Labrets, and Nosepins, and Ear Feathers, Oh My!

by Moki Kokoris

Stretching 1,500 miles from Kamchatka, Russia to the Alaska Peninsula, the Aleutian archipelago is a chain of windswept islands that has been inhabited for about 7,000 years. Although the Unangan (who speak the Aleut language) and the Alutiiq (Kodiak Islanders) view themselves as two culturally distinct groups, it was the invasion of the Russians in the 18th century that gradually organized them into a collective force to labor for the Russian sea otter fur trading empire. The term "Aleut" was coined by the traders to describe this homogenized group of enslaved natives.

German explorer and naturalist, Georg Wilhelm Steller, became the first European to describe the appearance of the indigenous peoples of these islands when he first traveled there with Vitus Bering in 1741. In his journal, Steller wrote: "One man had a piece of bone three inches long struck through crosswise above the chin just under the lower lip. Still another had a bone like it fastened in the forehead, and another, finally, had a similar one in each of the wings of the nose." A few decades later, a Russian explorer described their tattoo practices thusly: "Pricking the skin with needles made of seagull bones, the women sew in their cheeks, and rub with carbon, two lines, running from the lower part of the nose to the middle of the ears, and one broad band from the lower lip to the chin, which when they heal assume a bluish color."

Inuits from St. Lawrence Island. Note man on left with bone labrets at the corners of his mouth. Postcard from 1901, private collection

According to most historical accounts, tattooing among the Aleut was first practiced when women reached maturity. On Kodiak Island, it not only signaled adolescence, but social standing as well. Veniaminov, a Russian priest, observed that aristocratic women were more heavily tattooed than commoners, but not all had the same designs. Prettier women, and also the daughters of famous and wealthy fathers, endeavored to show the accomplishments of their fathers and forefathers in their tattooing, i. e. how many enemies or powerful animals that ancestor had killed.

Photo courtesy Aleut Corporation

Typical Aleut island landscape

Aleut piercing and tattooing represented natural symbols that simultaneously linked nature, society and culture into one organic whole. Body adornment justified human existence by not only influencing the supernatural and the dead, but by influencing the wishes and actions of living individuals in the community. In attempting to offer a fundamental interpretation of the meaning and function of the tattooing itself, it is necessary to mention other forms of Aleut body modification such as nosepins, ear ornaments and labrets.

Nosepins were worn by all indigenous groups of the Aleutian chain, by both sexes, with the incision being made shortly after birth. The ornament might be the shaft of an eagle's feather, a sea lion whisker, a piece of bark, bone, or a thin strip of leather decorated with tusk shells worn horizontally through the nose. Sometimes, women strung beads of coral and amber from the nosepin and let them hang down to the point of their chin.

Ear ornaments were another common form of adornment. Oftentimes, there were holes pierced all around the rim of the ear, with shells, beads, bones and amber placed into each hole. Before she was to be given to her husband in marriage, an Unangan woman would have ten sea lion whiskers pierced into each ear. Sea lion whiskers were considered to be very valuable and were regarded as trophies that indicated a good hunter, or the wife of a good hunter. Because each sea lion has only four whiskers, "any number of them together must be testimony of having captured a great many". These whiskers also adorned the wooden hunting gear of Aleut men or were used as ornaments in the nose. A visitor to the Andreanov Islands in 1761 noted, "instead of earrings put into their ears, the women wear eagle and goose feathers behind the ears."

When the Russians first made contact with the peoples of the Aleutian archipelago, the one custom that intrigued them most was the insertion of various types of labrets into the lower lip and cheek. Captain Cook noted in the 1770s "what the men have thrust through the hole in the underlip has the resemblance of two boar tusks: two pieces of bone about one and a half inches long joining in the middle of the lip. And separating, by means of the tongue, they can move these bones and make them point up and down. Others have a single polished bone the shape and size of a large stud." Men perforated the lip by placing several studs of walrus ivory into separate holes that appeared to Captain Cook as representing "another row of teeth immediately under their own". This style of labretifery was common on the Turnagain River of mainland Alaska and on Kodiak Island where "men wear up to ten garnets – white in back, blue in front – underneath their lower lip."

Photo by J. Ramos.

Stone and bone labret. The bone piece (shaft) on the right was inserted from the inside of the mouth through a slit in the skin; the stone bead then fastened onto it from the outside. Sometimes these beads were decorated with amber or glass.

Aleut adornment not only satisfied the need for display, celebration and accomplishment; it also embodied religious beliefs about the relationships between humans, animals and the deities who controlled human destiny and their surrounding world. For the inhabitants of this broken island chain, body art was created not only to lure, please and honor the spirits of animals; it increased social status, heightened spiritual power and enhanced beauty of the adorned by inscribing male and female identity.

