

## Chapter XI LABRETS AND TEETH ON THE NORTHWEST COAST

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This chapter derives from a study of human skeletal remains undertaken early in 1991 as part of R.G. Matson's excavation and analysis of the Crescent Beach site (Matson, Pratt and Rankin 1991). Matson sought to investigate how the prehistoric Locarno Beach phase contributed to the origins of the Northwest Coast ethnographic pattern. My contribution focussed on dental labret wear and its occurrences in human remains excavated from Crescent Beach (DgRr 1) and other archaeological sites in British Columbia (Cybulski 1991). Complementary to Matson's research, the goal was to investigate the distribution, antiquity, and social patterning of labret use on the Northwest Coast, a cultural phenomenon known ethnographically only among northern groups but archaeologically in both the north and south coasts of British Columbia. The underlying premise was (and continues to be) that human skeletal remains with suitably worn teeth can provide interpretive archaeological insight into the practice of wearing labrets whether or not the artifacts themselves are present in archaeological assemblages.

Here I present an update and overview of the data at hand. In addition to the data I collected in 1991, I include information from the site of Tsawwassen (DgRs 2) published that year (Arcas 1991), and report new observations for Greenville (GgTj 6) in the Nass River valley (e.g., Cybulski 1996). I also summarize the original Greenville Burial Ground findings on labret wear, and relate previously unpublished details on occurrences in the Prince Rupert Harbour sites and their interpretive implications (Cybulski 1974, 1992: 67-73).

The data collected in 1991 included observations on skeletal remains from Crescent Beach (DgRr 1), White Rock (DgRq 18), and Pender Canal (DeRt 1, DeRt 2). In this chapter I present additional data I later collected for DeRt 2 and data reported for the Qualicum Beach site, DiSc 26 (Willows, Hickok, and Wigen 2008). I also consider "squared-off" jaws as possible additional indicators of labret use in Northwest Coast aboriginal remains following the introduction of this concept by Arcas Consulting Archeologists Ltd. (AMEC Arcas) in their osteological report on the Tsawwassen site (Curtin 1991:80-83).

On the interpretive side, this chapter revisits the question of labret use and gender, and re-examines the antiquity and duration of labret use in the north and south coasts of British Columbia. Important to the issue of time is the potential influence of the marine reservoir effect on collagen dated human remains. It is possible that radiocarbon dates from directly tested Northwest Coast human remains may be off by as much as 600 to 800 calibrated calendar years on average depending on local fluctuations in oceanic deep water upwelling and marine versus terrestrial dietary contributions (Cybulski, in preparation; Richards et al. 2007; Southon and Fedje 2003). Finally considered in this paper is the social, cultural and possible economic significance of labret use and how the practice might have related to head shaping, a cultural practice which some have regarded as an interpretive analog of wearing labrets (e.g., Carlson 1996: 221).

### Historical Background

Dental labret wear signifies the abrasive scarring of the teeth of a person who wore a labret, or lip plug, during life.<sup>1</sup> Presumably, this would occur only when the artifact was made of stone as opposed to some other, softer material such as wood or shell which are known historically for labrets in the north (Niblack 1890; La Salle 2008:27-29). The softer materials may not be expected to similarly affect tooth enamel, the hardest substance of the body. Labret wear is visible to the unaided eye and usually recognized from faceting

of the enamel or faceted exposure of the dentin on the labial (lip) or buccal (cheek) surface of a tooth crown, sometimes extending to include the tooth's root (Figure XI-1; see also Figure 3 in Cybulski 1974). Care must be taken not to mistakenly interpret task-related tooth wear as an indication of labret wear. That type of wear, from use of the teeth as tools, generally extends down the labial or down the lingual (tongue) aspect of a heavily worn tooth and tends to be continuous with the occlusal surface. The appearance of such wear is often curvilinear rather than flat or faceted.

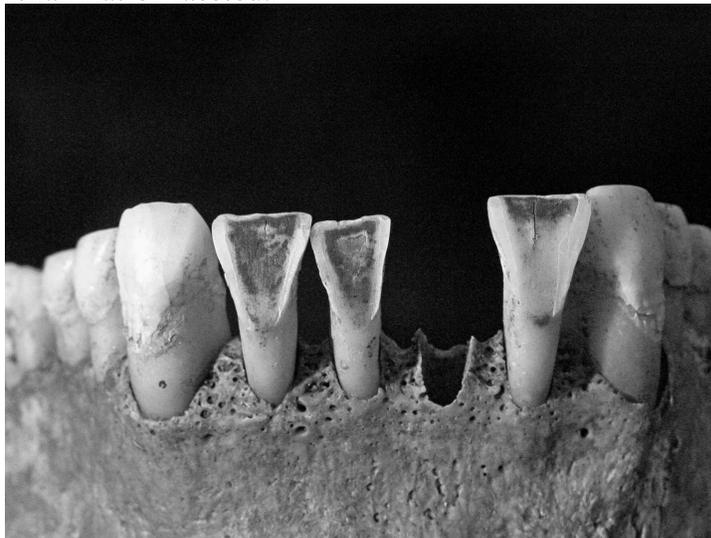


Figure XI-1. Labret abrasion is visible on the mandibular incisors – including the exposed dentin – of Bx 1602 from Greenville Locality B. Photo by the author, courtesy of the Canadian Museum of Civilization.

Tooth faceting from labret use has been known for the Northwest Coast since the early 1970s when the phenomenon was reported for prehistoric human skeletons from Crescent Beach on the south coast of British Columbia (Beattie 1976, 1981; Percy 1974) and at Prince Rupert Harbour and Blue Jackets Creek on the north coast (Cybulski 1974; Severs 1974). Since then, it has been reported at White Rock, Tsawassen, and Pender Canal in the south (Curtin 1991; Lazenby 1986; Weeks 1985, 1986), further north at Namu (Curtin 1984), and at the north coast site of Greenville in the Nass River valley (Cybulski 1992, 1996). Indisputable evidence for the association comes from some of the labrets themselves having tooth impressions (Cybulski 1974:34, 1996:12).

Although labrets may be found with a buried individual (also considered in this paper), one significant element of dental labret wear lies in the fact that the biological sex and (or) age at death of a wearer can be estimated even if the artifact is absent. Naturally, the biological sex and (or) age at death may also be estimated for a skeleton accompanied in burial by a labret and the data collated and analyzed for archaeological inference (La Salle 2008:30). With this kind of information and appropriate dating criteria, the prehistoric past may be investigated for information that might illuminate the known ethnographic pattern.

Historical records indicate that the use of labrets appears to have been largely limited to females of northern Northwest Coast groups including Tlingit, Haida, Tsimshian, Haisla, and northern Heiltsuk (Keddie 1989; Niblack 1890). Males may occasionally have been involved (Moss 1999; see also later in this paper) but authorities agree that women were the predominant wearers. The use of labrets is not known historically or ethnographically for the south coast of British Columbia including the central Coast Salish, Nootka (Nuu-chah-nulth), and southern Kwakiutl (Kwakwaka'wakw and Kwa-giulth) groups.<sup>2</sup>

## Samples studied

Crescent Beach is a mainland Strait of Georgia site (DgRr 1) rich in archaeological evidence for the Locarno Beach phase (3300-3500 to 2500 RCYBP). Matson's 1989-1990 fieldwork resulted in the discovery of one human skeleton which provided no evidence for dental labret wear (Chapter VII in this volume). Over the years, beginning in 1972, the site has yielded many human skeletal remains, subsequently housed in the collections of the Department of Archaeology, Simon Fraser University (SFU). I concentrated my 1991 research there, taking the opportunity to also study remains in that institution from two Pender Canal sites, DeRt 1 and DeRt 2 (Carlson and Hobler 1993) and a single burial from White Rock (DgRq 18) which was reported to have dental labret wear (Lazenby 1986).

### *Crescent Beach series*

I examined 89 sets of human remains that accumulated from four separate periods of field work: 1972, 1975, 1976-1977, and 1983-1984. The exact number of individuals was difficult to decipher. Most, if not all of the remains had been recovered under archaeological rescue conditions in advance of or during urban development projects. Many had been discovered and collected as disturbed skeletal elements or disturbed partial skeletons rather than as intact in situ burials.

The remains were initially reported osteologically by Owen Beattie (1976, 1981), Andrew Trace (1981), and Gerald Conaty and A. JoAnne Curtin (1984). Beattie (1976) reported 18 individuals excavated in 1972 by Richard Percy (1974). He later revised this figure to 20 (Beattie 1981), concluding that the mandibles associated with two skeletons, Burials 1 and 16, represented different persons which he labelled Burial 1b and Burial 16b. My assessment indicated the mandibles likely did belong to the skeletons. Beattie apparently read imperfect anatomical articulations between the lower jaws and their respective skulls as indicators for separate people. I suspect that the imperfect fits resulted from post-mortem changes (i.e., warping). Each skull and jaw were proportionate in size, morphology, and characteristics of preservation, and the opposing teeth had complementary expressions of occlusal attrition.

