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The Colha Preceramic Project: A Status Report
by

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Introduction

Little is known about the Late Archaic or Preceramic peoples who occupied northern Belize before the appearance of the first recognizably Maya settlements in the region with the onset of the early Middle Preclassic Period ca. 900 bc (Hester 1994; Hamm ond et al. 1995). The first Archaic sites in the region, defined as the chert-bearing zone by the Wright et al. (1959) geological survey, were identified by the Colha Project Regional Survey, directed by Thomas R. Hester and Harry J. Shafer, in 1979- 1980 (Hester et al. 1980; Kelly 1993; Shafer et al. 1980). These include the Lowe Ranch, Sand Hill, and Ladyville sites, where lithic scatters with highly patinated flakes, distinctive projectile points, sandstone bowls, "shoe shaped" unifaces, and large blades were found in aceramic contexts at the southern end of the chert-bearing zone, in a sandy pine ridge area north of Belize City. One of these point types, the Lowe Point, has been tentatively dated to ca. 2500-1900 bc (Kelly 1993: 215), based o n radiocarbon dates obtained with two points at Ladyville.

The Belize Archaic Archaeological Reconnaissance (BAAR), directed by MacNeish (MacNeish and Nelken-Terner 1983; Zeitlin 1984), carried out three seasons of fieldwork involving survey and excavation beginning in 1980. This

fieldwork led to identification of several new sites and the formulation of a tentative developmental sequence for the Belize Archaic. In the near-absence of datable organic remains and with few stratigraphic contexts, absolute dates were assigned based largely on cross-dating of projectile points with those from other regions. Important aspects of the BAAR Archaic model have not held up well under recent scrutiny (see Kelly 1993: 205).

The Colha Preceramic Project, directed by Hester and Shafer, has carried out excavations at the Colha and the Kelly sites since 1987, at the northern and southern ends of the chert-bearing zone, respectively, to identify and study additional Preceramic occupations in the region. The results of these excavations are reported below.

Test Excavations at Colha, 1987-1991

The presence of a Preceramic component at Colha was first discovered during off-mound testing undertaken by Wood in 1987 (Wood 1990). Test pits excavated around an *aguada* at Operation 4046 in the southeastern quadrant of the site in 1987 and 1988 recovered highly patinated lithic artifacts, including constricted unifaces, macroblades, and biface celts below Maya deposits and with no associated ceramics. The likely Preceramic origin of this material was recognized because of the contextual evidence, especially the presence of the constricted unifaces. Gibson (1991) had studied these distinctive artifacts in the early 1980s and, based on functional analysis and contextual considerations, concluded that they were woodworking adzes dating to the Late Archaic.

Further excavations were carried out at Colha Operation 4046 (CH4046) in 1991 on the edge of a mound next to the *aguada* (Lohse 1993). This mound, located about 300 m west of Cobweb Swamp, consisted of a natural marl rise with evidence of Maya occupation, including lithic workshop activity. Stratigraphy consisted of two Maya deposits, Zones A and B, beneath which were found two additional layers, Zones C and D. Zones C and D contained large amounts of patinated lithic material, including constricted unifaces, biface and macroblade fragments, and debitage, but no ceramics. Three radiocarbon dates were obtained (Stuiver and Reimer 1993, using 1-sigma calibrations): 1263-1006 bc, on a charcoal sample from Zone B-C contact; 1517-1208 bc, on soil humates from Zone C; and 2922-1920 bc, on soil humates from Zone D. Radiocarbon dates from the Colha Preceramic Project are summarized in table 1.

Table 1. Radiocarbon Assays from Colha and Cobweb Swamp

Sample No.	Calibrated Date (bc [bp], 1-sigma range) *	Provenience	Stratigraphy	Material
CAMS8397	944-831 (2894-2781)	1993 CH4046/17	Zone B-C interface	Wood charcoal
CAMS8398	1135-1045 (3085-2995)	1993 CH4046/17	Zone B-C interface	Humic insoluble fraction
CAMS8399	1132-1046 (3082-2996)	1993 CH4046/17	Zone B-C interface	Charcoal fraction
TX7371	1263-1006 (3213-2956)	1991 CH4046/9	Zone B-C interface	Charcoal
TX8106	1314-926 (3264-2876)	1993 CH4046/17	Zone B-C interface	Charcoal
TX8295	813-770 (2762-2719)	1994 CH4046/20	Zone C	Soil humate
TX7459	1517-1208 (3467-3158)	1991 CH4046/14	Zone C, bottom of zone	Soil humate
BETA46785	1134-1066 (3084-3016)	1990 Cobweb Swamp, Unit 4BB	Base of Cobweb clay fill	Soil humate
TX7460	2922-1920 (4872-3857)	1991 CH4046/14	Zone D	Soil humate
TX8020	3370-3078 (5320-5028)	1993 CH4046/17	Zone D	Soil humate
BETA64376	3510-3416 (5460-5366)	1993 Cobweb Swamp, Unit 4BB	Base of lower buried field	Noncar-bonized wood

*Stuiver and Reimer (1993), extended 14C database and revised calibration 3.0 14C program.

