

Phill's Beach: An Artifact Analysis and Comparative Study

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ABSTRACT

This paper reports the revival of a hundred year old site collection and the re-analysis of its contents. The main objectives of the study are to provide an illustration and description of the artifacts. Comparisons to other Maritime province shell midden assemblages are made in order to update the archaeological interpretation of the site. Phil's Beach is found to reflect cultural continuity as expressed in Northeastern, Atlantic coast, midden complexes. Two occupations, one dating about 2000 BP and the other about 900 BP are suggested for Phil's Beach. The conclusions reaffirm that valuable information such as temporal association, can be gleaned from the re-analysis of existing collections.

RESUME

"La Plage de Phil: Une analyse des objets fabriqués et une étude comparée"

Cet article fait le rapport de la remise en vigueur d'une collection d'un site vieille de cent ans et la re-analyse de son contenu. Les objectifs principaux de l'étude sont de fournir une illustration et une description des objets fabriqués. Des comparaisons avec les autres assemblages de fumiers de coquillages provenant des provinces maritimes sont faites dans le but de mettre à jour l'interprétation archéologique du site. On trouve que la Plage de Phil reflète la continuité culturelle telle qu'elle s'exprime dans les complexes de fumiers de la côte nord-est de l'Atlantique. On suggère deux occupations, l'une datant environ de 2000 BP et l'autre environ de 900 BP pour la région de la Plage de Phil. Les conclusions réaffirment que des renseignements de valeur telle que l'association temporelle peuvent être glanés de la re-analyse des collections existantes.

INTRODUCTION

When archaeology in the Maritime provinces was still in its infancy, the first thorough, multidisciplinary study was undertaken at Phil's Beach (BgDr 25), a shell midden site at Bocabaec on Passamaquoddy Bay, New Brunswick (Figure 1). An article by the excavator, George Matthew (1884), describing the excavations was published in the Bulletin of the Natural History Society in 1884. "Discoveries at a Village of the Stone Age at Bocabec, N.B." is proof that the early shell heap excavations were "... problem oriented approach(s) to archaeology..." (Connolly 1977a:11). Matthew touched on many still relevant topics. Distinctions were made between living areas and refuse dumping, debitage was used to suggest activity areas, faunal remains were analyzed, and, through differences in decoration and vertical position of ceramics on the site, two distinct occupation periods were hypothesized (Connolly 1977a:15).

Recent work in shell midden studies have mentioned the Phil's Beach site, and utilized Matthew's report for comparative purposes. Explicit technical and visual correlations were, however, impossible given the basically non-quantitative nature of the published article (Matthew 1884). Attempts to locate the collection during the 1960's were unfruitful (Pearson 1970:183) and hopes of ever totally integrating the site within the growing picture of New Brunswick archaeology seemed dashed.

Relocation of the Phil's Beach assemblage occurred in 1979 when New Brunswick Provincial Archaeologist, Dr. Christopher Turnbull, requested and received a loan of the New Brunswick Museum archaeological collections for cataloguing purposes. Apparently, Matthew's original field notes had become the property of other members of the Natural History Society of New Brunswick and were eventually destroyed (Turnbull 1980:p.c.). The artifacts, clumsily re-catalogued and mixed with other collections, languished in storage at the New Brunswick Provincial Museum until 1979 and 38 lithic artifacts, 23 faunal artifacts and 96 ceramic sherds were positively identified as belonging to the original 1883 collection. Cross referencing of the collection to the 1884 article indicates that some of the artifacts have been permanently misplaced.

This report represents an attempt to update the information known about the Phil's Beach site by providing a brief attribute analysis of the artifactual remains, excluding debitage, and comparing this information to other analyzed collections from elsewhere in Passamaquoddy Bay. This also enable the Phil's Beach site to be more accurately related to the known temporal and spatial patterns for the Maritime region, demonstrating the physical vestiges of cultural continuity throughout the region.

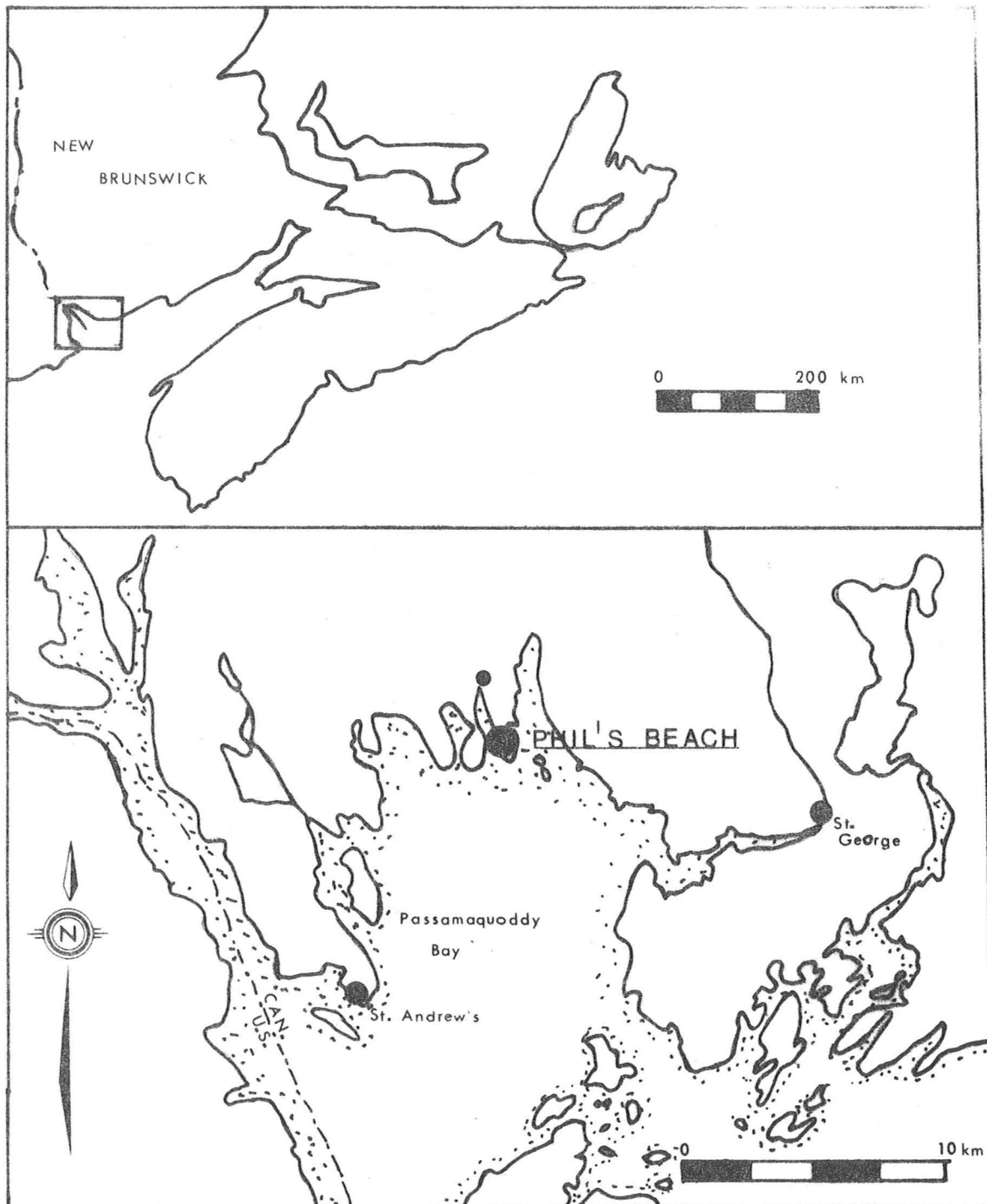


Figure 1: Location of Phil's Beach

RE-ANALYSIS OF PHIL'S BEACH ARTIFACTS

Techniques of Analysis

The artifacts from Phil's Beach were grouped as lithic, ceramic and faunal categories and analyzed according to attributes expressed in each grouping. Most of the techniques and terminology utilized in the analysis were modelled after other archaeological studies, in particular those of Davis (1978), Allen (1980), Stewart (1974) and Keenlyside (1978).

Maximum length, width, thickness, weight and, where applicable, edge heights, edge spans, and edge angles (Figure 2) were taken for all lithic specimens. Judgements of form and sectional configurations were done visually using elementary shape identifications (Figure 3). Jeffery Bresa, then of the Geology Department, University of New Brunswick, provided visual identification of the mineral composition of lithic materials.

Ceramics were examined to identify the position of each sherd on the vessel, external and internal decorative patterns, and type of temper utilized in construction. Definitions of these attributes can be found in Keenlyside (1978) and Emerson (1956).

The major objective in reviewing the faunal material was to note deliberate modification which indicated or suggested use. Where possible measurement and shape description such as that applied to lithic artifacts was employed in the analysis of faunal artifacts.