Aside from those discrepancies in identification, Beattie (1981) saw two individuals represented in Burial 7, two in Burial 9, and did not report Percy's (1974) Burial 17. I observed three individuals in Burial 9 as represented by teeth. In total, I counted 20 individuals from Percy's 1972 Crescent Beach excavation, though not in precisely the same catalogued manner as Beattie did in his 1981 dissertation.

Andrew Trace (1981) reported 13 burials from a 1976-1977 excavation. I had problems with this number because many of the remains I examined were not catalogued in the manner reported by Trace (1988:166) or not labelled at all. My impression from the laboratory examination was that most of the remains had been collected from disturbed deposits.

Other than pencilled or inked notes with the remains, I was unable to find documentation relating to any items recovered in 1975. Evidently, those bones were collected by the Archaeological Society of British Columbia from deposits earlier removed from the site by truck and had obviously been disturbed (Percy 1976:8).

Conaty and Curtin (1984) reported 25 individuals from a 1983-1984 archaeological monitoring program during urban development at the Crescent Beach site. I examined most of those remains but was unable to locate Burial 16b and Burial 21.

### *Pender Canal series*

DeRt 1 and DeRt 2 are two closely situated sites in the Gulf Islands, approximately 45 km southwest of Crescent Beach (Figure II-1). Collectively referred to as the "Pender Canal" sites, they were excavated in 1984, 1985, and 1986 by Simon Fraser University under the direction of Roy Carlson (Carlson and Hobler

1993). The collection contains remains relating to the Locarno Beach phase in terms of time as well as earlier and later periods.

How many individuals are represented in the recovered material is uncertain. Sylvia Weeks, a Department of Archaeology student, reported 39 individuals in burial repose and additional scattered remains and beach finds recovered in 1984 (Weeks 1985), and 24 burials and additional scattered remains recovered in 1985 (Weeks 1986). Her osteological work was preliminary and did not include all of the remains excavated in the first two field seasons. The remains recovered in 1986 had not been studied by 1991 except on an occasional individual basis as class projects by other archaeology students.<sup>3</sup> In total, I examined 27 individuals in 1991 including 21 from the 1986 excavation and three each from the 1984 and 1985 excavations. In 2009, I examined the mandibles of three additional 1984 skeletons which were reported to have been associated with labrets in situ.

### *Greenville*

A prehistoric burial ground in the village of Greenville on the Lower Nass River on the north coast of British Columbia was discovered in 1981 and excavated over three field seasons (Cybulski 1992). Data on labret wear were detailed as part of the osteological analysis (1992: 67-73) and are included in the present study.

The skeletal remains of an additional five individuals (MNI or minimum number estimate) were accidentally unearthed in the village in 1995 along with several artifacts when a trench was dug for the installation of a sewer line. I analyzed this material and concluded at the time that the collection was from the same population as that previously excavated and studied (Cybulski 1996). However, in the same location, which was 90 m southeast of the 1981-1983 excavations, upwards of 15 additional skeletal individuals were accidentally unearthed in 2006 during road building operations (Zimmerman 2006). Preliminary indications are that this sample – and by association the 1995 series – predates the 1981-1983 sample. In order to differentiate the two groups, the respective areas of collection have been tentatively designated as Locality A and Locality B in consultation with the British Columbia Archaeology Branch, Victoria. The entire village of Greenville (incorporating the two localities) had earlier been designated as a single archaeological site, GgTj 6.

Neither the 1995 nor 2006 skeletal remains, designated as Locality B, were collected under controlled archaeological conditions. My attention to the material was called after each series had been collected and boxed. In the laboratory, it was possible to sort and segregate the bones of some of the individuals but not all. Several were represented by partial or well-represented skeletons and others by only one or a few bones. That at least some of the individuals were found as discrete, articulated burials is attested to by observations at Locality B made soon after the 1995 discovery (D. Archer in Cybulski 1996). A few individuals exposed in 2006 had been collected as well-represented anatomically discrete individuals and are presumed to have been intact when uncovered. In the final analysis, the jaws of six adults could be studied for labret wear. It appears, at the time of this writing, that these individuals lived earlier than those excavated at Locality A. The latter had originally been assigned to the Late Pacific period, ca. 1500-175 RCYBP (Cybulski 1992:19; see Ames and Maschner 1999 for discussion of the Late Pacific and related temporal constructs). Additional details and clarifications are provided in a later section of this paper.

### *Prince Rupert Harbour*

Prince Rupert Harbour incorporates a complex of archaeological sites on the north coast of British Columbia 100 km southwest of Greenville. My original report on labret wear (Cybulski 1974) covered skeletal assemblages excavated between 1966 and 1970 from five sites including Dodge Island (GbTo 18),

Garden Island (GbTo 23), Parizeau Point (GbTo 30), Boardwalk (GbTo 31), and Grassy Bay (GbTn 1). Here, I add skeletal remains which I've studied from three subsequently excavated sites, Lachane (GbTo 33), Baldwin (GbTo 36), and Ridley Island (GbTn 19). In all, a total of 191 individuals could be investigated for this study. Details concerning the Prince Rupert Harbour excavations may be found in MacDonald and Cybulski (2001) and MacDonald and Inglis (1981). Most of the skeletal remains have been assigned to the Middle Pacific (3500 to 1500 RCYBP) (Cybulski 2006), although some of the individuals may be more recent than once thought as discussed later in this chapter.

#### Sample findings concerning labret wear

Two anatomical variants of dental abrasion relating to the use of labrets have been noted in previous studies of coastal British Columbia skeletal remains. Severs (1974) and Curtin (1984), respectively, reported polished facets on the buccal surfaces of premolars and molars in skeletons from Blue Jackets Creek (FlUa 4) on the Queen Charlotte Islands (Haida Gwaii) and Namu (ElSx 1) on the central mainland coast. Both upper and lower teeth were affected, and the facets were attributed to the use of lateral labrets. As historically witnessed elsewhere, lateral labrets were worn near or at the corners of the mouth (Keddie 1981:61).

Labret wear on the lower anterior teeth (incisors and canines) was reported in skeletons from five shell-midden sites in Prince Rupert Harbour (Cybulski 1974) and from the 1981-1983 Greenville excavation (Cybulski 1992:67-73). This type of wear may be attributed to the use of medial labrets, usually worn above the chin just below the lower lip (Figure 1 in Keddie 1981:59). Medial labret wear appears to be the dominant form in prehistoric coastal British Columbia sites from north to south. In my examination of the Crescent Beach, Pender Canal, White Rock, Greenville, and Prince Rupert Harbour remains, I did not observe any instances of lateral labret wear.

Tables XI-1 through XI-3 present observations for individual occurrences at Crescent Beach and Pender Canal, Greenville localities A and B, and the Prince Rupert Harbour sites respectively. I used a uniform recording system for each jaw as explained in the footnotes of each table.

The skeleton from White Rock (DqRq 18) probably did not have labret wear. The labial enamel surface of the crown of the right lower lateral incisor had at least three large polished facets which were interpreted as labret facets in a forensic study of the skeleton (Lazenby 1986). The jaws, however, exhibited malocclusion with crowding and displacement of teeth, and the tooth presumed to have been abraded by a labret was markedly displaced lingually so that it could not possibly have come into contact with a lip plug. The facets were likely caused by abrasion from an overlapping maxillary tooth.<sup>4</sup>

Almost all examples of labret abrasion (marked by an "A" in Tables XI-1 to XI-3) involved the anterior teeth of mandibles (canines and incisors), although there were three lower jaws in which a first premolar was affected, technically a posterior or cheek tooth. In one case, an adult female from Crescent Beach (Percy's Burial 6 according to the SFU catalog), the right canine and first premolar were affected, while all four incisors and the left canine were missing post-mortem and, therefore, unobservable; the left first premolar was not involved. In an adult Crescent Beach male from the 1975 recovery period (Burial 45), a right first premolar was also involved while all anterior teeth and the left first premolar were missing post-mortem.

No Greenville series premolar was faceted (see Table XI-2). A left first premolar was affected in one Prince Rupert Harbour jaw (Table XI-3) along with both canines and the left lateral incisor (the central incisors and right lateral were missing post-mortem). All studies indicate, however, that it is the anterior teeth which are clear markers for medial labret wear in prehistoric individuals. Evidently, involvement of a first premolar might occur if the artifact is wide enough to extend to that part of the dentition or if it moves about widely enough to abrade the tooth. In the premolar instances I observed, faceting appeared limited to

the mesiobuccal “corner” of the tooth crown, hence, facing anteriorly as might be expected from a medial labret rather than laterally or buccally as might be expected in the case of a lateral labret (see illustrations in Severs 1974).

