The St. Mungo Cannery Site: A Preliminary Report

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INTRODUCTION

The mouth of the Fraser River has long been a focal point of archaeological interest in the Northwest Coast. Through the excavations of C. E. Borden, a cultural sequence beginning in the first millenium B.C. has been established for this locality. Two problems in this sequence bear consideration. One problem is the origins and relationship of the two earliest phases, Locarno Beach and Marpole, and the second is the time gap between the Marpole phase and the more recent Stselax Phase. It was the hopeful intention of learning more about the latter period which led to the Vancouver Centennial Museum excavations at the St. Mungo Cannery Site in the winter of 1968 and summer of 1969. Surface finds at this large midden site on the South Arm of the Fraser River opposite New Westminster seemed to indicate a possible relationship to the Whalen II phase of Borden's sequence, radiocarbon dated to about 400 A.D. The excavations, however, yielded information of a much older occupation, and the data will, when fully analysed, considerably enrich our understanding of the origins and development of the Marpole phase and of early connections between the Fraser Canyon and the Fraser Delta.

LOCATION AND ECOLOGICAL SETTING

The St. Mungo Cannery Site, DgRr 2, is located on the south bank of the South Arm of the Fraser River, British Columbia, about thirteen miles from its present mouth (Fig. 13). It is situated at the foot of a high ridge of glacial till, Panorama Ridge, and occupies a small plot of land about 27 feet above sea level that must once have been the most westerly area of habitable ground in the region. Everything west of the site on the south side of the river would even now be marsh land, flooded every year, except for the protecting dykes; 4,000 years ago, at

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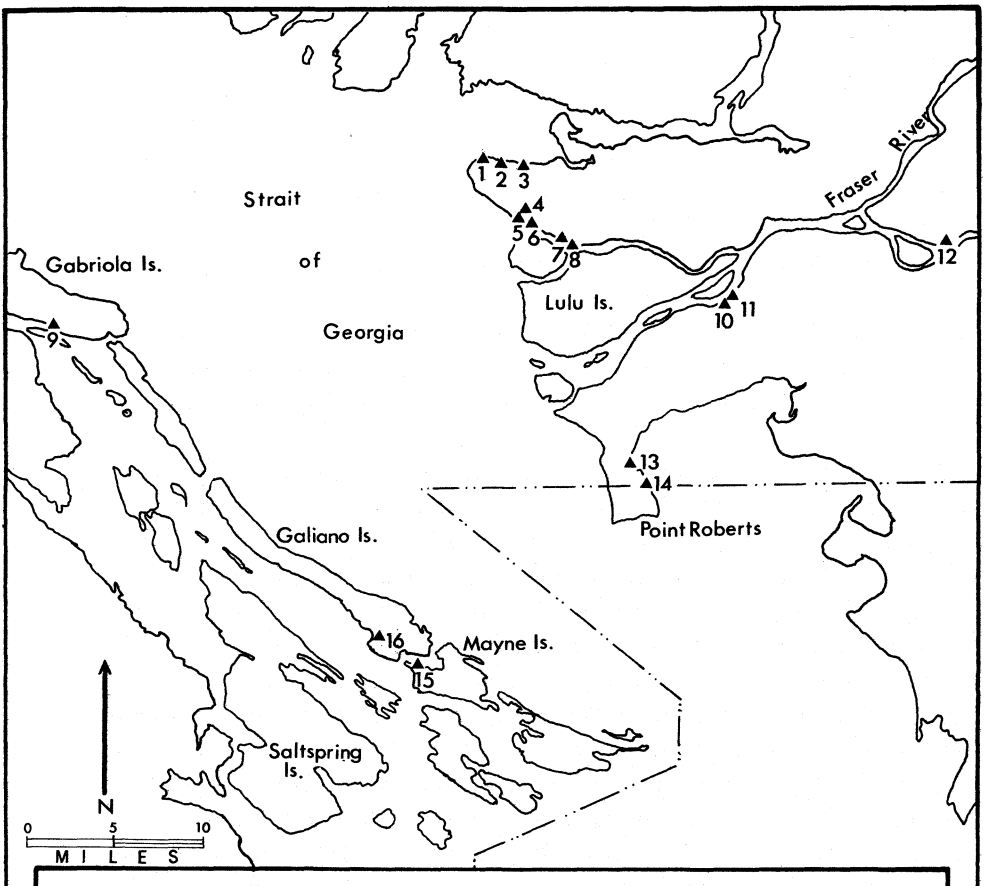
the time of the initial occupation of the site, it would have been tidal flats, brackish marshes and sloughs.

The climate of the Delta today is mild and wet with a heavy annual rainfall, occurring mainly in the winter months. Snowfall is light, temperatures are moderate without extreme fluctuations. The climax vegetation of the area prior to white settlement was a dense coniferous forest of red and yellow cedar, Douglas fir and hemlock, with lesser stands of spruce, yew, maple, and alder, and marshy ground in the low-lying areas along the river banks. The region abounds in marine, inter-tidal, riverine and land food resources, including staple protein foods such as molluscs, fish, birds and large herbivorous mammals. Vegetal foods are less abundant, but include a variety of berries, several types of sea-weed, arrowroot and camus lily.

Throughout the post-Pleistocene the ecological situation of the delta has not been static. The Fraser River has built its delta outwards at a relatively rapid rate both during the occupation and since, with the result that the site is now in a more inland position than it was originally. A local change was being effected by this delta outgrowth, with the environment becoming increasingly riverine-deltaic rather than marine-deltaic. A second, more general change was also taking place in the climate. During the first millenium of the occupation the St. Mungo people would have enjoyed a warmer, drier climate characteristic of the end of the Hypsithermal period (6500 - 1000 B.C.); from about 1000 B.C. onwards the climate would have become more like it is today, considerably cooler and more humid (Heusser 1960:184). One would expect such major changes in the ecological setting to be reflected in the cultural, bontanical and faunal remains at the site. Studies are being directed toward the recognition of such changes but as yet are not far enough advanced to offer more than a few tentative suggestions.

HISTORIC BACKGROUND

Prior to the establishment of Fort Langley in 1827, the New Westminster-Delta area was the territory of the Kwantlem group of the Stalo Coast Salish peoples. As in other areas, however, the building of the fort disrupted the aboriginal settlement patterns by creating a new military and economic focal point and many groups abandoned native villages to move closer to Fort Langley. So far, no mention has been found of a named village at the locality of the St. Mungo cannery, but the possibility cannot be entirely discounted. The recent Kwantlem



MAJOR SITES - FRASER DELTA & GULF ISLANDS

1	POINT GREY	DhRt	5	9	FALSE NARROWS	DgRw	4
2	LOCARNO BEACH	DhRt	6	10	ST. MUNGO CANNERY	DgRr	2
3	JERICHO BEACH	DhRt	18	11	GLENROSE	DgRr	6
4	OLD MUSQUEAM	DhRt	3	12	PORT HAMMOND	------	
5	MALÉ	DhRt	1	13	BEACH GROVE	DgRs	1
6	STSELAX	DhRt	2	14	WHALEN FARM	DfRs	3
7	LIQUID AIR	DhRs	19	15	HELEN POINT	DfRu	8
8	MARPOLE	DhRs	1	16	MONTAGUE HARBOR	DfRu	13

FIG. 13. Major sites — Fraser Delta and Gulf Islands.

villages of Kikait and Skaiametl were across the river near New Westminster (Duff 1952:23). It is worth noting that the stretch of the river immediately west of St. Mungo was the summer camping grounds of visiting Cowichan (and possibly also Nanaimo) groups during the fishing season (Duff 1952:25). There may have been some overlap of territories in the site area.

