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Evidence of California-Area Abalone Shell in Haida Trade and Culture

N. A. Sloan[†]

ABSTRACT. Abalone (*Haliotis* spp.) shell was a trade commodity in northwestern North American and part of a marine shell trade that also included tusk shell (*Dentalium* spp.) and olive snail (*Olivella* spp.). The occurrence of abalone trade shell in Haida art, language, and family crest usage demonstrates, at a minimum, an appreciable influence of the abalone shell trade in the post-contact era. However, despite archaeological evidence that trade in other shells regionally extends back at least 7,000 years, radiocarbon dating of California-area abalone trade shells excavated from the Haida village of Kiusta in northern Haida Gwaii (Queen Charlotte Islands) reveals them to be post-contact only. Compared to California-area abalone, the poor quality of local northern abalone (*H. kamtschathkana kamtschathkana*) shell may have accounted for their infrequent use. This paper reviews the post-contact abalone shell trade in southern British Columbia and Washington, and offers speculation on its pre-contact manifestation.

RÉSUMÉ. Lescoquilles d'orveau (*Haliotis* spp.) s'échangeaient dans le nord-ouest de l'Amérique du Nord et faisaient partie d'un commerce de coquillages marins qui englobait les dentales (*Dentalium* spp.) et les olives (*Olivella* spp.). La place des coquilles d'orveau dans l'art, la langue et les emblèmes haïdas révèle à tout le moins l'importance considérable de leur commerce après l'arrivée des Européens. Cependant, malgré les documents archéologiques qui montrent que d'autres coquillages marins s'échangeaient dans la région il y a plus de 7 000 ans, la datation au carbone 14 de coquilles d'orveau de la zone californienne

qui ont été exhumées dans le village haïda de Kiusta dans le nord de Haida Gwaii (îles de la Reine-Charlotte) indique qu'on ne les trouve qu'après l'implantation européenne. La qualité inférieure des ormeaux nordiques (*H. kamtschathkana kamtschathkana*) par comparaison aux ormeaux de Californie a peut-être contribué à l'utilisation peu fréquente des premiers. L'article examine le commerce des ormeaux dans le sud de la Colombie-Britannique et dans l'État de Washington après l'arrivée des Européens et propose des hypothèses quant à son existence préalable.

ABALONE (*HALIOTIS* spp.) ARE HERBIVOROUS marine snails that use their large, muscular foot to creep over lower intertidal and shallow subtidal rocky areas where they feed on algae. The nacreous (mother-of-pearl) insides of abalone shells are beautiful—an attribute that attracted many North American indigenous peoples. Indeed, William Sturgis in the early 1800s called Northwest Coast indigenous women's abalone ear pendants "their real diamonds and pearls" (cited in Gibson 1992: 9). Abalone shell was, and still is, used in ceremonies, worn as jewelry, sewn onto or inlaid into a range of personal items, and incorporated into monumental art by many coastal peoples of the Pacific Northwest.

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There has been trade in marine shell in the Pacific Northwest region for approximately 7,000 years. In addition to abalone, this trade included tusk shell (*Dentalium* spp.) and olive snail (*Olivella* spp.). This report examines the California-area abalone shell trade in northern coastal British Columbia to address the question of why it is virtually absent there. Although it was traded directly eastward into the Great Basin and to areas to the immediate north as early as 4,000 BP, it has been identified at only one site in British Columbia—the Haida village of Kiusta in northern Haida Gwaii (Queen Charlotte Islands), and possibly at a second—the Scowlitz site on the Fraser River. To better understand this interesting observation, I review and discuss the limited archaeological evidence and the more extensive post-contact use of California-area abalone. I also discuss the allegedly poor quality of local northern abalone (*H. kamtschatkana kamtschatkana*) shell for decorative work.

CALIFORNIA-AREA ABALONE SPECIES

Four abalone species occur in the intertidal to fishable (breath-hold) depth zones of the California coast. These are red abalone (*Haliotis rufescens*), green abalone (*H. fulgens*), pink abalone (*H. corrugata*), and black abalone (*H. cracherodii*) (Figure 1). The red abalone can exceed 280 mm in shell length, the green can exceed 230 mm in shell length, and the pink and black can reach 200 mm in shell length in California waters (Howorth 1978).

The massive foot of abalone has long been an important food of coastal California indigenous peoples (Raab 1992; Smith 1990). Indeed, shells of these species can dominate shellfish

remains in coastal midden strata of various ages, dating back to approximately 9,000 BP (Lindberg 1992; Raab 1992; Salls 1991).

In addition to its use as a food source, the shells were utilized for a variety of utilitarian and decorative purposes. They were also an important trade item. Abundant abalone shell obtained from coastal peoples of the south and central California areas was extensively traded among other indigenous peoples in southwestern (Howorth 1978; Jackson and Ericson 1994) and northwestern (Fitzhugh and Crowell 1988) North America. In addition to abalone beads, olive snail and limpet (*Acmaea* spp.) shells were traded into the Great Basin immediately east of present-day California during the last 4,000 years (Jackson and Ericson 1994). Abalone beads were also traded northward (Jackson and Ericson 1994), and trade abalone shell had reached the Tlingit of southeastern Alaska certainly by post-contact times (Emmons 1991). In fact, Emmons (1991: 187) notes that “it is traditional with the Tlingit that the much prized iridescent California *haliotis* shell came to them through native exchange long before [*sic*] the white man was known on the coast ...”

