

## **The Archeology of the Jomon Period and North American Northwest Coast Prehistoric Culture**

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I first met the American archaeologist, Professor Dale Croes, at an international symposium held over 20 years ago in England, and our correspondence has been continuing ever since. In 2001, he convinced me to come with him to visit the Makah Cultural Research Center Museum, located on the Makah Native American reservation in Neah Bay, at the Northwest tip of the Olympic Peninsula, Washington State. I was deeply impressed by the beautiful reconstructions and displays of ancient wooden artifacts, basketry, and plank longhouse architectural remains excavated at the Ozette Village wet site, and I have since become a regular visitor to the museum.

In Neah Bay, along with the normal traffic signs found at every intersection, arrow signs reading "Tsunami Evacuation Route" can also be seen by any visitors. From this, anybody can understand that, to the people of this village, tsunamis are a very familiar danger. My recent research made it clear that the Ozette site was buried by an earthquake, landslide followed by a tsunami, I thought it was time to introduce this site and museum to the Japanese public.

The people of the Pacific and Northwestern American Coast, which stretch from the southern part of Alaska to northern California state, are known for their contact-period high population density and complex social organizations, made possible in part by their practice of preserving the salmon which went up rivers every year to spawn, forming a preserved food stock. The archaeologist and author V. Gordon Childe also explained the prosperity of the late Paleolithic culture at the base of France's Pyrenees Mountains through ethnographic comparisons with the American Northwest Coast—made possible through similar methods of salmon preservation among the people living there. In Japan also, Yamanouchi Sunao explained the predominance in population and cultural developments of Eastern Japan over Western Japan, during the Jomon period, as being due to the people of Eastern Japan using salmon and trout as preserved food. This became widely known as the "Salmon/Trout Hypothesis." Thinking about this has led me to make comparisons between the food sources of the Jomon culture and the American

Northwest Coast prehistoric culture as a main reason for my frequent visits to this area.

### **Exploring the current Northwest Coast Indian Potlatch and the Ozette Sites**

From July 28th through August 7<sup>th</sup>, 2012 I was invited to participate in a traditional canoe journey ending and held in the capital of Washington State, Olympia, with 100 Native American canoes coming from Alaska, British Columbia, Canada, Washington and Oregon States. This event included an entire week of Indian "potlatching" and communal meals provided by the host, the Squaxin Island Tribe, in nearby Shelton, Washington. I participated in this week long Native American gathering with a few of my Japanese friends. I wrote this manuscript while participating in this large celebration.

On the 4th day of this potlatch, we used a rental car to go to Neah Bay and visit the Makah Museum. The very next day, we hiked for 3 hours to make the round trip to the Ozette site, and were able to survey the site. Located facing the Pacific Ocean on the Northwestern tip of the Olympic Peninsula, this site suffered a severe storm in February 1970, which revealed its contents to the world: five well-preserved traditional longhouses, and the household items which they contained. The entire site had been buried in an instant by a debris avalanche and soon was water saturated by underground springs. The non-oxygenated waterlogged environment led to the preservation of items such as wooden tools and baskets which are absent from usual archaeological sites.



*Tskawahyah island (commonly called "Cannonball island") bordering on the sea with the Ozette site in the background, functions as an ancient look-out station.*



*The Ozette Site today and the Makah Ranger Station residence*

The Makah Indian people immediately realized the importance of this site and called on Professor Richard Daugherty of Washington State University to conduct excavations, and these excavations went year-round from 1970 through 1981. The high level and richness of the material culture of the ancient Makah was quickly recognized. Since occupation of the ancient site, the Makah population has shrunk through exposure to diseases and dispossession by the Euro-Americans. The size and richness of the archaeological site revealed an earlier robust population and successful whaling culture. Calling it "a gift from our ancestors," the Makah built a world-class museum, and worked in an enlightened manner to both preserve the site and continue further research. Though a report published after the excavations dated the site as being in use from 2000 to 500 years ago, using radiocarbon dating, some surprising facts subsequently came to light.

### **The Earthquake and Tsunami Legends of the Makah Tribe**

Through the oral history and legends of native peoples inhabiting Canada's Vancouver island, Olympic peninsula, and the coast of Oregon state, provide several accounts about earthquakes and tsunamis. Their oral traditions were gradually lost during the 20th century. Today, it is said that less than 5 percent of it remains preserved in writing. Nonetheless, there remain several concrete legends regarding earthquakes and tsunamis that have been handed down by the Makah and other peoples of the Northwestern Coast, such as stories about thunderbird and the whale. This legend states that, when the thunderbird and the whale fight, the

bird picks up the whale with its talons and drops it either back into the sea or on the land, creating tsunamis or earthquake.

