

## CHAPTER 7

# Serrated Projectile Points from Inland Raised Elevation Sites in the Greater Victoria Area

Morley Eldridge<sup>†</sup> and Martina Steffen<sup>‡</sup>

<sup>†</sup> *Millennia Research Limited, Victoria, BC*

<sup>‡</sup> *Royal BC Museum, Victoria, BC*

### Introduction

There are no radiocarbon dates earlier than 3800 BP<sup>1</sup> from archaeological sites in the Greater Victoria area, though we must assume that people were occupying the area millennia before this. Local sea level history suggests that earlier occupation sites in the area are likely to be either drowned or stranded on raised beach terraces. Bifaces recovered from inland locations have some attributes that are rare in bifaces recovered from later period coastline sites. This paper examines the characteristics and typology of serrated and denticulate bifaces in the Victoria area and their geographic characteristics such as spatial distribution and elevation. A regional comparison examines the distribution and age of this trait. We introduce bifaces that have been found in association with serrated forms, and several additional apparently ancient artifacts from raised inland locations. No direct dating for the Victoria points is available, however, the arguments based on find locations, sea levels, and stylistic crossdating are, we believe, compelling.

During a recent archaeological assessment project, an unusual projectile point with denticulate blades was recovered while excavating a shovel test on a small, high-elevation bench near the summit of Skirt Mountain (Eldridge et al. 2006:25). Other archaeological investigation in the same locality had encountered several additional projectile points

(e.g., Golder Associates 2006). Because a number of the points from the summit were similar, and appeared to be types missing or rare in local coastline excavated assemblages, the authors hypothesized that the points may date to an earlier time period than is currently recorded archaeologically in the Victoria area; a time period after which rising sea levels had inundated any associated coastal habitation sites. Furthermore, projectile points with denticulate blades are known to date to a moderately early period elsewhere in the Pacific Northwest.

### Victoria Area Sea Level History

The sea level curve has been established for the Greater Victoria area. Sea levels at the close of the Pleistocene (13,000 BP) were very high, more than 75 metres above present day levels (Hutchinson 1992). Sea levels fell rapidly, however, and lowered to present day levels 11,700 radiocarbon years ago (Mosher and Hewitt 2004), after which sea level continued to fall below present day levels. The profile of the floor of Portage Inlet, below Skirt Mountain, shows subaerially weathered glacial tills, overlain by terrestrial peats, which are in turn capped by marine deposits (Foster 1972). The peats are as deep as -6.1 metres below present sea level. The weathered tills are found up to at least 10 meters depth at Royal Roads (Mathews et al. 1970), and core samples and unconformities in bedding as well as apparent wave-

<sup>1</sup> Uncalibrated radiocarbon date.

cut terraces off Esquimalt Harbour extend to over 50 metres below present mean sea level (Mosher and Hewitt 2004). Mosher and Hewitt suggest the lowest sea level was attained by  $9919 \pm 60$  radiocarbon years ago. Sea levels around Victoria stabilized at their present position by about 5550 radiocarbon years ago (Mosher and Hewitt 2004), although this is based on a single date just above present sea level on a terrestrial sample. Despite the relatively large amount of archaeological work undertaken along the current shoreline in Victoria, no sites dating to before 3800 BP have ever been radiocarbon dated (Keddie 2006). The archaeological record is a good indication that sea levels may have reached present day elevations only about 3500–4000 BP (Bornhold 2007). Locations just east and west of the city also show a possibly small but sudden rise in sea levels about 2000 years ago (Clague 1989).

### **Human Occupation in the Victoria Area**

We must assume that people were living in what is now the Victoria area during the middle and early Holocene, even though there has been no radiocarbon dated archaeological evidence of this. There is abundant proof that people were elsewhere on the Northwest Coast from the very early through middle Holocene (e.g., Carlson 1979; Carlson 1996a, b; Dixon et al. 1998; Fedje et al. 2004; Gallison 1994; Gustafson et al. 1979; Matson 1976b, 1996; McLaren 2006; Carlson 1990). The exclusive presence of late period archaeological evidence in the Victoria area probably results from an emphasis on archaeological research at or near the current shoreline. We suggest that several potentially early and middle Holocene point forms from the Victoria area have been retained within the Royal BC Museum (RBCM) archaeology collections. Specifically, in the following we define denticulation and serration as biface attributes that likely occur most frequently in periods earlier than 3800 BP.

### **Defining Denticulate and Serrated**

In the following we use the terms “denticulate” and “serrated” to describe bifacial tools with tooth-like projections along the blade margin. The terms denticulate and serrated are often used interchangeably (Loy and Powell 1977). During examination of the denticulate bifaces in the RBCM collection we ob-

served two different methods of manufacturing denticulate or serrated edge margins. The first is achieved through removal of small pressure flakes from alternate faces along the finished edge margin. This produces a slightly wavy edge. Generally, the alternating bifacial flake removal method seems to produce a slightly a less pronounced projection than the second method of manufacture, which is the removal of bifacial flakes along both faces originating from the same point along the edge margin, the depression between denticulate projections. Identification of the method of manufacture for serration or denticulate blades is not provided in the literature we reviewed. Subsequently, in the following we use the word denticulate, the second method of manufacture above, where it is present in the RBCM examples and to describe a very pronounced tooth edge in some cases within the literature. We use the term serration, as defined above, to describe the first method of manufacture in the RBCM examples and in cases where it was not possible for us to identify the specific manufacturing technique. Furthermore, this difference in manufacturing technique may have temporal implications.

### **Victoria Area Sites and Artifact Descriptions**

The following sample was composed from the RBCM collections. Included are descriptions of each site from which denticulate or serrated, and several other potentially early-type points, were recovered (Figure 1). All the chipped-stone points from each site with denticulate or serrated points are considered. Site elevations are all relative to current sea level unless specified otherwise (Figure 2), and sites are discussed in order from highest elevation to lowest elevation. We have included some artifacts that are catalogued with “y” Borden number designations, which have more general locations than those with designated Borden numbers, although in some cases the location is actually quite precise, where a block number or a street address is known. Artifact metrics are provided in Table 1.

#### *DcRv-154*

This isolated find site is located near the summit of Skirt Mountain at 325 metres above current sea level. The biface recovered from the site has denticulate blades, rounded shoulders, contracting stem, and a convex base. The point appears to have been