Many authors, including Erickson (1990) and Galm (1994), mention the strategically placed Dalles area near the confluence of the Columbia and Deschutes Rivers where north-south and interior-coastal trade occurred (Figure 1). Bancroft-Hunt (1979) speculated that the various commodities traded there, including California-area abalone shell, motivated northern coastal people such as the Tlingit to travel distances exceeding 1,600 km for trade, although he provided no specific evidence on the presence of abalone shell in this trade.

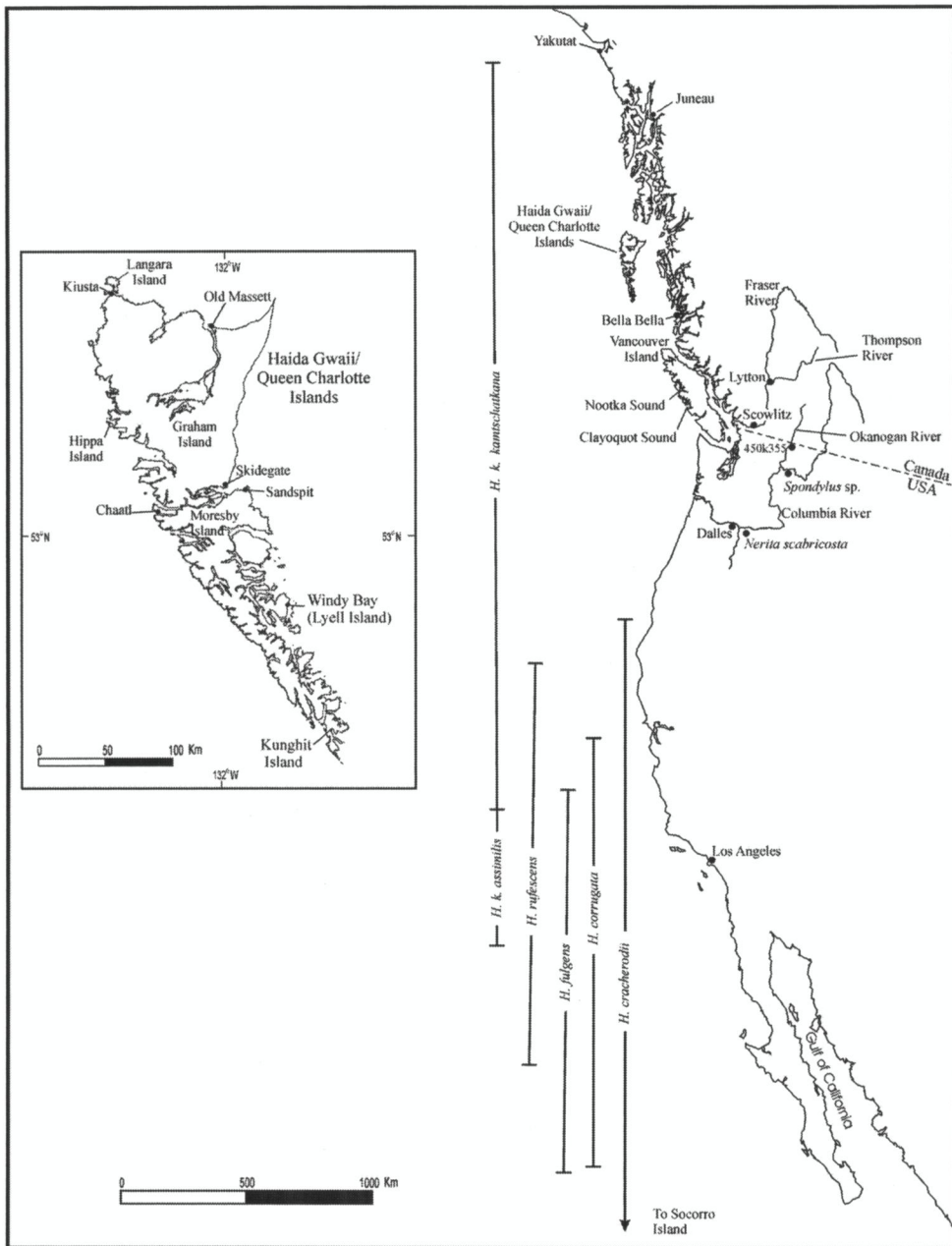


FIGURE 1. Geographic range of red (*Haliotis rufescens*), black (*H. cracherodii*), green (*H. fulgens*), and pink (*H. corrugata*) abalone species, and the two subspecies of northern abalone (*H. kamtschatkana*) along the Pacific coast of North America based on specimen records only (data from Geiger [2000] and <http://www.sbnature.org/geiger/ABMAP/>). Places mentioned in the text, excavation locations (Scowlitz and Lytton, B.C.), and locations of noteworthy tropical species (*Spondylus* sp. and *Nerita scabricosta*) from archaeological excavations are also shown.

