBld	Hintzman 2000:122
NPIPB	Non-cortical blade platform-isolation element detached from a pressure blade core. These elements are detached by pressure from the platform down the face of the core. They are removed to isolate the intended blade platform so that blade detachment will	NC/PlatIsoPresBld	Hintzman 2000:125
NPTFC	Noncortical Cortical Platform Tablet from a Flake Core		
NPTFPB	Non-coritical platform tablet or faceting flake removed from the distal end of a pressure blade core. NOTE: Tablets and faceting flakes were lumped together as they achieve the same purpose, maintaining the working angle of the core	NC/PlatTaborFacetPresBldCor	Hintzman 2000:126
NREVPB	A non-cortical pressure blade or blade segment that was detached from the distal end of the core towards the platform: usually to remove an error or topographic undulation on the face of the core	NC/PresBldRev	Hintzman 2000:126

NSFP	Non-cortical flake with a single-facet platform; includes single facet platform flake core flakes which are likely the desired products of flake core reduction (not from Wilke 1993; my own thoughts)	NC/SFP	Wilke 1993
NSNPB	A non-cortical pressure blade removed from a core that had a distal truncation removed from it. Some of the pecked region is evident near the platform of this pressure blade	NC/PresBldStartNotch	Hintzman 2000:127
NSNPTF	Non-cortical Platform Tablet or Faceting flake that has evidence of the pecked notch that segmented the core. The Pecked region is likely to occur along the faceting flakes margins or distal termination	NC/PlatFacetFlkAftTruncation	Hintzman 2000:125
NTDOPB	The distal segment of a non-cortical pressure blade that is trapazoidal in cross section. This blade oversho the distal end of the core, removing it. This element is valuable if providing information about th ecore form and methods of supporting the core	NC/PresBldeTrapDistOST	Hintzman 2000:125
NTDPB	The distal segment of a non-cortical pressure blade that is trapazoidal in cross section.	NC/PresBldeTrapDist	Hintzman 2000:125
NTDSPB	The distal segment of a non-cortical pressure blade that is trapazoidal in cross section. This distal sigament has a single facet element on its distal termination. This element can be used to determine if the cores were flat bottomed. If they were the	NC/PresBldeTrapDistSFT	Hintzman 2000:125
NTMPB	The medial segment of a non-cortical pressure blade that is trapazoidali in cross section	NC/PresBldTrapMed	Hintzman 2000:125

NTPB	A complete non-cortical pressure blade that is trapazoidal in cross section.	NC/PresBldTrap	Hintzman 2000:124
NTPPB	The proximal segment of a non-cortical pressure blade that is trapazoidal in cross section.	NC/PresBldTrapProx	Hintzman 2000:125
NTRANPB	The tranchet flake off of a pressure blade.		
NTRANTOOL	A tranchet bit pressure blade tool.		
PA	Partially cortical flakewith charcteristics of an alternate flake	PC/Alt	Wilke 1993
PAMFP	Partically cortical flake with a culturally abraded multi-facet platform	PC/AbrMFP	Wilke 1993
PB	Partially cortical flake with characteristics of a bulb removal flake	PC/Bulb	Wilke 1993
PDPB	partially cortical pressure blade.	PC/PresBldDist	Hintzman 2000:123
PE	Partially coritcal flake with characterists of an edge-preperation flake	PC/Edge	Wilke 1993
PMFP	Partially cortical flake with a multi-facet platform	PC/MFP	Wilke 1993
PMPB	The medial segment of a partially cortical pressure blade. This segment is devoid of a platform but still maintains its distal termination.	PC/PresBldDist	Hintzman 2000:123
PNP	Partially cortical flake with a natural or cortical platform	PC/NP	Wilke 1993
PO	Partially cortical flake with an outre-passe/overshot termination	PC/Outr	Wilke 1993
POT	Potlid, expelled from the surface of stone be differential termal (either cold or heat) expansion	POTLID	Wilke 1993

PPA	Partially cortical flake with plaform absent (can grade into biface-production of an edge preperation flake and also into debitage resulting from production of a bulbular uniface)	PC/PA	Wilke 1993
PPFF	Partially cortical platform faceting flake		
PPTFC	Partially Cortical Platform Tablet from a Flake Core	cf.PC/PlatTabPercBldCor	cf Hintzman 2001:122
PSFP	Partially cortical flake with a single-facet platform; includes diagnostic debitage from bulbular uniface production; includes single facet platform flake core flakes which are likely the desired products of flake core reduction	PC/SFP	Wilke 1993
PU	Partially cortical flake with a dorsal surface consisteing of an undulation from the distal end of the parent flake; outrepasse termination with cortex at distal end	PC/Undul	Wilke 1993
SC	Shatter with some cortex	SHT/C	Wilke 1993
SMALL	Small debitage > 1/8 but <1/4 inch in size		
SN	Shatter with no cortex	SHT/NC	Wilke 1993

Appendix 2: Obsidian Data Table

	C-001		C-002 and C-003		C-304		C-303 Op 15 and 16	
Flake Type	SumOfCount	Percentage of Total Count	Sum Of Count	Percentage of Total Count	SumOfCount	Percentage of Total Count	SumOfCount	Percentage of Total Count
NPICP					1	3.45%		
NPCB								
PDPB	2	0.55%						
NIDOPB	2	0.55%	1	1.69%				
NIDPB	6	1.65%					1	2.22%
NIMPB	19	5.22%	2	3.39%			1	2.22%
NIPPB	15	4.12%	5	8.47%	1	3.45%		
NTDOPB	12	3.30%					1	2.22%
NTDPB	28	7.69%	3	5.08%	1	3.45%	2	4.44%
NTDSPB	1	0.27%					1	2.22%
NTMPB	104	28.57%	29	49.15%	14	48.28%	20	44.44%
NTPPB	59	16.21%	14	23.73%	7	24.14%	13	28.89%
MFPB	20	5.49%	4	6.78%	3	10.34%	2	4.44%
NTPB								
NSNPTF	4	1.10%						
NPIPB	26	7.14%						
NECPB	4	1.10%					2	4.44%
NPTFPB	19	5.22%			1	3.45%		
NESPB	6	1.65%			1	3.45%		
NREVPB	3	0.82%						
NSNPB	2	0.55%						
NBPPASPB	3	0.82%						
NBPSPB	12	3.30%						
FC	2	0.55%						
FN	11	3.02%	1	1.69%			2	4.44%
SN								
NAMFP	1	0.27%						
BLC	1	0.27%						
BM	1	0.27%						
NSFP	1	0.27%						
NTRANPB								
NTRANTOOL								
Total	364	100.00%	59	100.00%	29	100.00%	45	100.00%