It is interesting to note that according to Aleut beliefs, their tattoos and piercings also cloaked or camouflaged the physical body from supernatural forces that inhabited their maritime environment. This view, widely held for many indigenous societies around the world, falls into the long-standing tradition of preventative "magic" aimed at warding off penetration or possession by evil forces that targeted vulnerable body passageways – namely the natural openings of the body (eyes, ears, mouth, etc.). Because the fear inspired by spirits in the landscape was great, Aleut peoples were compelled to develop a complex of personal adornment to neutralize the advances of these supernatural entities. In this way, the Aleuts attempted to project themselves beyond their everyday limits of space and time and, perhaps on some level, they envisioned supernatural control and, ultimately, their own immortality in the human bodies they manipulated.

A tattooed and pierced woman from Unalaska Island. Drawn by John Webber of the Cook Expedition, 1790

So, the next time you walk past a group of similarly adorned teenagers, blame it all on the Aleuts! ❑

Aleutian Islands Wilderness

Stretching 1,100 miles south and west from the Alaska Peninsula, the Aleutian Islands were set aside as the Aleutian Islands Reservation in 1913 and, in 1940, they became the Aleutian Islands National Wildlife Refuge. In 1980, the United States Congress reestablished the refuge as the Aleutian Islands Unit of the 4.8 million acre Alaska Maritime National Wildlife Refuge. Managed by the Fish & Wildlife Service, over 57 percent is designated "wilderness."

Consisting of more than 200 islands, which are the peaks of 57 submarine volcanoes (27 of which are still active) rising from near sea level to more than 9,000 ft., the 1,300,000-acre Aleutian Islands Unit is divided into seven island groups: Near Islands, Rat Islands, Delarof Islands, Andreanof Islands, Islands of Four Mountains, Fox Islands and Krenitzin Islands. Fewer than 1,000 Aleuts still inhabit the islands.

Most of the islands are covered with lush green tundra dotted with summer wildflowers and carpeted with grasses, sedges, mosses, lichens, and heath. Cool average temperatures prevent trees from establishing themselves. Marine mammals include the endangered Steller sea lion, threatened northern sea otter, and harbor seal. Most of the land mammals, including foxes, reindeer, and caribou, had been introduced by humans. The principal marine fish are halibut, cod, rockfish, sablefish, yellowfin sole, pollack, sand lance, herring, and salmon.

However, the Aleutians are best known for their birds. More than 10 million nest on the islands each summer. Puffins, auklets, gulls, storm petrels, cormorants, terns, kittiwakes, murres, pigeon guillemots and murrelets are among the most abundant species. The largest known colony of northern fulmars in America—topping one-half million—nests on Chagulak Island. Half of the world's emperor geese spend their winters in the Aleutians. Nowhere else in North America can you find whooper swans, tufted ducks, Siberian rubythroats, wood sandpipers, far eastern curlews and black-headed gulls.

Photo courtesy of Wilderness.net.

Aleutian Islands Wilderness.

The weather on the Aleutians is considered to be the foggiest, rainiest and windiest in the United States. Sea kayaking is popular but often dangerous due to violent storms and magnificently rocky shorelines, but for the persistent, the Aleutian Islands may well rate among the best wilderness experiences of a lifetime. ❑ — *Information compiled by Moki Kokoris*

A Clash of Polar Frauds and Those Who Believe

***The New York Times*, 8 September 2009, by John Tierney**—In September 1909, Dr. Frederick A. Cook and Robert E. Peary each returned from the Arctic with a tale of having reached the North Pole. Neither provided any solid proof or corroborating testimony; both told vague stories with large gaps. They couldn't even convincingly explain how they had plotted their routes across the polar ice.

Yet each explorer's claim immediately attracted its supporters, and no amount of contradictory evidence in the ensuing years would be enough to dissuade the faithful.

A century later, the "discovery" of the North Pole may qualify as the most successful fraud in modern science, as well as the longest-running case study of a psychological phenomenon called "motivated reasoning."

The believers who have kept writing books and mounting expeditions to vindicate Cook or Peary resemble the political partisans recently studied by psychologists and sociologists. When the facts get in the way of our beliefs, our brains are marvelously adept at dispensing with the facts.

The first people to believe Cook and Peary had obvious motivations: scooping rival newspapers and increasing circulation.

When Cook cabled his tale to *The New York Herald*, the newspaper promptly devoted its entire front page to the news: "Fighting Famine and Ice, the Courageous Explorer Reaches the Great Goal".