The St. Mungo Cannery itself was built in 1899 by James Anderson and was in operation by 1900, employing both Chinese and Indian workers. According to descendants of original settlers in the area, bunk houses for the workers stood on the midden desposits. As parts of the site have recently been levelled and bulldozed, there is little evidence of this occupation.

DESCRIPTION OF THE MIDDEN

The midden deposits at DgRr 2 must originally have been more than 300 yards long and 100 yards wide, with the long axis of the site parallel to the river. In its present state only a few portions of the midden remain undisturbed in a cleared area to the southwest of the cannery net loft buildings. The portion abutting the river bank and two northeast southwest swathes through the deposit have been bulldozed into the river to provide a platform on which to draw up the fishing boats. River Road, running parallel to the Fraser, bisects the midden longitudinally and a Great Northern Railway line cuts diagonally through the northeastern part. To the north and south of the cannery property and on the other side of River Road are private houses.

In December 1968 a 10-foot wide trench in a grid system of 5-foot squares was laid out parallel to the river on the most southerly portion of relatively undisturbed deposit where bank exposures revealed a depth of deposit of seven to eight feet. Two pits were excavated in December. On the basis of the material found during these excavations, it was recognized that we were dealing with a culture quite different from anything else yet found in the Delta, probably older, and with strong suggestions of up-river relationships. A carbon sample collected from the base of the cultural deposit was submitted for dating. A determination of 2,360 B.C. $\pm$ 110 years (I-4053) was returned on the sample, a second sample (I-4688) also from the base of the cultural deposit gave a reading of 2,290 $\pm$ 105 B.C. The St. Mungo site is thus the oldest dated midden in the Fraser Delta by at least 1,000 years. Two 10′ by 10′ pits were opened in March and two adjacent pits were completed.

Trowels were used throughout and all dirt removed was screened. Faunal remains and other associated materials were collected in natural stratigraphic levels unless it was necessary to subdivide large levels, or natural divisions were indiscernible. Layering and lensing throughout the deposit were generally fairly distinct, allowing for reasonably good correlation of levels from pit to pit.

STRATIGRAPHY

Three main stratigraphic units (Fig. 14) are present. These units from earliest to latest are as follows:

I. A thick, finely stratified deposit of typical shell midden type with heavily concentrated shell dump areas and intermediate areas of dark humus and finely crushed shell indicative of a succession of living areas. The living floor layers are marked by irregular extensive ash deposits, and small hearth areas sometimes found in clusters. One floor of particular interest was rectangular, roughly six feet by seven feet and covered with a thin layer of red ochre. There was a hearth in one corner and a dozen artifacts scattered on the surface. Smaller divisions are certainly possible within this main deposit, but as there is no evidence of sterile layers or major breaks, a gradual accumulation of cultural debris is indicated.

II. The second stratigraphic unit consists of a large irregularly shaped pit excavated into the main deposit, and the fill in this pit. The fill consists of orange sandy soil with traces of shell. The pit itself is something of an enigma, being quite irregular in outline and depth. The overall profile is dish-shaped with fairly steep sides. The soil is very sandy, ranging in colour from black to orange and is obviously fill brought in from elsewhere. In some areas the pit is "lined" with a layer of fine, dark soil with traces of shell. It covers an area roughly eighteen feet by fifteen feet and reaches a maximum depth of three feet. Nearly all the slate disc beads and numerous flakes come from this pit.

III. The upper layer of ash is composed chiefly of multi-coloured ash spreads, numerous scattered fire-cracked rocks and a number of small, irregularly shaped hearths in a matrix of dark brown soil with finely crushed shell. Two large post moulds and a number of smaller stake or post moulds are associated with these hearth areas. In some sections this layer is quite disturbed. Immediately below the sod the surface layer contains both early historic and very recent material.

BURIALS

Two complete, two incomplete burials and numerous scattered human remains were recovered. Miscellaneous fragments come from nearly all levels. The four burials were those of a woman and a foetus, possibly associated. Both had been disturbed by the hearths of the upper ashy layer. Both are probably in the sandy pit, but the disturbance makes it difficult to determine. The two complete burials are also probably associated. They are buried at the same level within the sandy pit and may be the reason for the presence of all the slate disc beads in this region and the reason for the existence at all of the sandy pit. They are both lightly flexed, facing inland, and placed with the crania pointing away from each other in opposite directions about three feet apart. One is an immature individual, the other a woman with flattening of the skull in the occipital region, presumably due to the use of a cradle-board. The associated (?) disc beads suggest they belong to the "early Marpole" time period of the site.

ARTIFACTS

Some 1700 artifacts of bone, antler, stone and shell have now been recovered. Analysis of these is still at a very early stage and they will be presented here only in the most general terms, with the reservation that further study will affect present designations and frequencies. Artifact yield at this midden is high, being just over one artifact per cubic foot, and as the pits cut through both dump and living areas, we may consider the sample to be fairly representative. The general picture presented by the objects is one of gradual development from an initial cultural base closely resembling the contemporary Eayem Phase at the Esilao site in the Fraser Canyon to what may be an early manifestation of the Marpole Phase which dominated the Delta from about 400 B.C. to 450 A.D. (Borden this volume). The surface layers of the site, however, seem to be the result of a short occupation by a later culture. There is a definite break in the artifact continuity at this point, which is not, however, accompanied by the development of a sterile soil horizon. Just below the sod are a few indications of the historic occupation dating to the turn of the century.

Bone and Antler Artifacts

Bone Awls: Awls are abundant and found at all levels of the site. The most common types are the splinter awl; awls of split mammal long

FIG. 14. Stratification at the St. Mungo Site. North-south profile through the site. The sandy pit (II) shows as the central darker area. The vertical rod is 6 feet long.

bone, ground all over; and longitudinally split cannon bone awls. Ulna awls are rare. (Fig. 15).

Needles: Only one complete needle was found, at the top of the main deposit. It is small, flat and pointed at both ends with a slotted proximal eye. Length is 10 cm. What may be the highly polished tip fragments of several other needles were also recovered from earlier levels. (Fig. 15).