	Terraces CT-394		C-010 & C-011 (Limestone Quarries)		Chans West Plaza Op 27		Op 28	
Flake Type	SumOfCount	Percentage of Total Count	SumOfCount	Percentage of Total Count	SumOfCount	Percentage of Total Count	SumOfCount	Percentage of Total Count
NPICP							1	4.17%
NPCB								
PDPB					1	1.01%		
NIDOPB								
NIDPB								
NIMPB					11	11.11%	1	4.17%
NIPPB					1	1.01%	2	8.33%
NTDOPB					1	1.01%		
NTDPB					7	7.07%	1	4.17%
NTDSPB								
NTMPB	5	83.33%	1	33.33%	24	24.24%	11	45.83%
NTPPB			1	33.33%	12	12.12%	4	16.67%
MFPB	1	16.67%			15	15.15%	3	12.50%
NTPB					1	1.01%	1	4.17%
NSNPTF					3	3.03%		
NPIPB					3	3.03%		
NECPB					2	2.02%		
NPTFPB					10	10.10%		
NESPB								
NREVPB								
NSNPB								
NBPPASPB								
NBPSPB								
FC					2	2.02%		
FN			1	33.33%	2	2.02%		
SN					1	1.01%		
NAMFP								
BLC								
BM								
NSFP								
NTRANPB					2	2.02%		
NTRANTOOL					1	1.01%		
Total	6	100.00%	3	100.00%	99	100.00%	24	100.00%

Appendix 3: Non-Obsidian Debitage

	C-002 C-003 (23.D only)		Northeast Group Op9		Chan Noohol (CN-1 only)		C-304 (Op4)		Mul Chichem Op 29	
Flake Type	SumOfCount	Percentage of Total Count	SumOfCount	Percentage of Total Count	SumOfCount	Percentage of Total Count	SumOfCount	Percentage of Total Count	umOfCou	Percentage of Total Count*
CE	1	0.35%								
CMFP	1	0.35%	1	0.09%	1	0.06%			1	0.03%
CNP	1	0.35%	10	0.91%	4	0.25%				
CPA	1	0.35%	6	0.54%	5	0.31%			1	0.03%
CSFP	2	0.69%	28	2.54%	9	0.56%	3	2.42%	1	0.03%
PA			1	0.09%	3	0.19%			13	0.42%
PB			1	0.09%						
PE			7	0.64%					11	0.36%
PAMFP	1	0.35%			1	0.06%				
PE	2	0.69%			9	0.56%	4	3.23%		
PMFP	9	3.13%	31	2.82%	64	3.97%	8	6.45%	43	1.39%
PNP	6	2.08%	20	1.82%	11	0.68%			5	0.16%
PO					2	0.12%				
PPA	7	2.43%	23	2.09%	49	3.04%	3	2.42%	7	0.23%
PPFF					1	0.06%			1	0.03%
PPTFC			1	0.09%	4	0.25%				
PSFP	43	14.93%	142	12.90%	121	7.51%	21	16.94%	6	0.19%
PSP									5	0.16%
NA			1	0.09%	3	0.19%			12	0.39%
NAMFP			4	0.36%	8	0.50%			8	0.26%
NB			3	0.27%	2	0.12%			2	0.06%
NE			38	3.45%	90	5.59%	11	8.87%	221	7.13%
NMFP	8	2.78%	61	5.54%	188	11.67%	10	8.06%	856	27.63%
NNP	8	2.78%	9	0.82%	16	0.99%	1	0.81%	18	0.58%
NO			1	0.09%						
NPA	5	1.74%	25	2.27%	80	4.97%	1	0.81%	134	4.33%
NPFF	1	0.35%	3	0.27%	6	0.37%			14	0.45%
NPTFC			1	0.09%						
NSFP	38	13.19%	128	11.63%	177	10.99%	26	20.97%	155	5.00%
BEC	1	0.35%	11	1.00%	25	1.55%	2	1.61%	80	2.58%
BEP									6	0.19%
BLC									16	0.52%
BM					2	0.12%				
BPA							1	0.81%	90	2.91%
FC	69	23.96%	249	22.62%	313	19.43%	10	8.06%	240	7.75%
FN	48	16.67%	202	18.35%	319	19.80%	22	17.74%	1114	35.96%
SC	22	7.64%	54	4.90%	51	3.17%	1	0.81%	7	0.23%
SN	11	3.82%	29	2.63%	40	2.48%			19	0.61%
POT	3	1.04%	6	0.54%	7	0.43%			12	0.39%
ER			1	0.09%						
Manuport			1	0.09%						
Micro*									3991	
Small*									4487	
Bipolar flake?			1	0.09%						
Burin Spall			2	0.18%						
Total	288	100.00%	1101	100.00%	1611	100.00%	124	100.00%	11576	

*Micro and Small not used in calculating percent of total from lot

BIOARCHAEOLOGY OF THE CHAN SITE: RESULTS OF THE 2008 LAB SEASON

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INTRODUCTION

This report contains the complete osteological analysis of the burials from the Northeast group, a rural "neighborhood" located northeast of the Chan site center (Blackmore 2004:67, 2005, 2008). During the 2008 lab season a total of 6 burials containing 10 individuals were examined and will be reported on here. Each burial is listed below according to burial number[1] and provenience (Operation, Suboperation, and Lot). Mound groups within the "neighborhood" are designated by NE-# to indicate their location in the Northeast Group (Blackmore 2008; Figures 1-3). Each burial is described beginning with the archaeological context from which the remains were recovered. Details of grave location, time period in which the interment occurred, position and orientation of the skeleton, and any grave goods are recounted in this section. The following section records the osteological analysis of each individual including the approximate percentage of the remains recovered, age, sex, dentition, and skeletal pathologies, if any were observed.

Archaeological contexts were reconstructed from the 2004 and 2005 Chan Project informes, field notes and drawings provided by project director Dr. Cynthia Robin and excavator of the Northeast group Dr. Chelsea Blackmore. All skeletal data were collected in accordance with the *Standards for Collection of Data from Human Skeletal Remains* (Buikstra and Ubelaker 1994). *Standards* is a compilation of techniques used in osteological analysis which outlines methods of determining age, sex, pathological conditions, and cultural modification. As much of these data as possible were collected for each individual. Age was estimated for most skeletons by dental wear or dental eruption, although where preservation was adequate epiphyseal closure, cranial suture, and pelvic morphology were also used. Sex was determined by a combination of cranial traits, pelvic morphology, and long bone measurements as preservation allowed. Analysis of the dentition was done according to *Standards* and supplemented by Simon Hillson's text *Dental Anthropology* (1996) and Timothy D. White and Peter Folkiens' text *The Human Bone Manual* (2006). Pathologies were identified with reference to *Identification of Pathological Conditions in Human Skeletal Remains* (Ortner 2003). Age at death for juvenile skeletons was estimated using *The Osteology of Infants and Children* (Baker, Dupras, and Tocheri, 2005). I have refrained from citing the above texts in the report except where it seemed necessary.