Burial 1 from the 1983-1984 field monitoring program at Crescent Beach was reported to have “definite evidence” for labret abrasion by Conaty and Curtin (1984). The authors cited the lower left central and both lateral incisors as affected. My observations indicated that the diagnosis could be doubtful. The labial enamel surfaces of the crowns were shiny, suggesting polishing from a labret, but they were not distinctly faceted. The right central incisor had been fractured during life as indicated by a remaining root in a partly enclosed (partly healed over) tooth socket (technically a crown-root fracture, indicated by “f” in Table XI-1).

Table XI-1. Dental labret wear in the mandibles of Crescent Beach and Pender Canal individuals

Burial	Sex	Age in yrs.	Right teeth <sup>1</sup>									Left teeth <sup>1</sup>						
			M3	M2	M1	P2	P1	C	I2	I1	I1	I2	C	P1	P2	M1	M2	M3
<i>Crescent Beach, 1972 field recovery:</i> <sup>2</sup>																		
1	Male	35-54	o	o	o	o	o	A	A	--	--	--	--	o	o	o	o	o
3	Male	45+	o	o	o	o	o	A	A	A	A	A	A	o	o	o	o	o
5	Male	35-54	o	o	o	o	-	A	f	--	-	f	o	o	o	-	o	o
6	Female	35-44	o	--	m	o	A	A	--	--	--	--	--	o	o	o	o	o
8	Male	60+	o	o	o	o	o	o	A	x	x	-	o	o	o	o	o	o
9b	Male	60+	-	z	--	o	o	A	A	A	A	A	A	o	--	o	z	o
16	Female	60+	o	o	o	o	o	A	A	A	A	A	A	o	o	o	o	o
<i>Crescent Beach, Possible 1972 scattered remains:</i> <sup>3</sup>																		
26	Female	60+	-	o	o	o	o	--	A	z	x	-	o	o	o	-	o	--
<i>Crescent Beach, 1975 field recovery:</i> <sup>3</sup>																		
41	Male	35-54	o	o	o	o	o	A	A	-	-	A	A	o	o	o	o	c
45	Male	25-34	-	o	o	o	A	-	-	-	-	-	-	o	o	o	o	o
46	Female?	15-17	o	o	o	o	o	-	A	A	-	-	-	o	o	o	o	o
<i>Crescent Beach, 1983-84 field recovery:</i> <sup>4</sup>																		
1	Female	35-54	o	o	o	o	o	o	p	f	p	p	o	o	o	o	o	o
2	Male	45+	m	m	m	m	m	m	m	m	m	m	A	m	m	m	m	m
20	Female	35+	o	o	o	o	o	A	m	m	m	-	-	o	o	o	o	o
<i>Pender Canal (DeRt-2):</i>																		
84-12	Male	40-54	o	o	o	o	o	A	p	p	p	o	o	o	o	o	o	o
84-31 <sup>5</sup>	Female	46+	o	o	o	o	o	o	o	x	x	o	o	o	o	o	o	o
84-32 <sup>5</sup>	Female?	26-45	o	o	o	o	o	-	-	-	-	o	o	o	x	o	o	o
84-33 <sup>5</sup>	Female?	16+	o	o	-	o	o	m	x	z	z	z	m	o	o	o	o	o
85-26	Female	20-29	o	o	o	o	o	A	A	-	-	A	A	o	o	o	o	o
86-19	Female	60+	o	o	z	o	o	m	m	x	x	x	o	o	-	-	z	o

<sup>1</sup> Tooth key: A = tooth abraded by labret and p = possibly abraded; o = tooth present and unaffected by labret; d = tooth damaged post-mortem and unobservable for labret wear; f = tooth fractured through the root with crown missing ante mortem; x = tooth missing, alveolus fully resorbed; z = tooth missing, alveolus partly resorbed; c = tooth missing congenitally; - = tooth missing post-mortem, alveolus intact; m = dental alveolus missing.

<sup>2</sup> Burial numbers assigned by Percy (1974).

<sup>3</sup> Burial numbers assigned by J.S. Cybulski for the purposes of the present study.

<sup>4</sup> Burial numbers assigned by Conaty and Curtin (1984).

<sup>5</sup> Labrets reportedly associated (Weeks 1985).

Possibly this injury and its consequences were responsible for the appearances of the adjacent tooth crowns, or the use of a labret itself may have been responsible for the fracture. Since the data are inconclusive, I have indicated those particular teeth as possibly abraded, “p”.

Conaty and Curtin also reported Burial 1 as presenting the only evidence for labret wear in their 1983-84 sample. I observed labret-faceted canines in Burials 2 and 20 as catalogued from that recovery period. There was no mandible with Burial 2 (tooth positions indicated by “m” in Table XI-1); only a very few cranial vault and post-cranial bone pieces were present, as were six loose upper and lower teeth including the faceted canine. Care was taken to insure that the loose faceted tooth was not the missing canine of Burial 20. The teeth were clearly from two different individuals as indicated by differences in tooth size and degree of masticatory occlusal wear.

Sylvia Weeks (1985, 1986) reported labret wear or possible labret wear in three individuals from the 1984 Pender Canal excavations and three individuals from the 1985 field season. I examined the jaws of those skeletons and found evidence only in two, Burials 84-12 (1984 field season) and 85-26 (1985 field season) (see Table XI-1). In Burial 84-12, the right canine was abraded, and the central and right lateral incisors were possibly abraded. In Burial 85-26, both canines and both lateral incisors were affected; the central incisors were missing post-mortem and, therefore, unobservable.

Table XI-2. Dental labret wear and anterior tooth loss in the mandibles of skeletal individuals from Greenville localities A and B

Burial	Sex	Age in yrs.	Right teeth <sup>1</sup>							Left teeth <sup>1</sup>								
			M3	M2	M1	P2	P1	C	I2	I1	I1	I2	C	P1	P2	M1	M2	M3
<i>Greenville Locality A:</i>																		
3	Female	45-49	o	o	o	o	o	o	o	A	x	o	o	o	o	o	o	o
7 <sup>2</sup>	Female	60+	x	o	x	o	o	x	x	x	x	x	o	o	o	o	m	x
11	Female	28-34	o	o	o	o	d	o	d	A	o	o	d	d	d	d	o	o
12	Female	30-39	o	o	o	o	o	o	o	A	A	o	o	o	o	o	o	o
22	Female	40-49	o	o	o	o	o	o	A	x	x	A	o	o	o	o	o	o
24	Female	60+	x	x	x	x	o	o	A	x	x	-	A	-	o	x	x	x
29	Female	55-64	o	o	o	o	o	A	x	x	x	x	A	o	o	x	o	o
40	Female	22-28	o	o	o	o	o	o	A	A	A	A	A	o	o	o	o	o
42	Female	60+	o	o	o	o	o	o	A	x	-	A	o	o	o	o	o	o
46	Female	40-49	o	o	o	o	o	o	o	A	A	A	o	o	o	o	o	o
<i>Greenville Locality B:</i>																		
95-3 <sup>2</sup>	Female	40-49	c	o	o	o	--	--	x	x	x	x	-	o	-	o	o	c
Bx0801	Male	20-34	m	m	m	o	o	o	A	A	A	A	o	o	o	o	o	o
Bx0802	Male	25-40	o	o	o	o	o	o	A	--	--	--	A	o	o	o	o	o
Bx10 <sup>2,3</sup>	Female	35-54	x	x	x	x	--	--	x	x	x	x	-	o	x	x	x	x
Bx1301 <sup>2</sup>	Female	35+	o	o	-	o	--	--	x	x	x	-	o	o	o	o	o	o
Bx1602	Male	20-34	o	o	o	o	o	A	A	A	-	A	A	o	o	o	o	o

<sup>1</sup> Tooth key: A = tooth abraded by labret; o = tooth present and unaffected by labret; d = tooth damaged and unobservable for labret wear; x = tooth missing, alveolus fully resorbed; z = tooth missing, alveolus partly resorbed; c = tooth missing congenitally; - = tooth missing post-mortem, alveolus intact; m = dental alveolus missing.

<sup>2</sup> Possible labret use indicated by ante mortem loss of anterior teeth (see text).

<sup>3</sup> The skeleton was accompanied by a large stone labret. Where the anterior teeth were missing, the resorbed anterior alveolar bone exhibited a near razor-sharp occlusal edge (Fig. XI-2).