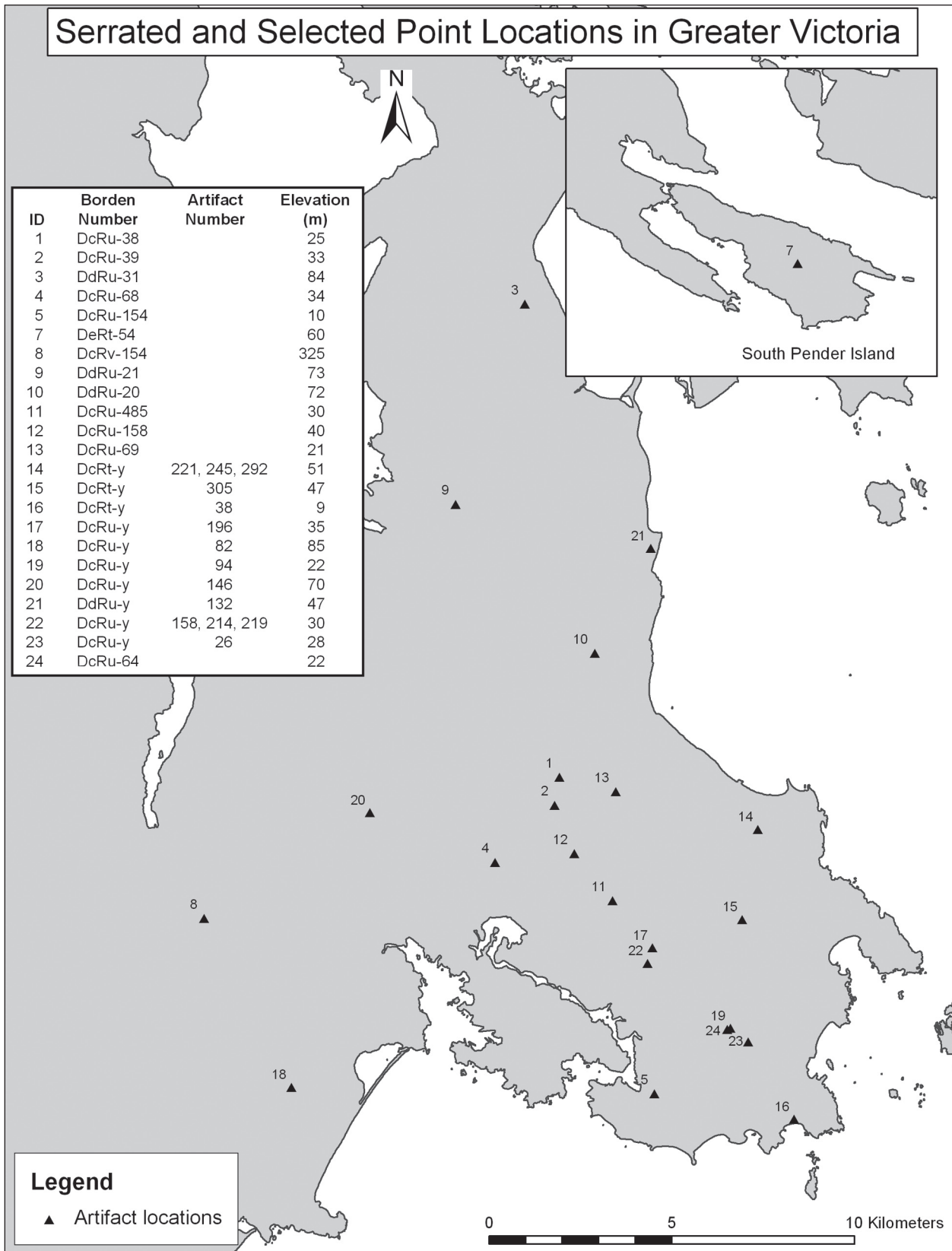
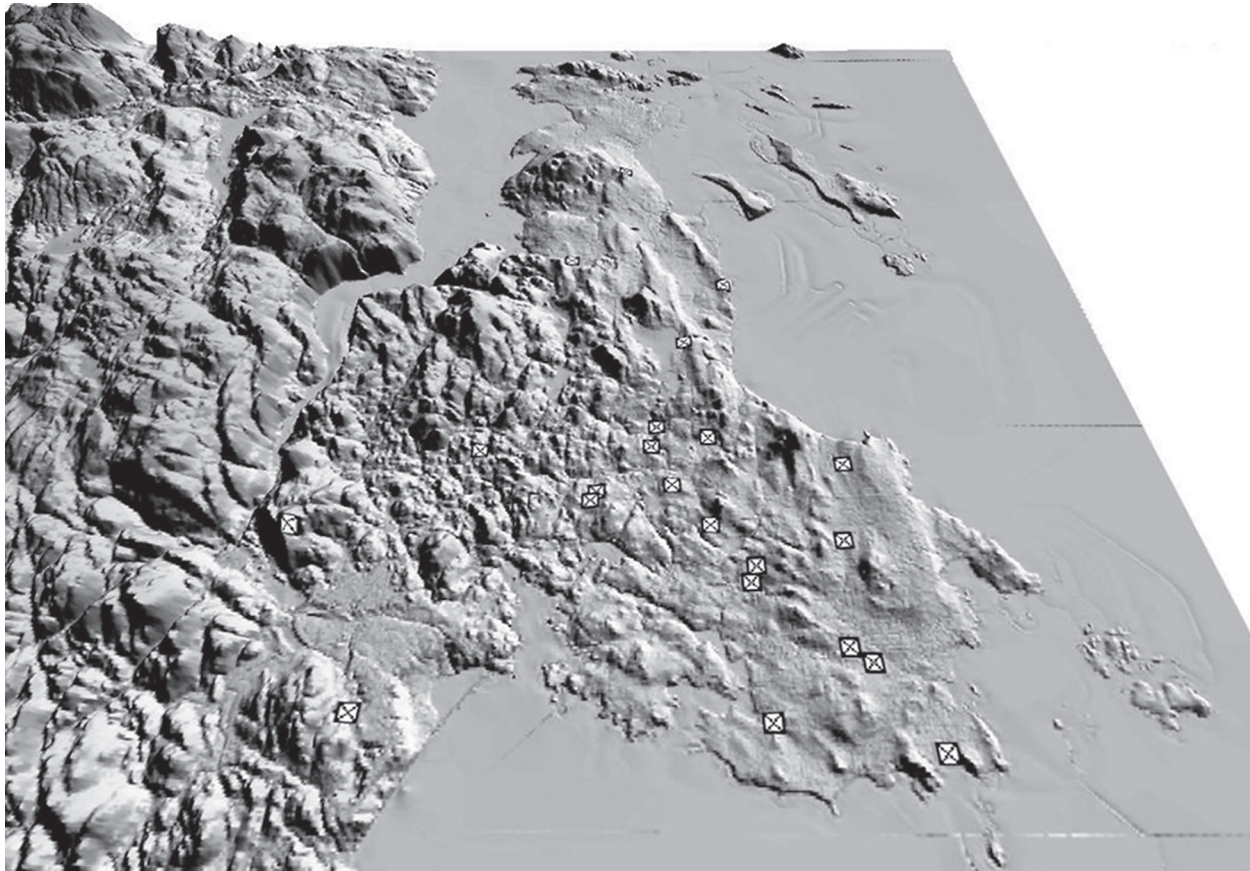


Figure 1. Map of the projectile point locations in the Victoria area referenced in the text.

**Table 1. Descriptive statistics of serrated/denticulate points in the Victoria region. Dimensions in mm.**

	Length	Width	Thickness	Wi/Th Ratio
Count (n=)	14	24	24	24
Mean	73	28	9	3.0
Standard Deviation	13	7	2	0.8
Median	71	27	10	2.9
Interquartile 1/4	65	23	8	2.5
Interquartile 3/4	78	32	11	3.9
Minimum	48	13	5	1.7
Maximum	105	47	13	4.3