In British Columbia, many items embellished with abalone trade shell, which date back at least to the 1820s, are found in the material culture of the coastal First Nations. These groups include the Nuxalk (Bella Coola area), Heiltsuk (Bella Bella area), Kwakiutl (northeast Vancouver Island), Nuuchah-nulth (west coast of Vancouver Island), Tsimshian (Prince Rupert area), and Haida (Haida Gwaii), as well as the Tlingit of southeastern Alaska (see examples in Brown 1998; Jonaitis 1988, 1991; MacDonald 1996; Wright 2001). In the early 20th century, Edward S. Curtis photographed a number of Northwest Coast people wearing abalone shell jewelry such as large earrings (Stewart 1973: 127). Clearly, abalone shell was a widely sought and valued item.

ABALONE TRADE SHELL IN HAIDA LANGUAGE AND CULTURE

The first recorded European contact with the Haida occurred in July 1774 when the Spanish vessel *Santiago*, commanded by Juan Pérez, encountered Haidas off western Langara Island (Beals 1989). Translations of ships logs revealed that trading occurred, and that the Spanish exchanged cloth, knives, and “Monterey” (abalone) shell brought north from Spanish-occupied California, for sea otter and other pelts (Beals 1989: 111). In August of that same year, Pérez traded off Nootka Sound, Vancouver Island, with Nuuchah-nulth peoples exchanging Monterey shell for sea otter pelts and dried fish (Beals 1989: 113). The Monterey shell likely was of species accessible to California area coastal indigenous peoples by breath-hold diving (red, green, or pink abalone) or intertidal gathering (black abalone).

There are other reports in the early post-contact era of the Haida acquiring abalone shell. In 1787, George Dixon purchased a labret with a copper rim and inlaid abalone shell near Hippa Island (Gessler and Gessler *no date*). In command of the Spanish vessel *Aranzazu*, Jacinto Caamaño visited Kiusta, a Haida village, in July 1792. He reported that the Haida willingly traded sea otter pelts for Monterey shell: “... they desired to have as green a colour as those that some wore in great numbers hanging at their ears. We were surprised to see that several had those of a sort that is found only at Monterey ... I inquired who had given them the Monterey shells but either they did not catch my meaning, or I misunderstood their reply” (Wagner and Newcombe 1938: 218). More recently, Haida elder Robert Cogo of Ketchikan, Alaska, stated that: “In 1790, the fur traders came from California with big abalone shell. The Haida took it in trade for sea otter furs. They were highly prized and the artists took and made buttons and ornaments. Later on they brought wool blankets and pearl shell buttons” (Grant 2003). Barbeau (1953: 1) and Drew and Wilson (1980: 81) mention that Haidas working aboard whaling and sea otter vessels directly acquired abalone shell from California-area ports. The Haida had, therefore, demonstrated a desire for thick, blue-green California-area abalone trade shell before the 1800s.

HAIDA USES OF ABALONE SHELL

The Haida used abalone shell fragments for personal adornment including labrets, jewelry, appliqué on garments, inlay into personal ceremonial dress such as frontlets, and inlay in argillite carvings for sale (Barbeau 1953). Boas (1898: 15) reports that sometimes pieces were glued directly to the skin for facial decoration.

The abalone species represented by these fragments are unknown.

Blake (*in press*) mentioned that inlaid abalone pieces in artifacts often have drill holes that may indicate they were recycled from sewn-on attachments to garments. This is illustrated by a Haida frontlet in MacDonald (1996: 24). The use of such recycled pieces as inlay may indicate the high value of trade shell.

The Haida also used abalone shell as inlay in monumental art. Swanton (1905: 284) described an exterior house pole decorated with abalone shell from Windy Bay village (Hlk'yaah 'Llnagaay), Lyell Island, which belonged to a chief. Barbeau (1950: 567) mentioned an external pole with inlaid abalone from the Middle-Town-People of Skiina kun, just south of Sandspit. In Old Massett, an interior house pole depicting a standing beaver biting an abalone-inlaid stick, was part Chief Wiah's "Monster House," which was built circa 1840; it now resides in the Canadian Museum of Civilization (CMC). The species of abalone shell pieces used in the inlay is unknown (Leslie Tepper, CMC, pers. comm. 2001), but their colour is a rich blue-green. The pieces cannot be removed and are too small for species identification *in situ*.

Further evidence of the importance of abalone trade shell is manifested in Haida language. Swanton (1905: 268, 282) reported that the southern, Kunghit Island-area Haida called large abalone trade shell *gu'lxá*, and also listed a chiefly name of *Gu'lasqa'óal* ("big abalone shell") from a southeastern Alaska-area Haida village. Ellis and Wilson (1981) listed the Skidegate-area (southern) Haida word *gwúlxá* for pieces of large abalone trade shell. For intact abalone shell (northern or California-area), the term *gálgah iiyáan k'áal* was

apparently used. In 2001, the Skidegate Haida Immersion Program finalized the spelling of California-area abalone trade shell to *gulxa* (Sloan *et al.* 2001). Interestingly, Swanton (1908: 476) listed the Haida and Tlingit words for "abalone" as *gu'lgá* and *gu'nxa*, respectively, and Emmons (1991: 174) recorded the Tlingit word *gúnxa* specifically for "California haliotis."