Preliminary osteological analysis was undertaken in the 2004 and 2005 field seasons by Margaret Briggs and is reported in the Chan Project reports from those years. Briggs examined two burials, C1 and C2. These burials were re-examined here for consistency.

[1] A "C" is added to each burial number (i.e."Burial C1") to differentiate them from the burials from the Chan site (i.e. "Burial 1") which also uses a numbering system beginning with the number 1.

THE NORTHEASTGROUP BIOARCHAEOLOGICAL ANALYSIS

Burial: C1	**Individual**: 1	**Observer**: A. Novotny, M. Briggs
Op: 9	**SubOp**: S	**Lot**: Multiple

Archaeological Context

Burial C1, located in NE-3 at the base of Wall 1, was a stone lined crypt capped with dressed capstones dating to the Late Late Classic Pesoro complex (A.D. 670-800/830) (Blackmore 2004:76, 2008:88; Kosakowsky 2008, personal communication; Figures 1 and 3). The crypt walls intersected with the southeast corner of Wall 1 and may have been built using stones from this wall (Blackmore 2008). The excavator identified two individuals within the crypt – a secondary interment, Individual 1.1, placed on top of a primary interment, Individual 1.2. Burials C1.1 and C1.2 were interred directly on bedrock oriented with heads to the south. A large quantity of special artifacts, including a stone pendant, and ceramic fragments of Mt. Maloney bowls, Benque Viejo Polychromes, and a Martin's incised Cylinder Vase Fragment, were recovered from the fill above Burial C1 (Blackmore 2004:74). However it is not clear whether these were deposited as part of the interment ritual or not. No grave goods were interred within the crypt.

Osteological Analysis

Individual C1.1 consisted of cranial and long bone fragments. Less than 25% of the body is present and preservation is poor. The bone surface is nearly completely gone due to extensive root damage.

Age and Sex

Age was estimated to be middle adult, 30-39 years old at death, based on dental wear. Sex was indeterminate. A fragment of the left sciatic notch was present for observation but its morphology was ambiguous.

Dentition

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
					X										
													X	**X**	
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

Only three teeth were associated with Individual C1.1 – RC^1, LM_1, and LM_2. None showed any pathologies such as calculus or linear enamel hypoplasias.

Pathology and Trauma

No pathologies or evidence of trauma were observed.

Conclusion

The poor preservation of osteological material and lack of many skeletal elements supports the excavator's interpretation of this burial as a secondary interment. It was placed on top of the primary interment, however it is impossible to know if the burial of Individual C1.2 occurred at the interment of Individual C1.2 or sometime after. The individual was a middle adult of unknown sex and, due to the lack of preserved skeletal material little else could be said about this individual.

Burial: C1	**Individual**: 2	**Observer**: A. Novotny, M. Briggs
Op: 9	**SubOp**: S	**Lot**: Multiple

Archaeological Context

Burial C1, located in NE-3 at the base of Wall 1, was a stone lined crypt capped with dressed capstones dating to the Late Late Classic Pesoro complex (A.D. 670-800/830) (Blackmore 2004:76, 2008:88; Kosakowsky 2008, personal communication; Figures 1 and 3). The crypt intersected the southeast corner of Wall 1 and may have been built with stones from this wall (Blackmore 2008). The excavator identified two individuals within the crypt – a secondary interment (Individual 1) placed on top of a primary interment (Individual 2). The individuals in Burial C1 were interred directly on bedrock oriented with heads to the south. Burial C1.2 was extended with arms at its sides. A large quantity of special artifacts, including a stone pendant, and ceramic fragments of Mt. Maloney bowls, Benque Viejo Polychromes, and a Martin's incised Cylinder Vase Fragment, were recovered from the fill above Burial C1 (Blackmore 2004:74). However it is not clear whether these were deposited as part of the interment ritual or not. No grave goods were interred within the crypt.

Osteological Analysis

Individual C1.2 was slightly more complete than Individual C1.1. Nevertheless, approximately 25% of the skeleton was present for observation including fragments of the cranium, long bones, and dentition.

Age and Sex

Age was estimated to be young adult, 20-29 years at death, based on dental wear. Sex was indeterminate as no diagnostic elements were present.

Dentition

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
				X	**X**	**X**	**X**		**X**					**X**	
						X		**X**		**X**		**X**			
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

Only a partial dentition was associated with Burial C1.2 mostly consisting of anterior teeth of the maxillary and mandibular arcades. Several teeth, LI^2, LM^2 and LC_1 showed small amounts of dental calculus. RC^1 and LI^2 were afflicted with interproximal dental caries.

Pathology and Trauma

The left ulna has a fracture callous on the distal 1/3 of the diaphysis (Figure 4). The diaphysis is broken postmortem and approximately the proximal 1/3 of the diaphysis and distal epiphysis are missing. The diaphysis proximal to the callous is morphologically normal.

The callous is large, well integrated, sclerotic bone. There are several porous loci on the surface of the callous but these appear to be healed/healing (Figures 5 and 6). The callous curves superiolateral to inferiomedial. The callous is most substantial at its anteriomedial aspect and less built-up posteriolaterally.

The distal epiphysis was not recovered. The left lunate is present and did not have any exaggerated musculoskeletal stress markers or pathological bone formation. The recovered left radius does not show any pathological bone formation.

The fracture was most likely a complete fracture since the callous was circumferential. Judging by the angulation, the fracture may have been the result of blunt force trauma to the medial ulna. That is, the ulna was rotated anteriomedially when a sharp blow was sustained, possibly with the arm raised.

Conclusion

Burial C1 contained two individuals, a primary and secondary burial. Individual C1.2, a young adult of indeterminate sex was the better preserved primary burial. Only minor dental pathologies were observed. This individual had evidence of trauma to the right ulna with possible secondary infection. No grave goods were interred with Individual C1.2.

Burial: C2	**Individual**: 1	**Observer**: A. Novotny/ M. Biggs
Op: 9	**SubOp**: X	**Lot**: 6

Archaeological Context

Burial C2, dating to the Late Late Classic Pesoro complex (A.D. 670-800/830), was encountered beneath the patio floor in Cluster 6 of the Northeast group, a group of two mounds surrounding a patio (Blackmore 2004:78, 2008:88; Kosakowsky 2008, personal communication; Figures 1 and 3). The grave was a cist partially cut into the natural bedrock slope and capped with capstones (Blackmore 2004:78-79). The individual was interred with head oriented to the south. A piece of round worked shell was the only grave good.

Osteological Analysis

Burial C2 was a single individual burial represented by long bone fragments, mandible fragments and teeth. The bone was badly preserved and little information could be recovered.

Age and Sex

Age was adult based on tooth development but age could not be estimated. Sex was indeterminate due to lack of diagnostic elements.