**Figure 2. Three-dimensional map of the Victoria area with the locations of projectile points indicated.**

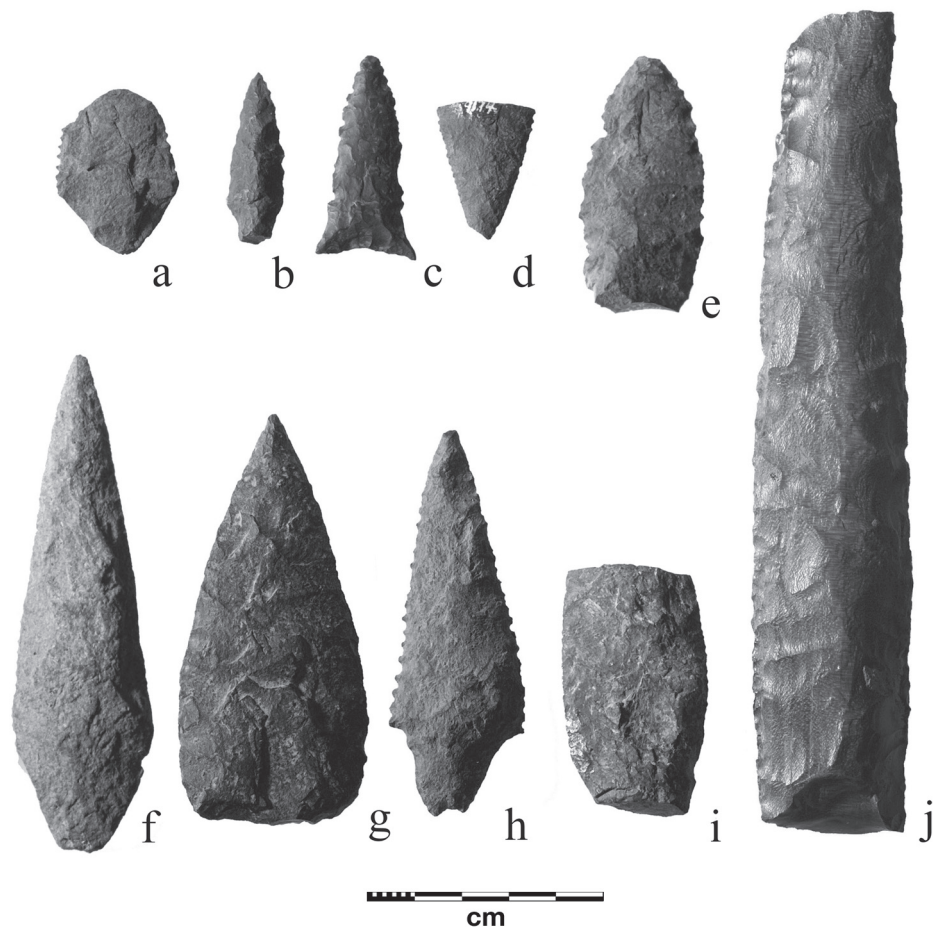
reworked from an originally longer form (Figure 3a). Several additional serrated or denticulate bifaces from the mountain have been found during recent fieldwork, but have not yet been reported.

*DcRu-y:82*

This distal-medial segment has excurvate serrated blades (Figure 3e) and was collected near Triangle Mountain at an elevation of 85 metres.

*DdRu-21*

Artifacts from this Saanich site, which is located at the junction of West Saanich and Keating Cross Road at an elevation of 73 metres, include several bifaces (Figure 3b, c, d, g, i). Among them are four denticulate points: a small stemmed point with serrated excurvate blades, rounded shoulders, and a slightly broken base; a barbed or eared denticulate point with recurved blades, concave base; and the



**Figure 3. Projectile points recovered from elevations over 60 metres in the Victoria area. a: DcRv-154; b: DdRu-21:4; c: DdRu-21:5; d: DdRu-21:6; e: DcRu-y:82; f: DcRu-y:146; g: DdRu-21:1; h: DdRu-20:1; i: DdRu-21:3; j: DdRu-31:1.**

end fragment of a denticulate point with subradial flaking and a thin and lenticular cross-section. Non-denticulate points from the site (Figure 3g, i) include two larger points: a medial fragment of a slightly contracting stemmed point with excurvate blades, and a complete biface with excurvate blades, irregular base, and subradial flake scars.

#### *DdRu-20*

This site is located along the 5000 block of the Pat Bay Highway in Saanich at an elevation of 72 metres and was defined by a single find from a residential garden (Figure 3h). The point is a thin denticulate biface with straight-excurvate blades, shoulders, contracting stem, and notched concave base. The small basal notch, created by bifacial tiny flake removal, is similar to the basal notches on several of the small,

thin lanceolate points recovered from the Stave Watershed (McLaren 2003). The pronounced teeth along the biface blades were produced by the removal of two flakes bifacially from the same point at the center of the depression between denticulate projections.

#### *DeRt-54*

This site lies around a former wetland in the Spaulding Valley on South Pender Island at an elevation of 60 metres. This site has been included despite the fact that it is not directly within the Victoria area because RBCM accession records describe two contracting stem, several foliate points, but no later period point types from this location. Denticulate and serrated points include foliate form points with excurvate blades and a slightly contracting stems (Figure 4h) and a point that is thinner in

cross-section, with excurvate blades, a more pronounced distal point, and convex base (Figure 4a). Non-denticulate points surface collected from the Spalding Valley include two shouldered bifaces with contracting stems (Figure 4f, g), and several foliate forms (Figure 4b, c, d, e). A notable example is DeRt-54:22, which is thin and lenticular in cross-section, and has fine subradial flake scars. The point has a white patina, perhaps as a result of taphonomic processes, as it is noted as having been recovered from peat.

#### *DcRt-y:221, 245, 292*

Serrated points from DcRt-y:221, 245 and 292 (Figure 4j, l, i) were recovered at an elevation of approximately 50 metres. Of these, two are stemmed forms, one of which has one wide angled and one rounded shoulder and a broken tip and base, the other with one irregular or recurved blade, a contracting stem, convex base, a wide rounded shoulder and a broken tip. All show slight serration along at least one blade margin. The third point is a foliate form. Additional points donated to the RBCM in the same collection include non-serrated and later period triangular point types. DcRt-y:305 (Figure 4n) is a foliate form with serrated blades and a slightly broken tip and base, which was collected at about 47 metres elevation.

#### *DdRu-y:132*

DdRu-y:132 (Figure 4m) is point fragment with denticulate excurvate blades. It was collected from a ploughed field north of Livesay Road about 175 metres back from a steep cliff, at an elevation of approximately 45 metres. The landform is glacially created and is continuing to be eroded by marine action. Interestingly, a 17,000 BP mammoth humerus was found at the base of the cliffs (Keddie 1979) and a mammoth tooth was later found at the same location (Keddie 1995).

#### *DcRu-158*

The site is located in Saanich on Leaside Avenue at 34 metres elevation on a knoll with good visibility to the south, west and north. A thin and finely flaked biface fragment with denticulate edges was surface collected from the site (Figure 5k).

#### *DcRu-68*

This site rests at a 34 metre elevation in Victoria. Artifacts surface collected at this site included hammerstones, an obsidian microblade, scrapers, a small foliate biface with slight serration and a biface with straight blades, shoulders, contracting stem, and convex base. Figure 5a and d are biface end fragments with entirely denticulate blades; the former is made of obsidian.

#### *DcRu-39*

The site is located in Victoria above Colquitz Creek at 33 metres elevation just south of where the creek crosses under Wilkinson Road. Numerous artifacts have been recovered including ground slate, and flaked basalt, obsidian, and chalcedony. Among a sample of artifacts donated to the RBCM in 1967 are several bifaces (Figure 5h, i, j, k), including four shouldered points with contracting stems, and convex or broken bases. One of these has denticulate excavate blades (Figure 5h). A small biface with contracting stem, and three triangular bifaces were also surface collected from the site. More than one period of occupation or site use is likely represented in this assemblage.

#### *DcRu-485*

Several bifaces were surface collected from this site, which is located at 30 metre elevation in Saanich southeast of the intersection of the Pat Bay Highway and McKenzie Avenue. Of the two bifaces donated to the RBCM one has denticulate blades and a slightly contracting stem (Figure 5c). The second biface has shoulders, a contracting stem, and excurvate blades.

#### *DcRu-y:214, 219, 158*

Biface DcRu-y:214 has denticulate excurvate blades, narrow angled shoulders a contracting stem and a broken base, 219 has very pronounced denticulate projections along the blades and a convex base, 158 has a wide and thin cross-section, slightly denticulate excurvate blades, and a broken base (Figure 5b, e, g). Cloverdale Street where they were found varies between about 20 and 55 metres elevation.