Finally, a number of widespread Haida families adopted "large" (trade) abalone shell as crests (Swanton 1905). This is significant as adoption of crests was costly and would normally be acquired by potlatch (Barbara Wilson, Gwaii Haanas, pers. comm. 2003). Southern Kunghit Island- and Skidegate-area Haida families of the Raven clan adopted abalone shell as family crests, as had an Eagle clan family of Chaatl village (Swanton 1905: 268, 269, 274).

THE KIUSTA VILLAGE SPECIMENS

Although there are numerous examples of abalone trade and utilization by the Haida in historic documents, oral histories, and material culture, the archaeological evidence is much more limited. In fact, the only known intact trade abalone from Haida archaeological sites are three large abalone shells excavated from Kiusta village, northern Haida Gwaii (Figure 1) in the 1970s (Gessler and Gessler *no date*). Provenience has been lost.

Two of the shells are *H. fulgens* and one is *H. corrugata*.¹ These species' geographic ranges are shown in Figure 1. A specimen of each of these species is shown in Figure 2. These shells were acquired in trade in post-contact times. One shell of each species was radiocarbon dated (Table 1), producing two identical AMS dates of 188–169 years BP—roughly AD 1812–1831.

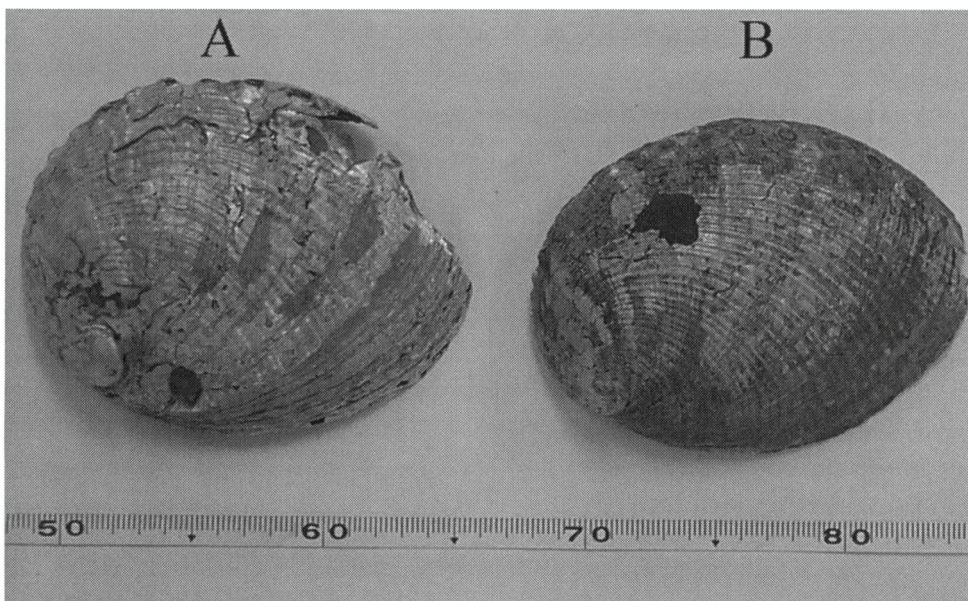


FIGURE 2. Photograph of *Haliotis corrugata* (A) [HGM # Kiusta 1574] and *Haliotis fulgens* (B) [HGM # Kiusta 215] shells excavated from Kiusta village site by Nick Gessler in the 1970s (courtesy of Natalie Macfarlane, Haida Gwaii Museum [HGM]). Scale is in cm. Both shells have been painted with a consolidant by a modern conservator and the *H. fulgens* shell has had its respiratory holes blocked with lead.

TABLE 1. Radiocarbon dates of California-area abalone shells excavated from Kiusta village.

CAMS#	¹⁴ C Age BP	ΔR*	Cal age range BP (2σ)*
91124	660 ± 35	210 ± 30	188–169 (2%), 149–0 (98%)
91125	660 ± 35	210 ± 30	188–169 (2%), 149–0 (98%)

* mean ΔR for Southern California and calendar age correction for the marine carbon reservoir effect (Stuiver and Reimer 2003).

The respiratory holes of the dated *H. fulgens* shell were blocked with lead as perhaps the shell was used as a ladle. Lead was most likely a post-contact era commodity among the Haida (Drew and Wilson 1980: 153).

EXPLAINING THE LIMITED USE OF NORTHERN ABALONE

Compared to the California-area species, the northern abalone (*H. kamtschatkana*

kamtschatkana is significantly smaller. In northern British Columbia, individuals rarely exceed 140 mm in shell length (Sloan and Breen 1988). The confirmed geographic range of the species is north of Oregon to Yakutat, Alaska (Figure 1).

Northern abalone shell is much thinner than California-area species. Its mother-of-pearl is a silvery-gray with pale pink and blue-green tones rather than the thicker shells with richer blue-green

mother-of-pearl of the California-area species.

