



Episode 702, Story 2: Galleon Wreck

Elyse Luray: Our next story examines whether a strange discovery on an Oregon beach was once part of the riches of the Spanish Empire. In the early 16th century, trade is creating connections between previously isolated cultures. Massive sailing ships from Portugal, Spain and England haul exotic cargos from China, Africa and the new world of the Americas. But many of those merchant ships will never arrive in their home ports. Storms and treacherous currents will claim their treasures. Some four centuries later Phyllis Koch of Portland, Oregon believes she may have a piece of this historic global enterprise, sprung from the hold of a long lost trade ship.

Phyllis: The stories we understood was that it was at least three hundred or more years old.

Elyse: I'm in Manzanita, Oregon to meet Phyllis and hear more about her family's discovery.

Phyllis: Come on over, I have the piece over here for you.

Elyse: That's unique. What is it?

Phyllis: It is...according to my mother, beeswax.

Elyse: Beeswax?

Phyllis: Um hmm.

Elyse: Wow, it doesn't feel like beeswax.

Phyllis: No, it's been out in the weather.

Elyse: And where did your mother find this piece?

Phyllis: Well, they found it down the coast.



Elyse: Phyllis says the strange brown block was found on the beach, on Oregon's northern coast, at a spot called, Nehalem Bay. How did it get to the beach?

Phyllis: Well I've always been told that the ship was coming from China, got blown off course, and were trying to make a safe harbor, and crossing the bar of the Nehalem River it wrecked.

Elyse: Phyllis's mother told her of a long history of beeswax recovered from this area.

Phyllis: Well one of the things she used to tell me about was that the farmers, when they needed extra money, and they would plow up a big chunk of beeswax and haul it up to Astoria and sell it.

Elyse: Who'd they sell it to?

Phyllis: No idea.

Elyse: What do you want me to find out?

Phyllis: Well, I'd like to know if it's really beeswax and did it really come from China?

Elyse: Well, I'll see what I can find out. Is it beeswax? Not really sure. When I look at it and touch it, it feels like rock at the top of it. When I looked at the back of it, it's very raw, it's very dark. It's much lighter on this side. And one of the things that I notice, that I find really interesting is it almost looks like someone deliberately carved some type of symbol or their initial onto the piece. This could be an a, and this, a b. But I'm not sure. If this is beeswax, I'm curious who might have been shipping so much of it, and why. It's pretty heavy. You'd be surprised. I think it probably weighs about twenty to twenty-five pounds. So I think what I'll do is I'll take it outside and I'll take some pictures of it. Phyllis was right... I've found several old articles, about beeswax uncovered on the beach at Nehalem Bay. Here's one from the *Wheeler Reporter* and it's dated Thursday, August 15th, 1929. "The first settlers say there were great chunks, some weighing two hundred pounds. The Indians told of a time when the beach was strewn for miles with the substance." And there's more. Oregon fur trader, Alexander Henry, writes in his journal from 1813, "great quantities of beeswax continue to be dug out of the sand near this spot, and the Indians bring it to trade with us." Henry took special note of the discovery of wax because the Pacific Northwest had



no honeybees yet. This article suggests the shipwreck wasn't a Chinese ship, as Phyllis said, but a Spanish Galleon. It appears that beeswax was a valuable commodity for the Spanish Empire. "Much of the wax was originally in blocks weighing about twenty pounds. The large quantity of the wax suggests that it was a shipment consigned to the Catholic missions for use in making images and candles". In the 17th and 18th centuries, the Spanish built hundreds of Catholic missions in their colonies in the Americas. The church required ritual candles to be made from 100% virgin beeswax. The pure wax symbolized Jesus' flesh from a virgin mother. And unlike waxes made from animal fat or paraffin, beeswax was safe around paintings because it creates no soot. Since there were no honeybees in the Spanish colonies in the new world, beeswax was imported from the Spanish colony in the Philippines. If this is beeswax, I still don't know what it was doing in the Northwest, where there were no Spanish colonies. Before I go any further, I better figure out if Phyllis' piece is even real beeswax. Mike Burgett is head of the bee lab of Oregon State University in Corvallis.