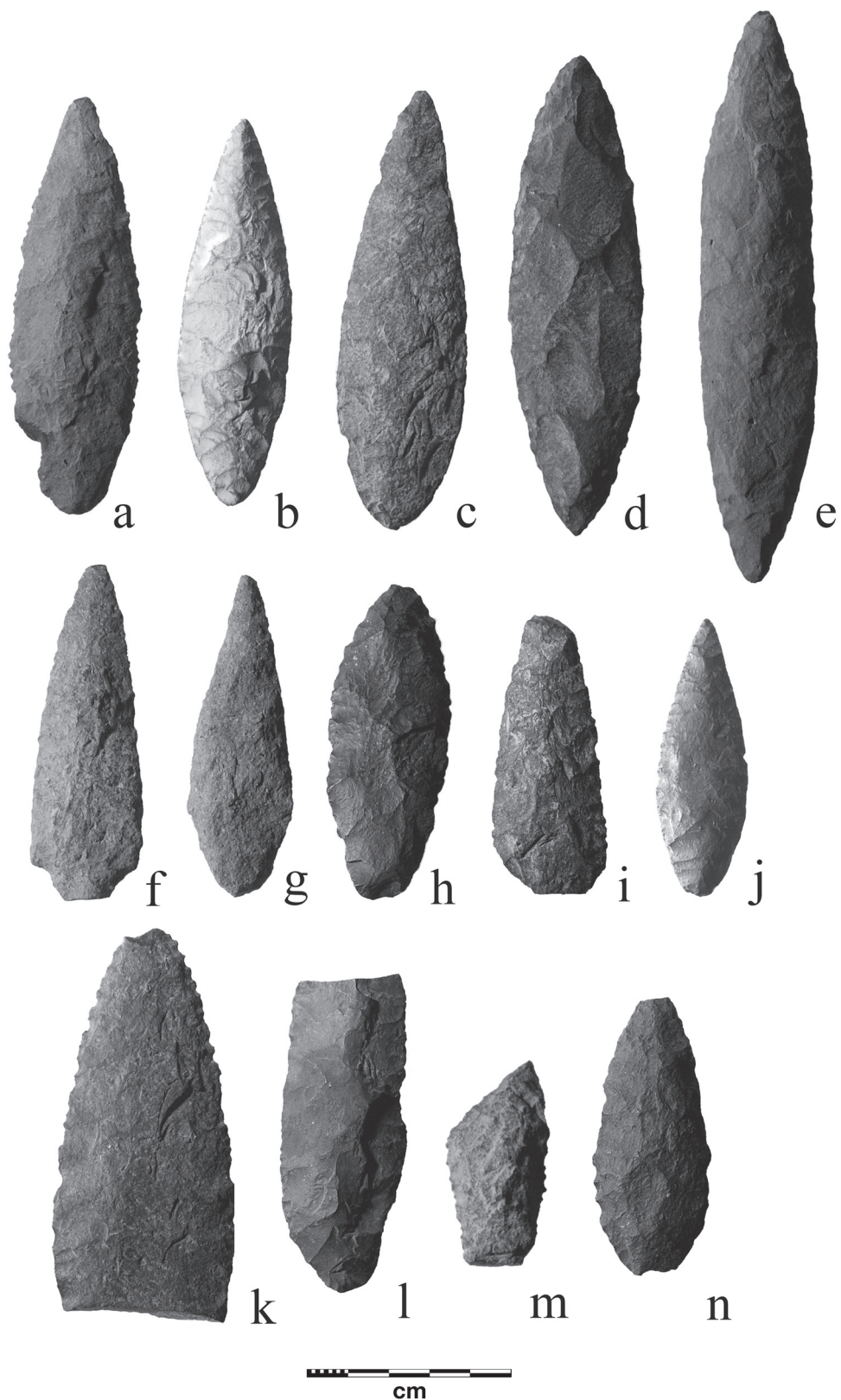


Figure 4. Projectile points recovered between 40 and 60 metres elevation in the Victoria area. a: DeRt-54:15; b: DeRt-y:22; c: DeRt-54:11; d: DeRt-54:12; e: DeRt-54:19; f: DeRt-54:17; g: DeRt-54:20; h: DeRt-54:16; i: DcRt-y:292; j: DcRt-y:221; k: DcRu-158:1; l: DcRt-y:245; m: DdRu-y:132; n: DcRt-y:305.

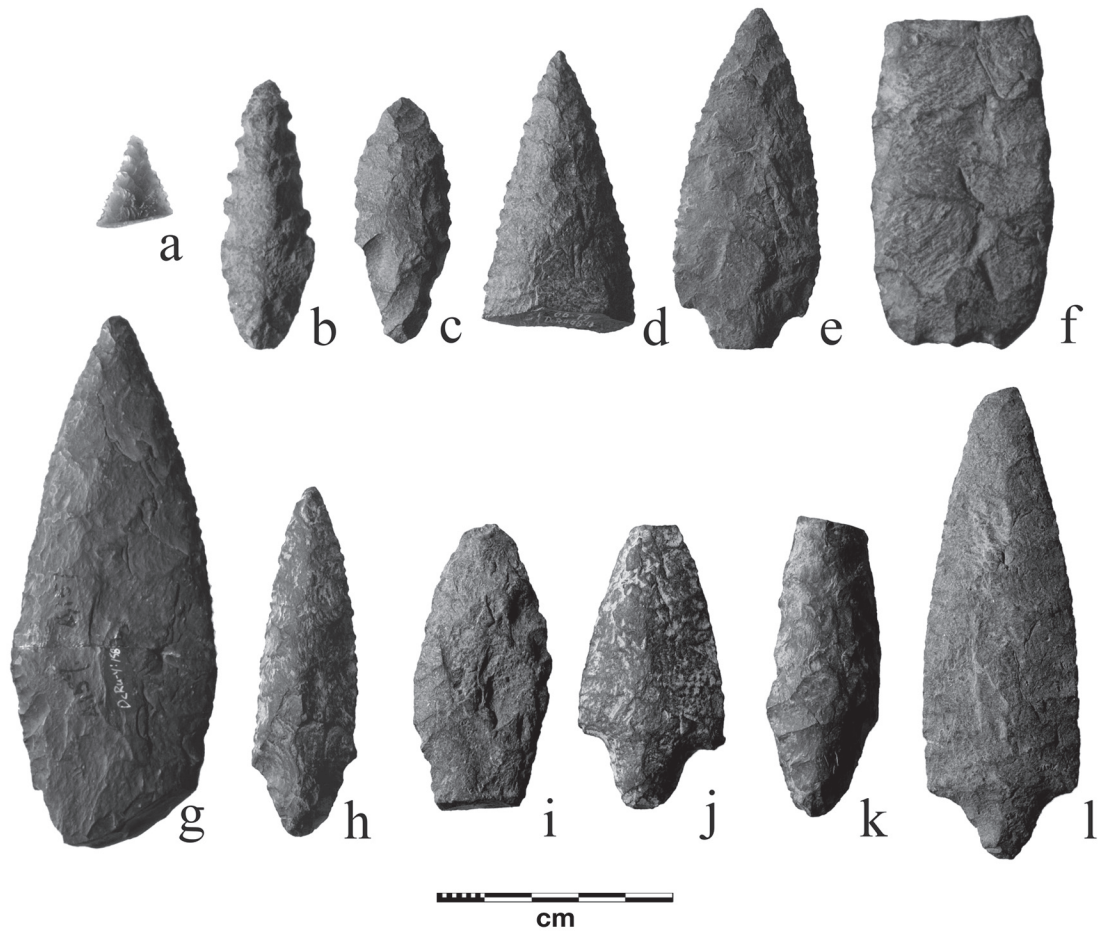


Figure 5. Projectile points recovered from between 30 and 39 metres in the Victoria area. a: DcRu-68:16; b: DcRu-y:219; c: DcRu-485:2; d: DcRu-68:13; e: DcRu-214:1; f: DcRu-y:196; g: DcRu-y:158; h: DcRu-39:7; i: DcRu-31:11; j: DcRu-39:8; k: DcRu-39:12; l: DcRu-39:6