Bone "Daggers": Two complete bone dagger-like tools were found in the upper layers of the main deposit. They are long and slender with polished, sharp but flattened tips. They are possibly fibre working tools. (Fig. 15).

Bone "Fleshers": A number of chisel-shaped bone tools with highly polished tips but no evidence of battering at the poll, and tip fragments of such tools were found in the middle levels of the main deposit. (Fig. 15).

Brow Bands: One complete and several fragments of brow bands were recovered from the middle layers of the main deposit. The complete band is small (presumably a child's) and narrow with a perforation supplemented by notches at each end. It is decorated with a simple incised geometric design, repeated four times, of one diagonally ascending line supported by four parallel lines slanting in the opposite direction.

Worked Ribs: A series of pointed, bluntly pointed and spatulate tools made from mammal rib are typical of the lower levels of the main deposit. The rib is generally split longitudinally and ground smooth. Less frequently they are left whole with one end modified. These artifacts seem to be unique to the site. (Fig. 15).

Simple Bone Pendants: Forms of decoration or ornamentation are few at the site, but small, very plain bone pendants were in vogue throughout most of the main deposit although they do not occur in the upper layers. They are simple oblong discs of polished bone with a single drilled perforation at one end. The largest is 3.9 cm. long. (Fig. 16).

Bird Bone Tubular Beads: Three complete and several fragmentary tubular bird bone beads come from the upper layers of the main deposit. (Fig. 16).

Bone Rings: Narrow, often poorly finished mammal long bone rings are found in the lower two thirds of the main deposit. They are usually broken. (Fig. 16).

Spindle-shaped Objects: Two little bone objects which may be charms or gambling pieces were found in the earliest levels of the site. They are small, spindle-shaped pieces of bone, carefully polished and completely incised with encircling grooves giving them a grub-like form. Two

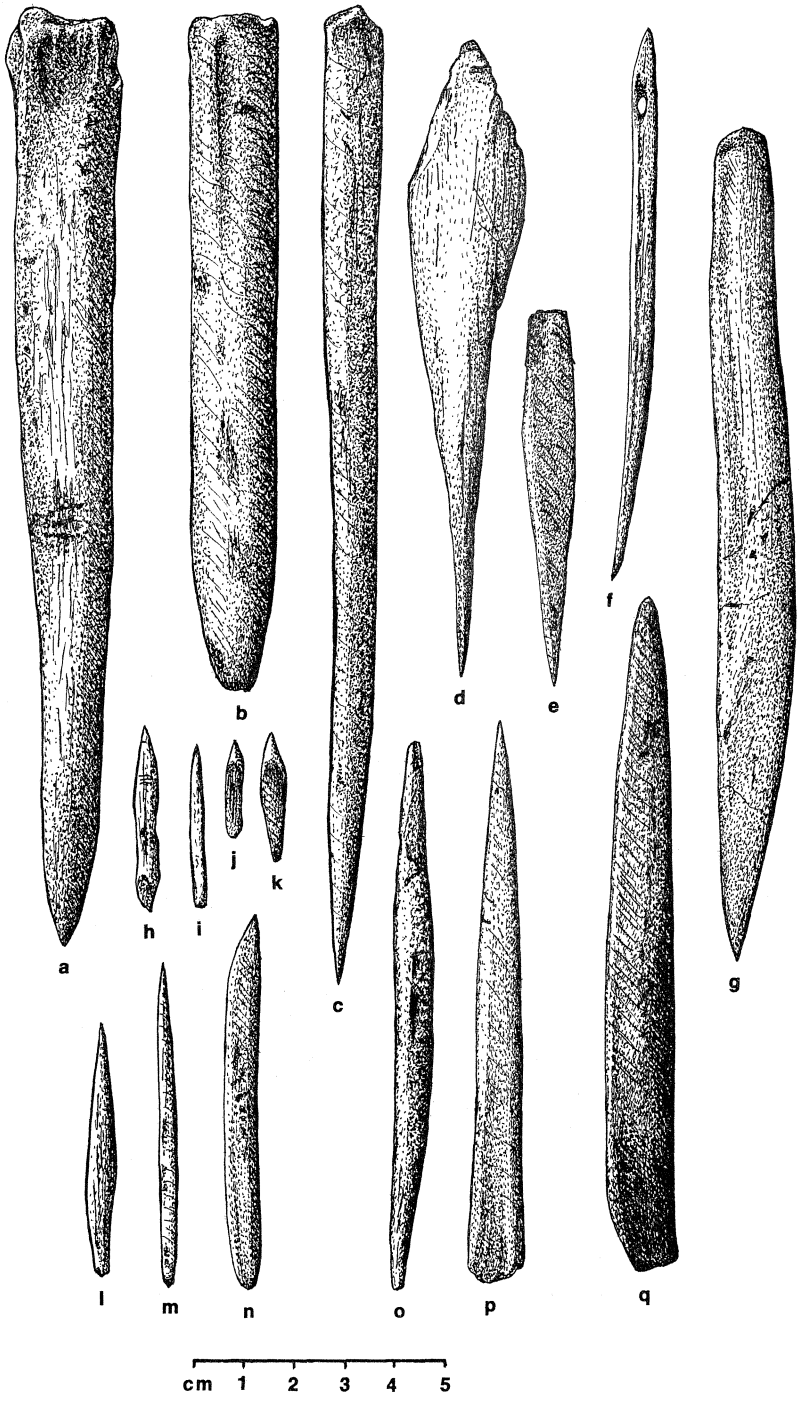


FIG. 15. Bone artifacts from the St. Mungo site. *a*, dagger-like tool; *b*, flesher; *c-e*, awls; *f*, needle; *g*, worked rib; *h-k*, small bone points; *l, m*, bird bone points; *h*, mammal bone point; *o-f*, large mammal bone points.

almost identical charms in stone come from the Eayem deposits at the Esilao Site. The largest is 3.8 cm. long. (Fig. 16).

Antler Wedges: Wapiti antler wedges of a variety of shapes and sizes are abundant through all the levels. The earliest examples, from the layer immediately above basal clay, are small, but there is no pattern of increase in size or meaningful distribution of width, curve or bit type. Large wedges are often made from the beam section split lengthwise and then bevelled unifacially. Fairly short broad wedges are more common than long curved ones. Size ranges from 6.4 cm. to 15.5 cm. in length. (Fig. 17).

Bone Wedges: Bone wedges, though less abundant than antler wedges, are also common and found in all levels of the site. They range from a tiny wedge less than 7 cm. wide to a huge one made from a bevelled section of wapiti long bone measuring 30 cm. in length and with a bit 5 cm. wide. The latter was found in the bulldozed deposit. (Fig. 17).

Harpoons: Only four harpoons have been found at the site, three *in situ*. A fragmentary valve for a composite toggle harpoon, with a slot for a cutting blade and a depressed area for line attachment comes from the upper ashy layer. A similar complete valve, very like those from the Whalen II Delta Phase comes from the beach. One harpoon with unilateral barbs, tang and a single lateral line guard comes from the top of the main deposit and the tip and shaft of a bilaterally barbed harpoon comes from the middle of the main deposit. All are made of antler. (Fig. 17).