Table XI-3. Individuals with dental labret wear or possibly related anterior tooth loss in mandibles, or accompanied by a labret, in the Prince Rupert Harbour sites

Burial	Sex	Age in yrs.	Right teeth <sup>1</sup>							Left teeth <sup>1</sup>								
			M3	M2	M1	P2	P1	C	I2	I1	I1	I2	C	P1	P2	M1	M2	M3
<i>Garden Island (GbTo-23):</i>																		
125	Male	22-28	o	m	m	o	o	A	--	--	--	A	A	A	o	o	o	o
178	Male	30-39	o	o	o	o	o	o	o	A	A	o	o	o	o	o	o	o
183 <sup>2</sup>	Male	30-39	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
197	Female	30-39	x	o	o	o	o	o	A	m	m	-	o	o	o	o	o	o
198	Male	45-54	z	x	o	o	o	o	A	A	A	-	o	o	o	o	o	z
199	Male	45-49	o	o	o	d	o	A	A	A	A	A	A	o	d	o	o	o
<i>Dodge Island (GbTo-18):</i>																		
149	Female	22-28	o	o	o	o	o	o	A	A	A	A	o	o	-	o	o	o
166 <sup>2</sup>	Male	20-24	o	o	o	o	o	o	o	--	--	--	o	o	o	o	o	o
170	Male	25-29	o	o	o	o	o	o	o	A	-	A	o	o	o	o	o	o
<i>Boardwalk (GbTo-31):</i>																		
312	Male	35-44	o	o	o	o	o	o	-	A	--	--	--	o	o	o	o	o
319	Male	40-49	o	o	o	o	o	o	A	A	A	o	o	o	o	o	o	o
333	Male	30-39	m	o	o	o	o	o	A	--	--	--	--	--	--	--	--	m
347	Male	16-18	o	o	o	o	o	o	o	c	A	o	o	o	-	o	o	o
364	Male	50-59	o	o	x	x	-	o	A	A	A	A	o	o	o	o	-	o
380/370 <sup>2</sup>	Male	35-44	o	o	o	o	o	A	A	-	x	-	A	o	o	o	o	o
382	Male	22-28	o	o	o	o	o	o	o	A	A	o	o	o	o	o	o	o
412 <sup>3</sup>	Female	35-44	--	--	o	o	o	z	x	x	x	x	o	o	o	-	o	-
525 <sup>2</sup>	Male	30-39	o	o	o	o	o	A	o	A	A	o	o	o	o	o	o	z
<i>Lachane (GbTo-33):</i>																		
459	Female	60+	--	--	z	o	o	o	z	A	x	--	--	--	o	--	--	o
475	Male	35-44	o	o	o	o	o	--	--	A	A	A	o	o	o	z	o	o
495	Male	30-39	o	o	o	o	o	o	-	A	-	o	o	o	o	o	o	o
502/503	Male	45-54	o	o	o	o	o	o	o	A	m	o	o	o	o	o	o	o
892	Male	40-44	o	o	o	o	o	o	o	A	A	o	o	o	o	o	z	m
<i>Baldwin (GbTo-36):</i>																		
505 <sup>2</sup>	Male	35-44	x	x	z	o	o	A	x	x	x	x	A	z	o	z	z	x

<sup>1</sup> Tooth key: A = tooth abraded by labret; o = tooth present and unaffected by labret; d = tooth damaged and unobservable for labret wear; x = tooth missing, alveolus fully resorbed; z = tooth missing, alveolus partly resorbed; c = tooth missing congenitally; - = tooth missing, alveolus intact; m = dental alveolus missing.

<sup>2</sup> These burials were accompanied by labrets (details in MacDonald and Cybulski 2001:11-12). No mandible was with the skeleton labelled 183 which was found disturbed. Burial 166 was articulated in situ; the labret was not with the facial skeleton but near the right hand. Three intermingled skeletal individuals made up the disturbed remains labelled 370 and 380. There was only one mandible present, labelled as 380. A "zoomorphic" labret with Burial 505 was reportedly near the mandible. In the case of 525, the labret was in place against the facial skeleton.

<sup>3</sup> Possible labret use was indicated by ante mortem loss of anterior teeth and a straight sharp occlusal edge in the resorbed alveolar bone.

None of 17 individuals recovered in 1986 which I examined exhibited labret wear. Weeks (1985) reported three 1984 burials as associated with labrets but mentioned nothing about possible tooth wear. I examined the jaws in June, 2009, and found no evidence for labret wear although the primary candidate teeth, i.e., the incisors, were largely missing and, therefore, unstudyable (Table XI-1). Peculiar wear patterns in the remaining anterior teeth were likely from use of the teeth as tools.

Ante mortem loss of lower anterior teeth probably indicates labret use in some cases. I have argued this point elsewhere for the Locality A population at Greenville (Cybulski 1992:67-69) where five individuals exhibited teeth scarred from labret use and ante mortem loss at other anterior positions (see Table XI-2). A sixth person featured ante mortem loss of all four incisors and the right canine.

Incisors, especially central incisors, are the most commonly abraded teeth (Table XI-4). One might conclude that their alveolar sites are most readily susceptible to gingivitis encouraged by bacteria trapped by a labret. Gingivitis (i.e., inflammation and infection of the gums) leads to periodontal disease, which weakens the bone, and tooth loss. It would also seem that once the teeth were lost, the presence of a labret might further have contributed to alveolar bone resorption (Leichter and Monteith 2006). Figure XI-2 shows a jaw from Locality B which exhibited reduced bone anteriorly and a straight, near razor-sharp alveolar edge. This jaw (Bx10 in Table XI-2) had been collected in 2006 and boxed with a well represented skeleton and a stone labret. The labret was notably large, up to 58 mm in diameter. It was one of two similar pieces found in Locality B. The other, up to 64 mm in diameter, had been collected in 1995 with bones labelled “Burials 1 and 2 Combined,” a disturbed assemblage representing at least three individuals but not including relevant mandibular parts (Cybulski 1996).

The incisor loss in Burial 86-19 from Pender Canal may also have been a consequence of labret use but this was not the case for Burial 84-31 judging from the configuration of the alveolar bone (Table XI-1). Like Bx 10 from Greenville Locality B, Burial 412 from the Prince Rupert Harbour Boardwalk site (GbTo 31) exhibited a straight, near razor-sharp alveolar edge where all four lower incisors were missing ante mortem. It is detailed in Table XI- 3 as a possible labret-wearer.

In another Boardwalk site jaw, Burial 401, ante mortem loss of anterior teeth was likely a product of injury and unrelated to the use of a labret. The jaw exhibited a healed fracture through the symphysis and the tooth loss was asymmetrical. The left central incisor through right first premolar were missing ante mortem while the left lateral incisor and canine remained intact. The anterior body of the mandible including the alveolar bone was notably thick, unlike the antero-posteriorly thinned appearance obvious in the cases likely due to labret use. The individual was also much younger at death than most of those with ante mortem loss likely due to labret use. Hence, not all ante mortem losses of anterior teeth need necessarily be the product of labret use in associated populations.

Table XI-4. Labret abrasion in studied sample (all sites) by tooth type or position

<u>Tooth</u>	<u>Rt PM1</u>	<u>Rt C</u>	<u>Rt I2</u>	<u>Rt I1</u>	<u>Lt I1</u>	<u>Lt I2</u>	<u>Lt C</u>	<u>Lt P1</u>
Unaffected	221	182	153	100	91	154	197	217
Abraded <sup>1</sup>	2	17	26	27	20	18	15	1
Per cent abraded	0.9	8.5	14.5	21.3	18.0	10.5	7.1	0.5
Lost ante mortem	2	4	11	24	30	9	1	2
Lost post-mortem <sup>2</sup>	28	42	51	74	83	53	34	33

<sup>1</sup> This category includes possibly abraded teeth (see Tables XI-1-3).

<sup>2</sup> This category includes only intact sockets.



Figure XI-2. Anterior tooth loss as a probable consequence of labret wear is shown in the mandible of Bx 10 from Greenville Locality B. Note the thinned and sharp resorbed alveolar edge. A portion of the labret that accompanied the mandible is also visible. Photo by the author, courtesy of the Canadian Museum of Civilization.

#### Age at death, sex, and population frequencies

It was not always older people who exhibited labret wear. The youngest I recorded had developmental ages of 15-17 years (Burial 46 of the 1975 Crescent Beach recovery) and 16-18 years (Burial 347 from the Boardwalk site). In addition, there were six affected individuals developmentally comparable to modern people in their 20s. The clear majority of individuals with abraded teeth, however, were middle-aged or older (31 of 51 affected jaws).

From Tables XI-1 through XI-3 it is evident that labret wear occurred in both male and female skeletons. There were, however, some interesting variations by region and site samples. Owing to the nature of labret wear, its variable affect on individual teeth, and the fact that different tooth positions may be inconsistently observed for presence and absence, it is difficult to produce exact statistics for occurrences among individuals. While the influence on specific teeth may be recorded precisely (e.g., Table XI-4), this says little about statistical occurrences among individuals, many of whom would be left out if only a specific tooth was considered such as a left central incisor, the apparently most commonly affected tooth in this set.

