The Tobey Site Revisited

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Introduction

The Tobey site is located in the village area of Rehoboth, MA, just south of the east-west segment of the Palmer River (Figure 1, Figure 7, A). The purpose of this article is twofold. The primary purpose is to meet an unfilled commitment from the Cohannet Chapter of the Massachusetts Archaeological Society (MAS) to provide an excavation report to the Tobey family. A secondary purpose, based on discussions with Joshua Tobey and my own personal interest, is understanding how the site fits into the prehistoric record.

My connection to excavation archaeology started in the summer of 1986. While I was walking the family dog along my south property line stone wall, Scooter stopped at the wall opening for the path onto my neighbor Paul Tobey's property, raised his ears, sniffed the air, shot up the path and disappeared over the top of the glacial kame on Paul's property. I followed him and found myself in the middle of an archaeological excavation in process by members of the Cohannet Chapter of MAS. I visited the excavation several times that summer. I joined the dig team the following summer, opening new squares and sifting the soil to junction. Over the next four and a half seasons I spent about 70 days in the dirt, gaining a respect for the organization and discipline of excavation

Discussion

The Tobey site, as shown in Figure 1, is located about 300 meters south of the east-west flow path of the Palmer River on a glacial kame on the north side of an approximately 15,000 year-old moraine of the Buzzards Bay glacial lobe (personal observation, Smith 2016, Skehan 2001). The excavation was on an open area of the kame about 75 meters north of the moraine. The course of this moraine is traceable from the Blackstone River in East Providence, RI to Middleboro, MA, where it joins a recessional moraine of the Cape Cod lobe.

This western segment of the kame was relatively open, while the area to the east is covered by a dense stand of white pine. The west side of the kame and the northwest corner are bounded by a swamp. The west swamp is replenished by a year-round, spring-fed brook. The northern edge of the kame, east of the path to the river, is bounded by another swampy area; the height of the kame from the level of the swamps is about eight meters. The western edge and northwest corner of the kame contain several sandpits. The exposed junction of the soil overburden at present varies from ten to twenty centimeters in thickness.

When Mr. Tobey purchased the property, this area was under cultivation, which he allowed to continue for several years. During that time, after spring plowing people would request permission to walk the area in search of Native American artifacts. The project was initiated when the Tobeys' daughter found a group of stone points along the eroded upper surface of one of the sandpits. Through the town's Historical Commission, the family contacted the MAS's Bronson Museum in Attleboro, MA. During the initial evaluation, Brady Fitts of the Cohannet Chapter, one of the early principal investigators, examined the upper area of the sand pit and found stone chips and several additional points. Based on the evidence, an excavation project was initiated.

From an opening in a rough southeast-northwest stone wall segment at a boundary post, Brady ran a north-south transit line. Eight one-meter test pits were excavated at two meter intervals. Based on the artifact density, he established a zero point at the north end of the test pit and established an east-west line. The initial excavations were in the northwest quadrant (-A / -E, 1 through 6 and + A/ +E, 0 through 5 (see Figure 2). A total of 100 two-meter square pits were excavated during weekends from 1985 through the Fall of 1991. Sixty percent were on a north-northwest line from -A to -L 1 through 6 / 8, and a single square was exca-

vated in the extreme north-northwest section, at -Z 14. About 25% were in the southwest section of the northeast quadrant, and the balance were in the southeast quadrant with a concentration in the lower area +L / +O 4 through 8. There was no excavation in the southwest quadrant. This quadrant, which is closest to the spring, which suggests a primary area of habitation, was overlooked. A suggested reason for this was a forced closure of the Bronson Museum in Attleboro in 1987, which was the primary meeting place of the Cohannet Chapter, which occurred shortly after the initiation of the dig. The museum's artifact collections were placed in storage. Shortly before the end of the excavation, the museum was moved to Middleboro MA and renamed the Robbins Museum. The result of this disruption was clearly evident in the rapid fall-off in the dig crew size after 1987 to a working group of five or six for the last three years. The Cohannet Chapter effectively dissolved and the promised report was not completed.

During the excavation an additional test pit line was run from +A8 / +H8. The artifact finding suggested that the occupation area would extend further to the east, reinforcing the previous site extension hypothesis. Included in this small assemblage were two Levanna points. Only two additional Levannas were found in the major areas of excavation. One of these was in loam. The test pit Levannas are not included in the artifact data shown in Figure 3. Five C^{14} dates were recorded. The first, 4470±50 B.P., GX-28956; δC^{13} = -26.0; cal 5208, 5192, 5048 bp (Stuiver and Reimer 1998) was found in a hearth in square -A1. The area in the southeast corner of the north west dig area from -A 1-6 to -F1-6 had the highest artifact density on the site. Its most significant feature was feature 7A, centered in -C2. This was a circular presumed sweat lodge extending into several squares with an east-west diameter of 308 centimeters and a north-south diameter with a small entrance rectangle of about 20 centimeters extending the north-south line. The floor depth was about 150 centimeters; in the middle was a layer of burnt stones. A C^{14} date of 4710±60 B.P. (Beta-27934, no δC^{13} correction; cal 5356 5552 bp (CalPal 2007)) was found in a charcoal sample taken at 153 centimeters under the stone layer. Along the north wall segment, the floor was not completely excavated for the lower 45-50 centimeters, providing a seat for the occupant. The sand under the stone layer was dark red; the reddish intensity reduced, becoming more brownish at the base of the seat. The lower area of the inside walls was brown. There was no evidence of any covering of the upper walls near junction, suggesting that plowing may have eliminated any residual evidence. The plow zone at the site ranged from 3 to 20 centimeters. In the area of this feature, the plow zone was about 15 centimeters.

An additional C^{14} date of 4470±80 B.P. (GX-27743, δC^{13} = -27.7; cal 5208, 5192, 5048 bp (Stuiver and Reimer 1998)) was obtained from a hearth at +M 5/6. The lithic artifacts from this area included primarily Squibnocket and other small triangles, with a single Neville point. An assemblage of nine modified scrapers with rounded, highly polished, bulbous ends was found adjacent to the feature, suggesting the location was a hide processing area (see Figure 4). Only one flat scraper was evident. There were several significant features in the area between -A1/4 to -D1/4; they included a concentration of fire cracked rock along the northeast southeast perimeter of the apparent sweat lodge. There were two grooved pestles, one broken and apparently tossed onto the ring of fire cracked rock. There were two smudge pits, a group of three hammerstones and an anvil. There was also an interesting heart-shaped concentration of undefined stone chippage. In a Spring 2017 discussion with Brady Fitts, he noted that there was also a small pile of roasted hickory nut shells adjacent to the chip concentration. Based on Brady's observation of Jeff Boudreau while flintknapping, the chippage distribution that built up while knapping tools in this feature suggested that a site occupant was munching on hickory nuts while making points.