Blanket Pins: Two blanket pins, one with a decorative knob from the sandy pit and the other, plain, from the upper ashy layer, come from the site.

Decorated "Net Needle": One of the most intriguing objects found is a broad, flat, needle-like object from the early levels. The tip is broken. The proximal end is squared off and decorated with a perforated scalloped edge. A cross-shaped slot cuts through the decorated end. It would have been more than 15 cm. long. (Fig. 16).

Large Bone Points: Long, narrow, unbarbed bone points occur at the site, but are not common. Two, from the middle part of the main deposit are bevelled at the butt end and are probably barbs. The largest is 10.9 cm. long. A well polished, tapering point comes from the upper level of the main deposit and a thick heavy one 13.5 cm. long comes from the beach. A few sections of round, heavy points occur in the ashy layer. (Fig. 15).

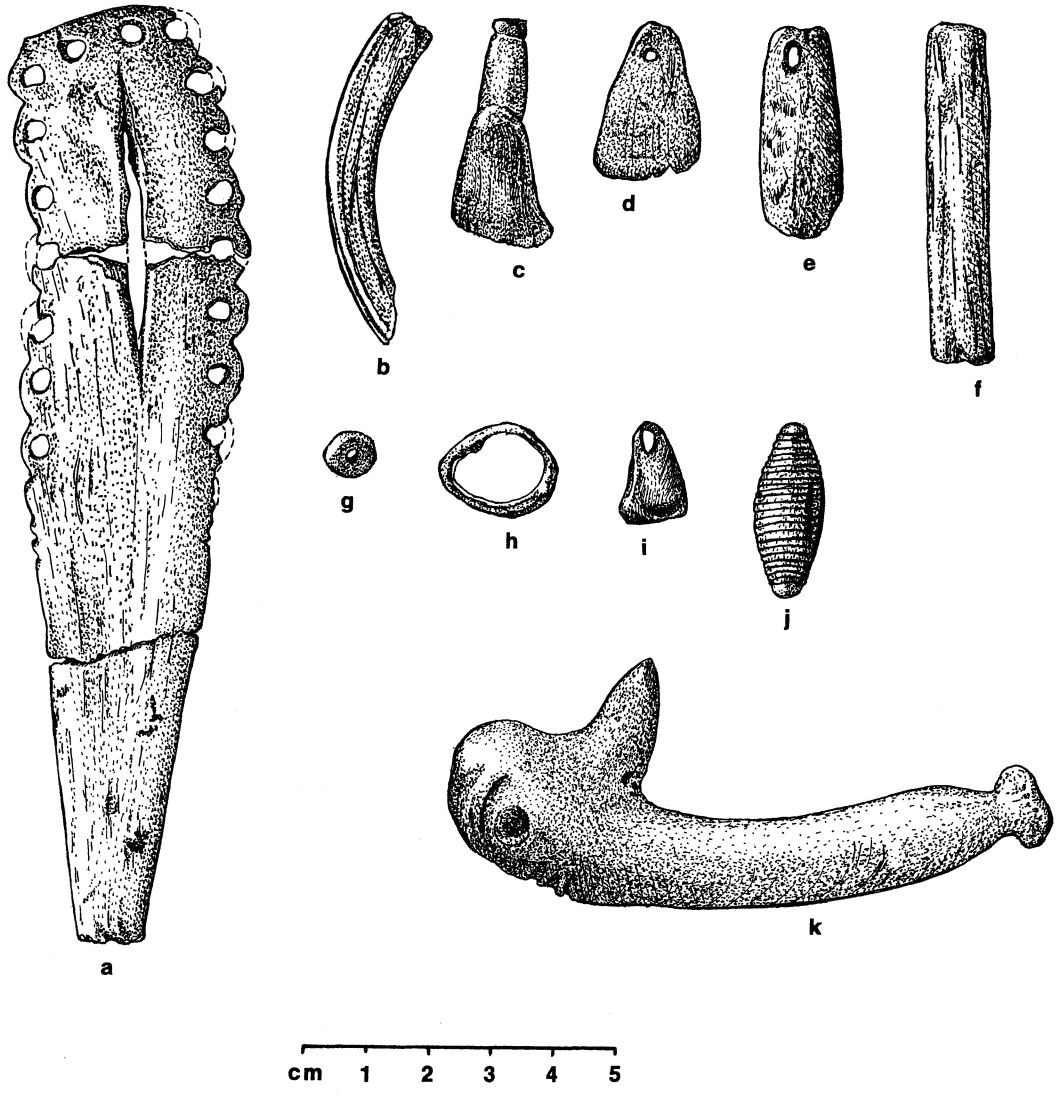


FIG. 16. Artifacts from the St. Mungo site. *a*, "net-needle"; *b*, reground beaver incisor; *c*, *i*, tooth pendants; *d*, *e*, simple bone pendants; *f*, bird bone bead; *g*, slate disc bead; *h*, bone ring; *j*, spindle-shaped bone charm; *k*, antler carving.