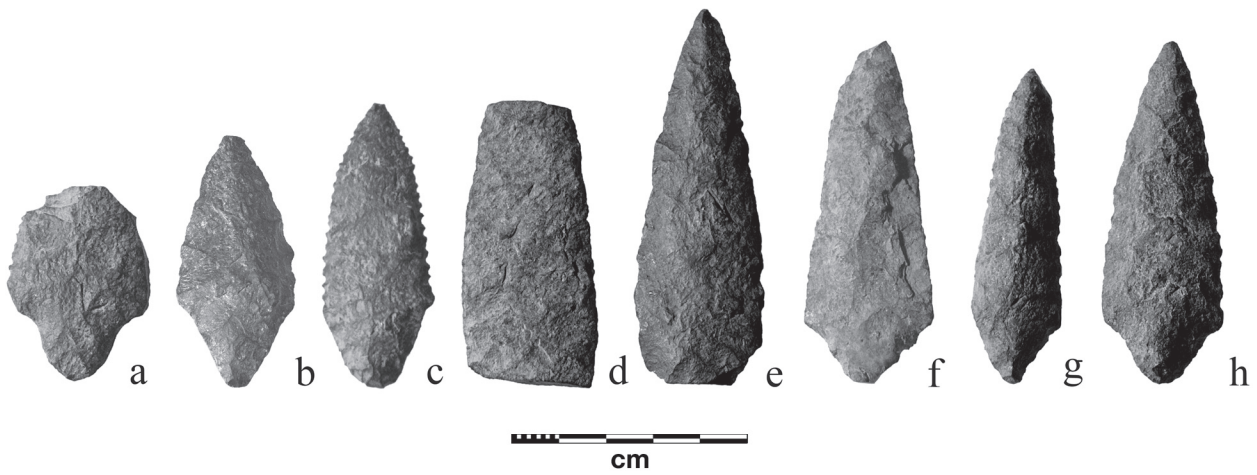


Figure 6. Projectile points recovered from between 20 and 29 metres in the Victoria area. a: DcRu-69:1; b: DcRu-64:1; c: DcRu-y:94; d: DcRu-38:83; e: DcRu-38:74; f: DcRu-38:158; g: DcRu-163; h: DcRu-38:159



### *DcRu-38*

The Quicks Pond site is located at an elevation of 25 metres on both sides of a large wetland on Colquitz Creek. Surface collected artifacts from the site include part of a hand maul, a microblade, utilized flakes, choppers, ground stone points, abrasive stones, and bifaces. Mitchell (1971) characterizes the site as a possible Locarno Beach culture type, though other culture type phases may be represented. Two of the flaked stone bifaces from the site (Figure 6g, h) have serrated blades, wide angled shoulders, contracting stems, and a convex base. Additional stemmed points show similar attributes but the blades are not serrated (Figure 6e, f). The medial section of DcRu-38:83 (Figure 6d) is lenticular and thinner in cross section than the others and may be an older point type. Additional bifaces (not shown) include one acute shouldered point with excurvate blades made of chalcedony, a diamond shaped biface, two shouldered forms with excurvate blades, contracting stem and convex base and one with a straight base, as well as five small foliate bifaces or fragments.

### *DcRu-y:94*

DcRu-y:94 (Figure 6c) was recovered from a residential garden at an elevation of 22 metres above current sea level. It has excurvate denticulate blades, wide rounded shoulders, contracting stem and convex base.

### *DcRu-64*

This site is located at an elevation of 22 metres, close to the find location of biface DcRu-y:94. The point is an isolated find, although, humic and ashy soil as well as scattered shell have been noted at the site. This contracting stem point is roughly diamond shaped, has excurvate serrated blades, and rounded wide-angled shoulders (Figure 6b).

### *DcRu-69*

This inland Victoria site is located at 21 metres elevation, east of the junction at Royal Oak Ave. and the Pat Bay Highway on the north side of Rithet swamp. Cultural material observed at the site includes fire cracked rock and scattered stone debitage,

along with an abrasive stone, retouched flakes, and several bifaces. One biface is very similar in form to DcRv-154:1 from Skirt Mt., having a denticulate blade (the second is broken), contracting stem and convex base (Figure 6a). The medial section of a small foliate form was also recovered from the site.

### *DcRt-y*

DcRt-y:141 (Figure 7d) has serrated blades, contracting stem, one wide angled shoulder, and straight-excurvate blades. DcRt-y:38 (Figure 7g) has slightly excurvate serrated blades, one slightly barbed narrow angled shoulder and broken shoulder, and a contracting stem and broken convex base. Collection provenience is more tentative for both DcRt-y:141 and 38, but they may have been collected in the vicinity of Cadboro Bay. St Patrick Street runs inland across low ground not higher than 20 metres.

A number of denticulate or serrated points have a general location but an unknown elevation, as follows.

### *DdRu-y*

DdRu-y:98 (Figure 7e) has serrated excurvate blades and an irregular broken base. It was recovered from somewhere in the vicinity of Patricia Bay.

### *DdeRu-y*

Bifaces from the area DdeRu-y (Figure 7a, b, c) have only a vague provenience and are noted in RBCM accession records as having been collected in "North Saanich" by J. Braden ca. 1890. All have excurvate denticulate blades. The blades of DdeRu-y:54 has angled shoulders, convex base, and may have been reworked as there is a slight contraction of blade form beginning in the medial portion of the blade. DdeRu-y:55 has a contracting stem and convex base, one excurvate and one straight blade, and wide-rounded shoulders. DdeRu-y:58 is a foliate form made of chert.

### *DcRu-y:33*

DcRu-y:33 (Figure 7f) is a foliate form with serrated excurvate blades. It was collected at Beacon Hill Park.