Ecological Studies in Cobweb Swamp

While Wood and Lohse were conducting their test excavations at CH4046, the first ecological studies were carried out on the edge of Cobweb Swamp, which encompasses the eastern boundary of the Colha site. Jacob (1995) and Alcalá-Herrera et al. (1994) have reported the results of soil studies along the western margin of the swamp.

Jacob (1995) concludes that reticulated field features discovered along the swamp margin in the southern part of the site likely represent human modification of natural channels and islands in order to exploit the agricultural potential of the

fertile swamp soil and that this wetland modification may have begun as early as the Middle Preclassic, or about 800 bc. Sometime after 1400 bc, according to Alcalá-Herrera et al. (1994), water levels in the lagoon began to rise, as evidenced by the precipitation of a second, upper marl, layer in the swamp. The second layer was caused by other than sea-level rise, perhaps, the authors suggest, deforestation, climatic change, stream diversion, or dam construction.

Jones (1994: 208) reports on the results of analysis of pollen and radiocarbon samples collected from the stratified profiles of Unit 4BB, in the area of the reticulated fields. He identifies two buried fields in these profiles. He dates a lower field zone containing a pollen assemblage characterized by a reduction in forest taxa and an increase in disturbance taxa to about 2500-1000 bc, but a radiocarbon assay on a piece of noncarbonized wood from the lower part of this zone recalibrates to 3510 ± 3416 bc at 1-sigma (Stuiver and Reimer 1993 calibration). There is an absence of cultigens in this layer, with the exception of a single manioc grain, but maize pollen dating to this earliest period of forest clearance was recovered in a nearby vibracore section in the swamp. An upper field zone containing abundant cultigen pollen, including maize, cotton, and possibly chiles, may date to 1000-500 bc, or early Middle Preclassic Maya times.

Excavations at Colha, 1993

The Colha Preceramic Project returned to carry out full-scale excavations at Operation 4046 in 1993. After some preliminary test-pitting, a 4.6 m block was opened just to the east of the earlier excavations by Wood and Lohse, about 15 m north of the *aguada*. Testing indicated that the deepest stratified deposits (1.5 m) were absent at both higher and lower elevations, that is, higher up on the edge of the mound and down toward the *aguada*. A series of test pits were also opened in the *aguada* itself to provide a clearer idea of site formation processes on this side of the mound.

The stratigraphic layers identified in our block unit, designated Zones A-D, were consistent with the stratigraphy in the surrounding area, based on our test pits and the earlier test excavations.

Zone A is for the most part plowzone. It is a dark brown sandy clay with abundant Maya lithic and ceramic artifacts, extending to a depth of 40 cm on the average.

Zone B is a marly dark brown clay. It extends about 40 to 80 cm below the surface. It contains mostly Terminal Classic lithics and ceramics, but a thick lens of cobbles covering part of the area, apparently the remains of a Terminal Classic platform or structure, contains lithic and ceramic construction fill from the Middle Preclassic through the Terminal Classic. The marl in this layer appears to be anthropogenic, likely plaster from Maya construction that has eroded from the mound.

Zone C has an olive green clay matrix that extends approximately 80 to 100 cm below surface. No ceramic artifacts are found in this zone, but there are large

quantities of patinated lithic material, including small biface celts, blades, macroflakes, cores, and abundant flake debitage. Three diagnostic constricted unifaces were found in situ in this zone. A platform of unmodified cobbles; others burned, tested, or used for blade production; and other lithic debris was found at the bottom of Zone C in the southwest corner of the block. A series of radiocarbon dates were obtained from charcoal samples recovered at and just above Zone B-C contact (see table 1).

Zone D is a yellow sandy, marly clay extending from about 100 cm to approximately 150 cm below surface. This zone grades into an increasingly coarse, sterile marly clay with large in situ marl and chert cobbles at the bottom. There are, again, no ceramic artifacts in this level, and there is no preservation of organic material. The lithic assemblage is characterized by worked cobbles, massive cores, macroblades and macroflakes, small prepared cores and blades, and production debitage.