Traditional Haida subsistence gathering was done by hand-picking at very low tide, or by spearing from canoes to approximately 3 meters depth below the zero tide line (Russ Jones, Haida Fisheries Program, pers. comm. 2003). Northern abalone is today an important species in the Haida Gwaii region, with a high public profile in cultural, fisheries, species-at-risk, and marine area conservation issues (Sloan *in press*).²

In the southern Haida Gwaii area, northern abalone shell has been recovered in trace amounts from middens dating back approximately 1,600 years (Acheson 1998). However, northern abalone shell is rarely recovered from excavated middens in Haida Gwaii or the west coast of Vancouver Island and what is recovered has been highly fragmented (Daryl Fedje, Parks Canada, pers. comm. 2003).

If the Haida and other Northwest Coast peoples valued abalone shell, why is there so little evidence of use of local, northern abalone shell? Northern abalone shell was indeed used. Stewart (1973: 131) illustrates an example of an alleged northern abalone ornament of unknown origin, and Holm (1965: 19) speculated that “pale native” abalone shell was “probably used in precontact times.” Northern abalone shell was also excavated from a site on the Columbia River, near Umatilla, northern Oregon, which is tentatively dated 2,500 to 250 BP (Osborne 1957, cited in Galm 1994: 291).

Nonetheless, there is widespread opinion that the thin, pale northern abalone shell was inferior to that of California-area shell (Drew and Wilson 1980; Drucker 1951; Emmons 1991; Karklins 1992; Mills 1982; Moss 1993).

This inferiority is also recounted directly from Nuu-chah-nulth traditional knowledge by Ellis and Swan (1981: 65). Furthermore, Stewart (1973: 127) speculated that traders imported California-area abalone shell because they had noticed local peoples’ use of “paler, smaller” abalone. Such importation was likely done by American traders who dominated the sea otter pelt trade in the Haida Gwaii area from the mid 1790s to the 1840s (Lyle Dick, Parks Canada, pers. comm. 2001).

The smaller size and relative thinness of northern Abalone shell may have made it less suitable for utilitarian and decorative uses than the California varieties. The mean shell wall thickness of northern Abalone is 3.5 mm, compared to 7.0 mm for the California-area abalone. It is possible that this difference may also have contributed to poorer preservation of northern Abalone in the archaeological record.

PRE-CONTACT TRADE IN ABALONE AND OTHER SHELL

How extensive was trade in California-area abalone trade shell between indigenous groups prior to the time of European contact? Heizer’s (1940, 1975) opinion that California-area abalone trade shell use was strictly post-contact, via European and American trade, has been influential on authors such as Holm (1965: 18) and Karklins (1992: 188). Stewart (1973) speculated that early American traders imported California-area abalone shell as a commodity, but provided no historical sources. Less frequently cited is Leechman’s (1942) response to Heizer (1940) that, if there was widespread pre-contact trade in obsidian, various shell species and copper, why could there not have been similar trade in abalone shell? Erickson

(1990: 114) was sympathetic with Leechman's view, stating; "It is hard to believe that an item of such high demand as *Haliotis* was not exchanged through the existing aboriginal networks from the coast to the interior." There are Haida stories of travel to warmer climates in the far south in pre-contact times during which exposure to large abalone shell may have occurred (Barb Wilson, Gwaili Haanas, pers. comm. 2003).

In the British Columbia area, there is approximately 9,500 years of verified trade activity for obsidian, and shells of California mussel (*Mytilus californianus*), weathervane scallop (*Patinopecten caurinus*), and *Olivella* spp. were in circulation by 4,000 BP (Carlson 1994). *Olivella* shells from approximately 7,000 BP were recovered from the Marmes Rock Shelter in southeastern Washington State (Rice 1972, cited in Carlson 1994: 330). Carlson (1994) concluded that a persistent cultural system of trade and exchange linking California to the northern coast via the Fraser River corridor was well in place from approximately 2,500 BP onward.

Dentalium is another well-documented example of trade shell in circulation. The major source of the scaphopod "tusk shell" mollusk (*Dentalium pretiosum*), or *hiaqua* (in Nuu-chah-nulth), gathered for trade was off the west coast of Vancouver Island within what is now Nuu-chah-nulth traditional territory (Andrews 1989; Barton 1994; Clark 1963; Drucker 1951). *Dentalium* was eventually in circulation from Unalaska in the Aleutian Islands to the western Arctic and throughout the Great Plains to central California (Andrews 1989; Barton 1994; Clark 1963; Drucker 1951; Gibson 1992). Some of this range was due to post-contact trade, which was so profitable

that Europeans expanded shell trading, including importing an Atlantic *Dentalium* species, and tried to market European-made porcelain tusk shells as well (Andrews 1989; Barton 1994; Gibson 1992). At a minimum, *Dentalium* trade occurred in coastal and interior Plateau areas 5,000 to 6,000 BP and on the Plains by approximately 4,000 BP (Barton 1994). Moreover, for millennia before the *Dentalium* trade, *Olivella* spp. were traded into the Plateau culture area of approximately south-central British Columbia and north central Washington and Idaho (Erickson 1990; Galm 1994).

Further evidence of ancient long-distance shell trade is seen with tentative identifications of two species of tropical mollusks from prehistoric archaeological sites in Washington (Figure 1). The two species, whose closest natural waters would be the Gulf of California (Paul Valentich Scott, pers. comm. 2003), were tentatively identified as the thorny oyster (*Spondylus* sp.) and the snail *Nerita scabricosta* (Browman 1966; Schalk 1987, both cited in Galm 1994: 291). The *Nerita* and *Spondylus* were dated to approximately 3,000 BP (Galm 1994: 292).