*DcRv-y:5*

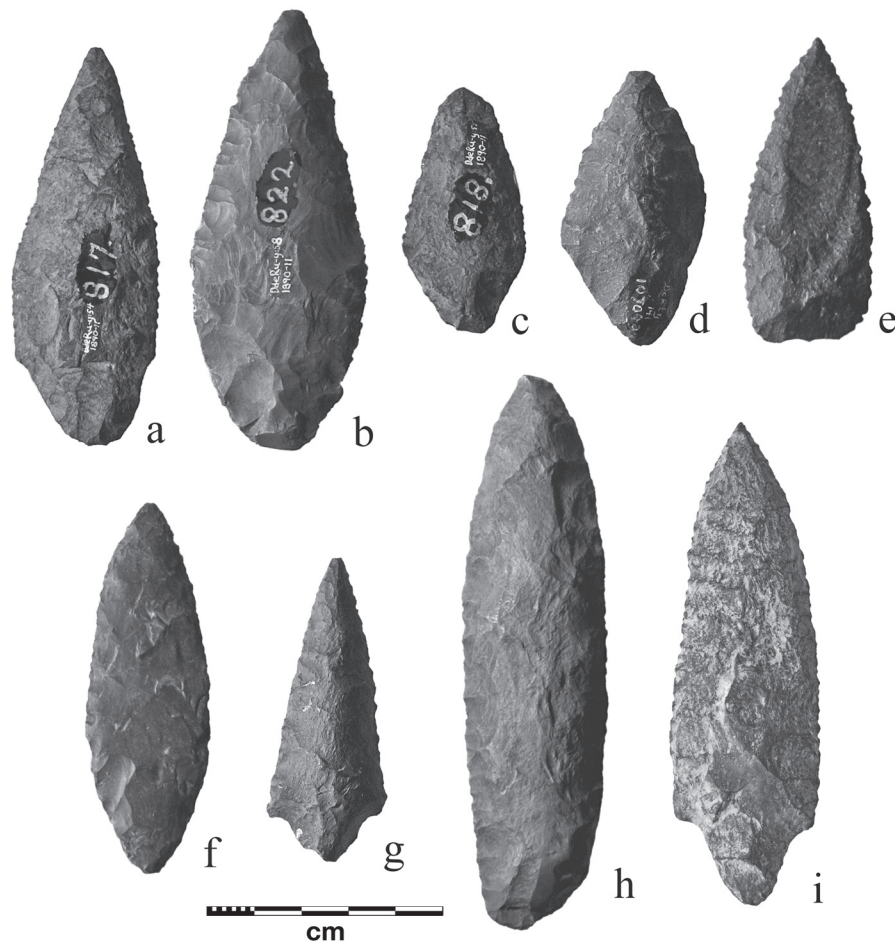
This point was collected in Metchosin west of Victoria, and deposited at the Royal BC Museum in 1921. The point has a lenticular cross-section, collateral and expanding flake scars, fine pressure-flaked denticulate excurvate blades, squared shoulders, contracting stem, and a convex base (Figure 7i).

**Non-denticulate Points**

The succeeding non-denticulate or serrated points are a sample of points that were collected from inland locations in the Victoria area that show attributes constant with relatively early antiquity.

DdRu-31 is located at approximately 80 metres elevation along Emard Terrace, south of the Experimental Farm in Saanich. The elevation of the site is

just above the maximum height of post-glacial sea level rise and a prominent small terrace and wave-cut scarp lies immediately below the site. This beach was active for a relatively short period of time immediately following deglaciation 13,000 years BP, after which sea levels dropped rapidly (Clague et al. 1982; Clague 1981; Mosher and Hewitt 2004). The medial section of an extraordinary long lanceolate, collaterally flaked, spear point was recovered from the site in 1966 (Figure 3j). The point has a lenticular, almost diamond-shaped cross-section and shows fine pressure blade retouch following the main shaping of the artifact. It is made from a radial cross-section of petrified wood, an exotic material that is not known to be available in the Victoria area (Hebda 2006). Four additional bifaces from the site are in the RBCM collection and these are more typical of a middle period; one very large shouldered point with



**Figure 7. Projectile points recovered from an elevation of less than 20 metres or from unknown elevations. a: DdeRu-y:54; b: DdeRu-y:58; c: DdeRu-y:55; d: DcRt-y:141; e: DdRu-y:98; f: DcRu-y:33; g: DcRt-y:38; h: DcRu-y:88; i: DcRv-y:5**

a contracting stem and a straight base, a diamond shape, and two foliate bifaces are present.

Four other points are isolated finds. The first, DcRu-y:88 (Figure 7h) is finely made, lenticular in cross-section, has fine subradial flaking and shows grinding on the face of the base, but not on the blades. The second, DcRu-y:146 (Figure 3f) was found at an elevation of about 70 metres near Pike Lake in Saanich in 1899. It is made of a coarse volcanic rock yet is finely manufactured, having a combination of subradial and collateral/oblique flake scars, contracting stem, wide rounded shoulders and parallel straight blades. The base of this point may show an original striking platform for the blank on which it was made. The third, DcRu-y:196 (Figure 5f) was collected in Saanich at 35 metres above current sea level. This biface fragment has straight parallel blades, a very thin and wide, flattened lenticular cross-section, and a base with two bifacial flake scar removals.

### Regional Context

In the following, an examination of artifact assemblages containing denticulate or serrated bifaces from surrounding areas is presented in order to situate the Victoria area points within a regional context. The discussion begins by addressing assemblages to the south, and then continues first east, then north. Projectile point form is also discussed in relation to nearby assemblages.

In proximity to Victoria, the closest large and well-described assemblage that contains a significant number of denticulate or serrated bifaces is from 45-CA-426, Sequim on the Olympic Peninsula. This site, only 40 km SSE of the Victoria waterfront, had a major excavation in the late 1990s (Morgan 1999). Morgan (1999) dates the site to 4000 to 8000 BP based on cross-dating with regional assemblages. A total of 23 projectile points and 245 other bifaces were recovered and described (Walker et al. 1999). Ten of the 23 points are serrated. The assemblage is classified as Olcott, which Morgan and Hartmann (1999) summarize for western Washington. The western Washington counterpart to Olcott is the Cascade Phase (e.g., Bense 1972; Leonhardt and Rice 1970). As well, Olcott is part of Butler's (1961) Old Cordilleran Culture, and Carlson's (1970) Pebble Tool Tradition.

The Olcott period points from the Sequim site are categorized into four types (Walker et al.

1999:7.5–7.9). Type 1, shouldered lanceolate, have one or two small shoulders and contracting stems and one of the five is serrated. Type 2, large lanceolate, are over 60 mm long (max 76 mm). Three of the illustrated points appear to have small shoulders (Walker et al. 1999:7.5–7.7). Significantly, only three of the ten are *not* serrated and at least one is deeply denticulate. Type 3 are small lanceolate and are mostly reworked from larger points. One is highly serrated and three have striking platforms forming their base, a rare attribute shared by many of the Lehman Phase (6000–4500 BP) and Lochnore Phase (5500–3500 BP) points from the interior of B.C. (Stryd and Rousseau 1996). Type 4 are large contracting stemmed points of which there are only two examples, one of which is serrated. These large points have prominent shoulders, and contracting stems. Many of the points have marked similarity to the included Victoria area points.

Serrated blade points are also found around Puget Sound and mountains to the south. A large assemblage of 650 Olcott period formed tools was found at 45-MS-100, at Lake Cushman in the lower ranges of southeastern Olympic Mountains, 100 km south of Victoria (Wessen 1990). The assemblage includes 60 points and bifaces. Of the 30 bipointed lanceolate Cascade or Olcott points, eight are serrated (Wessen 1990:75, 81). Unipointed lanceolate points are often diamond shaped and usually have rounded to nearly straight bases, while three points have shoulders and contracting stems. One of these is deeply denticulated. A single Cold Springs side notched point (often co-occurring with serrated Cascade foliate points further south) had serrated blades. None of the Lake Cushman materials were directly dated. Based largely on the prevalence of serration, Wessen suggests much of the material dates to the mid rather than early Holocene, or about 4000–6000 BP.

Two montane sites just south of Puget Sound and about 250 km south of Victoria are well-dated, with radiocarbon assays combined with tephra layers of known ages. Layser Cave had 92 projectile points, most of which had been reworked (Daugherty et al. 1987b). All the denticulate points were in one layer. Layer X at Layser Cave had four denticulate and possibly another two serrated points dated to 6650 ± 120 BP. The complete denticulate points are foliate. There are also shouldered contracting stemmed points (one seemingly with a unilateral

small barb) and a Cold Springs side notched point. In other layers, Cold Springs side notched type and contracting stemmed points dominate.