Two additional C^{14} dates were found. One is from a small shallow, circular stone lined hearth (Feature 16) at the junction of -I4/5, -J4/5. The C^{14} date was 3630±70 B.P., Beta-27835, no δC^{13} correction; cal 3866 4062 bp (CalPal 2007); a Stark point was found in the charcoal of this feature. An additional Stark point was found in the one-half meter charcoal stained area around the hearth. An additional small hearth (Feature 10) with a C^{14} date of 3730±80 B.P. (GX-27744; δC^{13} = -26.0; cal 4088 bp (Stuiver and Reimer 1998)) was found in the upper right section of square -J4. Adjacent to Feature 10

was a two-centimeter vertical post stain. The area from -H, -I, -J, -K5-7 had a concentration of drills and gravers. A curved line of fire cracked rock extended through several squares in the -H 5/6 area, similar to the grouping adjacent to the apparent sweat lodge Feature 7A, suggesting the possibility of an additional sweat lodge in the unexcavated area to the west.

About one half of the Stark points found on the site were at the working levels of Features 16 and 10, south of Feature 7A (see Figure 5). A post-dig analysis session with Jeff Boudreau verified that the two points found in Feature 16 were Starks. Jeff reclassified four of the other close by Stark points as Poplar Island, a type best known from eastern Pennsylvania (Boudreau 2017; see Figure 6). The standard Stark rounded tapered base had been changed to show an inverted curve at the base tip. During an additional session with Jeff, the ca. 65 Small Stem points from the site were observed under magnification, and two-thirds showed secondary usage. We had planned for an additional session to determine if there was any significant difference between the primary and secondary usage points. In other words, were the secondary usage points rejected as weapons points? Unfortunately, Jeff passed away before we could complete that project. Jeff also reclassified two of the Small Stems, one as a Fox Creek and the other as a Jack's Reef. The balance of the Starks and the distribution of Neville points were found in the southeast section of the northwest quadrant within +2 to 3 cm of the -30 cm working level of the hearth in -A1 (Feature 1).

An area in the southwest corner of the northeast quadrant from +A0/5 to +E0/5 had a smudge pit and a concentrated area of scrapers and knives. There was also an enigmatic feature from +A2 to +E2, a two centimeter wide stain at twenty meters below junction; several places along the length of the stain showed a bulge of about four centimeters. One of these was excavated to a depth of forty centimeters and appeared to be some kind of a supporting stick. Close examination of the stain showed an apparent linear longitudinal gradient; a cross section showed a similar type of discontinuity but very, very short in nature. This suggests a possible length of braided reeds with small forked branch elements to keep the stick in place (Fitts, 2017).

In addition to the lithics there was a significant presence of bone. A concentration of bird bone was found in the area of Feature One. Other types of bone included deer, possible snapping turtle and small animal. A sample sent to Dr. Nicholas Bellantoni was verified as deer and turtle (2002). A larger sample was analyzed in a report by Tonya Largy (to be published in 2018 - ed.). This report verified the concentration of deer bone in three locations in the northwest quadrant: one in the area of Feature 1, a second 2/3rds of the way between Feature 1 and Feature 16, and a third in the southeast quadrant in the area of +V, W 2 - 3. There was also a significant distribution of animal bone. One set of samples was possibly woodchuck. There was scattered bird bone, including both smaller birds and turkey. Bone from several locations was confirmed as turtle bone. Flotation samples from Features 10 and 1 were analyzed by Tonya Largy (2017). The sample from Feature 10 was oak, suggesting a hot fire, and several hazelnut shell fragments were also present. The sample from Feature 1 showed the presence of birch in multiple sizes. The elements from small size birch family brush showed evidence of green bark, suggesting late seasonal Fall activity; there was an incomplete combustion, suggesting a low intensity fire to generate smoke. The aforementioned evidence of roasted hickory nutshells at the knapping locus, in conjunction with the flotation data and the presence of animal bone, suggests the site was used as a primarily Fall season hunting site.

After the close of excavations in late 1991 I joined the Saturday staff at the Robbins Museum in Middleboro, MA. During the early years I assisted Tom Lux, who had succeeded Brady Fitts as principal investigator in 1989, in the analysis of the Tobey site data. After my retirement in 1998 I joined the Wednesday working group at the museum. That group was responsible for the operation of the museum. In my free time I continued to support Tom in analysis of the Tobey site data, until he suddenly passed away and those records disappeared. Several years later, they were found in a container behind his desk, restarting the Tobey site data analysis project.

How Does the Tobey Site Fit?

At the completion of the report there was an obvious connection between several Native American ceremonial sites and the adjacent habitation associated with the location of the Tobey site. These observations add a new dimension to the focus of this article. My initial exposure to archaeology occurred in the spring in 1983 when I went on a field trip sponsored by the New England Antiquities Research Association in which we observed several interesting enigmatic stone constructions. I later discovered that I had walked into a 70 plus-year controversy relating to the nature of the enigmatic constructions. I continued field research in this area, and in the Fall of 1989 I walked a site that contained an array of horizon-oriented U-shaped laid- up stone constructions that appeared to be related to the yearly Sun cycle. This was confirmed on 12/22/89. While kneeling in a U-construction that faces southeast, I photographed the winter solstice sunrise as it broke the horizon at the base of a canted, chocked, in-place standing stone foresite. This was precisely two minutes after the listed horizon sunrise time. I continued my investigations through 2009. The results were documented both in publications (Ballard 1999, 2014, Ballard and Mavor 2010) and in oral presentations to the Northeastern Anthropological Association (1992) and the Eastern States Archaeological Federation.