There are no constricted unifaces in this zone or biface celts, but several pointed retouched macroblades may represent finished tools produced at this location. Using microwear analysis, one such pointed unifacial tool has been identified as one of the few utilized artifacts in this large assemblage. Frequent proximal ends of aborted macroblades (representing unsuccessful attempts to remove macroblades) and large numbers of small blades are also indicative of target forms. A single pointed biface fragment abandoned in manufacture may be a preform for a Lowe point. A soil humate date of 3370-3078 bc at 1-sigma (Stuiver and Reimer 1993 calibrations) was obtained from this zone.

Refitting efforts have been pursued systematically by Iceland, beginning with searches for fits within Zones D and C, followed by fits between these two zones. Refits of up to six blades from a single core further confirm in situ production of small blades from prepared cores, macroblades from nodular cores, and specific core-preparation activities in Zone D and also provide information concerning the kinds and degree of disturbance at this quarry location.

The constricted unifaces have been an important focus of laboratory analysis. Hudler and Lohse (1994) carried out morphological/technological and microwear studies on 128 of these artifacts, nearly all of those known at the time of their study. Their study included an extensive experimental program using hafted replicas. They concluded that the constricted unifaces were hafted and used predominantly as percussion tools on medium to hard contact materials (probably wood) and, secondarily, as digging tools.

Excavations at Colha, 1994

Further excavations were carried out at Colha in 1994 with the principal objective of placing the Preceramic finds of previous years, especially the Zone C component containing the constricted unifaces, in a broader occupational context.

Two specific areas of Colha appeared to be promising locations for additional Preceramic occupations. In the main plaza, earlier fieldwork had recovered numerous constricted unifaces in Middle Preclassic Maya construction fill, likely indicating the presence of Preceramic occupations disturbed by later Maya construction activities (Gibson 1991; see also McSwain 1995). No evidence of constricted uniface production has been identified at any of the well-studied Preclassic lithic workshops at Colha, nor have stone tools with Maya forms been found mixed with constricted unifaces in the aceramic zones at CH4046. In the swamp forest, ecological research had provided evidence of agricultural activities in Preceramic times and it was hoped that anaerobic conditions in waterlogged soils might preserve organic remains of Preceramic features and artifacts as well. Test excavations carried out in three operations in and around the ceremonial center and two operations in the swamp forest, however, produced no evidence of Preceramic occupations.

A series of test excavations were also placed around the edge of the *aguada* at CH4046, the site of earlier excavations, to determine the extent and character of the Preceramic activities in this part of the site. Two adjoining units covering 12m², Suboperations 20 and 21, provided important Preceramic data that reinforce and supplement earlier findings. Most promising was the discovery of an early Middle Preclassic platform on the edge of the *aguada* containing large numbers of diagnostic macroblade burin spall cores (Potter 1991). Such platforms, three of which have now been identified, may represent work areas constructed on the edge of the *aguada* that permitted stoneworkers to extract promising chert nodules from the *aguada* clay and carry out reduction activities at the same locale.

This particular platform was built next to and directly over an apparent constricted uniface production locale containing numerous preforms, finished tools, and large amounts of debitage in a characteristic dark olive green Zone C matrix. A soil humate date of 787-808 bc at 1-sigma was obtained from this level (Stuiver and Reimer 1993 calibrations); we are currently studying the implications of this unexpectedly late date.

Excavations at the Kelly Site, 1995

The Kelly site is located near the southern end of the chert-bearing zone, on wet savannah near the Belize River, about 40 km south of Colha. Earlier reconnaissance at the site revealed lithic concentrations, including large numbers of chert flakes and broken and nearly complete constricted unifaces, that appeared to be the remains of Preceramic quarry and production areas recently exposed by heavy sand quarrying equipment.

Fieldwork was carried out in 1995 to record and collect the most promising of these disturbed concentrations and to seek undisturbed lithic activity areas in the sandy, grassy areas of the site as yet untouched by modern quarrying activity. Operation 1 was located in the southwestern corner of the modern quarry area. We placed Suboperation 1, a 2.2 m unit, in a mass of exposed lithic debris just inside the

extensive disturbed area. Four constricted uniface fragments, apparently abandoned in manufacture, were recovered along with considerable flake debitage. Sterile gray-yellow mottled clay was reached at a maximum depth of 15 cm in this unit. Nearby are piles of large chert nodules approximately 20-40 cm in length, occasionally larger, gathered up by heavy sand-quarrying equipment.