Judd Peak contained some 246 projectile points, which like Laysen Cave were also reworked, and are dated by both radiocarbon and tephra layers (Daugherty et al. 1987a). Although the radiocarbon dates and tephras matched well, the projectile points morphology appeared very mixed. The earliest layers exhibited only early style points; and arrow points were confined to the upper layers, as expected. However, other point styles including Windust, Cascade, and Late Cascade were found throughout. It is possible that prehistoric pit digging may have mixed the assemblages. Heavily denticulate and serrated points are found in almost every level, but dominate in a layer directly dated at  $5970 \pm 120$  and  $5930 \pm 120$  BP. Morphologically much older Windust and long-stemmed points also occur in this layer.

Along the Snake River in southeast Washington, about 400 km to the southeast of Victoria, are many of the best-dated Cascade Phase sites. These include Marmes Rockshelter and Windust Caves. Bense (1972) produced a PhD dissertation that describes 13 of these assemblages, which date to between 5500 and 8000 years BP. Many of the components are capped by Mazama volcanic ash, assisting with the dating of these sites. The 367 points vary from willow leaf to lanceolate with rounded bases, to trapezoidal (diamond) with sharply contracting stems. In the early part of the phase, about 20% of the blades are serrated or denticulate; this rises to 42% in the later half of the phase. The lanceolate Cascade points often co-occur with the large side notched Cold Springs points. These last, and many of the other artifacts such as edge-ground cobbles and shaft smoothers, are extremely rare or do not occur in the assemblages to the northwest.

Serrated points are also found sporadically to the east and northeast of Victoria. At Helen Point, Mayne Island (approximately 45 km NE of Victoria), serrated points occur in the Mayne Phase (Carlson 2006). Carlson also describes a large and heavily denticulate lanceolate biface, well over 200 mm long, from the Marpole component of the Helen Point site (Carlson 1996b:224, Fig. 7). Serrated points do occur occasionally in later periods (Carlson 1983:25). Burley (1980:19) suggests that large foliate-type points may be mainly in burial contexts during the Marpole period. Additionally, extremely large and

well made lanceolate blades do occur across much of North America in burial contexts at about this time, according to Ames (2005:224–225).

Two of the contracting stem points from the Lorcarno component at Montague Harbour (Mitchell 1971) are serrated. Mitchell's observations regarding the similarity of these points to Olcott and Cascade points shows that we are not the first to note the links to points from the south. However, the presence of these points in Montague Harbour 1 is at least 2000 years later than the occurrence of similar artifacts to the south. Subsequent work at the site has shown that originally terrestrial parts of the site continue beneath the current intertidal beach (Eldridge 1989) and into the subtidal (Easton 1991, 1993). The potential for introduction of mid-Holocene artifacts into rather later deposits would seem to be high at Montague Harbour.

The relatively small Old Cordilleran assemblage, from the Glenrose site at the mouth of the Fraser River, 75 km northwest of Victoria, has one serrated biface (Matson 1976a:Figure 8–3:t). The long lanceolate willow-leaf points and shouldered sharply contracting stemmed points are similar to others from the same time in the region, which are dated to between about 5000 and 8200 BP (Matson 1996). Glenrose and nearby St. Mungo sites also contain diamond-shaped, leaf, and shouldered contracting-stem points in the St. Mungo component (Calvert 1970; Matson 1976a). Pratt (1992) does not mention the serration trait in her discussion of the Charles Culture, within which she groups Mayne Phase and St. Mungo components.

Denticulation or serration occurs occasionally in assemblages in the Fraser River region. At least one of the presumed mid-Holocene aged points from Coquitlam Lake illustrated by Wright (Wright 1996 Fig. 3:c, second from right, top row) appears to be serrated. Coquitlam Lake is about 110 km from Victoria. Wilson and Clark (2001) also recovered a point with denticulate blades during their work at the Coquitlam Reservoirs.

Of 371 bifaces from the Fraser Valley Region analyzed by McLaren and Steffen (this volume), only eight were recorded as having denticulate blade margins. Five of the eight denticulates are from sites in the Stave Watershed. This reservoir is also north of the Fraser and about 120 km northeast of Victoria. Four of the five Stave points were recovered from sites that have been assigned relative date spans of

between 5000–8000 BP, and one site that dates to between 5050 and 216 BP (McLaren and Steffen Table 2, this volume). In addition, one denticulate point was recorded from Scowlitz, dated to between 330 and 2940 BP (Lepofsky et al. 2000), and one from Silverhope Creek dating to between 310 and 2510 BP (Archer 1980). At the Maurer Site, dating to approximately 5000 BP, leaf and diamond shape and shouldered contracting stem points are found, but denticulate blades are not apparent (LeClair 1976; Schaepe 1998).

The Milliken, Mazama, and Gravel components from the Milliken site, near Yale on the Fraser River about 180 km northeast of Victoria have foliate and shouldered points with contracting stems, but no serration (Mitchell and Pokotylo 1996). Later at Yale, the Eayem Phase (grouped by researchers such as Pratt into the Charles culture type) also appears to lack serration (Borden 1968, 1975).

Across the southern Interior Plateau of BC, 300–500 km distant from Victoria, Early Nesikep points that date to 6000–7000 BP occasionally have serrated blades (Stryd and Rousseau 1996: 188), however, the points are particularly dissimilar in regard to other attributes. For example, most of the points have barbs, slightly expanding stems, concave bases, and many have recurved blades.

To the north, serrated points are uncommon. In the Alberni Valley, one point with slight shoulders and a contracting stem, appears to have serrated or denticulated blades (McMillan 1996: Figure 4d). This point was associated with microblades and microblade cores and is thought to date to the early to middle Holocene. At the Bear Cove site on north eastern Vancouver Island all the foliate points and the one contracting stem point lacked serration. They dated to between 5000 and 8000 years old (C. Carlson 1979). At Namu, serration appears to be absent on the foliate projectile points and other bifaces of Periods 1 and 2, which are dated from approximately 10,000 to 5000 BP (Carlson 1996a). A single serrated biface dating to 8750 BP has been found on Haida Gwaii at the Richardson Island site (Fedje et al. this volume).

At Denman Island, in the northern Strait of Georgia, a large assemblage of 60 foliate and diamond-shaped bifaces dated to 3500 BP, completely lacked serration (Eldridge 1987).

Points from the Victoria area that have been described here are most often from inland, elevated

locations and are forms that may predate the earliest radiocarbon date in Victoria. Taken together, the points share specific attributes with assemblages both to the north and to the south. Specifically, the outline form of many of these points are characteristic of Carlson's (1970:115–117) Mayne Phase, 5650–3850 BP (Carlson 1975; Percy 1974), which defines point traits including foliate and diamond forms as well as stemmed and shouldered points. The Mayne Phase was first identified northeast of Victoria on Mayne Island at the Helen Point site, and has not been identified previously in the Victoria area. Definitive identification of a Mayne Phase component is complicated here by the lack of excavated and radiocarbon dated assemblages in our sample. Also, similar point types are present within other archaeological culture types, and it is likely that multiple components are present at some of the sites mentioned, particularly for larger assemblages such as Quick's Pond, which may result from reuse of favoured areas over a long term.

Overall, serrated or denticulate blade margins are more common in projectile points found in inland, raised elevation locals than at sites situated on the current Victoria shoreline, which are dated to no earlier than 3800 BP in the area. On the whole, serration and denticulation are rare in sites to the north and east of Victoria. By contrast, the blade trait is relatively common in assemblages dating to between 4000 and 8000 BP to the south. This suggests that the trait may have been influenced more from areas to the south, exemplified through sites in the Olympic Mountains and Strait of Juan de Fuca, Puget Sound and further south, during the middle Holocene than regions to the north or east.