Pre-contact trade in California-area abalone shell in British Columbia is also known. Blake (*in press*) reported abalone pendants, tentatively identified as black abalone (*H. cracherodii*), from a 1,400 BP burial mound at the Coast Salish Scowlitz site (Lepofsky *et al.* 2000) near the confluence of the Fraser and Harrison Rivers (Figure 1). Blake also suggested that a similar pendant, possibly of the same species, was recovered from a site nearby Lytton at the confluence of the Fraser and Thompson Rivers (Figure 1; Smith 1899, cited in Blake *in press*). Another abalone pendant, exca-

vated from a likely prehistoric burial site (Figure 1; site 450K355) in Okanogan County, Washington, was listed by Chatters and Zweifel (1987, cited in Galm 1994).

DISCUSSION

There are a number of indications that abalone shell was prized. One clear example of this is the association of trade shell, including abalone, with pre-contact burials of likely high status individuals (Blake *in press*; Galm 1994). The abundance of abalone inlay in post-contact ceremonial regalia from many coastal groups further indicates the value of abalone shell and its likely use by high status persons.

Gibson (1992: 228) considered abalone, along with *Dentalium*, as “goods that had long supported intertribal trade.” Both were apparently highly valued (Gibson 1992; Niblack 1890). That Haida and Tlingit words for abalone trade shell recorded from early 20th century were so similar indicates well-established shell trading. Indeed, Niblack (1890: 266) speculated that there was so much shell trade after contact that the value of abalone had been eroded by its increased availability. Given that large trade areas for both *Olivella* and *Dentalium* were networked for millennia, a trade for abalone shell, although perhaps not as extensive or as ancient, would not be surprising.

The importance of green and blue coloured items for trade goods may have enhanced the acceptability of California-area abalone shell (Drew and Wilson 1980: 153). For example, Niblack (1890: 266) mentioned blue among the “favourite” colours of trade goods. Wagner and Newcombe (1938: 203, 216) recounted strong preferences for blue and green-coloured goods. Karklins (1992: 167)

noted a fondness of blue glass beads among Haida mentioned by John Hoskins aboard the vessel *Columbia* in southern Haida Gwaii in 1791. Gibson (1992: 229, 282) mentioned the great popularity of blue abalone mother-of-pearl beads and “Russian” blue glass trade beads. Furthermore, the laminar nature of abalone mother-of-pearl meant that use did not dull shells’ iridescence, but rather, wear exposed other layers (Ellis and Wilson 1981).

There is an intriguing possibility of large abalone shell from within the British Columbia area. Drucker (1951: 113) cites Swan’s (1870) statement that “large richly colored abalone shells” were reported from “upper Queen Charlotte Sound” and “obtained from the southern Kwakiutl in prehistoric times.” Swan (1870: 47) actually wrote that abalone shell was received by the Cape Flattery area people through trade with Vancouver Island people, specifically from the Cowichan, Clayoquot Sound and Nootka Sound areas. In the early 1990s, however, a large (not northern) abalone shell was collected from the Bella Bella area, but the local origins of this shell were met with skepticism (Ivan Winther, Fisheries and Oceans Canada (DFO), pers. comm. 2003). However, a live specimen was acquired in 1995 from a Heiltsuk person of the Bella Bella area and transported to the DFO’s Pacific Biological Station, Nanaimo. A genetic sample has taken before the abalone died (Ivan Winther, pers. comm. 2003), but it has not yet been analyzed (Alan Campbell, DFO, pers. comm. 2003). It is ironic that Drucker could have uncovered something after all. Some type of large abalone may, therefore, have been available for trade from the central British Columbia coast—a discovery that could confound confirmation of

pre-contact trade in California-area abalone shell.

In conclusion, Blake's (*in press*) work likely expands the prehistoric geographic extent of California-area abalone trade shell into southern British Columbia (i.e., the Scowlitz site and perhaps the Lytton area). For northern coastal British Columbia, the rarity of abalone items in prehistoric sites, coupled with the region's spotty archaeological sampling (Carlson 1994), constrains speculation on the geographic extent of pre-contact trade of California-area abalone shell. Nonetheless, in post-contact times, California-area abalone was a conspicuous trade item before modern trade goods largely supplanted the shell trade. Abalone trade shell became important in Haida culture as manifested in art, language, and crest usage, and shell continues to be used. However, whether California-area trade shell was imported pre-contact by the Haida remains unverified. Nonetheless, such trade is claimed in the traditional knowledge of the Tlingit to the north (Emmons 1991) and the vigor and extent of indigenous trade linkages should not be underestimated. The current lack of evidence of pre-contact Haida trade in California-area abalone shell does not, therefore, preclude the possibility of such trade.