Lithic Artifacts

The remaining collection from Phil's Beach consists of 38 specimens; one stemmed biface, seven non-stemmed bifaces, five examples of groundstone, 13 steep edged unifaces (scrapers), four wedges (on also cross-referenced as a steep edge), and nine retouched flakes. Many of these categories are easily related to Matthew's text which identified lance-heads, arrowheads, axes, hammerstones, skinning knives, flake knives, a stone "pencil", and scrapers (1884:18-20).

Stemmed Bifaces

The single stemmed biface (artifact #28) remaining in the collection was roughly chipped with bifacial and unifacial retouch on the left margin (Figure 4). Blade edge form was asymmetric with wide angle corner notching. The expanding stem was thinned along its concave basal margin. In cross-section the point was plano-convex, while the longitudinal form was predominately biconvex. Length of the specimen was 78 mm, width 42 mm and thickness 12 mm. The lithic material was identified as limestone.

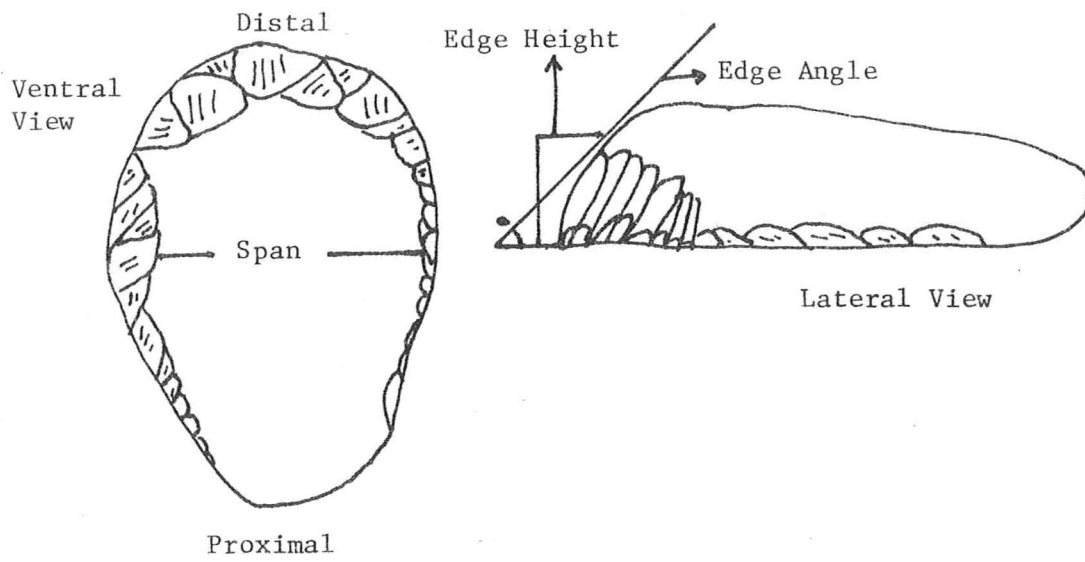


Figure 2: Steep Edge Definitions

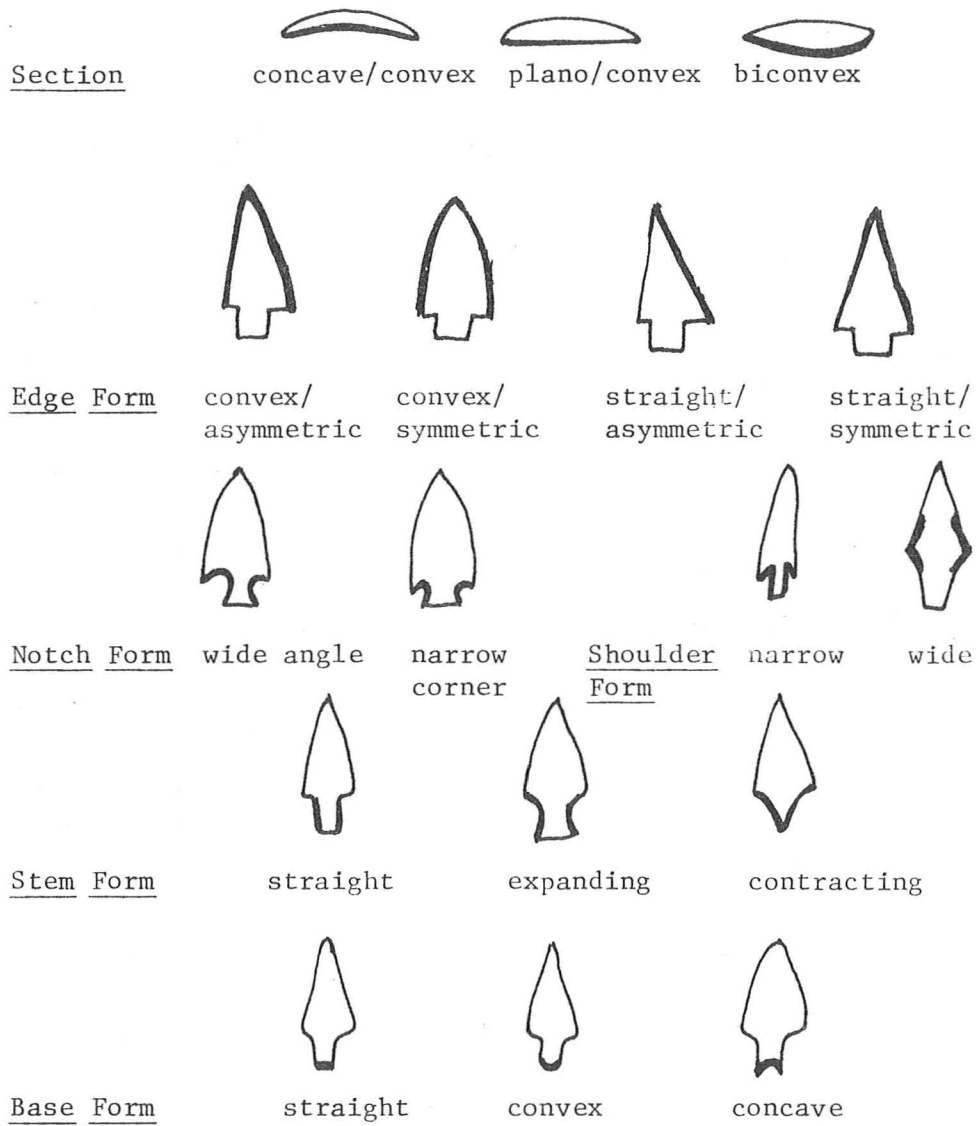


Figure 3: Form Attributes

Matthew recorded at least five stemmed bifaces as notched lanceheads of arrowheads (1884:19). Unfortunately there was no sure way of deciding exactly which biface was the survivor. The possibilities, however, included three references: one a 'lance-head' which was "...triangular and barbed at the base..." (1884:19) or a 'lanceolateleaf' form, or finally a triangular point "...with lateral notches for securing the point to the shaft" (1884:19).

Non-stemmed Bifaces

Non-stemmed bifaces in the Phil's Beach collection included four complete specimens, one tip, one base, and one basal medial fragment (Figure 5). Specimens #5 and #33 were considered to be bipoints while the other five artifacts were distinct in having a straight basal edge and were usually thinned basally (Table 1).

Matthew referred to skinning knives "...which showed the most careful chipping (and) were rectangular in outline..." (1884:20). Most of the non-stemmed bifaces would fit this description. Specimen #5 was no doubt the "...very large, ovate lance-head of quartzite..." (1884:19) found in one of the living areas. The only other directly traceable form would be #26, recorded as a jasper arrowhead by Matthew (1884:19).

Groundstone

Five lithic specimens evidenced surface grinding (Figure 6) (Table 2). Specimen #8 was a portion of the poll end of a celt. The artifact was formed by chipping and some grinding on all surfaces. Specimen #3 and #17 appeared to be a multi-purpose, hammerstone and abrader, tools. Both artifacts exhibit heavy pecking or battering marks at the proximal end with areas of abrasion visible on other surfaces. Specimen #1 was battered along the distal margin and lightly ground on the dorsal surface. Probably this artifact was a hammerstone or abrader. The final groundstone specimen, #105, was generally rectangular in shape with all four edges greatly worn. The distal tip was nearly round and pointed though slightly roughened and blunted by use. A shallow facet mark was apparent on the proximal end. A tentative use hypothesis was that it represented a drill for perforating or was used in a fire making kit (Allen 1980:p.c.).

Matthew referred to "...one well-formed axe..." (1884:19), and several rougher axes and hammerstones, as well as a cylindrical stone 'pencil' (1884:20). None of the celt-like artifacts remaining in the collection were complete nor appears to have suffered recent breakage. The stone 'pencil'; however, was readily identified as specimen #105.

Steep Edge Unifaces

Scrapers, or steep edge unifaces were numerous at Phil's Beach with 13 remaining in the collection (Figure 7). Three subgroups were determined based on attributes of general form and weight. Group one steep edges (Table 3) were predominantly triangular in form with weight ranges from 1.9 to 319 g. Group two (Table 4) forms were usually ovoid.