Dentition

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
					X										
										X=2	**X**				
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

The dentition of Burial C2 consisted of a RC^1, two LC_1's, and one LP_3. The canines have a blue-gray tinge to their surface color indicating that they may have been exposed to fire. However, there was no cracking or shrinking of the teeth. The LP_3 is normal in color and size. No dental pathologies were observed.

Pathology and Trauma

No pathologies or evidence of trauma were observed.

Conclusion

M. Biggs hypothesized that the presence of burned teeth and few bones indicated a cache or special deposit of human remains rather than an actual burial. The presence of duplicate teeth representing two different individuals lends support to this hypothesis. However, the grave space seems to have been prepared to contain the remains of an entire person, as evidenced by the infilling of a posthole and the preparation of a surface in the bedrock. The presence of the shell disc could be evidence of cached material or an item of personal adornment that is found with interments of the entire body. Perhaps an individual was interred here and removed at a later date.

Burial: C3 **Individual**: 1 **Observer**: A. Novotny
Op: 14 **SubOp**: W **Lot**: 9

Archaeological Context

Burial C3, dating to the Late Late Classic Pesoro complex (A.D. 670-800/830), was encountered under the western staircase of Str. 4, a small, square, single level platform located on the eastern side of Group 2 of Cluster 1 in the Northeast group (Blackmore 2005:2, 2008:88; Kosakowsky 2008, personal communication; Figures 1 and 2). The grave was a capped cist intrusive into Floor 20, whose western wall was the western retaining wall of Str. 4 (Blackmore 2005:5). The

interment consisted of a primary, single individual in a prone position oriented with head to the south. Grave goods included a piece of jade, two cut shell beads, and a third shell fragment (Blackmore 2005:5). A second, nearly complete set of dentition was recovered from the grave context, as well.

Osteological Analysis

Individual C3.1 was represented by long bone fragments and fragments of the cranium and dentition. Approximately 25% of the skeleton was present for observation.

Age and Sex

Age is estimated to be adolescent, 12-19 years old at death, based on dental wear. The maxillary third molar of the left side was fully developed but hardly worn at all. Sex was estimated to be male based on morphological attributes of the cranium.

Dentition

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
				X	**X**	**X**	**X**	**X**	**X**	**X**		**X**		**X**	**X**
			X	**X**			**X**			**X**	**X**		**X**		
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

Nearly a complete set of teeth was associated with Individual 3.1. Several of the anterior teeth were afflicted with caries, including the RI^1, RI^2, LI^1, and RI_2, as well as the LM^3. The occlusal wear on RI^1 slopes from the cavity to the distal corner of the tooth. Wear is also heavy on the lingual aspect of the tooth. The left incisor is not worn in the same manner. This could indicate use of the teeth for tools or avoidance of the large interproximal caries during chewing. A minor amount of dental calculus was also observed on the LP_3, RI_1, and RP_1.

Pathology and Trauma

No pathologies or evidence of trauma was observed.

Conclusion

Burial C3 consisted of an adolescent male, Individual C3.1, interred in the eastern structure of Group 2, Cluster 1. Besides several severe cavities his remains showed no pathologies or evidence of compromised health. He was interred with several special grave goods including jade and shell. A second set of teeth were interred within the Burial C3 , Individual C3.2, crypt and may have been a tooth cache offering (Saul and Hammond 1974).

Burial: C3	**Individual**: 2	**Observer**: A. Novotny
Op: 14	**SubOp**: W	**Lot**: 9

Archaeological Context

Burial C3, dating to the Late Late Classic Pesoro complex (A.D. 670-800/830), was interred beneath the stairs of Str. 4, a small platform on the eastern side of Group 2 Cluster 1 of the Northeast Group (Blackmore 2005:5, 2008:88; Kosakowsky 2008, personal communication; Figures 1 and 2). The grave was a capped cist intrusive into Floor 20, whose western wall was the western retaining wall of Str. 4 (Blackmore 2005:5). Individual C3.2 consisted of teeth interred with Individual C3.1, the primary interment. No grave goods were associated with the teeth as they were found beneath the remains of the primary individual (Blackmore 2005:5).

Osteological Analysis

Individual C3.2 was represented by teeth only.

Age and Sex

Age was estimated to be adolescent, aged 12-19, at death. There were no M3's present from either arcade however the wear suggests that the individual was closer to 18-20 years at death. Sex was indeterminate since Individual C3.2 was represented by dentition only.

Dentition[2]

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
		X			**X**	**X**	**X***	**X***	**X**	**X**	**X**				
			X	**X**		**X**		**X**	**X**	**X**	**X**		**X**		
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

Individual C3.2 was represented by nearly a full set of teeth, with the exception of the molars. Only two molars were recovered. Dental calculus was present on many teeth, the maxillary and mandibular teeth on both sides. Although the calculus buildup was minor the left side of both arcades had more teeth affected than the right side. No dental caries were present.

The maxillary central incisors were modified on their distal corners (Figure 7). They were filed in Romero's B4 style, or the "Ik" form. The mandibular central incisors were not modified.

Pathology and Trauma

No pathologies of evidence of trauma was observed.

[2] The asterix represents teeth that have been intentionally modified by filing or dental inlays.

Conclusion

Individual C3.2 consists of teeth only and may represent a tooth cache. Burial C3.2 represents one of 2 people who had dental modification at the Northeast group. Both Individual C3.2 and Individual C5.2 had the B4 type ("Ik") form of modification (Tiesler-Blos 2001). Three individuals from the Chan sites' central group had modified teeth as well, although they were of a different style that those found at the Northeast Group.

Burial: C4	**Individual**: 1	**Observer**: A. Novotny
Op: 14	**SubOp**: V	**Lot**: 11

Archaeological Context

Burial C4, dating to the Late Classic Jalacte/Pesoro time periods (A.D. 600-800/830), was interred within a single course crypt during Phase 2 construction of Str. 6. (Blackmore 2008:100. 88; Kosakowsky 2008, personal communication; Figure 1 and 2). Str. 6 is the northern of three structures surrounding a common patio in Group 2 of Cluster NE-1 (Blackmore 2005:2; Blackmore 2008). Burial C4 was interred beneath the patio floor at the base of the Str. 6 substructure and was most likely place there during extension of the structure and resurfacing of the patio floor (Blackmore 2005:3). The burial contained a single individual, primary interment that was placed in an extended position (Blackmore 2005:3). Grave goods included two obsidian prismatic blade fragments. (Blackmore 2005:3). A piece of jade was found on top of the capstones (Blackmore 2008:100).

Osteological Analysis

Burial C4 was extremely poorly preserved and less than 25% of the body was present for observation. Remains consisted of cranial, dental, and long bone fragments that were for the most part unidentifiable.

Age and Sex

Age was estimated to be young adult, aged 20-24 at death, based on dental wear. Sex was indeterminate due to the poor preservation of skeletal material.

Dentition

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
X							**X**					**X**			
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

Only three teeth were associated with Burial C4. The LP^4 had a cervical caries, the only instance of caries in this individual. No dental calculus was observed.