During the intervening years I spent a significant amount of time becoming knowledgeable about the Museum's displays and inventory, using as resources MAS publications, and the museum's library and exhibits. One of these resources was its collection of Massachusetts topographic maps which showed the recorded locations of known Native American sites. The Rehoboth area detail was primarily on two quadrangle maps (East Providence, RI and Somerset,MA). These included the geographic area from upper Narragansett Bay including parts of East Providence, RI, and Seekonk, Rehoboth, Dighton, Swansea, Somerset and Berkley, MA. There were twelve significant activity areas along the lower Palmer River in Rehoboth and the west bank of the Taunton River, nine activity areas from Sweet's Knoll in Dighton through Somerset. The accompanying index card data for the Palmer River sites indicated that they had been recorded in 1939 by Mr. Milton Hall. Milt was a resident of the town of Rehoboth, one of the original members of the MAS and one of the founders of the Bronson Museum. After his death, the family donated his lithic collection and documentation to the MAS, except for a small sample that went to the Carpenter Museum in Rehoboth. I made myself familiar with its contents, but was stymied because I was initially unable to break his location code.

Starting in the summer of 2013, things began to fall in place. A Rehoboth resident, Bill Swallow, brought his extensive artifact collection to the Robbins Museum for evaluation. For years he had walked local landscapes and participated in several excavations. The bulk of his collection came from a site about 2,500 meters west of the Tobey site along the south bank of Fuller's Brook before it turns south and empties into the Palmer River at Summer Street, in an area where the Palmer River broke through the glacial moraine and headed south (Figure 7, B). The area was near the property of his grandmother. When he found the property along the brook was about to be developed, he contacted the developer and got permission to do a salvage dig. The site was gridded and each excavator was directed to find a square. The excavators were entitled to any artifacts they found. During our discussion, Bill indicated that they had unearthed 15 hearths; one of those in his area turned out to be a stack of three, one on top of the other. One of the other diggers obtained a C^{14} date from a hearth in his zone of ca 3600 B.P. (no further information is available). This is similar to the dating of Features 16 and 10 at the Tobey site and is a clear first connection. Unfortunately, some of the artifacts in Bill's collection included artifacts from other areas. However, the bulk of the lithics were of the Transitional Archaic / Early / Middle Woodland eras, similar to the Tobey site. Several years earlier, Bob Sharples, also a former MAS member, had shown me a pair of Neville points that he had found while surface walking in the general area of the dig, suggesting that some of the earlier artifacts in Bill's collection were probably from this dig site. Reviewing the Robbins topographic map data from Mr. Hall's notes, one of the locations he referenced was along Fuller's Brook about 100 meters west of Bill Swallow's dig site. With that concurrence, I was able to break

Milt Hall's location code and identify the location of four of the twelve lower Palmer River sites. We were able to determine that about 100 of the 800 artifacts in Milt Hall's collection had come from these four sites. These points were from the Transitional Archaic through Middle Woodland. In 2016, a collection of about 100 points from the area of one of the twelve locations recorded by Mr. Hall was donated to the Carpenter Museum. The points were surface finds; over 50% were small triangles and the balance were from the Transitional Archaic through Woodland, except for a single Neville and a dentate stamp.

In the spring of 2014 the MAS received a letter from the daughter of a former Dighton resident, Mr. Edward Rose, who had an extensive collection of lithics from the west bank of the Taunton River (Figure 7, D), just south of Sweet's Knoll (Figure 7, E) and opposite Grassy Island (Figure 7, F). Two of the museum's working staff flew to California and drove the collection back to the Robbins. They were unable to obtain any documentation with the collection. Mr. Rose had excavated on the site for about twenty-five years. After he moved to California he returned to Dighton for one month every summer to continue excavation for many years. Mr. Rose documented his findings in two *Bulletins of the Massachusetts Archaeological Society* (Rose 1953, 1965). An article in the Fall 2015 *Bulletin of the Massachusetts Archaeological Society* (Bello 2015) details the collection's contents. The lithics extend from a small sample of Paleo points extending through the Woodland periods, with a concentration starting from Late - Transitional Archaic to Middle/Late Woodland Periods, based on comparative typology since no C^{14} data was available.

The similarity of location of these three sites, which were all just on the south side of the moraine at or near the end of the east-west flow segment of both the Palmer and Taunton Rivers, caught my attention. I have worked for several years on a drinking water well mapping project in Rehoboth. Coupled with my surface archaeology experience, I have gained an understanding of both the bedrock and glacial geology of the area from Narragansett Bay east to Middleboro (Skehan 2001). The bedrock runs in a waveform pattern with a north-south strike. The difference in height from the base of the anticlines to the top of the synclines runs from about 100 to 300 feet in a continuous wave pattern. The north-south flow of glacial ice swept the area clean of 250 million years of debris. As the glaciers receded, they left behind deposits of sand, gravel, and boulders. In Rehoboth, the soil overburden ranges from 120 feet in the anticlines to 5 feet on the tops of the synclines. In the area from Narragansett Bay to Middleboro, the rivers flow north-south until they are deflected by the moraine; after the breakthrough they continue north-south in the anticlinal valleys.

There are several other recorded excavations between Seekonk and Middleboro with similar geographic locations. The Read Farm site in Seekonk, MA (Figure 7, C) was a 110-acre property overlooking the Running River. It is on a relatively level stretch of land on the east side of the junction of the Running River with One Hundred Acre Cove about 7,000 meters south of the moraine. The Bear Swamp site in Berkeley (Figure 7, G) is on the north side of the moraine above the east bank of the Taunton River opposite Sweet's Knoll. The Wapanucket site in Middleboro (Figure 7, H) runs along the north shore of Assawompset Pond, the Nemasket River runs north from the pond for several miles until it joins the Taunton River. All these sites are in the anticlinal valleys with fertile alluvial river banks and spring fish runs which continue to this day.

The Read Farm site excavation in Seekonk, MA was the subject of an article in the *Bulletin of the MAS* in the fall of 1985 (Johnson and Mahlstedt 1985). C^{14} dates of 3475$\pm$70 B.P. (UGa-921) and 3145$\pm$65 B.P. (UGa-922) were found (Barnes 2016). Comparative lithic typology data suggests a possible Middle Archaic to Middle Woodland Period occupational presence.