Figure 4: Stemmed Biface



Figure 5: Non-stemmed Bifaces.

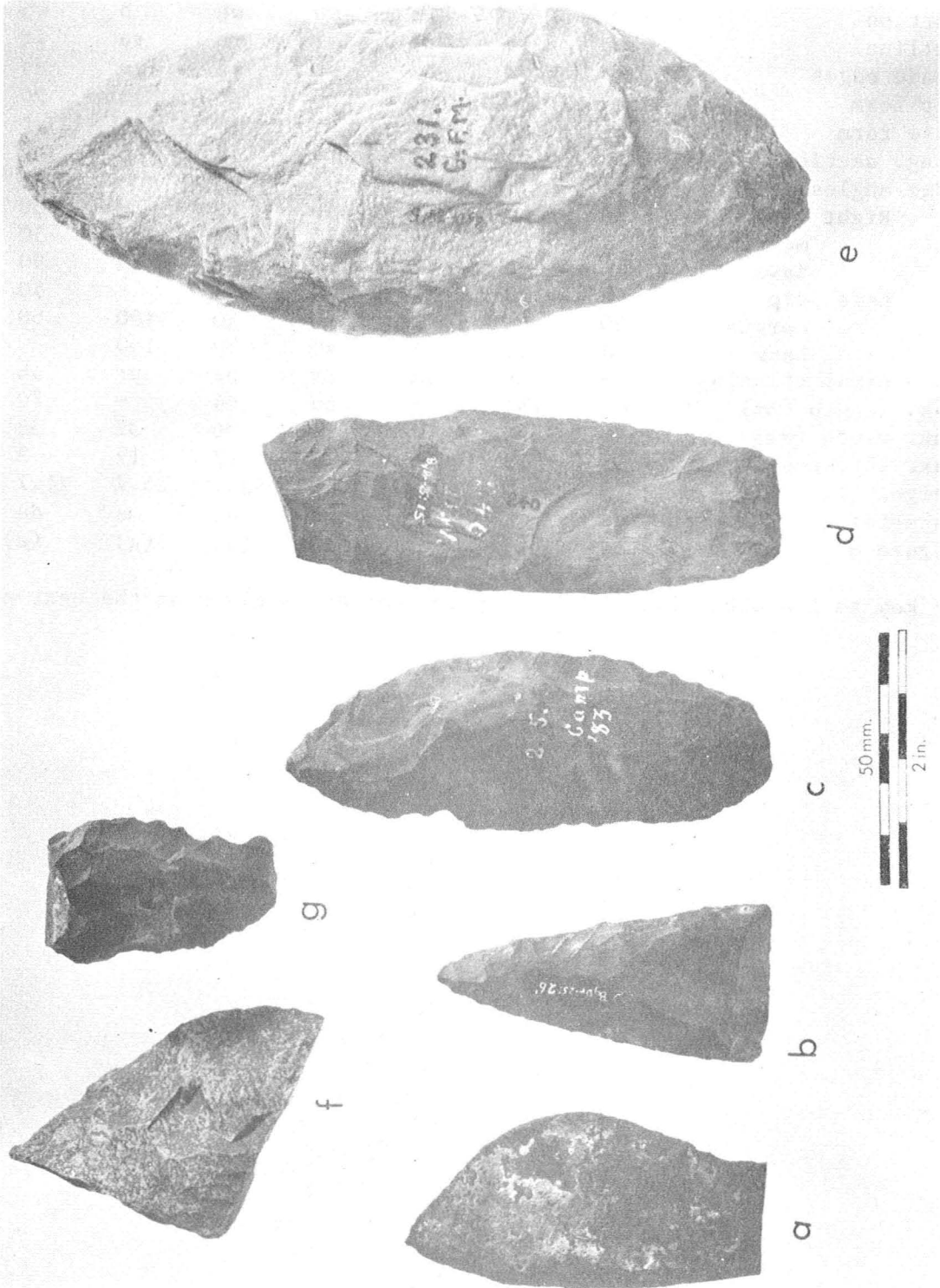


TABLE 1: Attribute Summary for Non-stemmed Bifaces*

Artifact number	33	5	15	26	27	2	7
Portion	t	wh	b/m	wh	wh	b	wh
Outline	tr	la	re	tr	re	re	ir
Blade edges	as	cx	cx	st	as	as	as
Tip form	po	po	-	po	po	-	po
Base form	-	po	st	st	st	st	st
Long. section	bc	bc	bc	bc	bc	bc	bc
Edge angles (degrees)							
Right tip	80	60	-	60	50	-	30
margin	50	60	60	70	60	70	50
base	-	60	40	60	40	50	90
Left tip	50	70	-	60	60	-	50
margin	50	60	50	60	50	100	50
base -	60	40	60	40	50	100	
Basal thinning	-	ab	pr	pr	pr	pr	ab
Max. length (mm)	-	154	-	66	94	-	70
Max. width (mm)	48	66	35	32	36	32	36
Max. thickness (mm)	13	19	9	9	12	19	9
Weight (g)	23.9	21.0	40.6	16.9	42.1	25.7	21.7
Material	cs	qt	r	c	cs	ms	de
Figure 6	(e)	(f)	(d)	(b)	(c)	(g)	(a)

*a key to the abbreviations used in the tables is given on the next page.

KEY: Abbreviations Used in Tables

a	-	agate	ov	-	oval
ab	-	absent	p	-	plano
as	-	asymmetric	pc	-	plano convex
b	-	base	po	-	pointed
ba	-	basalt	pr	-	present
bc	-	biconvex	px	-	proximal
bp	-	biplano	q	-	quartz
br	-	breccia	qt	-	quartzite
c	-	chert	r	-	rhyolite
cc	-	concave	rc	-	recurve
cs	-	calcareous shale	re	-	rectangular
cx	-	convex	ro	-	round
db	-	diabase	sh	-	shale
de	-	decite	ss	-	siltstone
di	-	diorite	st	-	straight
ds	-	distal	t	-	tip
ir	-	irregular	tc	-	triangular convex
j	-	jasper	tr	-	triangular
la	-	lancelate	uk	-	unknown
lg	-	longitudinal section	wh	-	whole
ls	-	limestone	-	-	not applicable
m	-	midsection			
ms	-	metasediment			

Figure 6: Groundstone.

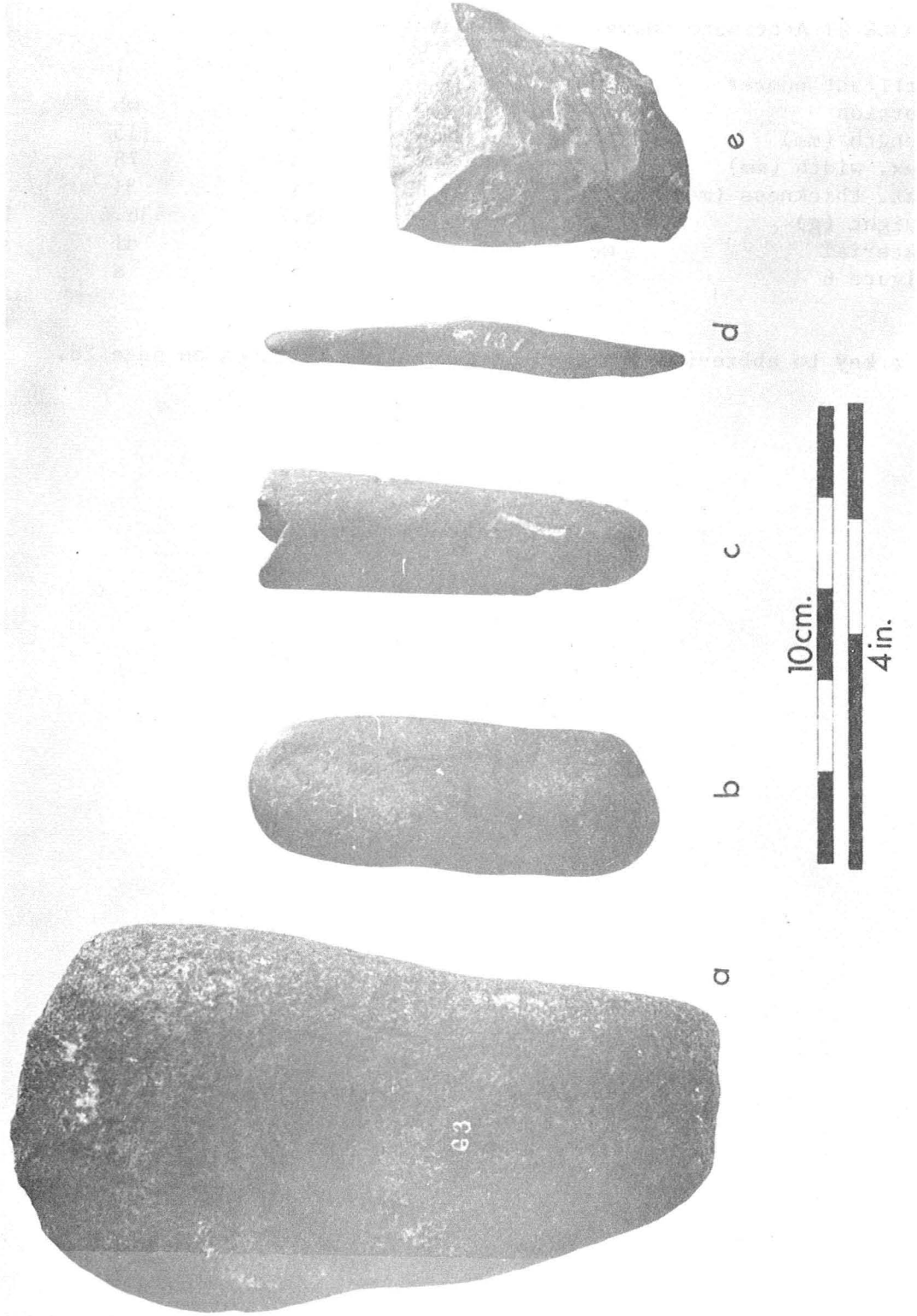
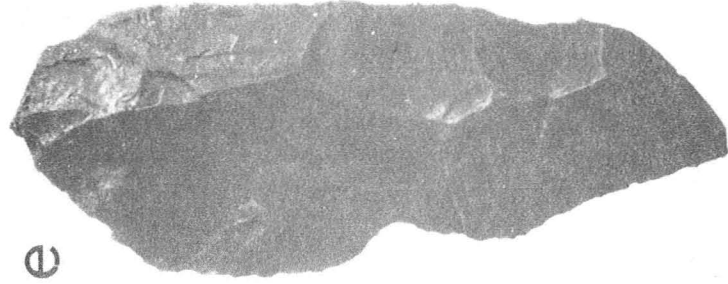