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NOTES

1. Identification by Daniel Geiger, Natural History Museum of Los Angeles County (pers. comm. 2002).
2. For example, all forms of fishing have been closed since 1990 due to low stock levels. In 1999 northern abalone was the first marine invertebrate species to be federally listed (as *threatened*) by the Committee on the Status of Endangered Wildlife in Canada, and in 2003 an Action Plan for the species' restoration was issued after public consultation (<http://www.pac.dfo-mpo.gc.ca/ops/fm/shellfish/abalone>).

REFERENCES CITED

- Acheson, S. R.
1998 In the Wake of the *ya'aats' xaatgaay* ["Iron People"]: A Study of Changing Settlement Strategies among the Kunghit Haida. *British Archaeological Reports (BAR) International Series* 711.
- Andrews, R. W.
1989 Hiaqua: *Use of Dentalium Shells*

- by the Native Peoples of the Pacific Northwest. M.A. thesis, Department of Anthropology, University of Washington, Seattle.
- Bancroft-Hunt, N.
1979 *People of the Totem: The Indians of the Pacific Northwest*. University of Oklahoma Press, Norman.
- Barbeau, M.
1950 Totem Poles. *National Museum of Canada Bulletin* 119 (*Anthropological Series* 30). Vol. 2: 435–880.
1953 Haida Myths Illustrated in Argillite Carvings. *National Museum of Canada Bulletin* 127 (*Anthropological Series* 32).
- Barton, A. J.
1994 *Fishing for Ivory Worms: A Review of Ethnographic and Historically Recorded Dentalium Source Locations*. M.A. thesis, Department of Archaeology, Simon Fraser University, Burnaby, B.C.
- Beals, H. K.
1989 *Juan Pérez on the Northwest Coast – Six Documents of His Expedition in 1774*. Oregon Historic Society, Portland.
- Blake, M.
in press Lower Fraser Valley Trade and Prestige as seen from Scowlitz. In *Complex Hunter-Gatherers: Evolution and Organization of Prehistoric Communities on the Plateau of Northwestern North America*, edited by W. C. Prentiss and I. Kuijt, University of Utah Press, Salt Lake City.
- Boas, F.
1898 Facial Paintings of the Indians of Northern British Columbia. *Memoirs of the American Museum of Natural History* (Jessup North Pacific Expedition) Vol. II, Anthropology I: 24.
- Brown, S. C.
1998 *Native Visions: Evolution in Northwest Coast Art from the Eighteenth through Twentieth Century*. Douglas and McIntyre, Vancouver.
- Carlson, R. L.
1994 Trade and Exchange in Prehistoric British Columbia. In *Prehistoric Exchange Systems in North America*, edited by T. G. Baugh and J. E. Ericson, pp. 307–361. Plenum Press, New York.
- Clark, R. B.
1963 The Economics of *Dentalium*. *The Veliger* 6: 9–19.
- Drew, L., and D. Wilson
1980 *Argillite Art of the Haida*. Hancock House, North Vancouver, B.C.
- Drucker, P.
1951 The Northern and Central Nootkan Tribes. *Smithsonian Institution Bureau of American Ethnology Bulletin* 44: 1–480.
- Ellis, D. W., and L. Swan
1981 *Teachings of the Tides: Uses of Marine Invertebrates by the Manhusat People*. Theytus Books, Nanaimo, B.C.
- Ellis, D. W., and S. Wilson
1981 The Knowledge and Usage of Marine Invertebrates by the Skidegate Haida People of the Queen Charlotte Islands. *Queen Charlotte Islands Museum Monograph* 1–40. Queen Charlotte Islands Museum Society, Skidegate, B.C.
- Emmons, G. T.
1991 The Tlingit Indians. *Anthropological Papers of the American Museum of Natural History* 70: 1–488.
- Erickson, K.
1990 Marine Shell Utilization in the Plateau Culture Area. *Northwest*

- Anthropological Research Notes* 24: 91–144.
- Fitzhugh, W. W., and A. Crowell
1988 *Crossroads of Continents: Cultures of Siberia and Alaska*. Smithsonian Institution Press, Washington, D.C.
- Galm, J. R.
1994 Prehistoric Trade and Exchange in the Interior Plateau area of Northwestern North America. In *Prehistoric Exchange Systems in North America*, edited by T. G. Baugh and J. E. Ericson, pp. 275–305. Plenum Press, New York.
- Geiger, D. L.
2000 Distribution and Biogeography of the Recent Haliotidae (Gastropoda: Vetigastropoda) World-wide. *Bollettino Malacologico, Roma* 35: 57–120.
- Gessler, N., and T. Gessler
undated (likely early 1970s) A European History of Kiusta as Compiled from the Early Chronicles. *The Charlottes: A Journal of the Queen Charlotte Islands* 3: 17–32. Queen Charlotte Islands Museum Society, Skidegate, B.C.
- Gibson, J. R.
1992 *Otter Skins, Boston Ships, and China Goods: The Maritime Fur Trade of the Northwest Coast 1785–1841*. McGill-Queen's University Press, Montreal and Kingston.
- Grant, D.
2003 Dorothy Grant, Haida Artist web site [<http://www.dorothygrant.com>].
- Heizer, R. F.
1940 The Introduction of Monterey Shells to the Indians of the Northwest Coast. *Pacific Northwest Quarterly* 31: 399–402.
- Heizer, R. F.
1975 Counterfeiters and Shell Currency Manipulators among California Indians. *Journal of California Anthropology* 2: 108–110.
- Holm, B.
1965 Northwest Coast Indian Art: An Analysis of Form. *Thomas Burke Memorial Washington State Museum Monograph* 1: 1–115.
- Howorth, P. C.
1978 *The Abalone Book*. Naturegraph Publishers, Happy Camp, CA.
- Jackson, T. L., and J. E. Ericson
1994 Prehistoric Exchange Systems in California. In *Prehistoric Exchange Systems in North America*, edited by T. G. Baugh and J. E. Ericson, pp. 385–415. Plenum Press, New York.
- Jonaitis, A.
1988 *From the Land of the Totem Poles: The Northwest Coast Indian Collection of the American Museum of Natural History*. Douglas and McIntyre, Vancouver.
- Jonaitis, A. (editor)
1991 *Chiefly Feasts: The Enduring Kwakiutl Potlatch*. Douglas and McIntyre, Vancouver.
- Karklins, K.
1992 Trade Ornament Usage among the Native Peoples of Canada. *Studies in Archaeology Architecture and History*, Parks Service, Environment Canada, Ottawa.
- Leechman, D.
1942 Abalone Shells from Monterey. *American Anthropologist* (N.S.) 44: 159–162.
- Lepofsky, D., M. Blake, D. Brown, S. Morrison, N. Oakes, and N. Lyons
2000 The Archaeology of the Scowlitz Site, SW British Columbia.