There were two excavations at the Bear Swamp site in Berkley, MA. The first (Bear Swamp One) was reported in the *Bulletin of the Massachusetts Archaeological Society* (Staples and Athearn 1969). It is on the north side of a glacial kame, similar to the Tobey site. Its main features were twenty pits. Several were used as residences. Of the others, one was a burial site and the other was a possible burial of collection of cremation residue (packed fine char). Two C^{14} dates were obtained (4640$\pm$80 B.P., Y-2499, and 4145$\pm$65 B.P., UGa-389). The site

overlooked a swampy area. Bear Swamp Two was on the opposite side of the swamp. Several C^{14} dates were found (4180±75 B.P., UGa-386; 4080±85 B.P.,UGa-913; 3520±180 B.P., GX-2418; 3445±80 B.P., UGa-387; and 2210±70 B.P., UGa-388) (Barnes 1972). Artifacts at both sites were similar, belonging to what Barnes referred to as the Squibnocket culture.

Continuing east, the Wapanucket site is in the alluvial plain on the north shore of Assawompsett pond south of the road between the beginning of the Nemasket River as it exits the northwest corner of the pond and a cemetery. Over an extensive of period of years ending in the early 1980's, seven excavations were conducted at this site as reported by Dr. Maurice Robbins (1980). A C^{14} date of 4720±140 B.P. (M-1350) was found during the Wapanucket 8 excavation. The range of artifacts was extensive and included two separate Paleo loci, both consisting of fluted points. One was based on surface finds in the beach area south of site number 8; the other was an excavation find of several fluted points in the Site 8 excavation area itself. There are about 6,000 artifacts from Wapanucket in the Museum's inventory, out of a reported total of about 14,000. Based on comparative typology, they range from Paleo through the Early/Middle Woodland periods (Fitts 2017). The most significant find was a habitation complex extending from the south end of Site 6 through Site 8 almost to the end of its southern boundary. This consisted of several circles of vertical post hole patterns with an entrance area on the outside of the circle, similar to the outside of a snail shell. In the center of the circles were vertical poles suggesting roof supports. There were two large structures, one in Site 6 the other at the southern end of Site 8; these had two entrances on opposite sides. In between the large structures were several smaller size units, perhaps for extended families. Adjacent to one of the structures was a bundle of sections of bark, suggesting that bark was used for the external covering of the outside walls. There were no hearths inside the structures. These were external and adjacent to the structures. Several C^{14} dates were extracted from the hearths: 3550±130 B.P. (M-1212), 3,610±130 B.P. (M-1213), 3655±55 B.P. (UGa-860), and 3765±65 B.P. (UGa-1412) (Robbins 1980).

On the first terrace at the Middleboro Little League site (Figure 8, I), which sits on the edge of a kame terrace facing southwest about 3 km north of Wapanucket, a pit feature dated to 3400±110 B.P. (GX-33768, Hoffman 2014) was found; it contained a lobate stemmed point interpreted at the time of excavation as a Rossville or Stark, but on comparison with the Tobey Site recoveries it can comfortably be reassigned to the Poplar Island type. Other dated features on this terrace ranged in age from early Late Archaic through early Late Woodland, and the typology ranged from Squibnocket Triangles, Small Stemmed points, and Atlantic points to Late Woodland Madison points.

The concentration of C^{14} dates in the areas discussed above is interesting. They bracket a major cold climate event from 4200 to 4000 BP (Schlesier 1987) that caused the migration of proto-Algonquians southwards. In the mid-continent, the Blackfeet and related tribes retreated from Alberta through Saskatchewan to the northern plains, bringing their sky-based Medicine Wheels with them. The Cheyenne migrated south through Manitoba into the Dakotas and east to Minnesota and later back to the plains. The Cheyenne's major annual cultural event was the Massaum ceremony, which was controlled by the dawn rise of several stars. Its altar was a U facing east (Schlesier 1987).

Perhaps around the same time, the Lenape moved south via the Hudson River corridor to Delaware. Delaware oral history notes that they came from an area where there were no tides. In the 1600s, after the Pequot War, they migrated west over the Alleghenies to eastern Ohio. In the early 1800s they were forced by the federal government to move fuither west because they chose to retain their sky-based culture rather than converting to Christianity. In the later 1800s the record shows that their January mid-winter Big House ceremony contained elements of moonrise and the Bear constellation, which was visible through the roof of the structure, An image of the constellation we call the Big Dipper, consisting of 3 hunters and the bear, was drawn on the floor of the lodge, and the ceremonial meal was bear meat. (Schlesier 1987, Speck 1931)

The lithic data from Massachusetts shows a distinctive change in point types between 4500 and 3600 B.P., suggesting some type of cultural change during that period. The presence of Poplar Island points at the Tobey site suggest a possible trade route expansion at this time – or, it could simply be that this type is underrecognized in the region, since all of the examples from the Tobey Site are made of local lithic materials.

Afterword

This brief description satisfies the initial objectives of the original report. Plotting the data regionally shows some interesting observations that support the hypothesis of the use of certain surface stone constructions to augment the oral memory of the sky-based elements of indigenous culture. On the high ground synclines from Seekonk to Middleboro there are six Native American ceremonial sites. The map in Figure 7 shows the habitation site locations as circles and the ceremonial site locations as triangles. The first two (Figure 7, K and L) are U-construct sites on the Dighton Syncline which separates the Palmer River and lower Taunton River habitation sites. The first one is in northeast Rehoboth. This site is named DTR 1b (Ballard 1999, 2014). The summer solstice and equinox sunset U's on this site overlook an array of stone piles. During sand and gravel removal operations that supported a nearby Nike missile construction area, one of the stone piles was removed. It contained a Native American burial. The remains were quietly reburied (Sharples 2003). The U-construction on the eastern edge of the syncline at DTR 1a included my initial recording of winter solstice sunrise 12/22/89. Between the lower Taunton River and Wapanucket on the high ground syncline in Lakeville, the ceremonial site consists of a boulder circle of stones with boulder lines extending along significant solar sunrise azimuths (Leonard, 2010). A third U-construction site is on the high ground between Wapanucket and Rock Village in Middleboro, south of Walnut Street (Figure 7, O) (Ballard 1999, 2014). A fifth site apparently existed on the top of a drumlin on Assawompset Neck overlooking Wapanucket (Figure 7, N). Before King Philip's War, Tispaquin deeded the drumlin area to three male members of his extended family. After King Philip's War this area became one of the largest Native American habitations sites in southeastern MA (Leonard 2010). In 1690, in order to prevent the Native Americans from using the hill for celebration events, the Middleboro selectmen took the site by eminent domain and leveled the top four acres of the drumlin (Leonard 2010).