TABLE 2: Attribute Summary for Groundstone*

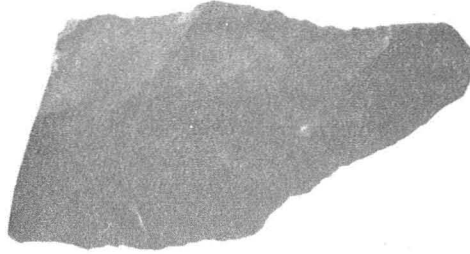
Artifact number	8	3	17	1	105
Portion	m/px	m/ds	wh	wh	wh
Length (mm)	63	83	88	115	90
Max. width (mm)	51	6	33	78	11
Max. thickness (mm)	29	18	11	31	9
Weight (g)	12.3	64.7	53.7	536.4	13.3
Material	ms	ss	db	di	ss
Figure 6	e	b	c	a	d

* a key to abbreviations used in the tables is given on page 28.

Figure 7: Steep-edged Unifaces



e



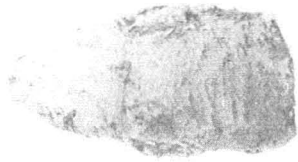
d



c



a



b



Generally, these were lighter than group one specimens although some overlap existed in the .7 to 2.2 g range. Group three (Table 5) represented the heavier steep edges and those irregular in form. Weight range was between 6 and 10 g. One specimen of this group, #52 was also discussed under the wedge category because it had two opposing crushed edges in addition to a marked steep edge.

Matthew's original discussion of scrapers identified "...the ordinary scraper, which in form may be compared to a gun flint with rounded corners,..."(1884:19), as well as other "...rough flakes, to which a fresh edge was given by flaking minute chips from the margin,- .." (1884:19).

Wedges

Four wedges (Figure 8) were noted in the collection (Table 6). These specimens bore edges with a definitely crushed or battered appearance not indicative of a flake/core relationship (Burley 1974:45). A preference for a roughly rectangular shape and edge angles of about 70° was noted. Matthew did not directly identify wedges; however, he reported chisel and gouge shaped scrapers (1884:19) which may have been wedges.

Retouched Flakes

The final lithic implement category was that of the unifacially retouched flake (Figure 8). Nine such specimens were found among the Phil's Beach debitage (Table 7) and were characterized by light, sometimes random retouch, a more narrow edge angle and more diminished edge height than the steep edged uniface. A tendency to utilize long, thin flakes was noted. Matthew made no direct reference to anything resembling a retouched flake. The original cataloguing procedure; however, classified all long flakes, retouched or not, as knife blades.

Ceramic Artifacts

Deposits of clay, supposedly designated for transformation to pottery vessels were found at Phil's Beach by George Matthew (1884:15-16). Numerous pot sherds from finished containers were also found, substantiating this hypothesis. Matthew recognized ten distinct designs on sherds and suggested two tools, "A small implement with a square point... and another with several teeth..." (1884:17), were utilized to create most designs. Fabric impression decoration was also suggested (1884:17). Re-analysis of the 96 remaining ceramic sherds echos Matthew's original work although no fabric impressed sherds were identified.

TABLE 3: Attribute Summary, Group One Steep Edges*

Artifact number	22	34	48	29	25	
Portion	wh	wh	lg	wh	wh	
Form	tr	tr	re	tr	re	
Platform location	px	px	uk	px	uk	
Cross-section						
distal	bc	bc	bp	bc	bp	
left	cc/cx	bc	bp	bc	cx/tr	
right	cc/cx	bp	bc	bc	p/cx	
proximal	p/tr	bc	cc/cx	bc	cc/cx	
Length (mm)	25	24	29	28	21	
Width (mm)	19	28	29	26	16	
Thickness (mm)	4	4	5	6.5	6	
Weight (g)	1.9	2.9	3.2	3.9	2.3	
Steep edge location	ds	ds	ds	ds	ds & left	
Span (mm)	17	27	29	26	19	15
Edge height (mm)	2	5	3.5	7	5	3
Edge angle	50°	60°	60°	80°	80°	80°
Material	r	ss	c	ms	j	
Figure 7	c	a	b	d	e	

TABLE 4: Attribute Summary, Group One Steep Edges*

Artifact number	24	36	40	37
Portion	lg	wh	ds	wh
Form	ov	re	re	ro
Platform location	px	lg	uk	lg
Cross-section				
distal	rc/p	p/cx	bc	bc
left	cc/cx	bc	p/tr	bc
right	bp	cc/cx	cc/cx	bc
proximal	bc	p/cx	bp	bc
Length (mm)	16	21	25	18
Width (mm)	13	16	10	17
Thickness (mm)	3.5	6.5	5	7
Weight (g)	.7	2.2	1.2	2.2
Steep edge location	ds	ds	ds	ds
Span (mm)	14	20	25	17
Edge height (mm)	3	4	6	4
Edge angle	70°	70°	60°	80°
Material	q	sh	q	ba
Figure 7	g	i	h	f

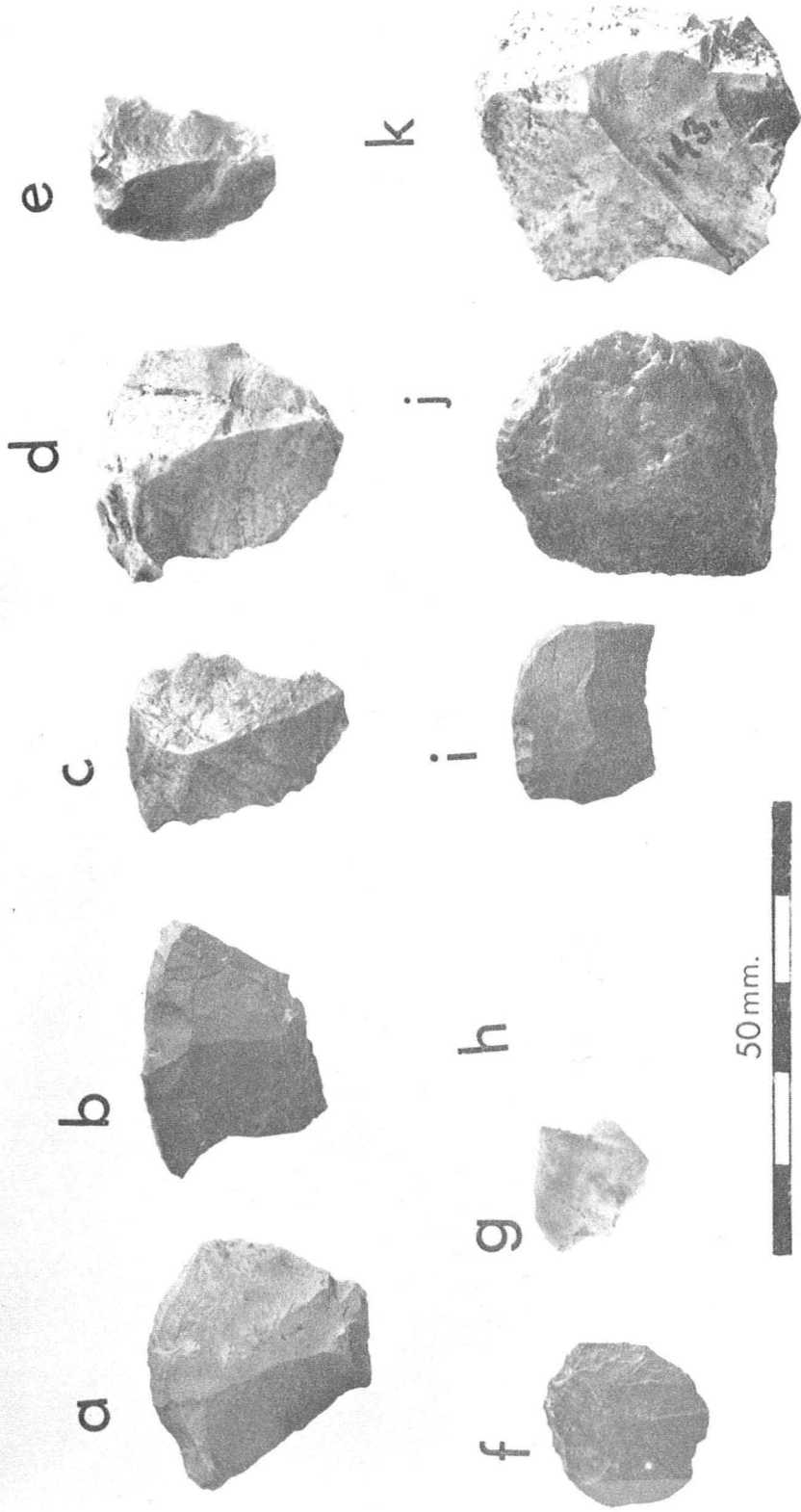
* a key to the abbreviations used in the tables is given on page 28.