An attempt to provide statistical data by biological sex is shown in Table XI-5. The affected from my observations include those individuals with at least one abraded tooth, with teeth possibly abraded, and those deemed to have lost teeth ante mortem as a consequence of wearing a labret. The numbers in the last two categories are enclosed in parentheses. People not considered to have been affected and, thus, also included in the sample sizes for statistical purposes were individuals in which at least three anterior teeth could be observed for labret wear. The majority (58 per cent) were represented by five or six unaffected teeth and an additional 24 per cent by at least four unaffected anterior teeth. For Prince Rupert Harbour, I have included data for each of the archaeological sites involved in the sampling as well as data for the total series.

Table XI-5. Sample distributions of individuals with labret wear by biological sex<sup>1</sup>

Sample	<u>Female</u>		<u>Male</u>	
	Affected/N	Per cent	Affected/N	Per cent
<i>South Coast sites:</i>				
Crescent Beach	5(1)/14	42.9	8/18	44.4
Pender Canal	1(1)/10	20.0	1/11	9.1
Tsawwassen <sup>2</sup>	0/21	0.0	2/18	11.1
Qualicum Beach <sup>3</sup>	1/5	20.0	0/2	0.0
Hill Site <sup>4</sup>	1(?)	??	0	??
<i>North Coast sites:</i>				
Prince Rupert Harbour	3(1)/50	8.0	18/87	20.7
-Boardwalk	(1)/27	3.7	8/40	20.0
-Lachane	1/7	14.3	4/23	17.4
-Garden Island	1/6	16.7	4/94	4.4
-Dodge Island	1/4	25.0	1/3	33.3
-Baldwin	0/2	0.0	1/10	10.0
-Parizeau Point	0/3	0.0	na	na
-Ridley Island	0/1	0.0	0/2	0.0
Greenville Locality A	9(1)/11	90.9	0/12	0.0
Greenville Locality B	0(3)/3	100.0	3/3	100.0

<sup>1</sup> Numbers tightly enclosed by parentheses identify individuals with *possible* abrasion facets in the case of Crescent Beach and ante mortem tooth loss as a probable consequence of labret use in the case of all other samples,.

<sup>2</sup> This information is from Arcas Consulting Archeologists Ltd. (Curtin 1991:82); statistics were not reported but I examined details given in their Appendix I to arrive at these figures (Curtin 1991:135-312).

<sup>3</sup> This information is from A. Hickok, pers. comm. June, 2009 (see Willows, Hickok and Wigen 2008).

<sup>4</sup> This information is from Hall and Haggarty 1981:80 (see also text for explanation of biological sex).

Also included in the table are data from three other South Coast archaeological sites that have been reported in the literature to include individuals with labret wear. The statistics shown for one of them, Tsawwassen, I calculated from details on individual burials and skeletons that were reported in an appendix (Curtin 1991:135-312). It was not possible to do the same for the Hill site, DfRu 4 (Hall and Haggarty 1981).<sup>5</sup> In each of these cases, I am assuming that the interpretations of labret wear were valid (see previous discussion concerning White Rock). In the case of Qualicum Beach (DiSc 26), the lone individual occurrence was clearly evident photographically and statistics were provided (Willows, Hickok, and Wigen 2008; A. Hickok, pers. comm., July, 2009).

At best, the information portrayed by the data can only be considered an approximation of reality since some individuals in the site samples could not be included. Essentially, the data suggest differences between the north and south coasts, and intraregional differences for the north coast. While it would certainly be helpful to have larger multiple site samples for the south coast, it appears that the sexes may have been equally involved or nearly so. Crescent Beach is especially noteworthy since the sample sizes are relatively large and the frequencies of involved females and males are substantial.

A caveat for the Hill site inclusion is that the individual identified with labret wear was not formally identified by the authors as to sex. However, the individual in question, "Burial 6," was considered to be part of a cluster of two "greatly disturbed" burials that included the fragmented and apparently incomplete

remains of four individuals, one of which was an infant. The authors wrote that the infant remains were possibly associated with Burial 6 and that both individuals “died during or as a result of the infant’s birth,” the implication being that Burial 6 was a female of child-bearing age (Hall and Haggarty 1981:75). The authors assigned Burial 6 an age at death of 16-19 years.

Overall, the frequencies of affected males and females for the south coast, including the presumed female recognition of the affected Hill site individual, were 22.4 and 19.6 per cent respectively. The sexual balance tends to be preserved, or even enhanced when consideration is given to those burials reportedly associated with labrets but not necessarily showing dental wear. Labrets were reportedly associated with a female and two suspected females at Pender Canal (DeRt 2) as indicated in Table XI-1, while at the Hill site, labrets were reportedly associated with three males.

Although it appears that south coast men and women had an equal chance for labret use, this was not the case for the north coast. Here, affected males outnumbered females at Prince Rupert Harbour and all actual artifact associations were with deceased males. The opposite was clearly the case at Greenville on the Nass River. These apparent intraregional differences may reflect patterns of temporal change and are discussed in a later section.

#### “Squared-off” dental arcades

Abrasive scars on teeth may not be the only osteological indicators of labret use in archaeological samples of earlier populations. In the report on the human osteology of the Tsawwassen site (DgRs 2), the Arcas Consulting physical anthropologist, A. Joanne Curtin, identified eight individuals which she felt could have worn labrets without there being evidence for tooth abrasion facets (Curtin 1991:80-83). The tell-tale sign in those instances was a “. . . mandibular dental arch with a squared-off appearance anteriorly, with the incisors and canines aligned in a more-or-less straight row . . . “. Two presumed examples were shown in photographs (Figures 18 and 19 on page 80 of the 1991 Arcas report). Since none of the involved teeth exhibited abrasion facets from a labret, Curtin hypothesized that perhaps the people wore labrets made of a softer material than stone in the form of wood or soft shell. She wrote that “. . . the normal curvature of the dental arch was altered as a result of repeated contact with a relatively unyielding surface, such as an habitually-worn labret.” (Curtin 1991:83).

While researching my doctoral dissertation on Northwest Coast cranial morphology in the Field Museum of Natural History, Chicago (Cybulski 1975), I also recorded what I felt to be significant anomalies and pathologies in the skeletal collection. Three relevant photographs I took are shown here as Figures XI-3a, b, and c. Each is a superior (occlusal) view of a mandibular dental arcade.

Figure XI-3a is an adult mandible with an apparently normal, rounded anterior dental arch. In Figure XI-3b, the incisors appear to have been shifted (pushed?) lingually and the anterior dental arch effectively “squared-off.” There is some buccal displacement of the first premolars, perhaps a consequence of some distal shifting of the canines.

At the time I studied and photographed the jaw, I didn’t quite know what to make of the altered tooth positions other than to attribute them to tooth crowding, a not infrequent finding in recent *Homo sapiens* (Hillson 1996:112). Later in my data collection, I encountered a mandible which had approximately the same anterior dental configuration as that shown in Figure XI-3b. In this case, however, there was a wooden labret in the collection tray which seemed to perfectly fit the apparently altered anterior dental arch as shown in Figure XI-3c.

The orientation of the labret is different from that usually illustrated for Northwest Coast wearers where the oval or circular flange or plate rather than the grooved, pulley-like circumference engages the teeth (e.g., Figure 4 in Cybulski 1974: 34; Figure 1 in Keddie 1981: 59; Figure 6 in Keddie 1981: 65). In



Figure XI-3. Normal and 'squared-off jaws' (see text) from the collections of the Field Museum of Natural History, Chicago: a. dental arcade with normal anterior curvature (Cumshewa, Haida Gwaii); b. dental arcade with lingually shifted incisors, buccally shifted first premolars, and probable distal shifting of canines (Ninstints, Haida Gwaii); c. dental arcade with changes similar to 'b' and accompanying labret made of wood (Old Tongass, Alaska). Photos by author, courtesy of the Canadian Museum of Civilization.

Figure XI-3c, the flanges or plates of the labret are directed superiorly and inferiorly. This wearer orientation is not unknown for the Northwest Coast; it has been illustrated for the ill-defined Northwest Coast “Nayas” by the artist George Catlin (Figures 1, 2 and 3 in Moss 1999: 36-38).

According to the Field Museum catalog, the jaw with the labret belonged to a labelled Tlingit skeleton from Old Tongass, Alaska (catalog #40956). I assigned the skeleton as female with an age at death greater than 50 years. The jaw in Figure XI-3b was part of a skeleton from the Khunghit Haida village of Ninstints on Anthony Island, Queen Charlotte Islands (Haida Gwaii) (catalog #40910). This skeleton also exhibited female characteristics and developmental criteria commensurate with an age greater than 50 years.

Although it cannot be proven with the data at hand (see below), it is plausible that the anterior teeth in the two jaws were “squared-off” by the use of a labret. The two skeletons were collected from the northern Northwest Coast. According to museum records, all of the remains which I studied for the dissertation were collected from historical localities and gravesites, and some were accompanied by historical, European made artifacts (Cybulski 1975). None of the remains I studied at the time from the central and southern coasts of British Columbia, including mainland and Vancouver Island localities, had jaws with similarly “squared-off” anterior dental arches. As noted earlier in this chapter, only northern Northwest Coast groups were reported to have made use of labrets in the contact or historic period.