Pathology and Trauma

No pathologies or evidence of trauma was observed.

Conclusion

Burial C4 was extremely poorly preserved. The individual was a young adult of indeterminate sex. No pathologies or trauma were observed with the exception of several caries. This individual is one of only two burials from the Northeast group that contained jade as a grave good.

Burial: C5	**Individual**: 1	**Observer**: A. Novotny
Op: 17	**SubOp**: E	**Lot**: Multiple

Archaeological Context

Burial C5 was interred in Phase 2 construction of NE-3 at the base of Wall 3, the eastern retaining wall of the NE-3 platform (Blackmore 2008:119-120). It dates to the Late Late Classic Pesoro complex (A.D. 670-800/830) (Blackmore 2008:88; Kosakowsky 2008, personal communication; Figures 1 and 3). The crypt was poorly preserved and assembled of stones from earlier construction phases of Cluster 3 (Blackmore 2005:6). The excavator identified multiple individuals interred in a prone position with heads oriented to the south. Osteological analysis confirms that the remains of three individuals were interred in Burial C5. It is unclear at this time which was the primary interment. Shell beads, ceramic fragments, and obsidian prismatic blades were recovered from the burial (Blackmore 2005:7, 2008:120).

Osteological Analysis

Individual C5.1 was commingled with Individuals C5.2 and C5.3. An MNI of three was determined based on cranial and dental remains. Approximately 50% of the cranium of Individual C5.1 was present for observation. The rest of the remains were inventoried but could not be matched with a set of cranial and dental remains.

Age and Sex

Age was estimated to be middle adult, aged 30-39 years at death, based on cranial suture closure. Sex was determined to be male based on morphological characteristics of the skull.

Dentition

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
	X		**X**		**X**					**X**					**X**
			X		**X**		**X**			**X**		**X**	**X**		
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

The teeth recovered from Burial C5 were divided by individual based on dental wear if they were not associated with a crania. Individual C5.1 did not have teeth directly associated with the

crania. However, one (incomplete) set of dentition was more worn than the other. The more worn teeth were grouped with Individual C5.1 because they had more advanced cranial suture closure.

Several teeth showed a minor amount of dental calculus and three teeth had caries – LP_4 and RP_4 had interproximal caries and LC_1 had a large caries.

Pathology and Trauma

Porosity is present on the left and right parietals and occipital of Individual C5.1. The porosity is most widespread on the ectocranial parietals at the bosses. Porosity reaches from the superior aspect to about the temporal line. The bone surface distal to the line is smooth and normal. Porosity is healing and smooth to the touch. Some porosity is present on the endocranial surface at the suture lines.

The left frontal has porosity similar to that observed on the parietals immediately above the glabella over the left orbit. The interior surface of the orbits is normal. The right frontal was not present for observation.

A unifocal lytic lesion is present on the occipital, superior to the nuchal line on the left side. It is approximately 3mm in diameter and 2mm high and is roughly round in shape. The edges are rounded and smooth but the border is not very well defined. Porosity within the lesion is both active and healed and coalesces slightly on the left side. No other lesions like this are present anywhere on the skull.

Conclusion

Burial C5.1 was a middle adult male interred with two other individuals within a poorly preserved crypt. He showed pathological bone reaction on several cranial bones. The porosity seems more characteristic of an infection than of a nutritional deficiency like anemia, which is also associated with porosity of the parietals and occipital. It is possible that the lytic lesion on the occipital was the result of a traumatic event such as a blow to the head, that resulted in an infection of the scalp. It is not likely that this was the cause of death as it was in the process of healing at death. Burial C5.1 also had minor dental pathologies.

The burial type is similar to multiple individual burials found at the central group of the Chan site, Burials 3 and 5. These were multiple individual burials that dated to the Late Classic time period and contained similar grave goods of jade and shell (Keller 2007; Novotny 2007).

Burial: C5	**Individual**: 2	**Observer**: A. Novotny
Op: 17	**SubOp**: E	**Lot**: Multiple

Archaeological Context

Burial C5 was interred during Phase 2 construction of NE-3 at the base of Wall 3, the eastern retaining wall of the NE-3 platform (Blackmore 2008:119-120). The crypt was poorly preserved

and assembled of stones from earlier construction phases of Cluster 3 (Blackmore 2005:6). It dates to the Late Late Classic Pesoro complex (A.D. 670-800/830) (Blackmore 2008:88; Kosakowsky 2008, personal communication; Figures 1 and 3). The excavator identified multiple individuals interred in a prone position with heads oriented to the south. Osteological analysis confirms that the remains of three individuals were interred in Burial C5, however it is unclear at this time which was the primary interment. Shell beads, ceramic fragments, and obsidian prismatic blades were recovered from the burial (Blackmore 2005:7, 2008:120).

Osteological Analysis

Individual C5.2 was commingled with Individuals C5.1 and C5.3. Three crania and incomplete sets of dentition were identified. Preservation is poor for all three individuals and no postcranial remains could be matched with crania. Approximately 25% of the cranium of Individual 5.2 was present for observation.

Age and Sex

Age was estimated to be middle adult, aged 30-39 at death, based on dental wear and palatine suture closure. Sex for this individual was ambiguous based on morphology of the cranium.

Dentition

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
X	**X**	**X**			**X**		**X***		**X**		**X**				
		X	**X**	**X**	**X**		**X**			**X**		**X**			
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

An incomplete set of dentition was associated with the cranium of Individual C5.2. However, I suspect that these teeth are mixed because some teeth were more worn than others. Nine teeth showed a minor amount of dental calculus. No caries were present.

The RI^1 was modified at its distal corner in Romero's B4 style (Figure 8). The LI^1 was not recovered. This was the only tooth in the burial that was modified.

Pathology and Trauma

A left tibia associated with Individual C5.2 has abnormal bone formation located on the posteriomedial and lateral aspect. Sclerotic bone is present on the medial aspect. Between the interosseous crest and the anterior ridge there is a minor amount of healed, striated, sclerotic bone. The anterior ridge of this left tibia is blunt with sclerotic bone, particularly in the proximal section near the tibial tuberosity.

A right tibia shows a similar pattern of sclerotic activity. This bone is more fragmented than the left and was only partially reconstructable. The lateral aspect has striated sclerotic bone running proximal/distal along the entire aspect between the posterior ridge and anterior angle. The posterior surface seems unaffected. A right fibula has sclerotic bone formation in the proximal 1/3, posteriomedial aspect.

The periostitis of the tibiae and fibula are consisted with a treponemal infection, either yaws, bejel, or venereal syphilis. Syphilitic lesions occur most commonly in the tibiae and are characterized by extensive periosteal thickening of the bone surface. The anterior aspects are the most commonly affected, giving the bone a distinctive shape, but as the disease progresses the entire diaphysis may become involved.