TABLE 5: Attribute Summary, Group Three Steep Edges*

Artifact number	30			52	20	41
Portion	wh			wh	wh	wh
Form	ov			re	ov	tr
Platform location	lg			uk	lg	px
Cross-section						
distal	bc			p/cx	p/cx	p/cx
left	bp			rc/cx	bc	bc
right	p/cx			rc/cx	bp	p/tr
proximal	bp			bc	cc/cx	cc/cx
Length (mm)	39			31	41	41
Width (mm)	31			28	29	25
Thickness (mm)	8.5			10	8	12
Weight (g)	6.3			10.3	10.5	10.5
Steep edge location	ds & left & right			ds	ds	ds
Span	14	20	20	21	30	21
Edge height	4	1	1	4.5	6	3
Edge angle	60°	40°	40°	80°	70°	80°
Material	ms			j	r	q
Figure 7	k			j	-	-

* a key to the abbreviations used in the tables is given on page 28.

Figure 8: Wedges and Retouched Flakes.



50 mm.
2 in.

Figure 9: Ceramic Artifacts



50 mm.



2 in.



TABLE 6: Attribute Summary, Wedges*

Artifact number	23	103	84	52
Form	re	re	re	re
Length (mm)	23	27	40	31
Width (mm)	22	15	31	28
Thickness (mm)	11	10	13	10
Weight (g)	5.5	4.4	20.1	10.3
Edge span (mm)				
distal	11	12	29	-
left	14	-	27	-
right	18	-	21	-
proximal	-	-	-	-
Edge angle				
distal	50°	80°	80°	-
left	50°	-	90°	40°
right	90°	-	90°	80°
proximal	-	-	-	-
Material	br	q	q	j
Figure 8	-	b	a	-

* a key to the abbreviations used in the tables is given on page 28.

TABLE 7: Attribute Summary, Retouched Flakes

Artifact number	50	51	38	100b	100a	46	35	47	44
Form	re	ov	tr	re	ro	tr	re	re	tr
Platform location	lg	px	uk	uk	px	uk	lg	uk	px
Length (mm)	42	26	38	29	22	46	39	61	18
Width (mm)	24	22	37	14	18	25	25	26	18
Thickness (mm)	7	4	4	6	3	4	9	6	4
Weight (g)	5.6	1.8	7.5	3.6	3.6	6.8	10.2	11.5	3.3
Distal span (mm)	27	7	30	15	16	18	30	50	24
height (mm)	1.5	1	2.5	2	1	1	2	2	1
angle	50°	60°	60°	70°	90°	40°	50°	40°	60°
Right span (mm)	-	14	9	-	-	-	-	-	-
height (mm)	-	0.5	0.5	-	-	-	-	-	-
angle	-	50°	40°	-	-	-	-	-	-
Left span (mm)	-	14	18	-	11	-	-	-	-
height (mm)	-	0.5	0.5	-	0.5	-	-	-	-
angle	-	50°	50°	-	40°	-	-	-	-
Proximal span (mm)	-	7	-	-	-	41	-	-	-
height (mm)	-	0.5	-	-	-	0.9	-	-	-
angle	-	40°	-	-	-	30°	-	-	-
Material	q	j	ba	ls	sh	sh	r	cs	q
Figure 8	-	-	-	-	-	d	e	c	-

TABLE 8: Attribute Summary, Ceramics

<u>Sherd Type</u>	# of sherds	%
Rim	4	4.2
Body	87	90.6
Shoulder	1	1
Base	4	4.2
<hr/>		
Total	96	100.0
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Technique and Design

Rocker stamping		
dentate	44	45.8
linear	5	5.2
cordwrapped stick	5	5.2
pseudo-scallop shell	5	5.2
Drawing		
trailed	4	4.2
Undecorated	33	34.4
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Total	96	100.0
<hr/>		

Temper

Grit	88	91.7
Organic	8	8.3
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Total	96	100.0
<hr/>		

Due to poor provenience and the incomplete nature of the collection, vessel analysis could not be used. Instead, individual sherds were tabulated as to exterior design, technique of design application, and temper (Table 8). Rim sherds were more completely analyzed.

The pottery used by the inhabitants of the Phil's Beach site probably the conical based, uncastellated variety with at least occasional addition of shoulder region perforations. A fragment from group #392 was half of a cone shaped base. This piece had a maximum width of 18 mm. The four rim sherds were flat-lipped and a single shoulder sherd (#380) had broken on a plane which dissected a perforation. The halved hole bore striations where the tool was inserted through the wet clay.

Most of the sherds, 74%, were a light orange or beige colour and quite resilient. The remainder of the fragments were black in colour and highly friable. All organically tempered pieces were dark in colour. Temper was more commonly grit, a combination of quartz and mica matrix containing crystals anywhere from 1 mm to 4 mm in size. Due to dissolution over time, organic constituents in the pottery were generally not available for identification, although 3.1% of the total sample was shell tempered.

Several interesting notes were made regarding the patterns of design on various sherds. One piece (#388) illustrated a rocker stamped dentate design in chevron pattern; one row of dentates obliquely angled to those adjacent. A representative of the pseudo-scalloped shell design category (#378) also bore a line of dentates beginning along one of the broken margins. The two rims from group #376 (Figure 9) had three circumferential rows of dentates just below the lip. The remainder of the decoration was longitudinal.

On rocker stamped dentate specimens it was noted that the terminal ends of each design were more heavily impressed while, as a result of rocking procedure, the central area was erated and appeared to be linear draw. This effect can be replicated experimentally in the laboratory. Tool lengths of 18, 12, 16 and 19 mm were taken from Phil's Beach dentate stamped sherds.

One rim sherd (#392) was somewhat unusual in that it bore no visible decorative surface. The condition of the sherd was such that the decoration may have been worn off. The interior surface was definitely not decorated. Predominately straight in form, the lip overhung the exterior very slightly. This fragment had a width of 8 mm.

The rim #389 was also 8 mm thick and straight in form. The design was a trailed mark on the exterior surface. The lip was also decorated with an oblique trailed line.

The final two rim sherds (#376) were from the same vessel based on their identical colouring, metric attributes and design. One rim had an accompanying portion of the shoulder. The lip exterior and interior were decorated with a rocker stamped dentate pattern. Interior decoration covered only the rim portion of the internal vessel surface. The form was excurved and both fragments were 9 mm thick.

Faunal Artifacts

Modified bone accounted for 23 artifacts in the BgDr 25 collection (Figure 10). Four modified beaver incisors, six bone awls, four bone points, four pieces of scored and/or notched bone, and five miscellaneous worked bone fragments were noted.

Each of the four beaver incisors was somewhat unique, warranting brief individual descriptions of the artifacts. Specimen #74 was a medial-distal portion of an upper left incisor. Medial modification on the right edge extended to the distal margin although the distal surface was unworked. The tooth was polished on the right margin and the center area was gouged. A different wear pattern was found on a lower left incisor, #75. Modification was on the distal surface. The occlusal tip of the tooth had a high polish sheen and was worn on a different plane than the lingual, enamel surface. Artifact #56 was also a lower left incisor with concave distal modification and a right angle cut across the shaft. Diagonal modification, which included light, tip angled striations of the left margin, characterized specimen #55. This lower right incisor also had lingual surface modification with strong lateral striations evident.