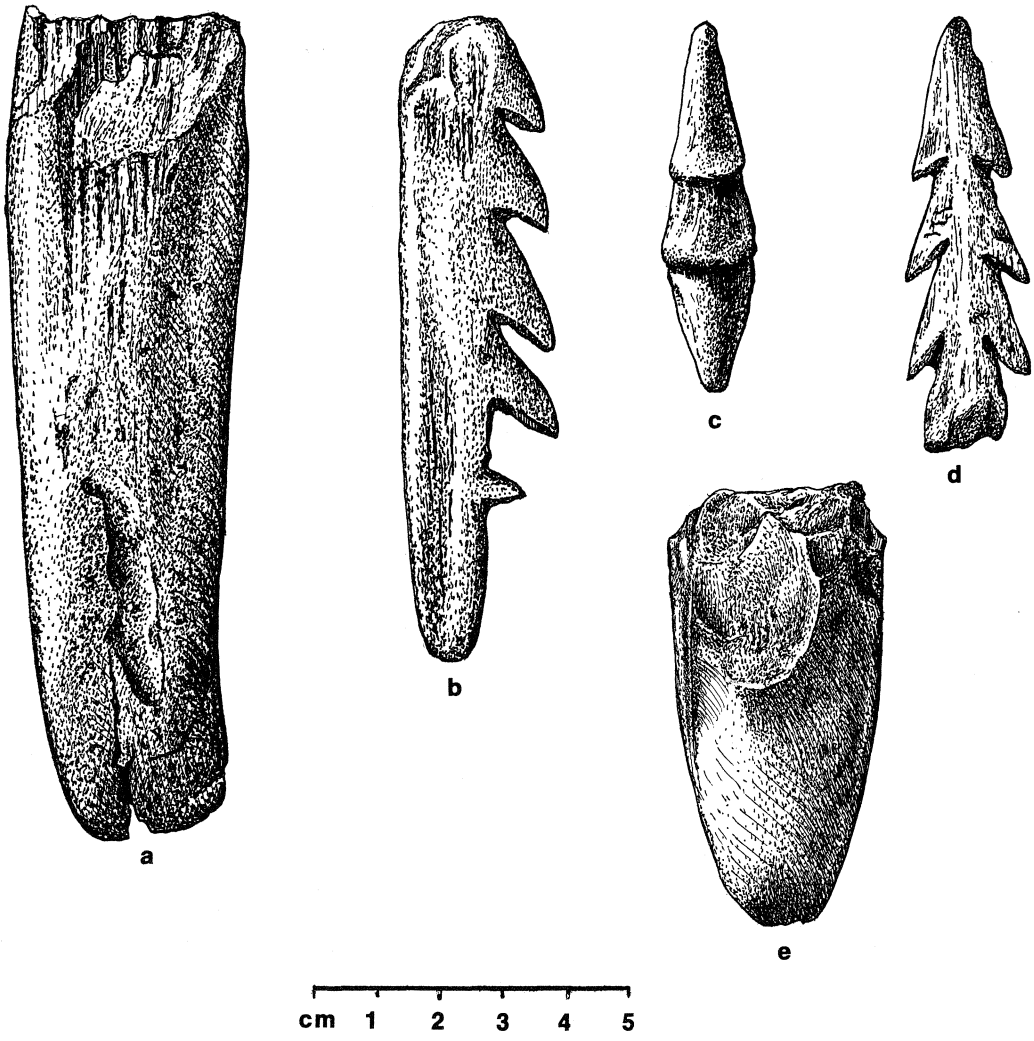


FIG. 17. Artifacts from the St. Mungo site. *a*, antler wedge; *b*, antler harpoon of Marpole style; *c*, toggle harpoon valve; *d*, bilaterally barbed antler harpoon; *e*, bone wedge.

Medium Bone Points: Smaller bone points are more common, occurring throughout, but are still not abundant. There are two categories. One consists of slender, thin points of bird bone, often with poorly-finished bases. Length ranges from 5.2 to 6.6 cm. They are probably barbs. There are also several points of mammal bone, heavier and well finished, which are probably fixed points. The largest is 7.5 cm. long. (Fig. 15).

Small Bone Points: The most common points are small to tiny slivers of bone either merely sharpened, or carefully formed into little barbs with tapering tangs. Size ranges from 2 cm. to 4 cm. in length. (Fig. 15).

Barbed Points: Three fragments of barbed fixed points have been found on the surface of the site. One is the base of a unilaterally barbed point with shallow barbs and a long tang. The second is a tip fragment and the third bilaterally barbed. The barbs on one side of the latter appear to have been made at a later date than those on the other.

Carvings: One beautiful antler carving was found at the site, unfortunately, not *in situ*. It is a killer whale effigy with large, depressed, round eyes, an open oval mouth and a prominent chin. A natural projection of antler has been left to represent the dorsal fin and the tail forms an area for suspension thong or lashing attachment. It may be a charm or possibly a carver's handle as one side of the body is hollowed out. Length is about 9 cm. The style of the carving is similar to a small anthropomorphic carving from the Old Musqueam Site, an early Marpole Phase component. (Fig. 16).

Chipped Stone Artifacts

Pebble Tools: Large unifacially flaked pebble tools have been recovered from all levels. They are common in the main deposit, but there is only one each from the sandy pit and the ashy layer. Cutting edge varieties include straight, convex, converging to a point, and side and end flaked. (Fig. 18).

Large Cores: A number of very large cores of fine grain igneous rock come from the main deposit. Flakes have been removed from all faces of most though several still retain a little cortex. The largest measures 30 cm. in length.

Boulder Spalls: Large boulder spalls, with or without retouched edges are not common at the site, but those found come from the main deposit. One spall also has a ground edge.

Scrapers Made on Thick Flakes: This is a rather amorphous category of chipped stone scrapers that forms an important part of the assemblage from the site. Outline shape is not consistent, but often squarish. They