We then turned to the adjacent sandy stretches beyond the modern quarry area in hope of finding ancient production or habitation areas that had suffered minimal horizontal disturbance from modern human activities or natural processes and were not mixed by vertical conflation of successive ancient occupations.

To detect the presence of subsurface artifact concentrations, we cleared two 16 m transects joined at right angles, encompassing Suboperations 2-4, and used long-handled brooms to remove the shallow layers of fine wind-blown sand. Subsurface artifact concentrations proved largely nonexistent, although there were scattered large chert nodules. Two surface lithic concentrations near the western end of the east-west transect were noted, however, and these were designated Suboperations 5 and 6 and linked in a 34 m block that was excavated as twelve 1m² units, Suboperations 5-16.

Suboperation 5 was excavated to the bottom of layer 1, a surface layer of fine brown sand just 5 cm deep. At the bottom of Suboperation 5, in a thick lens of flake debitage, three uniface fragments were found, two of which could be refitted to confirm that they belonged to the same constricted uniface probably broken by a misplaced blow as the knapper was putting on the final touches. The two refitting fragments were located just 17 cm apart, at the same depth. Mottled gray-yellow basal clay was encountered at a maximum depth of 20 cm.

The second lithic concentration, Suboperation 6, contained a constricted uniface bit fragment and a macroflake preform on the surface and the matching uniface proximal end and another uniface preform with at least two refitting flakes in layer 2, along with a coarse sandstone bowl fragment, all in a mass of chert cobbles and flakes. No ceramics were found in Operation 1.

Preliminary laboratory analysis is reinforcing our impression in the field that Suboperations 5 and 6 are the foci of two small quarry knapping areas devoted primarily to the production of constricted unifaces using macroflake blanks struck from small cobbles, such as one 20 cm diameter cobble with two macroflake scars recovered in Suboperation 10. Some core-blade reduction also appears to have been carried out at the site. The resulting concentrations of lithic debris appear to have retained considerable integrity in spite of the continuing aeolian movement of sands, burning, quarrying, and other postdepositional processes evident at the site.

Conclusions

Analysis of recently recovered data is currently under way, but some preliminary conclusions can be drawn. It appears that intensive lithic quarrying and production

activities were taking place at various locations in the northern Belize chert-bearing zone going back, possibly continuously, to about 3000 bc. These lithic activities coincided with the inception and possible gradual intensification of agriculture in the region.

There are now several radiocarbon dates from the northern Belize region encompassing a period from about 3500 bc to 1900 bc and associated with large-scale forest clearance, maize and manioc cultivation, the use of a distinctive Lowe-type dart point, and the production of large quantities of chert macroblades and smaller blades. All of these are evident to some degree in the Zone D component at Colha-Cobweb Swamp in the central part of the region and in various combinations at numerous sites from Pultrouser Swamp in the north (where Pope et al. [n.d.] report a Lowe point find with an associated radiocarbon date of ca. 2500-2000 bc) to Ladyville in the south.

A later Preceramic occupation has been dated from roughly from 1500 bc to as late as 900 bc. The lithic assemblage of this later Preceramic occupation is characterized by the constricted uniface, large numbers of which have been found at several sites within and just outside the northern Belize chert-bearing zone. Production locales with debitage representing all stages of constricted uniface production have been identified in Zone C at Colha and at the Kelly site, in the southern part of the region. There is evidence of continued blade production at Colha and the Kelly site during this period, as well as the appearance of small biface celts.

There is also pollen and soil evidence from Cobweb Swamp that the period from 1400-1000 bc may have been one of large-scale forest and land modifications (Jones 1994: 209). If so, it is quite possible that the constricted unifaces were associated with widespread agricultural intensification, a conclusion supported by microwear studies (Hudler and Lohse 1994). It may be that the presence of rich lithic and wetland resources provided an exceptionally favorable setting for early experiments at sedentism, cultivation, and intensive craft production.

We would like to know, of course, if these Preceramic people were in some sense proto-Maya. The evidence of the lithic technology is mixed, as noted above, with some very general classes of artifacts spanning the Preceramic to Maya occupations. There is no clear evidence of discontinuity, or abandonment, at any point in the sequence at CH4046. The close vertical proximity of the early Middle Preclassic platform and the Zone C constricted uniface production locale suggest there was not. A clustering of Zone C radiocarbon dates at the end of the second millennium bc, with two dates in the late ninth century bc, combined with several radiocarbon dates in the 825-770 bc range associated with early Middle Preclassic Bolay phase Maya ceramics in the main plaza at Colha (Hester 1994: 3; Klein et al. 1982 calibrations), further close the chronological gap, at least between the Preceramic and recognizably Maya occupations at Colha.

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