Matthew made reference to the beaver incisors, noting in particular the diversity of use exhibited. "By cutting the point of the incisor of this animal in various ways, chisels, s, and other pointed implements were formed" (Matthew, 1884:23).

Awls

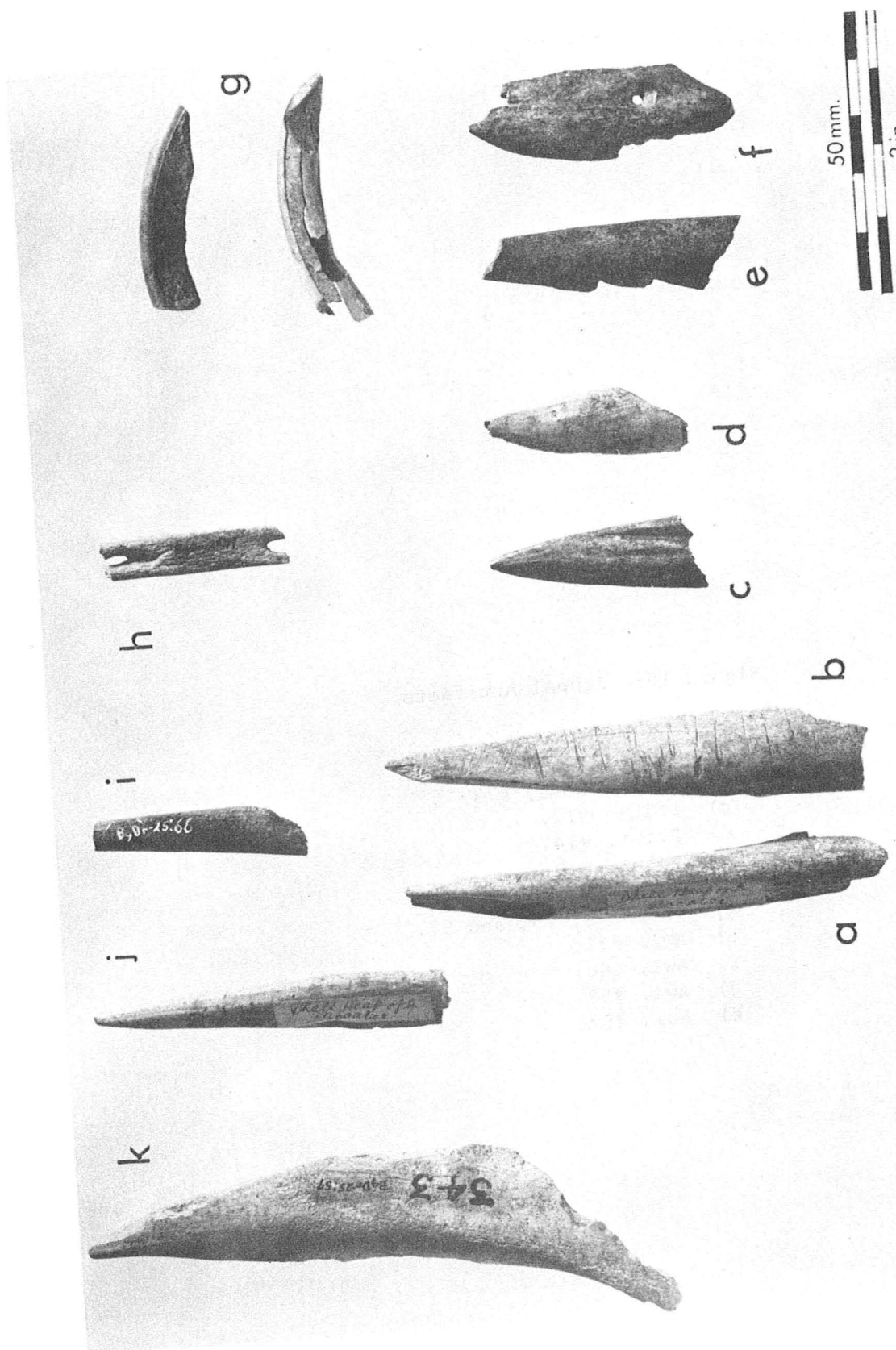
Six awls, representing the 'bodkins' and 'netting needles' identified in 1883 (Matthew, 1884:23), were found in the collection. Specimen #57 was a complete awl with a blunted tip and no evidence of hafting. Other awls included #58, a distal fragment with a blunted tip, #66, #73 and #59, all of which were midsection portions with smoothed and/or whittled edges. The final artifact in this category, #77, had two perforations as well as prehistoric and modern breakage at opposing ends of the tool.

Bone Points

This category included portions of bone projectile points or harpoons. Four such artifacts were located. Specimen #12 was from a large mammal bone and had well rounded edges that tapered to a point. Whittling marks and a smooth tapered form characterized artifact #14.

Figure 10: Faunal Artifacts.

- a) Loon Bone, #63.
- b) Scored Bone, #73.
- c) Point, #12.
- d) Point, #14.
- e) Point, # 9.
- f) Point, #22.
- g) Incisors, #56 and 57.
- h) Awl, #77.
- i) Awl, #66.
- j) Awl, #58.
- k) Awl, #57.



The final two artifacts in this category were no doubt portions of harpoons. Specimen #9 had well rounded, smooth edges with three shallow barbs while #72 represented the tang portion of a bone harpoon, bearing a bifacially gouged perforation.

Matthew noted that "...harpoons were of the ordinary form, with lanceolate blade, barbed on one side. Only fragments of this kind of implement were obtained" (1884:23).

Scored and Notched Bone

The four artifacts with scoring and notching modifications were possibly utilized as tallies, preforms for points, decorative pieces or gaming discs. The most ornate was artifact #73 which was whittled and polished and had been repeatedly slashed cross-sectionally to the shaft. No definite patterns were discerned although cuts vertical to the shaft, perpendicular to the vertical cuts, and obtuse angle lines were recorded. Specimen #69a was part of a mammal rib with scoring on the interior surface. Specimens #69 and #11 were both scored lightly on the surface and bore three distinct notches on one margin.

"Among the worked bones which are, not strictly speaking, implements, there was one which was scored on the back and another that was notched on the edge" (Matthew 1884:23). This reference no doubt applied to artifacts #73 and #11 respectively. Matthew also suggested the bones were utilized either as tallies or as gaming pieces (1884:23).

Miscellaneous Worked Bone

Under this heading five pieces of bone, modified beyond butchering, but suggesting no use, were placed. None of these specimens were remarked upon by George Matthew. A loon (Gavia immer (Stewart 1980: p.c.)) bone (#63) had a diagonal cut across the shaft, and smoothed, tapered borders and edges. Specimens #10 and #61 had whittling marks on bone margins and cuts on the shaft. The metatarsal shaft portion of a deer (Odocoileus virginianus), specimen #60, also had smoothed and rounded edges. The final artifact in this category was #65 a midshaft portion of an adult beaver (Castor canadensis) tibia which was worked on the distal end, as well as having a right angle cut through the shaft.

SPATIAL AND TEMPORAL CORRELATIONS

Introduction

Due primarily to the lack of care given the original field notes and the Phil's Beach collection, confusion exists over the place of the site in the overall Maritime archaeological picture. This portion of the report attempts to place BgDr 25 within the temporal sequences suggested for the Maritime Provinces even though these are still far from completely understood.

It is known that man had inhabited the Maritime region for at least 10,600 years. The range of the Paleo-Indian occupation has not yet been explicitly identified although the characteristic fluted points have been found in both northeastern and southern New Brunswick (Turnbull and Allen 1978:199) as well as at the better known Nova Scotian site, Debert (MacDonald 1968).

A general assumption is that an Archaic tradition grew out of the Paleo-Indian period. Excavations in Newfoundland/Labrador suggest the Archaic, characterized by "...lanceolate to triangular points with basal thinning and grinding..." (Tuck 1975:127), began some 9,000 years ago. The later manifestation of this general tradition, the Maritime Archaic, beginning about 5000 BP, is well established throughout Newfoundland at sites such as the Port aux Choix burial (Tuck 1975:127) and represented in New Brunswick by the Cow Point site (Sanger 1973). This culture is best known from its ceremonial groundslate bayonet points and extensive use of red ochre in the mortuary customs.

Although the Archaic and probably the Paleo-Indian peoples of the Maritimes had at least seasonal exploitation patterns in coastal regions, it was not until about 3000 years ago that the cultures which crated the shell middens began. Sanger doubts that the coastal adaptation in the Passamaquoddy Bay came about as evolution from earlier Archaic populations:

More likely, it was introduced full bloom from areas to the south where the initial experimentation took place. Ritchie (1969) has demonstrated the presence of the shell-fish utilization pattern by 4,000 years ago in Massachusetts and there are sufficient similarities in artifact forms, mainly projectile points, to suspect the introduction of this way of life to Passamaquoddy Bay at least 3000 years ago (Sanger 1971:16).