A complete differential diagnosis could not be done because the bones from Burial 5 were poorly preserved commingled. Thus, it cannot be confirmed that the disease process was syphilis.

Conclusion

Individual C5.2 was a middle adult of unknown sex. They were interred with two other individuals in Burial C5. Individual C5.2 had pathological bone formation on the left and right tibiae and right fibula that are diagnostic of a treponemal infection. Changes to the anterior aspect of the tibiae are diagnostic of late-stage syphilis. This was the only indication of the disease process, however. There were no cranial lesions or dental morphology to led support to the diagnosis. No other pathological bone formations were observed.

Individual C5.2 is further distinguished by the presence of a modified incisor. It is filed in the Romero B4 style. Dental modification was present on three individuals from the Chan site central group, however they had different modification than the Northeast group individuals. Burial 5 shares characteristics of several burials from the Chan site central group, including their Late Classic date, the inclusion of multiple individuals and grave goods of jade and shell (Keller 2008; Novotny 2007).

Burial: C5	**Individual**: 3	**Observer**: A. Novotny
Op: 17	**SubOp**: E	**Lot**: Multiple

Archaeological Context

Burial C5 was interred during Phase 2 construction of NE-3 at the base of Wall 3, the eastern retaining wall of the NE-3 platform (Blackmore 2008:119-120). The crypt was poorly preserved and assembled of stones from earlier construction phases of Cluster 3 (Blackmore 2005:6). It dates to the Late Late Classic Pesoro complex (A.D. 670-800/830) (Blackmore 2008:88; Kosakowsky 2008, personal communication; Figures 1 and 3). The excavator identified multiple individuals interred in a prone position with heads oriented to the south. Osteological analysis confirms that three individuals were present, however it is unclear at this time which individual was the primary interment. Shell beads, ceramic fragments, and obsidian prismatic blades were recovered from the burial (Blackmore 2008:120).

Osteological Analysis

Individual C5.3 is represented by femora fragments and dentition only.

Age and Sex

Age is estimated to be young adult, aged 18-20 years, based on dental wear. Sex is indeterminate due to lack of diagnostic elements.

Dentition

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
											X				
	X	**X**	**X**	**X**	**X**	**X**			**X**		**X**	**X**	**X**		**X**
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

An incomplete set of dentition represents Individual C5.3. Several teeth, seven total, showed a minor amount of dental calculus. No caries were present. None of the teeth had odd wear patterns or dental modification.

Pathology and Trauma

No pathologies were observed or evidence for trauma.

Conclusion

Individual C5.3, identified in the lab by femora fragments and teeth, is the third of three individuals interred in Burial C5 and may have been a secondary burial given the lack of skeletal elements. The individual was an adolescent/young adult of unknown sex. There were no pathologies, skeletal or dental, or trauma observed.

Burial: C6	**Individual**: 1	**Observer**: A. Novotny
Op: 17	**SubOp**: E	**Lot**: 25

Archaeological Context

Burial C6 located at the base of the eastern face of NE-3 during construction Phase 2 (Blackmore 2008:116-117). It dates to the Early Late Classic Jalacte complex (A.D. 600-670) (Blackmore 2008:88; Kosakowsky 2006; Figures 1 and 3). The burial was interred within a cist cut into bedrock and capped with capstones that lay on the bedrock surface (Blackmore 2008:116-117). A considerable amount of fill lay between the body and the capstones. The interment consisted of a single individual placed in a prone position with head to the south (Blackmore 2008:116-117). No grave goods were associated with Burial C6.

Osteological Analysis

Burial C6 was moderately well preserved and approximately 50% of the skeleton was present for observation. The thorax was not well preserved and remains consisted of the cranium, long bones, hands and feet. The cranium was particularly well preserved although it was badly crushed by the weight of the soil.

Age and Sex

Age was estimated to be young adult, 20-29 years at death, based on dental wear and cranial suture closure. However, cranial sutures were partially obscured by cranial modification and posterior crushing of the skull. Sex was determined to be male based on morphological characteristics of the cranium. No diagnostic elements from the pelvis were preserved.

Dentition

M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3
		X	**X**		**X**					**X**					**X**
												X		**X**	
M3	M2	M1	P4	P3	C	I2	I1	I1	I2	C	P3	P4	M1	M2	M3

Although the cranium was well preserved, the mandible was practically still articulated, a full dentition was not present for this individual. The right mandible is completely edentulous and resorbed. No right mandibular teeth were recovered. The maxilla was resorbed on both left and right sides where the anterior teeth should have been. No maxillary incisors were recovered. Both maxillae and mandible were complete but no evidence of infection or trauma was observed that would have resulted in the loss of so many teeth.

The teeth present had only minor wear. A small amount of calculus was present on the RM^1 and no caries were observed.

Pathology and Trauma

The cranium was modified in the fronto-occipital style. The cranium was extremely well preserved and flattening of the frontal is clear (Figure 9). However, the cranium was partially crushed by overlying sediment and the occipital flattening is not as clear.

No other evidence of pathology or trauma was observed.

Conclusion

Burial C6, a young adult male, may have been one of the earliest burials in Cluster 3 as it was overlain by the earliest patio fill (Blackmore 2005:6). No pathologies or trauma were observed on Burial C6 and no grave goods were interred with him. He is distinguished, however, by his burial in a deep pit beneath 40 cm of dense fill. This is unusual as other burials with capstones in the northeast group, and the Chan site, are encountered immediately below capstones. He is not, however, the only burial interred in bedrock. Burial C2 and C6 from the Northeast group and Burial 1 from the central group of the Chan site were interred in bedrock pits (Blackmore 2003; Novotny 2007).

SUMMARY

A total of 6 burials containing 10 individuals were excavated at the Northeast group of the Chan site during the 2004 and 2005 field seasons by Dr. Chelsea Blackmore. All burials from the

Northeast group dated to the Late Late Classic Pesoro complex (AD 670-800/830), with one individual (C6) dating to the Early Late Classic Jalacte complex (AD 600-670) (Blackmore 2008:88; Kosakowsky 2008, personal communication). Grave construction was either cist or crypt style for all individuals. Grave goods were less common in the Northeast group, and the absence of whole ceramic vessels noted in the Late Late Classic burials in the Chan E-group is also noted in the Northeast Group (Novotny and Kosakowsky 2008). Shell beads or fragments of shell were found in several Burials (C2, C3, C5). Two multiple individual burials in the Chan site E-group contained numerous, small, whole shell beads. Similarly, Burial C5 contained three individuals and many of this same type of bead (Keller 2008). Burial C3 was the only individual from the Northeast group interred with a jade fragment (Blackmore 2005).

Due to poor preservation and lack of diagnostic elements biological sex could be determined for only three individuals – all male. No females were recovered, however sex could not be determined for 70% of the sample.