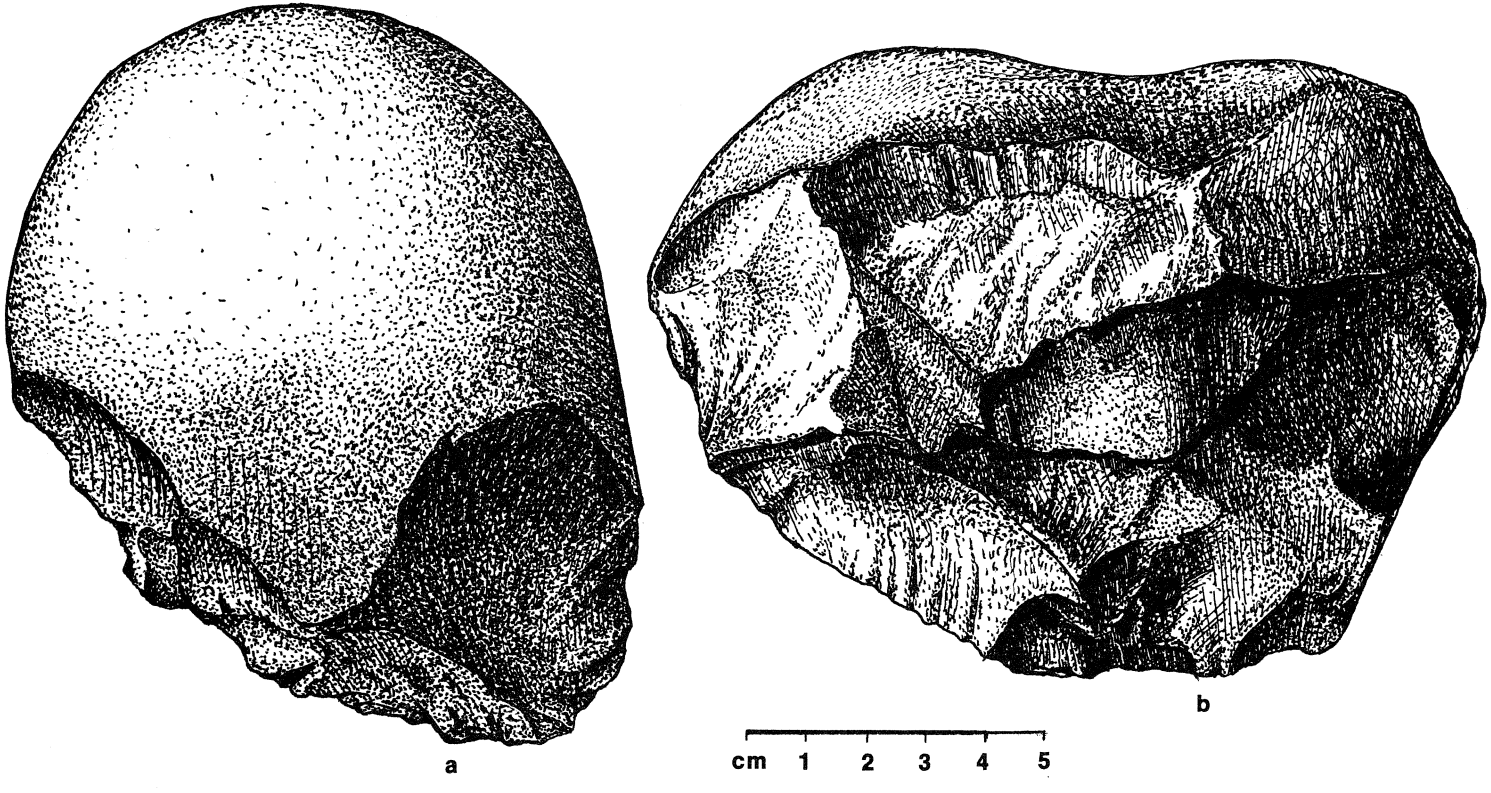


FIG. 18. Pebble tools from the St. Mungo site.

are based on fairly thick flakes with a fine retouch along the thin edge or edges. More often than not, more than one edge has secondary retouch. In a few instances two edges are unifacially retouched on opposing faces of the main flake. Basalt is the main material used, but others occur, including quartzite and other fine grained igneous rocks.

Scrapers Made on Thin Flakes: These artifacts fall into a narrower category and are quite unique for a Fraser Delta site. They are made exclusively of basalt, usually a smooth, high-grade basalt, and are based on long, irregular and very thin flakes. They are generally longer than their width, with a fine pressure retouch along one or more edges. The shape of the scraping edge may be convex, concave, straight or angular. Occasionally these scrapers also will have two edges unifacially retouched on opposing faces. The fact that some are retouched around almost the entire circumference leads me to suggest that some at least may be hand tools. These scrapers occur in the main deposit and the sandy pit, while the heavier ones occur at all levels.

Piece Esquille: A piece esquille industry is present towards the top of the main deposit, but is not abundantly represented.

Chipped Points: Chipped points are found at all levels, with some types changing through time. A variety of materials was used, including chalcedony, jasper, brown chert, white chert, quartz, agate, petrified wood and obsidian. The most common material, however, is the local basalt. Analysis of the points is not sufficiently advanced to offer a typology, but a few remarks can be made.

Stemmed points with convex sides, small, rather square stems and slightly rounded shoulders occur in the earliest levels, together with a very small single-shouldered arrow (?) point (Fig. 19*e*) made on a thin obsidian flake, and asymmetric leaf shaped basalt points. The stemmed points are of the same kind as the one illustrated by Kidd from the Sumas Mountain Site, DgRm 1, (Kidd 1968: Plate VI), and as those from the Eayem Phase. Slightly later very shallowly single-shouldered points appear, together with basalt points with sides converging to the tips, slight shoulders and tapering tangs. Small stemmed arrow or dart points also occur here. (Fig. 19).

In the middle of the main deposit a small bi-point and a large leaf-shaped blade were found with a variety of one-of-a-kind points. The latter include a sharply shouldered stemmed point of petrified wood and a small stemmed curved "knife" of chalcedony. This variety carries on into the upper layers of the main deposit and the sandy pit. Points here include a small stemmed arrow (?) point, a large basalt blade with

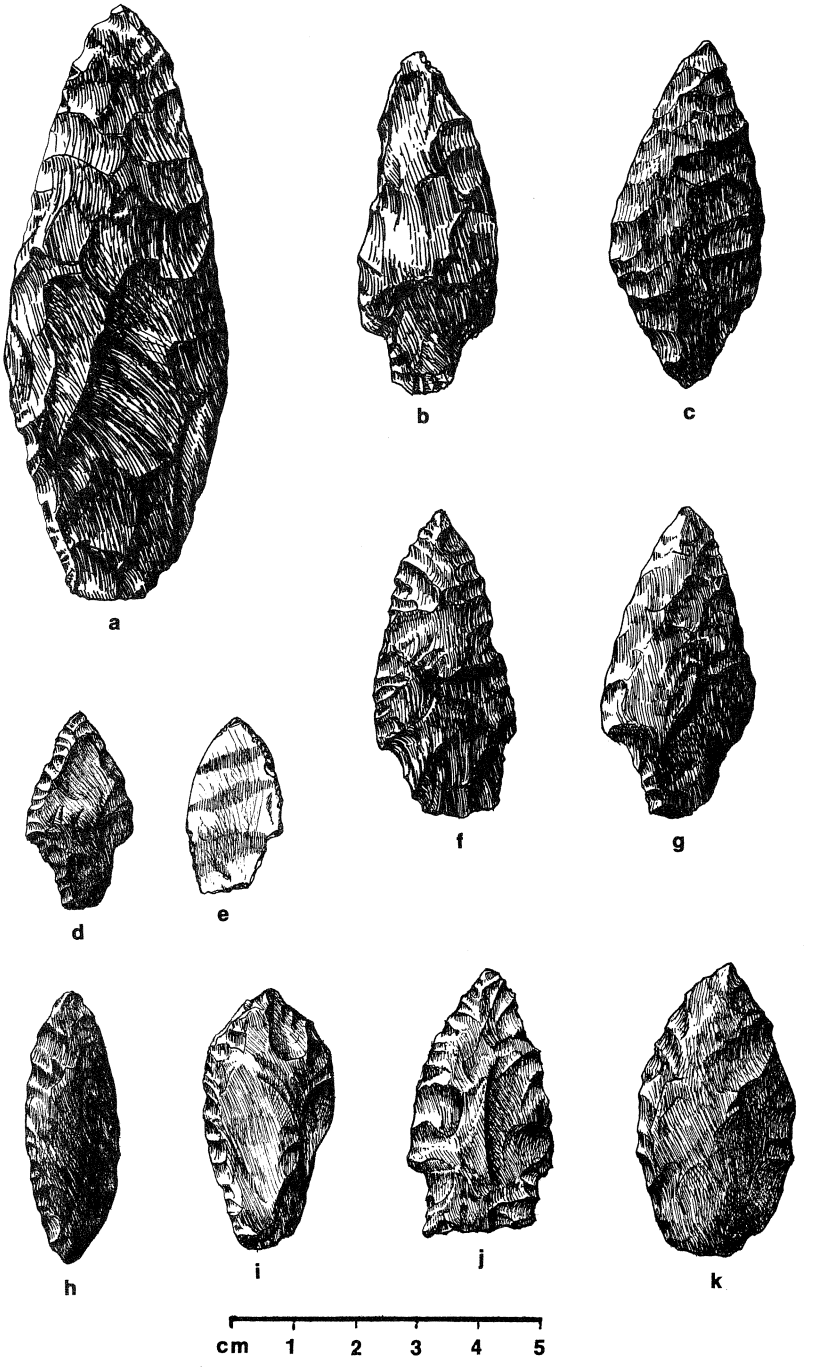


FIG. 19. Chipped stone projectile points from the St. Mungo site. *a*, *i-k*, from upper part of stratigraphic unit I; *b*, *c*, from the earliest levels of stratigraphic unit I; *d*, *h*, from middle levels of stratigraphic unit I; *e*, from earliest levels of stratigraphic unit I; *f*, *g*, from lower levels of stratigraphic unit I.

slightly tapering tang, a small basalt point with rather blunt point and tapering tang, and a small broad-stemmed point with shallow, sharp shoulders, slightly convex base and convex edges, of a white fibrous material. (Fig. 19).