However, these legends do not have any clear origin points, only having come down to us as "the words of the ancestors."

## **The Geological Approach**

In recent years, the rapid development in geological and seismological research has made clear that there is an area off the shores of Oregon and Washington's Olympic peninsula where two plates at the bottom of the ocean collide, called a "Cascade Subduction Zone" (CSZ), and from which several earthquakes have emerged in the past. One proof for this is the many sand sediment layers deposited by tsunamis that can be found on the cliffs facing the Pacific ocean. In some of these areas, traces of stone hearths can even be found under the sand. In many more areas, thickets of withered cedar root and stumps, called "phantom forests," are spread over wide distances under these layers of sand. Measuring the age of these trees, it became clear that many of them showed a last growth ring in the summer of 1699.

In the immediate aftermath of the Great East Japan Earthquake, I visited both the Ishimaki Cultural Center and the Rikuzen-Takata Municipal Museum in order to rescue damaged cultural relics. There, I saw a large amount of sand from the sea that had been taken up by the tsunami and deposited inside the buildings. I also vividly remember Rikuzen-Takata City's Takata Matsubara, in which innumerable pine trees had been felled with only their roots remaining, except for a lone pine which had miraculously survived. From similar marks left by a similar tsunami, tree ring chronology has proven that the sudden halt in the growth of tree rings at the Ozette site in the Northwestern coast was due to a large tsunami occurring sometimes between the Fall of 1699 and the Spring of 1700.

## **The Orphan Tsunami of the Genroku Era**

Surprisingly, traces of this tsunami can be found in Japan. On January 26th, 1700, or during the night of December 8th to December 9th during the 12th year of the Genroku era, under the old method of dating, what became known as the "Orphan Tsunami of the Genroku Era" struck Iwate Prefecture's Kuwagasaki, Tsugaruishi, and Otsuchi, Ibaraki Prefecture's Nakaminato, Shizuoka Prefecture's Miho, and Wakayama Prefecture's Tanabe. The reason for this tsunami's peculiar name was

because there was no "parent" earthquake to accompany it, however it came all the same. There are records of this event in official Japanese documents. Some diaries of senior retainers of the Morioka clan mention that, late during the night of December 8th in the 12th year of Genroku, a tsunami striking Otsuchi caused damage to fields and pots for saltworks, while in Nakaminato, documents mention that boats loaded with rice were carried off to sea. The area affected by this tsunami is recorded in diaries of the Moriai clan in Tsugaruishi, which faces Miyako bay. It was comparable with the tsunami that hit Chile in 1960, which means that it was certainly of a large scale.

Calculating backwards from these Japanese sources, it was calculated this tsunami's "parent" was a large earthquake of magnitude 9, with the Cascade Subduction Zone as its epicenter, and occurred around 9PM on January 26th, 1700. It took this tsunami approximately 10 hours to reach the Japanese archipelago.

Until now, the standard explanation was that a landslide caused by back-spring water had buried the Ozette site. However, it has now become likely that the site landslide was triggered by the earthquake and followed by the tsunami. This site, in which people had lived for over 2000 years, was perfect for a fishing people, with its suitability for whaling, the hunting of fur seal and other marine mammals, as well as both salmon and halibut fishing. Despite having sustained massive damage in 1700, it continued to be used afterwards as a seasonal camping ground, until finally falling into disuse around 1930.

The Ozette site is not only a site rich with wooden items and basketry textiles in a state of preservation rarely seen around the world, it is also a site in which geology, seismology, tree-ring chronology, as well as the results of research into Japanese historical records regarding tsunamis have been masterfully synthesized to succeed in shedding light on its dramatic history. A summary of all of this research is included in detail in the literature below:

**Brian F. Atwater, Musumi-Rokkaku Satoko, Satake Kenji, Tsuji Yoshinobu, Ueda Kazue and David K. Yamaguchi** *"The Orphan Tsunami of 1700", Japanese Clues to a Parent Earthquake in North America*, University of Washington Press 2005.

After returning to Japan and learning that this research regarding the orphan tsunami was very famous amongst people with knowledge of tsunamis, I felt strangely ashamed of myself. This tome is written in beautiful Japanese, and contains wonderful images and captions. I recommend reading it at least once, even in English.