### **Discussion of the Geographical Distribution of Serrated and Denticulate Points in the Greater Victoria Area.**

The serrated and denticulate blade point forms are predominately from elevated inland locations. Figures 1 and 2 show that the find locations are rarely near modern shorelines. These sites consist of both isolated finds and locations where numerous artifacts have been recovered. In most cases, sites containing numerous artifacts are situated in close proximity to wetlands that would have provided for occupants during periodic stays at hunting or gathering camps. Isolated find sites are characteristic of points lost or

discarded during hunting. Many of the sites are on the rolling uplands of the Victoria area, a zone that would have been rich with deer and elk.

Notably, the elevation distribution of the serrated points reflects the elevation distribution of agricultural and residential development in the Greater Victoria area. Nearly all of these finds have been in farmer's fields or on residential lots. Only recently is development expanding to higher elevations, and points are being found, at least at low density, wherever archaeology is conducted in advance of such development.

It is clear that the serrated and denticulate points have a very different distribution than other point types. A frequency graph of elevations, in 20 metre bins, shows a unimodal distribution at 20–40 metre elevation (Figure 8). Interestingly, few have been found from 0 to 20 metre elevation. The graph decreases slowly to the right toward the highest elevation.

Although not demonstrated numerically here, it is evident that later point styles, such as triangular forms (Carlson 1983; Keddie, this volume), would have a very strong skew to the extreme left of the graph. The great majority of such points have been

found on modern beaches or in excavated shell middens and other sites associated with the current sea level. Away from the modern shore, we know that later period point types are also occasionally present at higher elevation locations and represent terrestrial hunting activities in the later Holocene.

It is possible that the higher frequency of denticulate or serrated blade points at elevated locations is due to their suitability for inland hunting, but if this were the sole reason for their frequency distribution one might expect to find the points, or fragments, with some regularity at later period coastal sites as occupants produced and reworked the points. Likewise, the increased frequency of inland and elevated serrated and denticulate points is not necessarily indicative of an early distribution of people who emphasised inland locations over coastal areas. Throughout the Holocene it is likely that occupants of the area utilized both the coastal and terrestrial resources available to them. Furthermore, the presence of a maritime economic capacity has been demonstrated from the early Holocene both to the north (Fedje et al. 2004; Steffen 2006; McLaren 2006) and at the Channel Islands of California to the south (Rick et al. 2001). Thus, it would seem

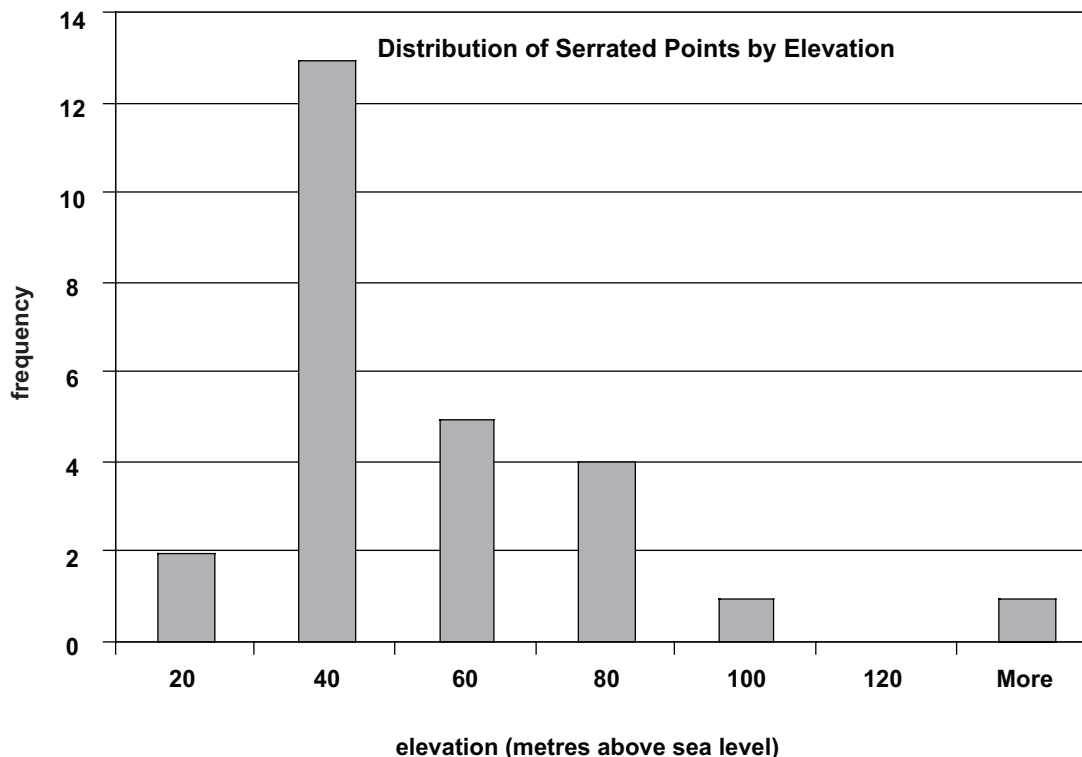


Figure 8. Histogram showing the elevations of serrated and denticulate points from the Victoria area.

unlikely that people situated in the Victoria area throughout the Holocene did not also have maritime proficiency. The inland distribution is better explained by rising sea levels. Probably serrated and denticulate points did occur with greater frequency along the shoreline at sites that are now drowned in up to 30 metres of water by a rise in sea levels.

The effects of changing sea levels on site distribution has been considered previously for the Victoria and southern Strait of Georgia region (e.g., Duff 1963), but researchers in Washington State have in the past neglected to consider sea level fluctuations in site distribution interpretations. For example, it had been suggested that an inland hunting economy characterized the Olcott period (e.g., Gallison 1994; Grabert 1977), without considering the possibility of an inundation of potential coastal sites. While not dismissing a maritime component Matson (1996:119) supports the stated emphasis on inland hunting and suggested that little sea level change had occurred in Puget Sound, which is arguable (e.g., Kelsey and Sherrod 2001). In considering sea level fluctuations absence of evidence can not be taken as evidence of absence, that is to say, if the sites that are directly related to early period maritime activities become drowned, then only the upland hunting sites might be visible archaeologically, potentially leading to a highly skewed view of culture and economy.

Denticulate or serrated points might well appear with considerable frequency within assemblages yet to be investigated from underwater contexts. It is likely that many drowned archaeological sites will have been damaged by wave and current erosion. Easton's (Easton 1991, 1992, 1993) excavation efforts in the shallow subtidal of Montague Harbour are a valuable demonstration, but produced an undated archaeological sample that was disturbed by marine bioturbation. In future, protected areas such as Portage Inlet, the Gorge, and parts of the Victoria Inner Harbour that have not been dredged might prove productive as places to target subtidal or underwater investigation. The very earliest sites in the Victoria area, however, may be associated with the post-glacial 75 metre elevation strandline.

## Conclusion

There has been a considerable amount of archaeological research conducted in the Victoria area that

has, for the most part, taken place along the current coastline and dates to no earlier than 3800 BP. Projectile points found at elevated, inland locations often show different attributes than those found at modern shoreline sites. Without the existence of firmly dated archaeological samples, this paper has taken a geographical and regional approach to consider this apparent variability in point attributes. We suggest that a number of the projectile points found at inland, elevated locations might represent earlier time periods of human occupation than have been radiocarbon dated in the area thus far. In particular, serrated or denticulate blade foliates, diamond, and shouldered contracting stemmed points may derive from the period 4000 to 8000 years BP in the Victoria area, as they do in assemblages to the south.

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