The Phil's Beach site is very much a part of this coastal adaptation pattern. With the information previously given in this text as well as Matthew's text it is now possible to test the many similarities in artifact forms of BgDr 25 and other sites covering the region. This permits some comment on the spatial continuity for the midden complex. A variety of relative dating techniques can also be utilized to suggest a temporal framework BgDr 25 site.

Spatial Considerations

A shell midden site is nearly always located on a piece of shoreline with a southerly exposure. The location is near an accessible supply of fresh water and on land high enough for good drainage (Rice 1971:4). Phil's Beach is no exception to these basic rules.

The site was well chosen, for the advantages of the place to a people who depended for existence on hunting and fishing... . A clay flat, flanked on the west by a hill of felsite rock, running parallel to the course of the Bocabec River, and on the east by a similar ridge which separates this river from Digeguash Inlet, was the spot chosen for the principal settlement. To the north of this clay flat, ...there is now an open field,..., and to the south was the sea beach,...

To the east of Phil's Beach a spring of cool water flows over a low cliff into the sea (Matthew 1884:6-7).

Matthew found the most common feature at BgDr 25 was what he termed hut-bottoms. These depressions, roughly an 8 foot diameter oval, had a gravel fill and a central fireplace region. Most of the artifactual remains and chipping debris were localized in these house features.

Davis in his (1978) Teachers Cove report described the "semi-subterranean" houses and their fairly extensive geographic range. Similar forms to BgDr 25 have been noted in Maine and possibly Massachusetts as well as being recorded at other Passamaquoddy Bay shell-midden sites including Teacher's Cove (BgDr 11), Minister's Island (BgDs 10) and Sandy Point (BgDs 6) (Davis 1978:17). There is also evidence that the "sunken floor" house feature existed in Nova Scotia at two sites on the Shubenacadie River, BfCv 6 and BfCv 3. BfCv 3 "...yielded a distinctive assemblage apparently associate with a shallow house-pit excavated in the subsoil" (Preston, 1974:19). At BfCv 6, in the northern half of the excavated area was a "...shallow but distinct house-it with an internal hearth" (Preston, 1974:18).

Beyond the similarities in major structural features is the more specific correlation of artifacts. Certain common traits exist across site boundaries. Projectile points are often considered the most diagnostic items in a collection; specimen #28, the single stemmed biface described in this text has no clear counterpart to any points excavated from the Teacher's Cove site. The only point observed to date, which closely resembles #28 is a stemmed biface from the Bear River site in Nova Scotia (Connolly 1977b: plate 3). The Bear River artifact is included in 'group v points' of classification scheme used in Nova Scotia (D'Entremont 1977:85). This group is characterized by wide corner notching, an expanding stem, and a general biconvexity of cross-section.

Correlation between artifacts in the non-stemmed biface categories is quite easy to note in New Brunswick and between provinces. Davis divides his bifaces into three categories: large, over 40g; small, under 40g; and oval (1978:21). The most noteworthy similarities in biface attributes are with respect to basal thinning and edge angle ranges particularly of the large group (1978:21). The Phil's Beach collection, when demarcated in a similar fashion, yields surprisingly similar results, 50% for small bifaces and 66% for the large variety. The mean edge angle similarities

are not quite so striking. Probably an angle within 10° to 50° was preferred by the inhabitants of both Teacher's Cove and Phil's Beach (Davis 1978:47-8).

Visual evidence for the popularity of basal thinning on bifaces exists from other sites as well. Again the Bear River assemblage has many startling resemblances to the BgDr 25 material. The straight based triangular form, which occurs at Teacher's Cove (Davis 1978; plate viii, figures b.c.d) and Phil's Beach (Figure 2 b) is represented by four specimens at Bear River (Connolly 1977b: plate 4). On at least two of these, and the other rounded base forms, basal thinning can be detected.

The triangular, predominantly straight based form with or without basal thinning was also recorded by Smith on Merigomish Harbour, in northern Nova Scotia, and by Wintemberg in the Eisenhauer Shell Mound, Mahone Bay, southern Nova Scotia (Smith and Wintemberg 1929: plate iii, figure 11, 12; plate xxiii, figure 5). Indications are that this form was wide-spread in the midden complexes of the Maritime provinces.

By stretching the visual analogy ever so slightly it can be suggested that the prototype of the triangular biface was known in New York at Martha's Vineyard, as the Levanna type projectile point. One of the Bear River Bifaces suggests this relationship because of its extremely concave base, (Connolly 1977b: plate 4) highly characteristic of the Levanna form, and great resemblance to the specimens depicted by Ritchie (1971: plate 9, figures 1-3, 6; plate 30, figure 1,6-10; plate 40, figure 1-4).

Although less diagnostic than the stemmed and non-stemmed bifaces it is also possible to see some relationships between the steep edges found at Phil's Beach and those located elsewhere. Taking the weight as indicative of a group, BgDr-25 samples can be compared with those at Teacher's Cove. Davis uses less than 5 g as category one, a second category of 7-10 g, and a category larger than 10 g (1978:22). Because of insufficient sampling in the Phil's Beach material, only the groups less than 5 g and over 10 g could be considered. The weight, plus the span, height and angle of the working edge, obviously the important functional attributes, have been chosen for cross reference (Table 9). Certain preferences for edge angles, heights and spans exist, varying slightly with the weight of the implement. Smaller steep edges from both sites suggest a preferred span somewhere in the vicinity of 20 mm, and height close to 4 mm and an angle about 65° . The heavier forms indicate a significantly larger span, over the 21 mm range with a higher edge height and a larger average edge angle, close to 75° .

Ceramics, like lithic material can be indicative of cultural similarity. Again the closest matches to the Phil's Beach collection come from Maritime region midden sites. Forms of dentate, rocker stamping are

TABLE 9: Steep Edge Attribute Comparison, BgDr 25 and BgDr 11.

	BgDr 25		BgDr 11	
	Range	Mean	Range	Mean
Group 1				
Edge span (mm)	14-29	21.5	10-27	20.2
Edge height (mm)	2-7	3.5	2.5-6.5	4
Edge angle	50-80°	65°	40-90°	66.6°
Weight (g)	.7-3.9	2.3	.7-4.7	3.2
Group 2				
Edge span (mm)	21-30	25.5	27-44	34.9
Edge height (mm)	3-6	4.5	6-16	11.1
Edge angle	70-80°	75°	60-90°	73.6
Weight (g)	10.3-10.5	10.4	10.3-26.4	18.2

(Davis, 1978)

quite common at Teacher's Cove, and grit tempering is by far the predominant type (Davis 1978). Davis illustrates (1978: plate xxiii) a particular dentate which is nearly identical to that displayed by the BgDr 25 rim sherds #376. This type of design was also found in Nova Scotian sites on Merigomish Harbour, (Smith and Wintemberg 1929: plate x, figure 12, 15-20, 24-26) and at Bear River (Connolly 1977b: plate 11).

From sites a little farther afield, dentate is also diagnostic. At the Waterside Shell heap, Frenchman's Bay, Maine, Rowe found that the "...commonest patterns are rows of wedge-shaped or nearly rectangular impressions, set close together, which bear a superficial resemblance to basketry,..." (1940:9). The line drawings of this pottery type (Rowe 1940: plate vi) are nearly identical to the BgDr 25 patterns. Linear rockerstamping is also present in both collections.

Last, but far from insignificant, are the faunal remains. Patterns are consistent to some extent through the midden sites, as well. Beaver incisors are nearly universal in the shell middens of the east. The Bear River site (Connolly 1977b: plate 5) Teacher's Cove, (Davis 1978: plate xvi), Merigomish Harbour sites, the Eisenhower heap (Smith and Wintemberg 1929: plate xvi, plate xxx) and various sites from Maine (Rice 1976:41-2) all produced the modified beaver teeth. The implications of this for suggestions of cultural continuity are somewhat tentative, since the beaver incisor is a traditional tool which had a broad use in all North American cultures where the animal was available.

The more diagnostic bone tools are the points. Point tips similar to Phil's Beach specimens #12 and #14 are quite common (Davis 1978), (Smith and Wintemberg 1929). The awl is also common. National Museum # vii-B-ii (Historic Resources Administration, Photographic Record 79B35) is an awl nearly identical to Phil's Beach #25. In fact the same type of bone appears to have been used. The museum specimen, from a shell midden in Passamaquoddy Bay, has a complete tip and is thus longer than the Phil's Beach artifact. The generally long, cylindrical pointed forms of awls and needles are also characteristic of Teacher's Cove (Davis 1978), Bear River, (Connolly 1977b) and the Nova Scotian sites excavated by Smith and Wintemberg (1929).