No statistics can be provided on the occurrences of “squared-off” jaws in the north coast Field Museum collection. I did examine the entire “Haida” skeletal collection but did not systematically record the presence and absence of “squared-off” dental arcades since my focus was on cranial morphology. There was, however, one other individual for which I recorded a possible squared-off jaw. In this instance, that of an adult female from North (Langara) Island (catalog #40845), I wrote that the anterior dental arcade was “flat.”

For the “squared-off” jaw phenomenon to hold relevance for the archaeological interpretation of labret use on the Northwest Coast, it would be necessary to know the normal range of variation in curvature of the anterior dental arcade in relevant samples. The illustrated Tsawwassen examples do not appear as demonstrative as the examples shown in Figures XI-3b and XI-3c. In particular, the configuration of the anterior dental arch in Curtin’s Figure 19 (i.e., Burial D-7a) does not look to me any different than the configuration of the jaw shown in my Figure XI-3a which I regarded as normal. It cannot, in my estimation, be considered flat or squared-off. What is needed is a systematic study of a skeletal collection such as the Field Museum Haida to differentiate the normal from the unusual in the light of potential labret influences. Unfortunately, that collection is no longer available for study as it was repatriated for reburial on Haida Gwaii in 2003 (Skidegate Repatriation & Cultural Committee 2009).

Time is of the essence

Current archaeological thought is that the use of labrets on the south coast of British Columbia (the central Northwest Coast) began about 5000 RCYBP but did not persist beyond about 2000 RCYBP (La Salle 2008). It was around that time that head shape modification became dominant as a possible group or status marker, having earlier made its appearance in the archaeological record at the Locarno Beach – Marpole phases transition (Cybulski 1994:78, 2006:536-538). Some have suggested an interrelationship of the two cultural phenomena. Is the time frame and possible association still acceptable?

*The basics*

Labret use on the south coast of British Columbia has usually been associated with the Locarno Beach culture phase (3300-3500 to 2500 RCYBP) although its apparent persistence into the subsequent Marpole phase (2500 to 1500/1100 RCYBP) has been recognized by the presence of artifacts at some sites (Matson and Coupland 1995:201).

Roy Carlson reported a collagen-based radiocarbon date of  $5170 \pm 220$  years BP (RIDDL-100) for Burial 84-12 from Pender Canal (DeRt 2; Carlson and others 1986; Carlson and Hobler 1993). This would make it the oldest known burial with labret wear on the south coast of British Columbia even with the large standard error at two sigmas. The date places Burial 84-12 well within Fladmark's (1986) Early Developmental Stage of British Columbia coast prehistory or Ames and Maschner's (1999) Early Pacific (5500-3500 BP) and, minimally, 1000 years in advance of the Locarno Beach phase which is part of the Middle Pacific or Middle Developmental Stage (3500-1500 BP).

As far as is known, none of the other Pender Canal or Crescent Beach skeletal remains with labret wear date as early as Burial 84-12. Percy (1974) assigned almost all of the Crescent Beach burials recovered in 1972 to the Locarno Beach phase. A lone exception in terms of the individuals affected with labret wear was Burial 16 which Percy assigned to the subsequent Marpole phase (ca. 2500-1500 years RCYBP).

Whether Burial 16 did belong to a later period than the other 1972 Crescent Beach burials may be questioned. Percy (1974: 36) stated that the deposits in which Burial 16 was found "... possessed (only) slight indications of being intrusive from upper levels..." It may also be noted that the skull shape of Burial 16 showed no evidence of having been artificially modified, a common finding for Marpole period burials throughout the Strait of Georgia region (Beattie 1981).

From his osteological studies of various Strait of Georgia sites, Owen Beattie (1985) concluded that intentional head/skull shape modification, well known historically on the south coast of British Columbia, was rare or absent as a cultural practice before about 2500 radiocarbon years ago. Among Percy's 1972 Locarno Beach phase burials affected with dental labret abrasion, Burial 1 showed slight lambdoidal (posterior) compression of the skull and Burial 5 definite lambdoidal compression. Such lambdoidal compression, however, may not have been from intentional head-shaping but a by-product of ordinary cradling practices which led to positional molding of baby's head. The appearance is quite different and significantly less apparent than the "bilateral" or "bifronto-lambdoidal" type of intentional skull shape modification which has been commonly associated with the Marpole culture phase (Beattie 1981:46, 49b-51b).

The skull shape of Burial 8, another Crescent Beach individual with labret wear, was not modified. For Burials 3, 6, and 9b, the skulls were missing or insufficiently complete for study.

The skull shape of my number 26 in Table XI-1, possibly also from the 1972 excavation, was not modified. Numbers 41, 45, and 46 were represented only by mandibles. Skull parts with Burial 1 of the 1983-84 field recovery period showed normal contours and the skull of Burial 20 was definitely not modified. Conaty and Curtin (1984) reported "no evidence of artificial deformation" in Burial 1 and "skull appears undeformed except for slight flattening around lambda" for Burial 20. The "slight flattening around lambda" in that case appears to be a normal morphological variation in coastal British Columbia skulls regardless of whether they have been intentionally or unintentionally modified. Skull parts preserved with Burial 2 were insufficiently representative to judge whether any skull shape modification had occurred.

It may well be that all of the Crescent Beach dentitions with labret abrasion were associated with the Locarno Beach phase component of the site. The equivocal stratigraphic information for Percy's Burial 16 and the absence of cranial shape modification suggests that it, too, could have belonged to the Locarno Beach phase. Of course, one cannot be sure of the inclusive statement without recourse to collagen-based radiocarbon dating of the materials, particularly those disturbed remains out of depositional context, but there would seem to be very little evidence for dental labret abrasion in south coast skeletons dating later than the Locarno Beach phase. Both Tsawwassen examples were reportedly associated with the St. Mungo component of the site which preceded the Locarno Beach phase at 4500-3300 RCYBP (Curtin 1991:82) (but see later in this chapter and in Chapter XII by Matson where the marine reservoir effect has been taken into

account).

Another possible Marpole-related example is the Hill site skeleton, Burial 6. Hall and Haggarty (1981) assigned this site to the Marpole culture phase, duly noting, however, similarities between the site's cultural content and the Locarno Beach phase. While no radiocarbon dates were published, it is quite possible that portions of the Hill site, with its artifact complement of labrets and Burial 6 with labret abrasion, belonged to the Old Musqueam subphase culture, an early Marpole subcomponent difficult to distinguish from Locarno Beach (Matson 1989:15).

#### *Radiocarbon dates and the marine reservoir effect*

On the basis of radiocarbon dates, the human burial complex at Prince Rupert Harbour has generally been accepted to represent the Middle Pacific period of Northwest Coast prehistory or, as it has been identified for Prince Rupert Harbour alone, Period II (Figure 11 in Cybulski 1992:39; MacDonald and Cybulski 2001). Many of the dates for these sites are collagen-based and have commonly been considered an accurate reflection of reality when calibrated for atmospheric fluctuations in  $^{14}\text{C}$ . However, a marine reservoir influence has been increasingly noted for human bone collagen dates in other areas (Arneborg et al. 1999; Yoneda et al. 2002) and this may also be the case for Pacific Northwest humans who subsisted largely on marine diets (Richards et al. 2007).

From the Boardwalk site at Prince Rupert Harbour, I tested the marine reservoir influence on the radiocarbon ages of two humans who were not associated with labrets or dental labret wear (Cybulski, in preparation). They were associated in burial with pegs made of cedar enclosed in rolled copper, together thought to be the remnants of rod armour (i.e., identified as the warrior's cache and Burial 521 in MacDonald and Cybulski 2001:8-12). The conventional radiocarbon dates differed by about 500 years between the pegs and associated humans, the latter reading older. When corrected for a local marine reservoir effect, the calibrated age ranges from the human bone were the same or very close to the calibrated AMS age ranges from the cedar pegs. I used the CALIB 5.01 calibration program and related Marine Reservoir Correction Database (Stuiver, Reimer, and Reimer 2005).

The resultant median probability estimates differed by 510 and 620 years between the calibrated collagen ages with and without the marine reservoir correction for the two tested sets of human remains. The corrections made the ages younger. A third test was applied to a collagen-dated skeleton from Qualicum Beach (DiSc 26; Beta-240968) on the south coast. In this case, a nearby sample of marine shell had been dated and adjusted for the local reservoir correction (Beta-230218; information supplied by A. Hickok, pers. comm. 2008, courtesy of I.R. Wilson Consultants, Ltd.). When corrected for the marine reservoir effect, the median probability estimate for the bone collagen age was virtually the same as the corrected marine shell date. In this instance, the calibrated difference between the collagen date with and without utilization of the marine reservoir correction was 790 years for the median probability estimates.