Several days later Peary cabled his claim to *The Times*, which had helped sponsor his expedition. *The Times* hailed his triumph, reporting that "the world accepts his word without a shadow of hesitation" and quoting Peary's denunciation of Cook as a fraud who "has simply handed the public a gold brick."

Each explorer promised to provide proof, but neither had taken along a trained navigator to corroborate the feat with independent celestial observations. Cook wasn't even competent himself to make the observations.

Peary was an expert navigator and traveled with companions who could also use a sextant, but he left them behind for the final week's push. Then, with no other trained navigator present, his daily rate of progress suddenly doubled.

Most puzzling of all, his expedition traveled for hundreds of miles across the ice without making any celestial observations to determine their longitude and to make sure they hadn't veered off course to the east or west. Then, after five weeks, Peary made an observation and refused to reveal the results to his companions. He was reported to look disappointed, and he left his diary pages blank that day. But he would later tell the rest of the world that his observation had confirmed his arrival at the pole.

How, in moving across jumbled pack ice continuously drifting in the wind and ocean currents, did Peary unerringly travel right to the North Pole? How did he achieve a nearly 500-mile "pole-in-one," as the historian Dennis Rawlins would later dub it?

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In 1909, such questions didn't trouble *The Times*, the National Geographic Society and Peary's other supporters. They were so busy denigrating Cook's claim—"the most astonishing imposture since the human race came on earth," according to *The Times*—that they overlooked flaws in their own hero. As scholars and explorers with much more Arctic experience than Peary have rejected his claim, the supporters have tried furnishing the missing proofs and explanations: if Peary said he made it to the pole, there must have been a way to do it.

They have dreamed up ways for him to navigate precisely north by studying wind patterns in the snow, looking at the sun or observing shadows. They have suggested he navigated by compass (even though it is notoriously difficult to use near the magnetic pole). They've tried to match his speeds near the pole (but have failed even when guided by GPS).

They have analyzed Peary's photographs and concluded that the shadows offer the long-sought proof he was at the pole, according to a report for the National Geographic Society in 1989. The society hailed the report as "unimpeachable" and today stands by it and by Peary's claim to the pole.

But the report was criticized by outside experts, who concluded that the photos could have been taken more than 100 miles from the pole. Another of the report's assertions, that Peary's accurate steering was plausible because Roald Amundsen had used reached the South Pole in a similar manner, was directly contradicted by evidence that Amundsen had relied on regular observations to determine longitude.

Among polar experts today, the consensus is that Peary got much closer than Cook, but not to the pole. Some suggest Peary gave up the day he took that solitary observation because he realized how far off course he had gone; some suspect he had earlier avoided taking longitude observations so as not to leave a paper trail of his route. (For more on the continuing debate—and for who really reached the pole first—go to nytimes.com/tierneylab.)

Mr. Rawlins and another prominent polar scholar, Robert M. Bryce, doubt that Peary got much closer than 100 miles to the pole. Mr. Bryce, who recently discovered the draft of the Cook telegram that started the controversy, figures that Cook stopped more than 400 miles short.

Mr. Bryce is the author of *Cook & Peary* (1997), an 1,100-page book subtitled, *The Polar Controversy, Resolved*, but Mr. Bryce knows it's not resolved in all minds. Although, some of the loyalists have lost faith

(*The Times* ran a formal correction in 1988, citing Peary's "unreliable" records and his "incredible" speeds), both explorers still have their supporters at the Frederick A. Cook Society, the National Geographic Society and elsewhere.

Mr. Rawlins who is the editor of *Dio*, a science history journal, says he cannot think of any modern scientific fraud that has been so profitable and popular and endured a century.

The only longer-lived example that comes to mind, he says, are the second-century astronomical "observations" of Ptolemy that were apparently derived not from the sky but from his theories.

Ptolemy's tables were used for more than 14 centuries, which seems like a hard record to beat. But with sufficiently motivated reasoning, who knows? In 1909, after Cook's loyalists ignored the evidence of fraud provided by Cook's own traveling companions, the Independent magazine wearily predicted, "There will be a 'Cook party' to the end of time, no matter how strong the evidence brought against him in the future." A century later, there is still a Peary party, too. ❑

Satellites and Submarines Give the Skinny On Sea Ice Thickness

PASADENA, CALIFORNIA, 10 September 2009, by Kathryn Hansen—This summer, a group of scientists and students—as well as a Canadian senator, a writer, and a filmmaker—set out from Resolute Bay, Canada, on the icebreaker *Louis S. St-Laurent*. They were headed through the Northwest Passage, but instead of opening shipping lanes in the ice, they had gathered to open up new lines of thinking on Arctic science.