Mike: Let's go look at some bees! These are worker honeybees. And we're looking at a comb that they have produced entirely from their beeswax. But everything we see here is pure beeswax.

Elyse: I ask Mike why people would ship beeswax in large blocks.

Mike: Even today, this is the common way of in wax marketing. Rather than handle small lots of it, you would take wax, in a solid state like this, liquefy it, strain it, and pour it into molds.

Elyse: Mike explains that if our object is beeswax it could be several centuries old.

Mike: Wax beeswax is an item that lasts forever. A block of beeswax today is gonna be that same block a thousand years from now. You can't say that about honey. Honey...honey will eventually, quote/unquote "spoil."

Elyse: He says that there are over 20,000 species of bees in the world, but only 8 or 9 species of honeybees.

Mike: The bee we're looking at right here, Elyse, is commonly called the European honeybee, or the Western honeybee.



Elyse: Mike tells me that European honeybees didn't arrive in the northwest until pioneers brought hives in the 1860's. We've gotten permission from Phyllis to take a sample from her block, so Mike can confirm if we do have beeswax and figure out what kind of bees may have made it. Jeff Morre is a researcher at the university's chemistry lab. Here you go.

Jeff: Let's run it on the GCMS.

Elyse: The GCMS is a gas chromatograph/mass spectrometer which separates complex chemicals into their individual components. Jeff dissolves our sample in chloroform, and then injects the liquid into the testing device. The sample is vaporized and shot down a long tube, where its elements divide. Bee species have evolved differently depending on their location. If we do have beeswax, the chemical composition will be a kind of fingerprint that can identify the source of our sample. The findings are matched against samples of both the European and the giant Asian honey bee.

Jeff: You can see that the *Apis Mellifera* and the...the *Apis Dorsata*, have quite different patterns.

Elyse: Right.

Jeff: And when we look at the sample, it very closely resembles *Apis Dorsata*.

Elyse: So our example looks very close to the...

Mike: Giant honeybee.

Elyse: Ok we do have beeswax, and it definitely came from the giant Asian honey bee. But exactly where the wax was harvested, Dr. Burgett isn't sure.

Mike: It could be from the Philippines, but it could as well be from other geographical areas in Southeast Asia.



Elyse: And he says that it's difficult to test the wax's age, because radio carbon dating can only tell us within 300 years. Maybe the markings on the wax can help answer those questions. Mitch Marken has recovered underwater artifacts off the coasts of Mexico, Ecuador, and Bermuda. I'm hoping he'll have some ideas for me. Mitch, first tell me a little bit about what you do.

Mitch: Well, I'm a shipwreck archaeologist. And my specialty is ceramics that have been recovered from...from Spanish galleons.

Elyse: And what time period are those shipwrecks usually from?

Mitch: In the period of Spanish colonization, mostly from 1500 through 1800.

Elyse: And where would you say that you primarily find these shipwrecks?

Mitch: The galleons that I've looked at are in the Caribbean, the Pacific. Vietnam, North Sea of Britain, Mexico. All over, actually.

Elyse: Mitch explains that the Spanish galleons were the largest and most advanced fleet of their day. For almost two hundred and fifty years, starting in the mid fifteen hundreds the Spanish galleon trade ships crisscrossed the globe. Silver from the new world headed west across the pacific. In the Philippine port of Manila, the precious metal was traded for Chinese silk, spices, porcelain and beeswax. The galleons returned to Acapulco, Mexico, and their cargo was then shipped overland, to Veracruz and onward, across the Atlantic, to Spain. Mitch, I'm researching this piece of beeswax that was found on the Oregon coast. And it looks like there's a mark that's deliberately carved in it. Have you ever seen anything like that before?

Mitch: Uh, I sure have. In fact, um, a lot of the ceramics that I've studied from these shipwrecks have similar markings...let me show you something. These are called Spanish olive jars. And we recovered a bunch of them from Spanish shipwrecks. One is from the first half of the sixteenth century that was found in the Bahamas.

Elyse: Hmm.



Mitch: And this one is from the Spanish Armada, in 1588.

Elyse: Mitch shows me the rims of these jars, broken off during recovery. They're frequently engraved with a mark composed of overlapping letters called a sigla.