I subsequently calibrated the collagen dates from other skeletal samples associated with either dental labret wear and (or) associated labrets using the appropriate local marine reservoir corrections and reported carbon isotope signatures.<sup>6</sup> The results for all relevant samples are graphically illustrated in Figure XI-4 and detailed for the South Coast samples in Table XI-6. Since a collagen date was available for one of the Blue Jackets Creek skeletons with lateral labret wear, I also included it in the comparison. None of three Namu skeletons with lateral labret wear appear to have been dated directly. However, they appear to be contemporaneous with the Blue Jackets Creek manifestations on the basis of stratigraphic associations and other radiocarbon-dated materials (Curtin 1984).

Table XI-6. Select calibrated South Coast radiocarbon dates corrected for marine reservoir effect.

Sample (Burial)	Labret influence	Measured 14C age	Conventional 14C age	SD	14C lab #	Delta R years	Delta R SD years	Percentage of marine carbon	2 $\sigma$ extreme cal BP age range	Median probability estimate
<b>Pender Canal</b>										
84-12	Tooth wear	5170	5360	220	RIDDL-100	384	39	86.25	5890-4850	5400
84-31	Associated artifact	4320	4530	220	RIDDL-96	384	39	98.90	4810-3650	4220
84-33	“ “	4430	4630	170	RIDDL-104	384	39	95.45	4830-3920	4390
<b>Tsawwassen</b>										
TS D-16	Tooth wear	3800	3990	60	Beta-38354	400	28	86.25	3800-3440	3600
TS D-48	“ “	3500	3690	60	Beta-39228	400	28	86.25	3410-3070	3260
TS B-01	Squared arch	1670	1860	100	Beta-38348	400	28	86.25	1300-910	1120
TS B-03	“ “	1520	1710	70	Beta-38349	400	28	86.25	1140-790	970
TS D-39	“ “	1410	1600	60	Beta-39229	400	28	86.25	970-700	850
TS D-23	“ “	1550	1740	60	Beta-39231	400	28	86.25	1170-860	1000
TS D-07a	“ “	1500	1690	60	Beta-40986	400	28	86.25	1090-780	940
TS G-07	“ “	1280	1470	70	Beta-40987	400	28	86.25	900-620	730

It is important to note that the results shown in Figure XI-4 are in BP years calibrated for both the marine reservoir effect and atmospheric fluctuations in 14C. Just as the latter is not constant through time, so the former will not be constant. That is, there is no local constant to be subtracted for the marine reservoir effect which generally makes uncalibrated marine influenced dates older than their land-locked counterparts. In Figure XI-4, I have also illustrated the temporal boundaries discussed in this paper (phases for the south coast and periods or cultural development stages for the whole coast) to give some orientation to the dated skeletal remains. Those temporal boundaries have been developed over the years using radiocarbon ages uncalibrated for atmospheric fluctuations in 14C.

*Overall findings in light of the marine reservoir effect*

Each of the calibrated ages shown in Figure XI-4 is represented by its median probability estimate and the extremes of its two-sigma range. For the south coast, the results support “the basics” reported above, at least for the datable individuals with dental labret wear or those associated with labrets at Pender Canal. There are no dated remains more recent than the Locarno Beach phase with the obvious exception of those individuals with squared-off jaws which have been proposed to reflect the use of soft labrets at Tsawwassen (Curtin 1991). The six dated individuals all fit closely within the Late Pacific period or what would be called the Gulf of Georgia phase in local chronology.

As noted earlier, systematic study is needed to determine the range of normal variation in the form of the dental arcade in relevant archaeological samples before any conclusive statements can be made about noticeable alterations from the use of “soft” labrets. The two Tsawwassen examples illustrated in the Arcas volume (Curtin 1991) do not resemble the more demonstrative remodeled dental arcades illustrated in this paper by the Tlingit and Haida jaws, one of which was accompanied by a labret made of wood. Indeed, one of the illustrated Tsawwassen examples looked no different than the normal dental arch shown here as Figure XI-3a. Perhaps it was a borderline example.

Unlike the north coast experience, there has been no other, tangible evidence for labret use on the south coast after 2000 (uncorrected, uncalibrated) years RCYBP. Of course, softer materials such as wood may not be expected to survive except, possibly, in so-called “wet sites” where organic materials have

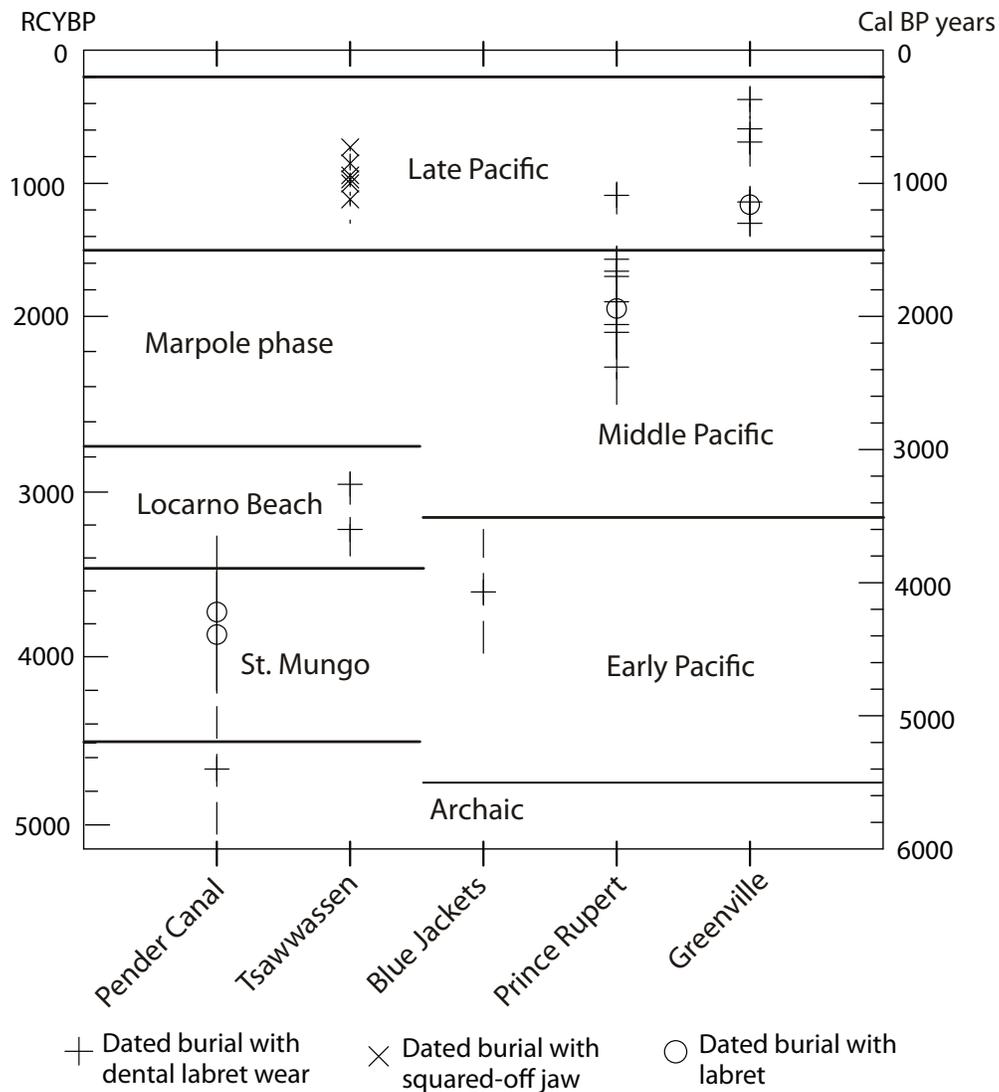


Figure XI-4. Radiocarbon ages of skeletons with dental labret wear or associated labrets, corrected for the marine reservoir effect – median probability estimates and extremes of the 2 sigma ranges are shown.

preserved. Two labrets made of wood were recovered from a waterlogged deposit at the Prince Rupert Harbour site of Lachane (GbTo 33) that produced dates ranging from  $2470 \pm 90$  to  $1630 \pm 100$  RYBP (Inglis 1976: 177, 179).<sup>7</sup> Although several wet sites have been excavated on the Central Northwest Coast (e.g., Musqueam Northeast in the Fraser Delta and Hoko River and Ozette in the state of Washington [see Matson and Coupland 1995 for summary discussions of these sites]), none have revealed labrets made of wood (D. Croes, pers. comm., 30 July 2009).