A couple of small, poorly made leaf-shaped points with straight bases occur in the ashy layers.

Ground Stone Artifacts

Abraders: Abraders are not numerous, but do occur sporadically throughout the deposit. A very coarse, rectangular one comes from the lowest level.

Ground Slate: Ground slate is also not abundant at the St. Mungo site. It first occurs in the form of the base of a stemmed point of chipped and ground slate about the middle of stratigraphic unit I. It is not present in the earliest level. Hereafter, a few fragments of rather thick, poorly ground slate occur occasionally until in the upper layers of unit I ground slate artifacts become both thinner and more common. Two small, leaf-shaped, chipped and ground points occur at this level. Two of the earlier fragments are incised with a simple feather design. Some of the thin, well ground fragments in the upper levels and in stratigraphic unit II are probably parts of fish cutting knives, while two large fragments from stratigraphic unit I, where thin slate is relatively common, are obviously such.

Adze Blades: Only two fragments of stone adze blades were recovered from the site. Both are small, one, of nephrite, with sides sloping to the poll, and the other, of pale green jadeite, with straight sides and probably a straight bit. Both come from stratigraphic unit II.

Slate Disc Beads: 183 ground slate disc beads were found at the site. All but a dozen of these were found scattered in the large sandy pit of unit II in the area of the two undisturbed burials described above. Although they were not found with the inhumations as strings or ornaments, they would seem to be associated in some way. The remaining beads come either from the beach or adjacent strata. (Fig. 16).

Pecked and Ground Stone Artifacts

Sinkers: A fragment of pecked and ground stone with an encircling groove, from the upper ashy layer, may be part of a net sinker.

Hand Mauls: A single, unfinished hand maul was found on the beach in front of the site. The manufacture is not far advanced, but it would probably have had a simple pestle-shaped style.

Hammerstones: Two types of hammerstones have been found although they are not abundant. One type shows pitting at both ends and sometimes on the faces close to the ends or in the centre. The second type also shows grinding or battering along the edges, giving them a rectangular outline. The distribution of the two types is not mutually exclusive. (Fig. 20).

Artifacts of Other Materials

Tooth Pendants: Pendants made of dog, wapiti and bear (?) canine have been found *in situ* and in disturbed areas. In the site they occur in the upper half of the main deposit. They are either perforated or grooved for suspension. An unusual find is a human molar with the roots ground off to the neck. There is no modification for suspension and it is probably a charm. (Fig. 16).

Shell Pendants: One shell pendant was found lying on the ochre floor. It is a long, slender, oval shape with two drilled perforations for suspension.

Shell Cutting Blades: Three fragments of cutting blades ground from *Mytilus californianus* were recovered from the central levels of the main deposit. One is probably an adze blade.

Beaver Incisors: Beaver incisors from the mandible with edges reground for use as carving (?) tools are relatively common in the main deposit, although splitting them lengthwise does not seem to have been practised. Two incisors also have the root ends ground, possibly to facilitate hafting. (Fig. 16).

Ochre: Apart from the red ochre floor, lumps of ochre were found throughout the deposit.

Historic Goods: One opaque blue bead; three Canadian silver nickels, two found just below the sod dating to 1899 and 1906, and one found on the beach dating 1905; a couple of buttons, an ivory handle; a few nails; and a few fragments of glass are all that remains of the historic occupation.

Artifact Distributions

The vertical distribution of artifacts at the St. Mungo site indicates both the loss of some types and the addition of others through time. These distributions are as follows:

Artifacts that occur at all levels of the site: These artifacts might be termed basic "survival equipment" and include pebble tools, bone awls,

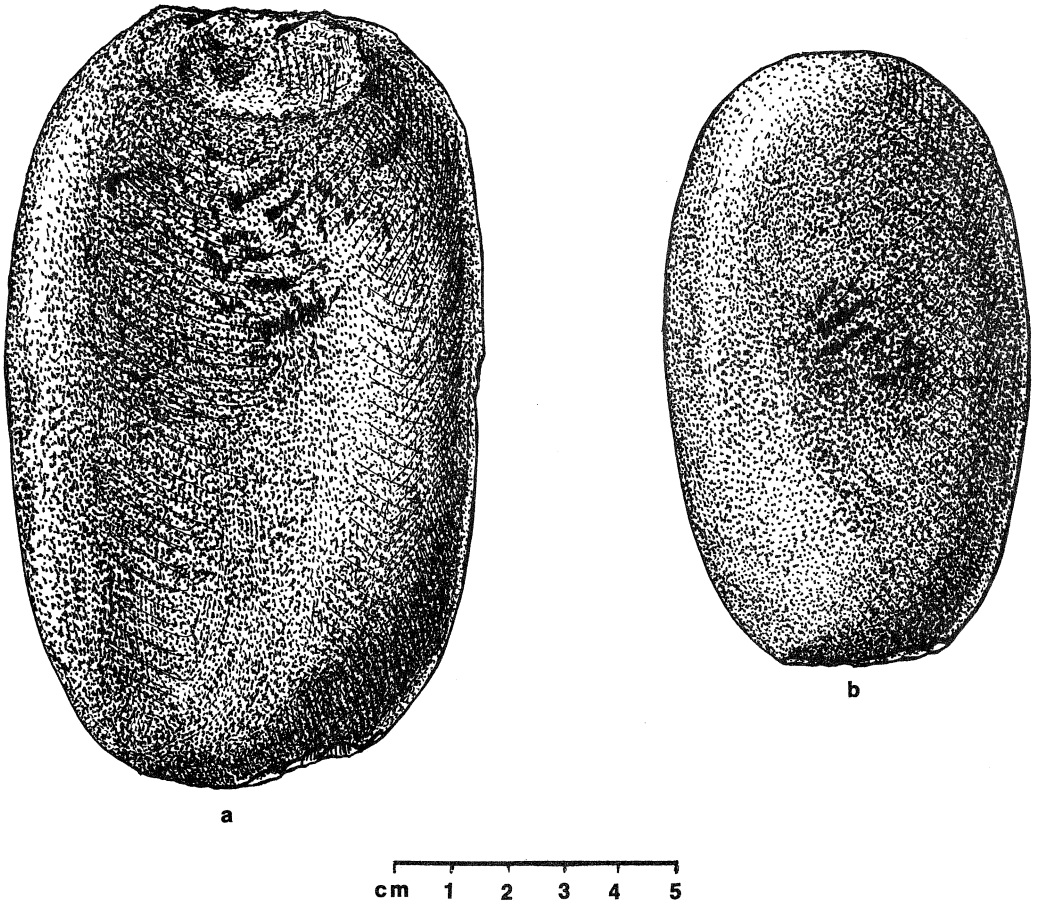


FIG. 20. Hammerstones from the St. Mungo site. *a*, type II; *b*, type I.

heavier stone scrapers, abraders, medium size bone points, chipped points, antler and bone wedges and hammerstones. Ochre, though not essential to survival, also occurs at all levels.