After Contact to the present, these alluvial riverine areas became prime agricultural sites. The lithic record of the pre-Contact Middle and Late Woodland Periods were impacted by the plow. The lithic contents were widely dispersed into the private collections of the surface hunters who followed the plow. This has further limited our ability to define local Native American culture, which is already ill-defined due to archaeologists relying only on excavations in trying to understand what is primarily a sky-based culture. The record shows a three witnesses to our hypothesis. The first of these is in the writings of Roger Williams (1643):

> They are punctuall in measuring their Day by the Sunne, and their Night by the Moon and the Starres, and their lying much abroad in the ayre; and so living in the open fields, occasioneth even the youngest amongst them to be very observant of those Heavenly Lights . . . By occasion of their frequent lying in the Fields and Woods, they much observe the Starres, and their very children can give Names to many of them, and observe their Motions. . . And know their Course and therein doe Excell the English tame.

Second, Snow (1996) states that the Iroquois observed the Pleiades and timed their midwinter ceremony to its highest point in the sky. The third is a pair of C^{14} dates of 800±50 B.P. and 860±50 B.P. for two of the four U-constructions at the Mouscosuck Creek site in West Barrington RI, the southern tip of the Seekonk, MA syncline (Figure 7, J) (Ballard 1999). Applying the principles of comparative typology to the U-construction ceremonial sites discussed above augments the hypothesis. Hopefully accepting the evidence will provide permission for researchers to broaden the study of the sky-based nature of prehistoric Native American cultures in the Northeast.

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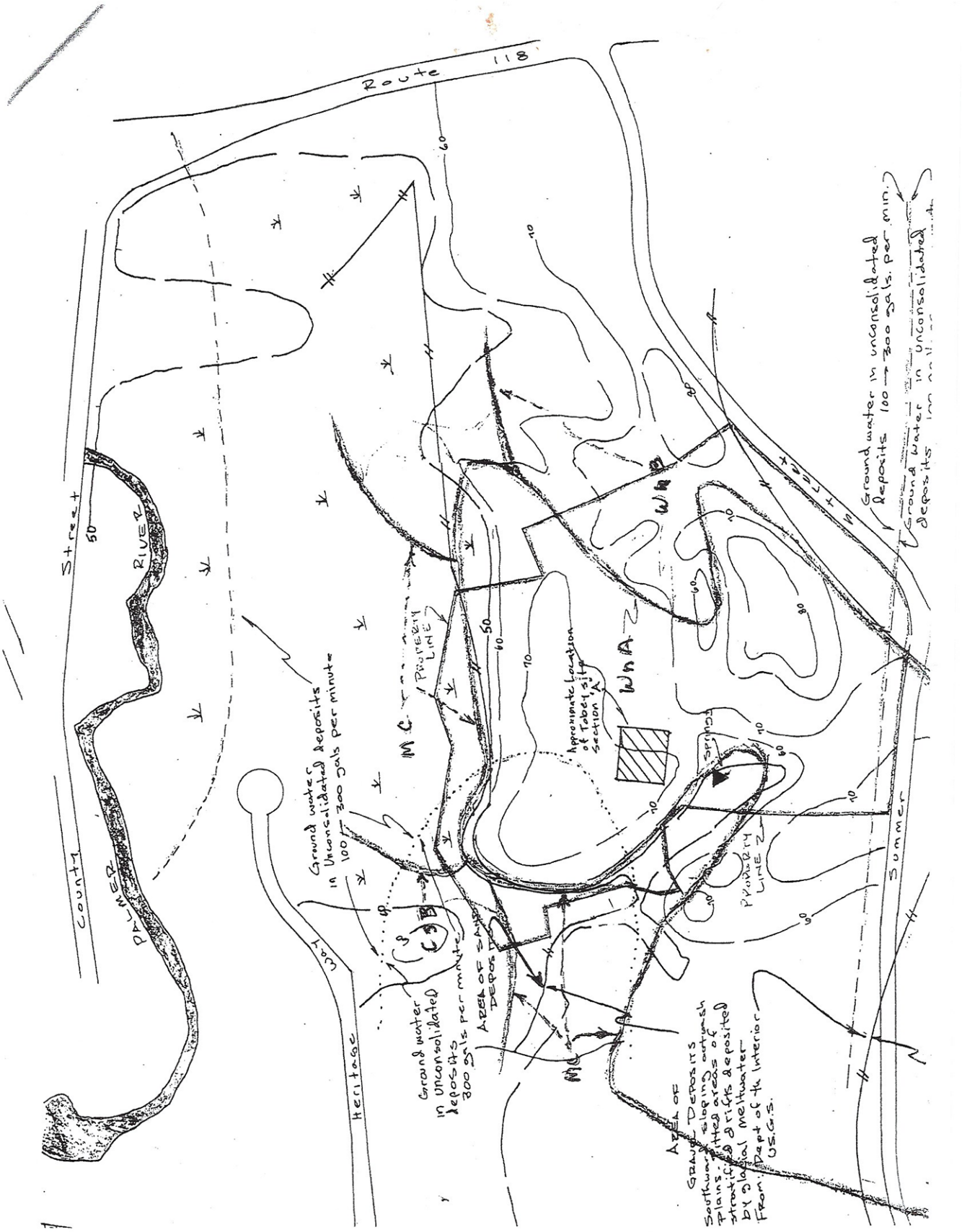