All but one of the the dated Prince Rupert Harbour remains shown in Figure XI-4 fall within the Middle Pacific period when corrected for the marine reservoir effect. The exception demonstrates contemporaneity with the skeletal remains from Locality B at Greenville. This latter assemblage of human remains is of interest from several perspectives. I dated four different sets of human remains from this locality and all four dates were closely spaced with conventional values that clearly separated them from the later Locality A remains by an average of 640 years. Reading the uncalibrated (conventional) dates as reported by the laboratory ( $1850$  to  $1980$  RYBP  $\pm 40$  in each case (Beta-231731, Beta-233320, Beta-233321,

and Beta-233322), my inclination was to assign the Locality B remains to the Middle Pacific, making them contemporaneous with the Prince Rupert Harbour burials. While now in the Late Pacific when calibrated and corrected, the remains are still contemporaneous with the later Prince Rupert Harbour burials. When calibrated and corrected for the marine reservoir effect, 30 of 77 dated Prince Rupert Harbour burials fall in the Late Pacific period, 45 in the Middle Pacific and two in the Early Pacific.

It is now evident that men wore labrets on the north coast beyond the Prince Rupert Harbour region. Three such men have been identified in Greenville Locality B out of six individuals with dental labret related phenomena. Previously, only females were identified as labret wearers at Greenville based on the Locality A excavations carried out early in the 1980s. On present evidence, the shift to apparent female exclusivity on the north coast took place at about 1000 calendar years ago, after the Late Pacific period was well underway.

### Sex / gender, social organization, and status

The ethnographic and ethnohistoric literature relating to labret use emphasizes that only women wore labrets on the northern Northwest Coast. The only deviation from this apparent dictum is in the papers of George Catlin who in the 1850s illustrated “two, possibly three” men, as well as “three women” wearing labrets at a locality he attributed to the “Nayas” (Moss 1999: 45, 54). Precisely who the Nayas were has been subject to debate since Catlin did not pinpoint the location of the village he visited or give coherent, potentially decipherable clues. From his writings, Madonna Moss deduced that the Nayas Catlin visited may have been located on the central mainland coast of British Columbia, within the territory of the Heiltsuk (Bella Bella) or Oowekeeno, or further north in the territory of the Coast Tsimshian or Haisla (Moss 1999: 44). Yet, there is a footnote in one of his works that makes reference to “a Nayas chief, of Queen Charlottes Island” (Catlin 1868: 101) which one might presume refers to territory of the Haida. Quite possibly, as Moss explains, “Nayas” was a generic northern Northwest Coast tribal label used by Catlin in a manner similar to that of other 19th century writers when they spoke of the “Nass” tribes (Moss 1999: 43).

Whatever their location (or *its* location since only one village was posted by Catlin for the labret wearers), it is clear that the historic representation of labret use by men here was an aberration. Catlin wrote that the practice belonged chiefly to women and that the male involvement he painted was “eccentric” (Catlin 1868: 138; Moss 1999: 44-45). In fact, one would be hard pressed to find another 19th century writer who did not flatly state or imply that the practice was the exclusive domain of women as a cultural practice (e.g., Niblack 1890: 256; Mackenzie 1891: 54-55).

From the dental evidence and even from the occasional burial associations, it is clear that the use of labrets by men in the prehistoric past was not an aberration. Excluding those with “squared-off” jaws, thirty-two of the 63 involved individuals in the present study were identified as male and at least nine archaeological sites were represented.

There has been much debate as to the significance of labret use based on historical evidence which might be projected back into the past. Catlin, while noting that it was chiefly the Nayas women who wore labrets also wrote that only a portion of the women used them. Moss (1999) asserts several times in her writings that only non-slave women wore them (see also Niblack 1890). The latter situation might account for the near 100 per cent frequency of apparent wearers at Greenville Locality A, a north coast prehistoric sample that most closely emulates the historical record. Indeed, all of the identified adult females from that excavation might have worn labrets (Cybulski 1992: 67-73) and only free women were buried in this particular cemetery.

It is also possible that status played a role at Greenville Locality A. In addition to the very high percentage of females with labret wear or anterior tooth loss, there were burial-related food offerings, one

or possibly two instances of grave offerings in the form of dog skulls, and details of site construction that suggested that Greenville Locality A could have been restricted to high status people as opposed to commoners (Cybulski 1992). In any event, it is unlikely that slaves were buried there. The same might be said of Locality B where all six analyzable mandibles exhibited dental labret wear or related tooth loss but at an earlier time level involving both sexes.

Partly based on Percy's (1974) tentative record of labret wear in the 1972 Crescent Beach materials, Matson (1989:10) touched on the possibility that individuals with "ascribed" or "achieved" status might be recognized among the site's burials. While he did not explain or elaborate on the concept, presumably, the first type of status would be attained through heredity via kinship, while the second would be attained through acquired wealth, methodological vehicles drawn from the Northwest Coast ethnographic record.

Among the Coast Tsimshian and Nisgaa, in whose territories the Prince Rupert Harbour and Greenville sites are located, social units were based on matrilineal descent (Halpin and Seguin 1990). Among the central Coast Salish, in whose territories Crescent Beach, Pender Canal, Qualicum Beach, Tsawwassen, and Hill are located, descent was reckoned bilaterally (Suttles 1990). Either sex would expectedly attain ascribed status with equal probability, and there is, essentially, equivalency in the morphological / biological sex distribution of individuals with labret wear.

The Greenville Locality A situation, on the other hand, would fit a model of ascribed status based on matrilineal descent, expected if the site's burial population were ancestral Nisga'a and that, in fact, appears to be the case (Cybulski 1992, 2001). Interestingly, this Tsimshian model would not appear to extend further back in time to Locality B at Greenville or to the Prince Rupert Harbour sites. Does this mean that the people buried in those locations were not ancestral to the Coast Tsimshian? This probably was not the case for Prince Rupert Harbour since biological distance studies based on cranial morphology suggest genetic continuity (Cybulski 2001). Likewise, study of the 1995 Locality B sample at Greenville indicated that it was from the same general population as that of Locality A (Cybulski 1996) and I have no reason to doubt that conclusion from the more recently recovered items. The remains are notably similar morphologically especially in the area of cranial morphology. Possibly, prior to 1000 RCYBP, labrets and labret abrasion scars documented individuals with either ascribed or achieved status. Kenneth Ames (2001: 8) has previously suggested, on the basis of a variety of Prince Rupert Harbour burial data, that male status was a mix of ascribed and achieved, but that female status was entirely ascribed.

#### Labret use and head shaping

Notwithstanding the possible fly in the ointment spawned by the squared-off jaw phenomenon at Tsawwassen, the apparent fact that head shaping came into fashion in the south coast when labret wearing seems to have fallen out of fashion has prompted some archaeologists to conclude an either/or association between the two practices as visible markers of individual status or "high" status (Carlson 1996: 221).

Whether the two cultural practices can be associated in such terms is debatable. Historically and proto-historically, head shaping was widely practiced on the central and southern Northwest Coast from the Bella Bella (Heiltsuk) and Bella Coola (Nuxalk) in the north to the Alsea or Siuslaw in the south (Cybulski 2006: 536-537). Group variations in distinctive styles of head-shaping may very well have identified regional social networks for economic purposes (Cybulski 1994: 78). The practice would not have been a visible marker of individual status but rather one of group affiliation. Most writers agree that within each group, only the children born of slaves did not have their heads shaped. Else, the practice was effectively universal, a finding confirmed by statistical study of skulls from relevant ethnohistorical locations where about 80 per cent show evidence for cranial deformation (Cybulski 2006: 537). On the south coast, that percentage is maintained in the archaeological record from Marpole and later prehistoric times (2006: 538). Only at

Greenville is a similar 'universal' figure maintained among labret wearers. As evident in Table XI-5, significantly fewer people likely wore labrets before head shaping began on the south coast of British Columbia at the Locarno-Marpole transition. It seems clear that in all respects the two practices reveal different observational and, likely, cultural patterns.

## Footnotes

- 1 A comprehensive, illustrated discussion of types of labrets and how they were worn may be found in Keddie (1981).
- 2 All prehistoric sites studied in this paper from the south coast fall within the central Coast Salish region.
- 3 Several graduate theses have since been completed on different aspects of the Pender Canal skeletal remains (e.g., Dale 1994; Strutt 1998).
- 4 I demonstrated my findings at SFU to Prof. Mark Skinner, originally responsible for study of the skeleton, and he agreed with my interpretation.
- 5 The Hill site has also been referenced as Toynbee Beach (LaSalle 2008:30); it is located on Saltspring Island, one of the Gulf Islands (see Figure II-1).
- 6 In most cases, the percentage of marine carbon for each sample was determined by calculating the carbon isotope ratio supplied by the radiocarbon laboratory against a best-estimate background of the distribution of marine and terrestrial faunal remains culled from several coastal archaeological sites. In instances where a sample carbon isotope ratio was not available, a site average derived from other samples was applied. For Tsawwassen, where no carbon isotope ratios were available, a coast-wide average was used.
- 7 Ames (2005:240-241) reported that only one wooden labret was recovered from the Lachane deposits. The two artifacts reported by the excavator, Richard Inglis, are in the collections of the Canadian Museum of Civilization, Gatineau, cataloged as GbTo 33:C-477 and GbTo 33:C-495.