Artifacts occurring only in stratigraphic unit III: Toggle harpoons, stone adze blades, and possibly pecked and ground stone implements other than hammerstones.

Artifacts occurring only in the upper part of stratigraphic unit I and stratigraphic unit II: Bone "dagger-like" tools, bird bone beads, disc beads, unilaterally barbed tanged harpoon with lateral line guard.

Artifacts occurring in the upper part of unit I and in units II and III: Large bone points, thin ground slate knives and blanket pins.

Artifacts found in stratigraphic units I and II: Very thin basalt scrapers, small bone points.

Artifacts found only in unit I (not necessarily lasting to the top): This list is the longest by far: Large cores, beaver incisor carving tools, shell cutting blades, boulder spall tools, needles, simple bone pendants, tooth pendants, brow bands, bone rings, worked ribs, bone "fleshers", bilaterally barbed harpoon, thick chipped and ground slate, spindle-shaped incised bone charms (?), stemmed or single-shouldered spear or lance points, and possibly the antler carving.

The contrast between stratigraphic unit III and the earlier deposits is obvious. The former seems quite impoverished, though this is no doubt due in part to the thinness of the layer. The style of the toggle valves suggests that this layer may be contemporary with the Whalen II Phase, but this is at present a mere suggestion. Other things particularly indicative of that phase are lacking. It might also be a protohistoric Coast Salish occupation.

The artifacts found only in the upper main deposits and parts of unit I and in unit II are those suggestive of the Marpole Phase assemblage. Again, much is lacking, particularly the stone bowls and carvings, the hand mauls and large adzes so distinctively Marpole. The stemmed points, incised spindle-shaped charms, thin scrapers, pebble tools and chipped and ground slate artifacts from the earliest levels that are like the Eayem Phase assemblage. The chipped stone drills common in that phase do not occur, but there is ample evidence of drilling.

Artifacts that are either absent or surprisingly rare at the site are stone adze blades, barbed bone or antler points, harpoons, large, heavy bone points, hand mauls, stone vessels, net sinkers, large facetted ground slate blades and labrets.

FAUNAL REMAINS

Systematic identification and analysis of the faunal remains has not yet begun, but a few general remarks can be made on the basis of a cursory examination. Fish and shellfish seem to have been staple foods from the initial occupation on. Fish abundantly represented are salmon (*Oncorhynchus*), and sturgeon (*Acipenser*). Fish whose presence is merely indicated are dogfish (*Squalus*), herring? (*Clupea*), and halibut (*Hippoglossus*). The main shell component of the site is bay mussel (*Mytilus edulis*), with lesser amounts of butter clam (*Saxidomus*), basket cockle (*Clinocardium*), barnacle (*Cirrepedia*), the occasional horse clam (*Schizothaerus*) and some unidentified species. Clam content increases slightly towards the top of the midden.

Sea mammal bones are either absent or exceedingly rare. Land mammal bones are abundant, the most common being Wapiti (*Cervus canadensis*), deer (probably *Odocoileus*), beaver (*Castor canadensis*) and smaller unidentified species. Dogs were certainly kept in the upper levels, possibly earlier also.

Birds of various unidentified species, some very large, are well represented.

SUMMARY

At this stage of the analysis only a few tentative remarks can be made as correlations of the available data. They are preliminary statements and should be viewed as such. In this light, they raise some very interesting questions about the development of the Delta sequence and Northwest Coast culture patterns as a whole. There is no suggestion of close contact with the Locarno Beach Phase culture and there is no suggestion of the presence of an industry which could have given rise to the stone vessel complex associated with the Marpole Phase. But the basic economic reliance on fish, molluscs and wood which is so characteristic of later Northwest Coast cultures is well-defined in the earliest levels.

The cultural development at the site might be summed up in point form:

1) The lowest levels of the deposit show affinities to the Eayem Phase of the Fraser Canyon, with which they are roughly contemporary. The people were apparently well acquainted with wood working techniques and depended on riverine, inter-tidal and land resources for food.

2) This economic pattern seems to persist with little change. It is

accompanied by a gradual cultural development, marked by an increase in particular decorative forms and the first slight indications of a more maritime oriented way of life. Contact with other groups is verified by the presence at the site of materials not available in the immediate locale. The upper levels of unit I and unit II may well mark the transition of a "late Eayem" to an "early Marpole" phase. Stratigraphic unit III may eventually be correlated either with the Whalen II Phase or with a more recent coast Salish occupation. Radiocarbon dates may help here, as the artifactual evidence is inconclusive.

3) The apparent lack of sea-hunting, harpoons, and stone adze blades may also suggest the lack of efficient sea-going vessels, even though some form of river-craft is indicated.

4) The discontinuity that exists at the top of the site may be related both to local and overall ecological changes. The steady outward growth of the Fraser Delta would gradually make intertidal food resources less easily accessible. The broad climatic changes and subsequent shifts in vegetation zones may also have created environments less favourable to the large herbivorous mammals and consequently shifts in the faunal zones as well, "forcing" more dependence on sea resources. This may have resulted in a gradual down-river population movement, and development and spread of the Marpole culture in a deltaic-marine setting, climaxing at such places as the Marpole site itself. In this regard, it is worth noting that the lower levels of the Marpole site contained few ground slate artifacts (Borden 1950 a: 18). On the other hand, the change may have been a more local one, a simple re-orientation of the population centre in the immediate area, as there are indications that a more developed Marpole with typical chipped points, labrets, stone adze blades and thin ground slate, is represented at the Glenrose Cannery site, three tenths of a mile up-river from St. Mungo. Whether or not this is the result of a continuous *in situ* development can only be answered by excavation. In any event, development at the St. Mungo Cannery Site stopped and what must have been a large and thriving village became one more midden site.

As a final remark, one might point out that the presence of a Fraser Delta component of the Eayem Phase suggests that other early Canyon Phases may be just as wide-spread and that the cultural similarity found along the lower Fraser in more recent times has a great antiquity.

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