Figure 1: Brady Fitts' Original Contour Map of the Area around the Tobey Site

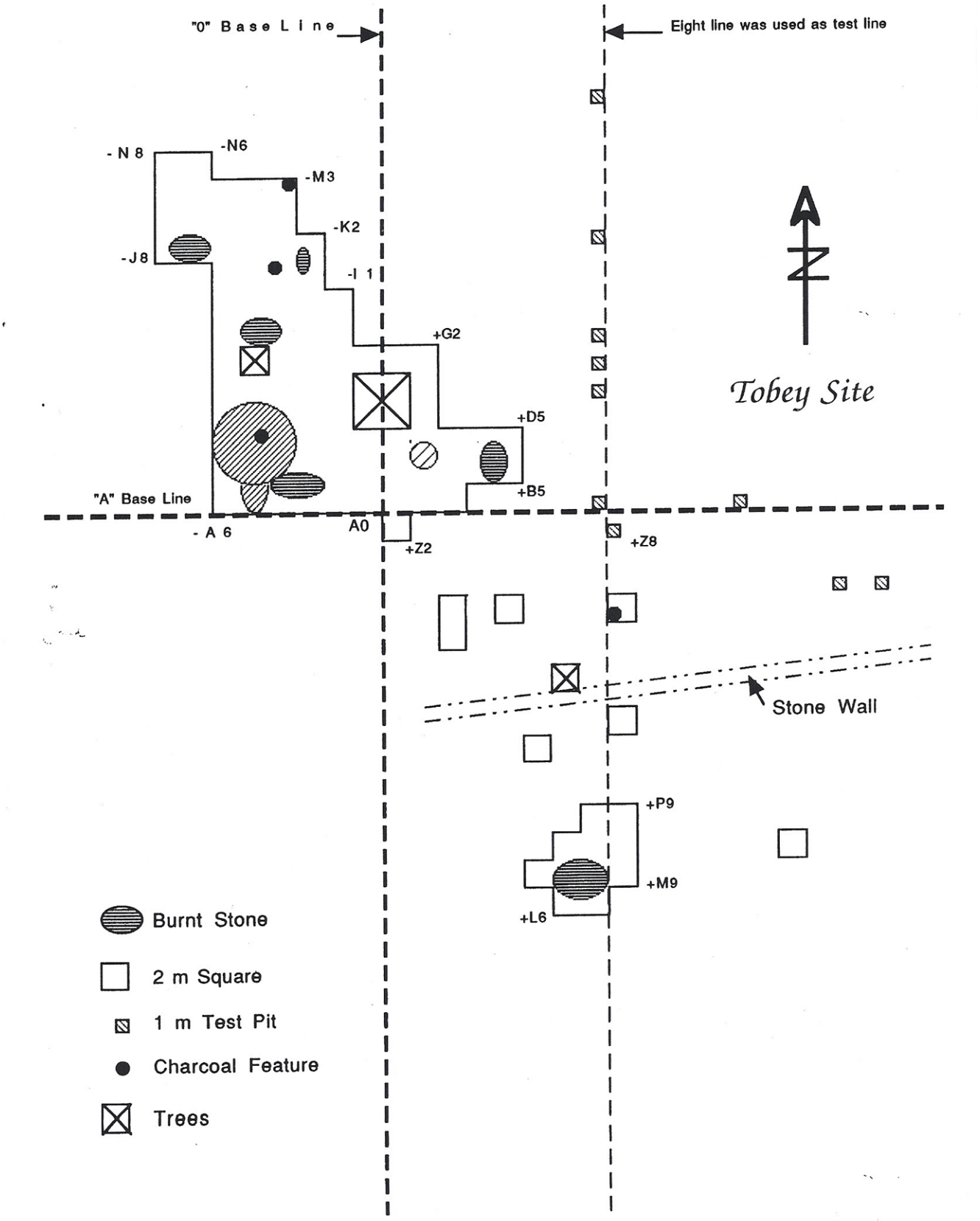

Figure 2: Layout of Excavation Units at the Tobey Site

		Artifact Inventory (844)					
Category	Type	#	Total	Category	Type	#	Total
Projectile Points:			516	Working Tools:			77
	Small Triangles	144			Hammerstones	39	
	Large Triangles	9			Anvils	15	
	Small Stemmed	67			Rubbing Stones	8	
	Corner-Notched	55			Metates	3	
	Side Notched	11			Pestles	2	
	Tapered Stem	7			Grinders/Abraders	3	
	Eared	6			Digging Tools	3	
	Parallel Stem	1			Atl-Atl Weights	1	
	Projectile Tips	136			Weights	3	
	Midsections	19					
	Projectile Bases	61		Miscellaneous:			36
					Pottery Sherds	3	
Other Chipped Stone:			176		Graphite Pieces	16	
	Scrapers	64			Pipe Stems	2	
	Choppers	4			Minnie Ball	1	
	Utilized Flakes	7			Pewter Button	1	
	Knives	35			Wine Bottle Seal	1	
	Drills	22			Shell Pieces	10	
	Gravers	6			Iron Fragments	2	
	Cores	38					
	Chippage	45+			Bone Pieces	2707	