Mitch: It's a very, very Spanish custom. And the overlapping letters that you see here actually represent somebody's name or a merchant business.

Elyse: He says a Spanish merchant would carve this mark before putting his cargo on a ship, to make sure he was paid when the merchandise was delivered.

Mitch: They appear on the jars and obviously it looks like you've got somebody shipping a chunk of wax as well.

Elyse: Mitch says our mark is clearly a Spanish sigla. He's done some research to try and figure out what galleon our beeswax might have been on. He can't find a match to our sigla. But Mitch knows someone else who can help – Scott Williams, of the Washington State Office Archeology and Historic Preservation. Mitch had told me the Spanish never made it as far as Oregon, but Scott has found other evidence of Spanish colonial trade on the same beach at Nehalem Bay. Scott, so if you're going from Manila to Acapulco, how would the beeswax end up here?

Scott: They would actually leave Manila and sail way up north towards Japan to above the thirty degree latitude.

Elyse: He says from there the ships would catch winds that carried them across the pacific.

Scott: This was an incredibly long and dangerous voyage. It was not unusual for ten or twenty percent of the passengers and crew to die, either due to scurvy or disease. So if your crew's dead or weakened, they can't steer the boat as easily. And some kind of storm, or adverse winds comes up, uh, it could push it right into the Oregon coast.

Elyse: Scott shows me a list of all 33 Spanish galleons lost in the pacific during their 250 years of trade.



Scott: Because this trade was so important the Spanish kept incredibly detailed records of every ship that sailed. The cargo was that valuable.

Elyse: Scott explains that besides beeswax, which we know can't be dated; the ships also carried Chinese porcelain. Scott's team has found some 1200 pieces of Chinese porcelain, on the same beach where the beeswax came from. By matching the patterns on the porcelain pieces to patterns of known Chinese porcelain, his team has been able to figure out when the porcelain was made.

Scott: And they fall pretty tightly into a time period between 1680 and 1700 a.d.

Elyse: The porcelain dates help him narrow down his search to two possible ships, the San Francisco Xavier and the Santo Cristo de Burges. But Scott has one more piece of evidence that helps us pinpoint when the ship carrying the beeswax may have disappeared... an ancient document discovered in the national library in Paris.

Scott: This is a French translation of the original Spanish cargo manifest. And right here it says, "500 Marquette de Cire".

Elyse: Phyllis is going to love this. Phyllis, first of all, thank you. It was a great investigation. And, when I saw that I was investigating beeswax, I really wasn't sure where it was gonna take me. The first question you asked was this piece beeswax. And, we took it to a lab, and I'm happy to tell you that it is one hundred percent beeswax.

Phyllis: Wow! Yeah! After all these years this truly is beeswax.

Elyse: I tell Phyllis that the carved markings helped prove that her wax came over not on a Chinese ship, but on a Spanish galleon. And, we found one more piece of evidence that helped us figure out just when her beeswax set sail.

Scott: Five hundred Marquette de Cire, which is five hundred cakes of wax, uh, weighing up to three hundred pounds each, for a total of seventy-five tons of beeswax. So we can say with



confidence that the wreck at Nehalem is one of these two Spanish galleons. Either the Santo Cristo de Burgos or the San Francisco Xavier. We haven't found a cargo manifest for that ship yet, uh, but it's very likely that it was also carrying a lot of beeswax.

Elyse: I tell Phyllis what her family discovered decades ago is more than just an ancient piece of cargo; it's a link to one the world's earliest and longest running global trade routes. All the evidence points to the fact that your piece sailed from the Philippines on a Spanish galleon over three hundred years ago. Your mom was right.

Phyllis: Oh that is really, that's exciting. When you have something like this and you can touch it, it's like history becomes real, and to know that this piece was laying under the sand, under the water, all those years and then to find out, it's real...so, yeah, we'll...we'll hold onto it. It's living history.

Elyse: In the early 19th century, several of Spain's Latin American colonies were violently clamoring for independence. Already weakened by the Napoleonic wars in Europe, Spain was no match for liberation movements in Mexico, Venezuela, and Colombia. Spain's loss of their new world colonies ended their supply of South American silver, and the last galleon returned from Acapulco in 1815.