One particularly interesting thing to note, however, is the presence of scored bone in a number of sites, including Phil's Beach. This curious phenomena is quite well documented in the Smith and Wintemberg, Nova Scotian sites. Wintemberg reports two fragments of bone bearing incised tranverse lines from the shell heaps of the Merigomish Harbour site (Smith and Wintemberg 1929: plate xix).

Given the previous cross references it is possible to reconstruct, in a tentative manner, some of the boundaries which dictated the non-perishable cultural 'baggage' carried by the shell midden occupants of Phil's Beach. Already it should be obvious that the spatial boundaries for these ideas were fairly broad. Most coastal settlements of the Eastern Seaboard from New York, Massachusetts and Main, to Nova Scotia seem either to be closely related to the manifestation present in the Passamaquoddy Bay complex, or prototypic.

At some point the Phil's Beach inhabitants, and their immediate neighbours at Teacher's Cove, and across the Bay of Fundy at Bear River were constructing a stemmed biface which was typically corner notched, and fairly large, as well as thinning the basal portion of most bifacial, non-stemmed artifacts. A favourite biface form, triangular, may have had its origin with people further south. The Teacher's Cove and Phil's Beach people were constructing their steep edged scrapers with a preference for certain angles and weights. Even groundstone implements were at least in part constructed from a similar mental template. Free movement of people, or ideas is also demonstrated by the widespread existence of a particular, grit tempered, rocker dentate stamped ceramic form.

The similarities in faunal remains are difficult to assure diagnostically. Bone tool kits are known from special sites with proper preservation conditions and the variance in form between cultural groups is very poorly understood. It would seem logical, however, that bone tools are as revealing of a culture as any other implement form.

The bone points from BgDr 25 certainly bear close resemblances to other midden sites, both in tip shape and nature of the barb. It would also seem that the people of the middens engaged in some activity which required keeping a record, tally, or count by scoring bones.

Temporal Considerations

Absolute dating of sites was not possible when Matthew excavated Phil's Beach in 1883, but he did estimate the antiquity of the site. No historic materials were uncovered, some of the artifacts were deeply weathered and "...the covering of vegetable mould (which) has attained a considerable depth..." suggested to Matthew an occupation "...anterior to the discovery of America, or at least the region of Acadia, by the 'White Race',..." (1884:27).

Pearson suggested that Phil's Beach was a fairly late Woodland component, because incised pottery, generally later than cordwrapped stick, and abundant side notched points were found at BgDr 25. There is no evidence from this study that incised pottery or cordwrapped stick were particularly important in the ceramics of Phil's Beach and quite probably other points than side and corner notched were uncovered. Mention of "lonzenge shaped" and lanceolate points" (Matthew 1884:19) are far more reminiscent of bipointed projectile points.

With no carbon 14 samples, and a completely mixed collection, there are only a few ways possible to place BgDr 25 in a chronological sequence. Comparison to dates returned from similar sites would provide a general framework while analysis of projectile point typologies and sequences would also lend valuable information. It is also possible to check both of these relationships against a known ceramic seriation from New Brunswick.

A variety of dates are known from midden sites in New Brunswick and Nova Scotia. The oldest radiocarbon dates are 2370±80 BP from a test pit on Minister's Island (Bonnichsen and Sanger 1977:13) and a reading of 2125±65 BP returned by Erskine on the Bear River site (Connolly 1977b:45). Six dates also from Minister's Island provide a range of 1060±140 to 410±130 BP, which coupled with the rough range of 1900 BP to 900 BP from Teachers Cove (Davis 1978:33) comprise the more conservatively accepted age range of the middens.

The easiest way in which to suggest a date for Phil's Beach would be to give the range as loose boundaries, and Matthew did note two occupations at BgDr 25 as seems characteristic of other Passamaquoddy Bay middens. The proximity of the Teacher's Cove site, a two occupation site, with Phil's Beach suggests a possible close correlation in time and no doubt the BgDr 25 site fits within the 2000 year sequence. Artifact comparisons support this temporal placement.

The nearest typological assessment of points is from New York state. The single stemmed point from Phil's Beach is extremely similar to the Snyders Point of New York nomenclature which is broad bladed with corner notching and an expanding, markedly convex base (Ritchie 1971:49). Because this point type is usually associated with Hopewellian mounds it seems a bit far fetched to suggest a cultural relationship.

Vestal notched points are also comparable to the Phil's Beach specimen, being corner notched with straight or convex bases (Ritchie 1971:130). These occur in New York middens and have been dated at 2140±100 BC., again a far too early date, given the midden dates known for the New Brunswick and Nova Scotia coasts, but possibly the Vestal notched is an ancestral prototype.

A sequence for projectile points is known for New Brunswick. Although the data derives from a northern, non-coastal site "...a similar progression in projectile point development is suggested for all New Brunswick from approximately 2200 BP until at least 1700 BP" (Allen, 1980:148). This proposal is based on the fact that a second site, Fulton Island, from the more central, southern portion of the province, exhibits the same development. Corner notched points are considered to date after 1000 AD though Allen notes that corner notching is much earlier, by up to as much as 900 years, in the Passamaquoddy Bay region. It may be that all developments in the northeastern part of the province are later than those of the southern regions, though this is only speculation. If indeed there were bipointed forms in the Phil's Beach assemblage, comparison with Allen's sequence would suggest an occupation dating at about 2000 BP (Allen 1980:337).

Allen's ceramic seriation can also be used to date the Phil's Beach site. At approximately 1700 BP the dentate and the alternate notched tool decorations were preferred (Allen 1980:115). Sometime shortly after this date, cordwrapped stick impressions became the most popular decorative design (Allen 1980:115). As can be seen on the tables accompanying the

ceramic description, dentate was by far the most popular design at the BgDr-25 site. Psuedo-scalloped shell design was present, though poorly represented, while cordwrapped stick impressions are also infrequent in the sample.

Temper also indicates a date pivotal about 1700 BP. Allen (1980:121) notes that organic tempering was associated with cordrapped stick vessels and appeared to be a post 1700 BP development. Grit temper is almost exclusively used in the Phil's Beach material.

Phil's Beach was no doubt utilized as Matthew (1884) suggested by at least two temporally delineated settlements. Evidence from the ceramic comparisons suggests that the strongest component was a settlement occupying the site about 1700 BP, which is consistent with radiocarbon dates from other sites in the area. The occurrence of cordwrapped stick, organic tempering and incising techniques also suggest that a much more recent occupation, possibly in the 900 BP range, as postulated by Davis (1978) for Teacher's Cove, existed at Phil's Beach.

CONCLUSION

Recent works dealing with the shell midden have referred only to text and never to the actual collection of materials from the Phil's Beach site. Through attribute analysis and descriptive techniques applied to the BgDr 25 collection, a gateway has been opened to facilitate the comparison of artifactual material between this site and others.

Application of descriptive categories to other sites, particularly Teacher's Cove. and Bear River back up a hypothesis of cultural continuity and help provide a chronological reference for the Phil's Beach site. Basically, the cultures utilizing the littoral environment shared very similar templates for their major implements. Nearly identical relationships in lithic, ceramic and faunal material can be found throughout New Brunswick and Nova Scotia with clear suggestion of an origin further south in the coastal American states.

Characteristic of the midden complex is the use of the corner notched point and extensive use of the bifaces (often exhibiting basal thinning). The ceramics from these sites are varied but all contain some distinctive rocker stamped dentate pattern. Indications are that the bone tool kit was large and diverse with the possibility of diagnostic barbed bone points, worked beaver incisors and common preferences in the type of bone utilized for specific purposes. The presence of regularly marked but functionally unidentifiable bone fragments also seems widespread.

The shell midden complex has a known age spread of at least 2000 years in the Maritimes. Through comparison with known site dates, projectile point sequences and ceramic seriation, it has been possible to determine the approximate occupations at Phil's Beach. Ceramic evidence

in the form of dentate rocker stamping, and cordwrapped stick markings suggests one occupation at about 1700 BP and a second within the 900 to 400 BP range. The single projectile point suggests only the second period of occupation, after 1000 AD. Because the site was multi-component, both times are accepted as rough indicators of the temporal position of BgDr 25.

Although no particular problems relating to the understanding of the shell midden were discussed, it is hoped that by adding to the knowledge of the Phil's Beach site, future studies will have access to a few more morsels of data by which to construct a complete picture of the lives of the people who exploited the coastal regions of Northeastern North America.

NOTES

1. This report represents a somewhat abbreviated version of the author's Bachelor of Arts, Honours thesis (Dept of Anthropology, University of New Brunswick). No attempt has been made to update the methodological or interpretational stance taken in the original work. Thanks are extended to Dr. Christopher Turnbull, New Brunswick provincial archaeologist, who provided access to the collection. The following persons also contributed their expertise: Patricia Allen, Jeffery Bresa, Francis Stewart, Louise Hale and Dr. Gail Poole.

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