There were no children recovered from the Northeast group. Two individuals were between the ages of 12 and 19 due to their lack of dental wear. However, all of these individuals were closer to the older end of the age range based on their dental development of the teeth present. The majority of individuals were young to middle adults. This pattern is consistent with findings from the Chan site central group where 7 out of 24 individuals (~30%) were between the ages of 20 and 29 (Novotny 2007).

Most individuals were affected with dental calculus in the Northeast group (70%) with fewer individuals affected with dental caries (40%). No indicators of childhood stress such as linear enamel hypoplasias or porotic hyperostosis were observed on the individuals from the Northeast group. Two individuals from the Northeast group had severe infections that they survived for some time – Individual C1.2 had a severely fractured ulna that became infected and Individual C5.2 showed signs of a treponemal infection.

Male	3
Female	0
Indeterminate	7
Total	10

Table 1: Sex distribution of the Northeast group

Life Stage	Age Range in Years	Chan NE Group Sample
Prenatal	3 – 9 months	0
Perinatal/Neonatal	9 mo – 1.5 yr	0
Infant	1.6 - 3	0
Child	4 – 11	0
Adolescent	12 – 19	2
Young Adult	20 – 29	4
Middle Adult	30 – 49	3
Old Adult	50+	0
Adult (Unknown range)	-	1
Total	-	10

Table 2: Age distribution of the Northeast group.

Pathology	Individuals Affected
Dental Calculus	7
Dental Caries	4
Linear Enamel Hypoplasias	0
Periostitis	1
Cranial Porosity	1
Fractures	1
Osteoarthritis	0

Table 3: Paleopathology of the Chan Northeast Group.

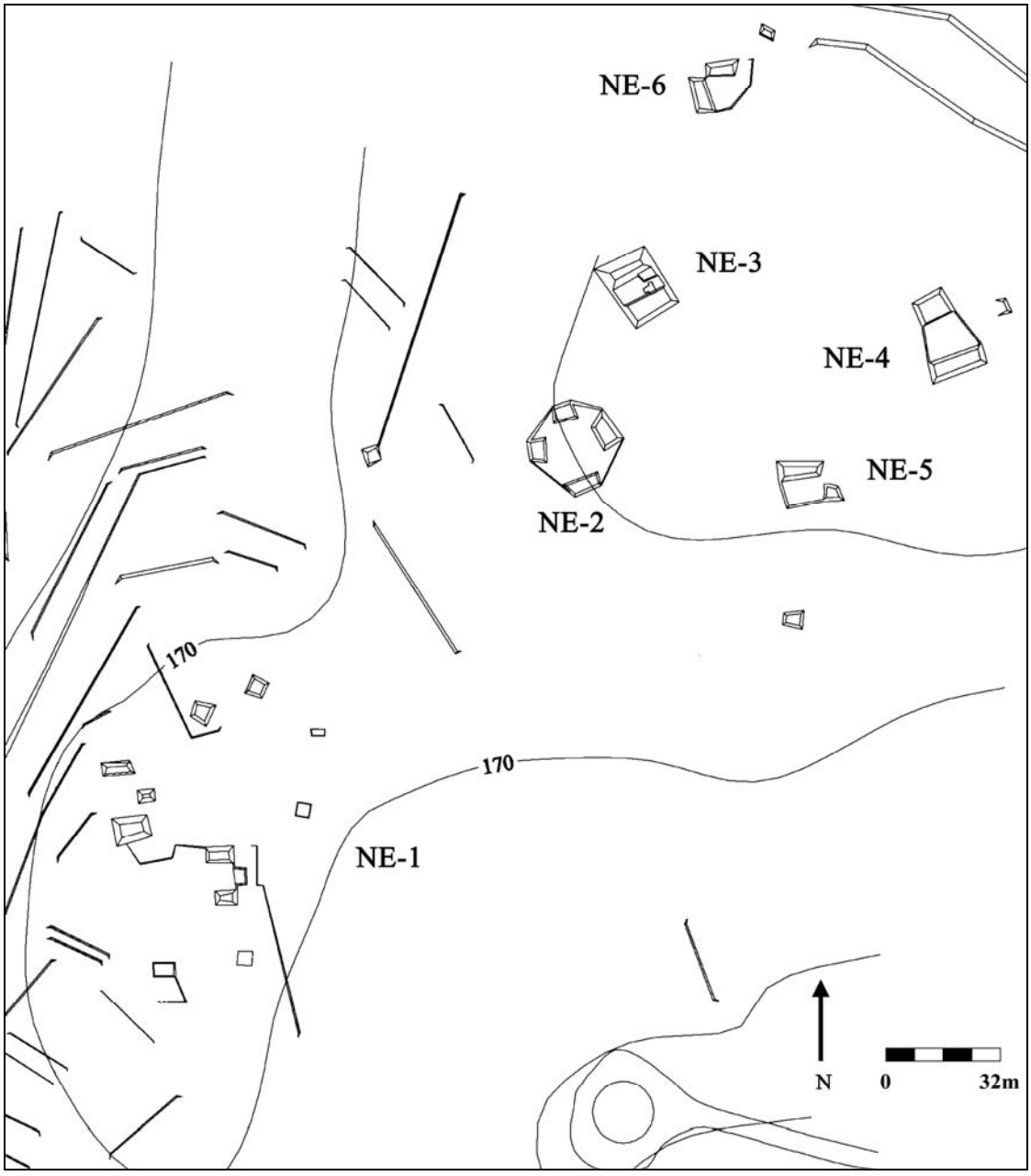

Figure 1: Overview of the Northeast Group. (after Blackmore 2008).