Among the participants in the shipboard workshop (hosted by Fisheries and Oceans Canada) was Ron Kwok of NASA's Jet Propulsion Laboratory in Pasadena, Calif. Kwok has long provided checkups on the health of Arctic sea ice—the frozen sea water floating within the Arctic Ocean basin. He also knows that some important clues about ice changes can't be seen from a ship.

Extending the record

While satellites provide accurate and expansive coverage of ice in the Arctic Ocean, the records are relatively new. Satellites have only monitored sea ice extent since 1973. NASA's Ice, Cloud and Land Elevation Satellite (ICESat) has been on the task since 2003, allowing researchers to estimate ice thickness as well.

To extend the record, Kwok and Drew Rothrock of the University of Washington, Seattle, recently combined the high spatial coverage from satellites with a longer record from Cold War submarines to piece together a history of ice thickness that spans close to 50 years.

Analysis of the new record shows that since a peak in 1980, sea ice thickness has declined 53 percent. "It's an astonishing number," Kwok said. The study, published online August 6 in Geophysical Research Letters, shows that the current thinning of Arctic sea ice has actually been going on for quite some time.

"A fantastic change is happening on Earth—it's truly one of the biggest changes in environmental conditions on Earth since the end of the ice age," said Tom Wagner, cryosphere program manager at NASA Headquarters. "It's not an easy thing to observe, let alone predict, what might happen next."

Sea ice influences the Arctic's local weather, climate, and ecosystems. It also affects global climate. As sea ice melts, there is less white surface area to reflect sunlight into space. Sunlight is instead absorbed by the ocean and land, raising the overall temperature and fueling further melting. Ice loss puts a damper on the Arctic air conditioner, disrupting global atmospheric and ocean circulation.

To better identify what these changes mean for the future, scientists need a long-term look at past ice behavior. Each year, Arctic ice undergoes changes brought about by the seasons, melting in the summer warmth and refreezing in the cold, dark winter.

> *"The dramatic decrease in multiyear ice coverage is quite remarkable and explains to a large degree the decrease in total ice area and volume,"* — Ron Kwok, NASA Jet Propulsion Laboratory

But climate is not the same as weather. Climate fluctuates subtly over decades and centuries, while weather changes from day to day and by greater extremes.

"We need to understand the long-term trends, rather than the short-term trends that could be easily biased by short-term changes," Kwok said. "Long-term trends are more reliable indicators of how sea ice is changing with the global and regional climate."

That's why a long-term series of data was necessary. "Even decadal changes can be cyclical, but this decline for more than three decades does not appear to be cyclical," Rothrock said.

All the ice counts

Arctic sea ice records have become increasingly comprehensive since the latter half of the 20th century, with records of sea ice anomalies viewed from satellites, ships, and ice charts collected by various countries. Most of that record, kept in the United States by the National Snow and Ice Data Center at the University of Colorado, Boulder, describes the areal extent of sea ice.

But a complete picture of sea ice requires an additional, vertical measurement: thickness. Melting affects more than just ice area; it can also impact ice above and below the waterline. By combining thickness and extent measurements, scientists can better understand how the Arctic ice cover is changing.

Kwok and other researchers used ICESat's Geoscience Laser Altimeter System to estimate the height of sea ice above the ocean surface. Knowing the height, scientists can estimate how much ice is below the surface.

In 2008, Kwok and colleagues used ICESat to produce an ice thickness map over the entire Arctic basin. Then in July 2009, Kwok and colleagues reported that multiyear 'permanent' ice in the Arctic Ocean has thinned by more than 40 percent since 2004. For the first time, thin seasonal ice has overtaken thick older ice as the dominant type.

Submarines and satellites

To put the recent decline in context, Kwok and Rothrock examined the recent five-year record from ICESat in the context of the longer history of ice thickness observed by U.S. Navy submarines.

During the Cold War, the submarines collected upward-looking sonar profiles, for navigation and defense, and converted the information into an estimate of ice thickness. Scientists also gathered profiles during a five-year collaboration between the Navy and academic researchers called the Scientific Ice Expeditions, or "SCICEX," of which Rothrock was a participant. In total, declassified submarine data span nearly five decades-from 1958 to 2000-and cover a study area of more than 1 million square miles, or close to 40 percent of the Arctic Ocean.

Kwok and Rothrock compared the submarine data with the newer ICESat data from the same study area and spanning 2003 to 2007. The combined record shows that ice thickness in winter of 1980 averaged 3.64 meters. By the end of 2007, the average was 1.89 meters.

"The dramatic decrease in multiyear ice coverage is quite remarkable and explains to a large degree the decrease in total ice area and volume," Kwok said.

Rothrock, who has worked extensively with the submarine data, agrees. "This paper shows one of the most compelling signals of global warming with one of the greatest and fastest regional environmental impacts." ❑