Figure Three: List of Artifacts Recovered at the Tobey Site

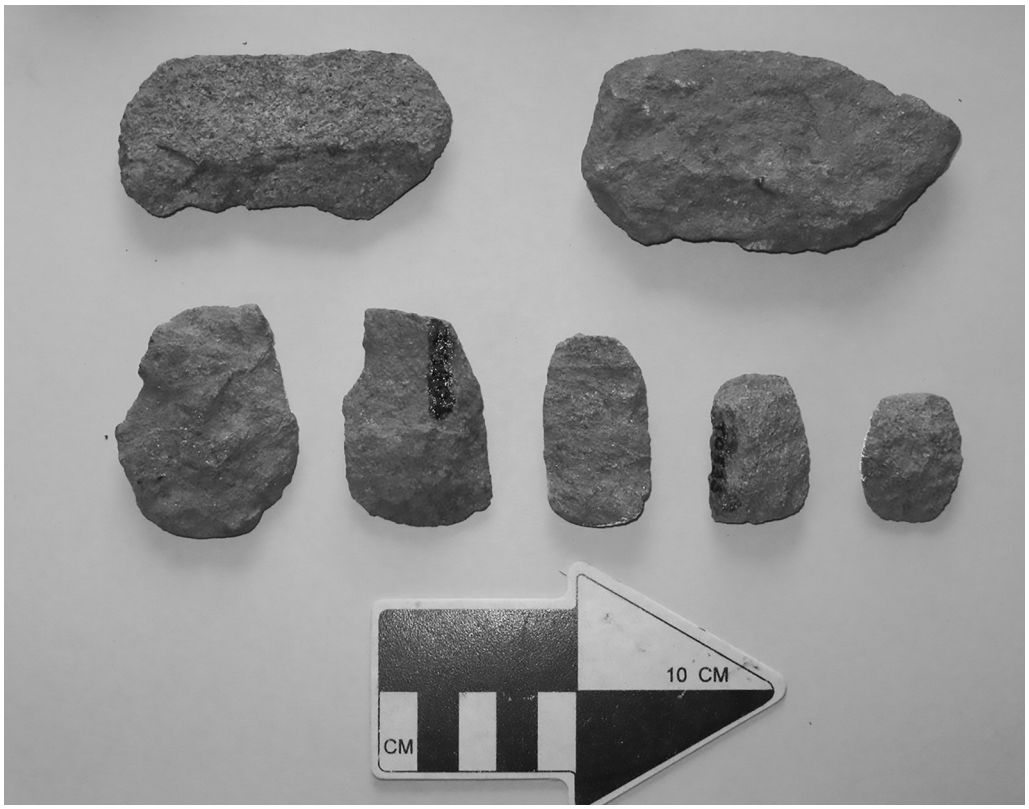

Figure 4: Sandstone Scrapers from the Tobey Site

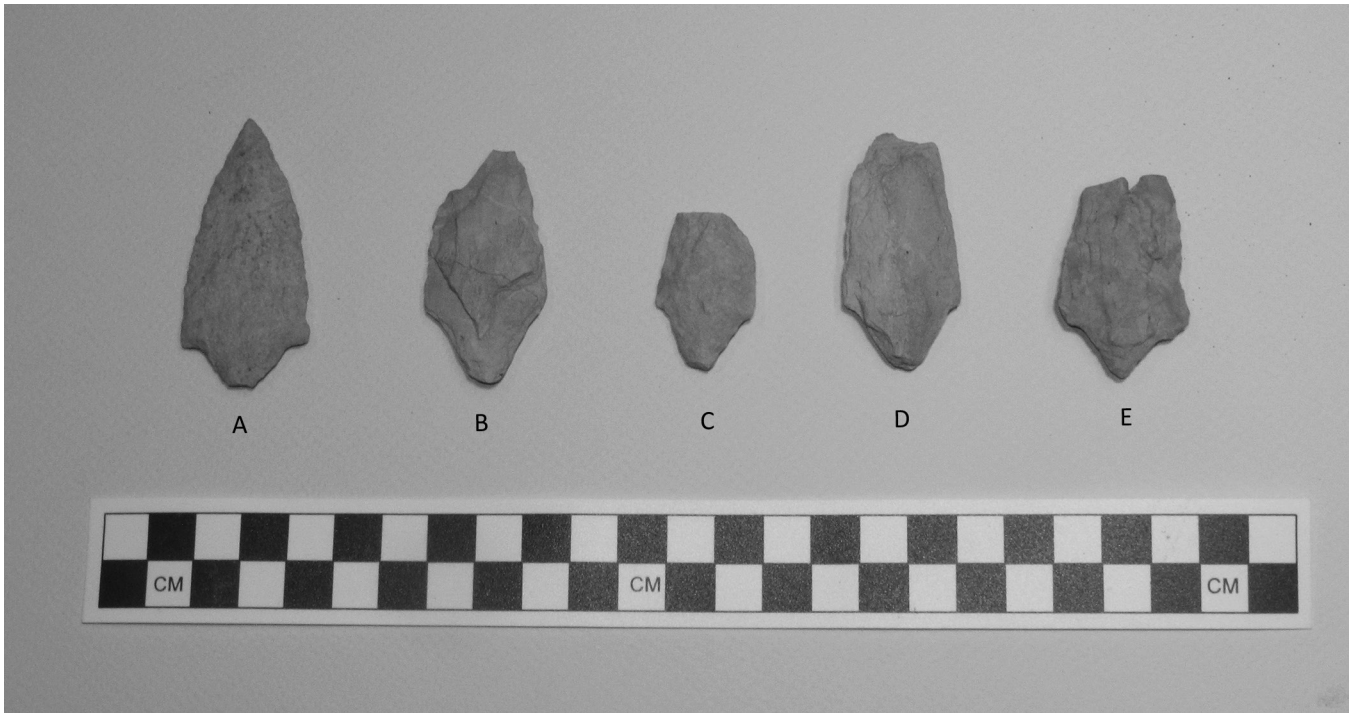

Figure 5: Sample of Stark Points: A-C – Quartzite; D, E – Argillite

Figure 6: Sample of Poplar Island Points: A – Quartzite; B -- Hornfels; C, D – Ledite; E, F – Argillite

Figure 7: Area Map Showing Sites Mentioned in the Text

Analysis of Flotation Samples from Features 1 and 10 Tobey Site, Rehoboth, Massachusetts

Tonya Largy, Archaeobotany Consultant

Introduction

Flotation samples from two features (Feature 1 and Feature 10) excavated at the Tobey site by the Cohannet chapter of the Massaschusetts Archaeological Society were submitted for analysis. Two radiocarbon dates were obtained on charcoal from the features from Geochron Laboratories (Ballard 2002). Feature 1 returned a date of 4470±80 B.P. (δ13C corrected, calibrated 5093±206 bp). Feature 10 was dated at 3730±80 B.P. (δ13C corrected, calibrated 4088±130 bp). These dates place these features in the Late Archaic period.

Analytical Methods

All materials were examined under magnification ranging from 5X to 280X using a Wild M3Zoom stereomicroscope and double fiber-optic lighting. Specimens were manipulated with "feather-light" forceps. Wood fragments were snapped manually to obtain a cleaner cross-section in order to view diagnostic anatomical features. Materials were weighed on an A and D digital scale to the nearest one-hundredth of a gram.

Wood samples were placed in plastic zip-lock bags. Samples from Feature 1 were placed in a cardboard box to protect them from crushing. Provenience information was written on acid-free paper labels and placed in the bags with the specimens. Small items such as fragments of bark and nutshell were packaged in hard plastic microtubes along with small acid-free tags bearing the identification of the specimen.

Wood identifications were made using manuals (Panshin and de Zeeuw 1970; Core, Cote, and Day 1979) as well as my recollection of charred wood. I also field-checked the bark on older trees and shrubs of alder and American hornbeam.

Wood fragments shown on Table 1 represent a sample removed as voucher specimens for identification. They were weighed rather than counted since one charcoal fragment results in a count of two or more after being broken during analysis. Also, wood charcoal may continue to break up after being excavated and transported. Although the same may be true for nutshell, these fragments are both counted and weighed. Weight as compared with count indicates the degree of fragmentation or size. Seeds are not weighed since weight is negligible.