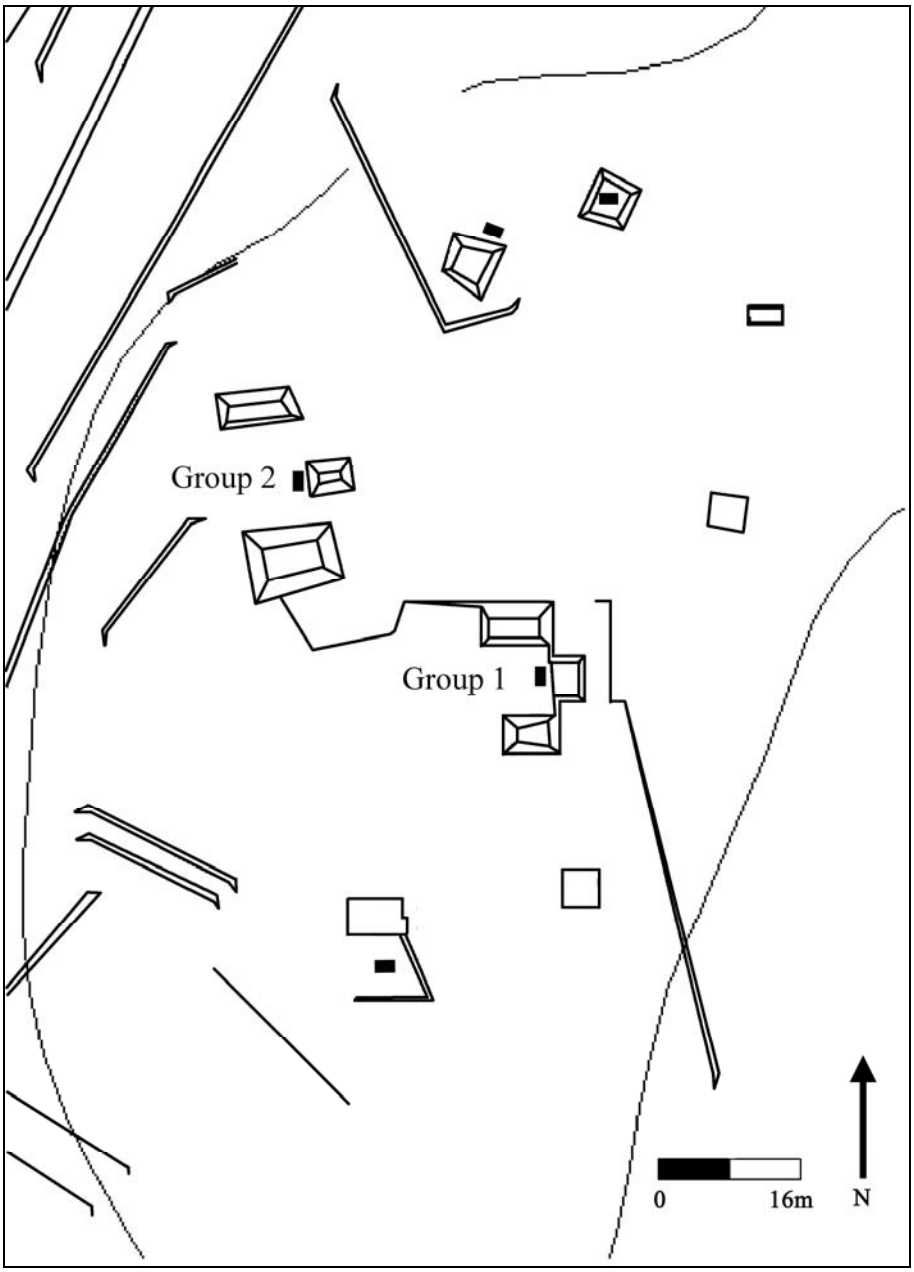

Figure 2: Detail of NE-1. (after Blackmore 2008).

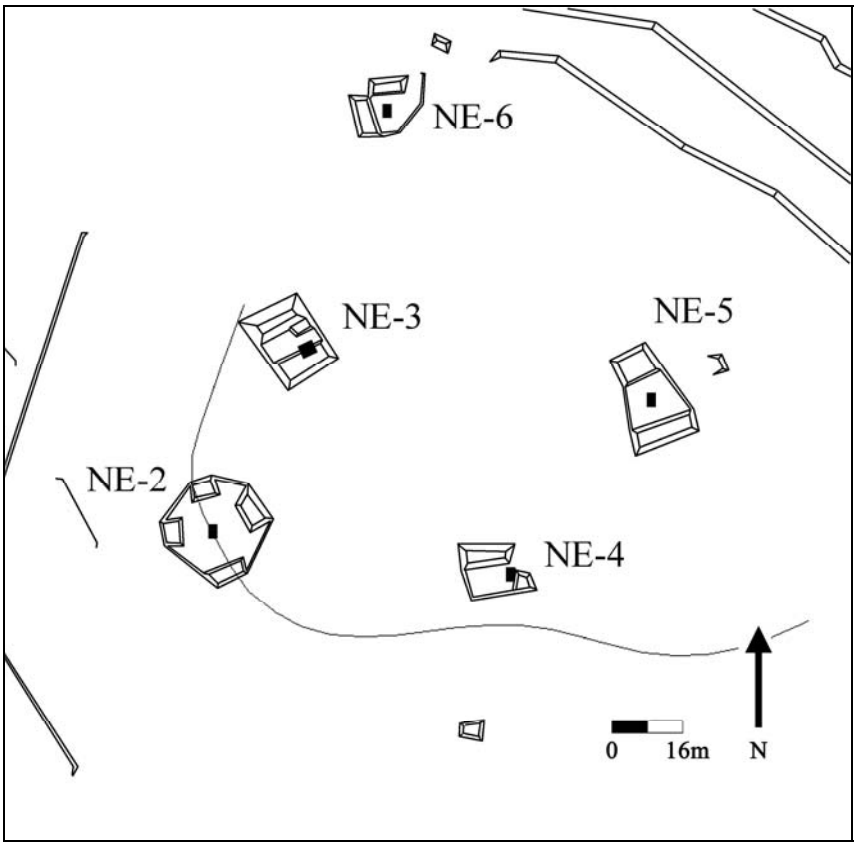

Figure 3: Detail of NE-3 through NE-6. (after Blackmore 2008).

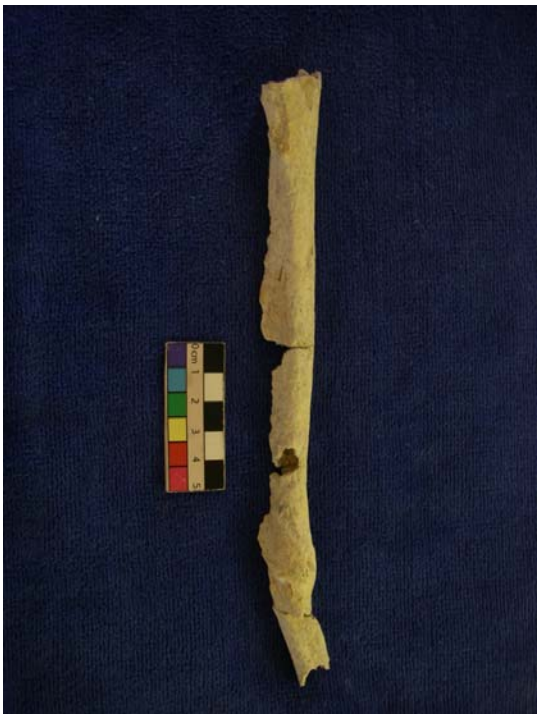

Figure 4: Individual C1.2 angulated healed fracture of the left ulna (photo by the author).

Figure 5: Individual C1.2 cloacae of the fracture callous of left ulna, posteriolateral aspect (photo by the author).

Figure 6: Individual C1.2 cloaca of the fracture callous of the left ulna, lateral aspect (photo by the author).

Figure 7: Individual C3.2 modified incisors (photo by the author).

Figure 8: Individual C5.2 modified incisor (photo by the author).

Figure 7: Burial C6 modified cranium, right lateral view (photo by author).

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