- Journal of Field Archaeology* 27: 391–416.
- Lindberg, D. R.
1992 Evolution, Distribution and Systematics of Haliotidae. In *Abalone of the World: Biology, Fisheries and Culture*, edited by S. A. Shepherd, M. J. Tegner, and S. A. Guzman del Proo, pp. 3–18. Fishing News Books, Oxford.
- MacDonald, G. F.
1996 *Haida Art*. Douglas and McIntyre, Vancouver, B.C.
- Mills, D.
1982 The Procurement and Use of Abalone in Southeast Alaska. *Interim Report to the Alaska Board of Fisheries from the Division of Subsistence, Alaska Department of Fish and Game*.
- Moss, M. L.
1993 Shellfish, Gender, and Status on the Northwest Coast: Reconciling Archeological, Ethnographic, and Ethnohistorical Records of the Tlingit. *American Anthropologist* 95: 631–652.
- Niblack, A. P.
1890 The Coast Indians of Southern Alaska and Northern British Columbia. *Report of the Smithsonian Institution, United States National Museum* 1887–1888: 225–386.
- Raab, L. M.
1992 An Optimal Foraging Analysis of Prehistoric Shellfish Collecting on San Clemente Island, California. *Journal of Ethnobiology* 12: 63–80.
- Salls, R. A.
1991 Early Holocene Maritime Adaptation at Eel Point, San Clemente Island. In *Hunter-Gatherers of Early Holocene Coastal California*, edited by J. M. Erlandson and R. H. Cotton, Perspectives in California Archaeology 1: 63–80. Institute of Archaeology, University of California Los Angeles.
- Sloan, N. A.
in press Northern Abalone: Using an Invertebrate to Focus Marine Conservation Ideas and Values. *Coastal Management*.
- Sloan, N. A., P. M. Bartier, and W. C. Austin
2001 Living Marine Legacy of Gwaii Haanas. II: Marine Invertebrate Baseline to 2000 and Invertebrate-Related Management Issues. *Parks Canada Technical Reports in Ecosystem Science* 35: 331 p.
- Sloan, N. A., and P. A. Breen
1988 Northern Abalone, *Haliotis kamtschatkana*, in British Columbia: Fisheries and Synopsis of Life History Information. *Canadian Special Publication of Fisheries and Aquatic Sciences* 103: 46 p.
- Smith, K.
1990 Abalone: A Precious Gift. *News from Native California* 4(3): 14–15.
- Stewart, H.
1973 *Stone, Bone, Antler and Shell Artefacts of the Northwest Coast*. Douglas and McIntyre, Vancouver.
- Stuiver, M., and P. Reimer
2003 Marine Reservoir Correction Database; revision 4.4 (Marine 98.14C dataset) [<http://www.calib.org>].
- Swan, J. G.
1870 The Indians of Cape Flattery, at the Entrance to the Strait of Fuca, Washington Territory. *Smithsonian Contributions to Knowledge* No. 220, Vol. 16, Article 8: 105 p.
- Swanton, J. R.
1905 *Contributions to the Ethnology*

of the Haida. E. J. Brill, Leiden and G. E. Stechert, New York. [reprinted in 1975 by AMS Press, New York, and also issued in *Memoirs of the American Museum of Natural History* 8(1).

1908 Social Conditions, Beliefs, and Linguistic Relationship of the Tlingit Indians. *Bureau of American Ethnology (Smithsonian Institution)* 26th Annual Report p. 391–485.

Wagner, H. R., and W. A. Newcombe (editors)

1938 The Journal of Don Jacinto Caamaño. *British Columbia Historical Quarterly* 2: 189–222, 265–301.

Wright, R. K.

2001 *Northern Haida Master Carvers*. Douglas and McIntyre, Vancouver, B.C.

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