Rate of Recovery

Poppy seeds (N=10) were added to each 400-milliliter bulk sample prior to flotation as a control to gauge the recovery rate for seeds and other small specimens. Four poppy seeds were recovered from Feature 1, representing a 40% rate of recovery. Six poppy seeds were recovered from Feature 10, representing a 60% recovery. One of these, from Feature 1, was found in the heavy fraction 2.00 mm screen. The rest were found in the light fraction 1.00 mm and 0.5-0 mm screens.

Results

The samples are composed almost entirely of charred wood and bark. No charred or uncharred seeds were noted in either sample except for one small charred fragment from Feature 10 which resembles a seed coat. Nutshell is present in a very small quantity and is discussed below. Also, I saw no evidence of calcined bone or other fauna in any of the fractions from either feature, although calcined bone was recovered from Feature 1. All plant taxa from both features are shown in Table 1.

Feature 1

Wood

The wood from Feature 1 appears to be homogenous; i.e., all one species consisting of small rounds from limbs measuring 0.25 cm and 2.00 cm in diameter. This suggests that shrub wood was selected for burning. The taxon is betulaceae (birch family). Two genera in this family, *Alnus* (alder) and *Carpinus caroliniana* (American hornbeam) strongly resemble each other, possessing diffuse-porous vessel distribution with both narrow and broad rays and Y-shaped pith. This pith configuration is present in all genera within the birch family. The fragments strongly resemble charred alder in my reference collection, but certain fragments have characteristics of American hornbeam. A more precise identification requires a microscope with higher magnification and a greater investment of time, so I have offered both possibilities based on the analytical methods described. More work needs to be done when access to a different microscope can be arranged.

The degree of preservation of complete rounds of wood in the feature suggests the fire may have been a low oxygen fire for smoking, which would contribute to wood being preserved closer to its original condition rather than being consumed more completely in a higher temperature fire.

Bark

Two types of bark, one thick and one thin, are present. A sample of these were removed for study. Both alder and hornbeam have smooth, thin bark markedly different from the thick bark present in the feature. This raises the question of whether the pit may have been lined with thick bark, or perhaps it was used to kindle the fire or was added as part of the fuel.

Seasonality

Charred bark found adhering to wood provides information regarding the season the wood stopped growing. Many fragments (2.81 grams) in Feature 1 were removed as being good diagnostic pieces to observe these data. All fragments show that the tree stopped growing some time between late summer through winter. Trees typically stop growing in late summer, rest through fall and winter, and resume growth in the early spring. Assuming the tree/shrub was collected while still alive, this suggests a time frame for the construction of Feature 1. Selecting green wood also insures a slower-burning fire.

Feature 10

Wood

Diagnostic wood (0.54 grams) from Feature 10 included one genus, *Quercus spp.* (oak, more than one species). Oak wood often can be placed in one of two groups, the white oak group (leucobalanus) and the red oak group (erythrobalanus). However, some oaks are known to hybridize and often show features of both groups, as is the case in Feature 10. Oak is a prime fuel wood, which burns at a steady, high temperature. The fact that it is found in a feature interpreted as a "stone-lined hearth" is not surprising. Oak charcoal also preserves well and is often found in features throughout southern New England in fragments large enough to identify.

Nutshell

Six very small (< 0.01 gram) fragments of charred nutshell were found in the heavy fraction 2.00 mm screen. They all exhibited recent breaks and may have been originally one fragment. One fragment resembled *Corylus* (hazelnut) showing residual grooves after the outer surface burned away. It is within the range of thickness and curvature for hazelnut shell. The remaining five fragments are very small (1 mm – 2 mm) and are identified just as nutshell based on appearance, density, and curvature.

There are two species of hazelnut in New England, *C Americanus* (American hazel) and *C. cornuta* (beaked hazel). Both species mature in late summer and early fall and are eaten by animals as well as humans. Both are native to southern New England and are often found in sites of the Late Archaic period. Assuming that hazel was deposited in Feature 10 during the same collecting season, it suggests a late summer/early fall season of occupation. The possibility also exists that hazelnut shell lying on the forest floor could have been incorporated into the fire. Perhaps if a larger

amount of the feature soil had been collected for flotation, more nutshell might have been recovered, providing more data for this interpretation.

Conclusions

Based on feature descriptions and field records, and the type of wood identified, Feature 1 and Feature 10 likely had different functions. Feature 1 may have been constructed for smoking either plant or animal food, or used as a smudging pit. The presence of calcined bone, not yet analyzed, may suggest that bones were discarded into the fire as a method of disposal and as additional fuel. Or, perhaps it had some unknown purpose. The seasonality suggested by the wood with adhering bark is late summer/early fall.

Feature 10, containing mostly oak wood, almost surely is a hearth used for cooking and warmth. The presence of a small amount of nutshell may indicate a fall occupation, which concurs with the wood seasonality data from Feature 1.

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TABLE 1. PLANT TAXA FROM FEATURES 1 AND 10, TOBEY SITE, REHOBOTH, MASSACHUSETTS

Fea.	Depth	Fraction	Screen	Qty.	Wt.(gr.)	Wood	Nutshell	Common Name	Seed	Comment
1	42cm bs	Light	2.00mm		3.08	Betulaceae		Birch family		*Alnus* (Alder) or *Carpinus* (Hornbeam); diagnostic sample only
1	42cm bs	Light								
1	42cm bs	Light	2.00mm		2.81	Betulaceae		Birch family		Sample of wood with bark; late summer through winter
1	42cm bs	Light	2.00mm		4.21	Dicot Bark		Deciduous bark		Thick bark; not Betulaceae
1	42cm bs	Light	2.00mm	3	0.03	Dicot? Bark		Deciduous? bark		Thin bark; unidentified
1	42cm bs	Light	0.50mm	3					Poppy	Added as controls
1	42cm bs	Heavy	2.00mm	1					Poppy	Added as controls
10	19cm bs	Light	2.00mm		0.54	*Quercus* spp.		Oak		More than one species; sample of each
10	19cm bs	Light	1.00mm	1					Poppy	Added as controls
10	19cm bs	Light	0.50mm	5					Poppy	Added as controls
10	19cm bs	Heavy	1.00mm	1	<0.01		cf. *Corylus* sp.	Hazelnut		"Compares with" hazelnut; very small
10	19cm bs	Heavy	1.00mm	5	<0.01		Nutshell			Very small fragments (1mm-2mm)
10	19cm bs	Heavy	1.00mm	1	<0.01				Seed?	Char. fragment; resembles a seed coat
Total				**20**	**10.67**					