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Rediscovering voyages that changed trade, culture and medicine across the Pacific

New EU-funded research, sparked by a 17th-century shipwreck, reveals how centuries of trans-Pacific trade shaped medicine, shipbuilding and geographical knowledge, and built cross-cultural connections still relevant today.

19 August 2025 - By GARETH WILLMER

In 1609, the Spanish galleon *San Francisco* sank off Japan after sailing through storms and hurricanes en route from the Philippines to Acapulco in Mexico. The shipwreck took with it many vital clues about centuries of trans-Pacific trade and cultural exchange.

Now, over 400 years later, the *San Francisco*'s fate has inspired an international team of EU-funded researchers. They aim to shed fresh light on the era of the Spanish Manila galleons and the lasting legacy of these epic ocean voyages.

Hidden impact of the silk route

The *San Francisco* was one of many vessels in the fleet of trading ships that linked Asia and the Americas from the 16th to the early 19th century. They carried luxury goods such as silver, silk, spices and ceramics from China and other parts of Asia, in exchange for silver and other items, such as medicines, cacao, wine, plants and dyes, from the New World.

As part of a six-and-a-half-year research initiative called TRANSPACIFIC, the researchers aim to find out what three centuries of steady trade meant for contact between populations and the sharing of knowledge.

Key interests included tracing how diseases spread, how medicines were traded and transferred, and how galleon crews interacted with the environment during their voyages.

"It is important to show in our modern capitalist world how globalisation came into existence and who contributed to knowledge transfer," said Professor Angela Schottenhammer, principal investigator on the

TRANSPACIFIC team. She is also a professor of Chinese Middle Period and Early Modern World History at KU Leuven in Belgium.

Deeper dive into the past

The inspiration for the research came during a conversation between Schottenhammer and long-time collaborator Dr Jun Kimura, a maritime archaeologist at Tokai University in Tokyo, after a dive to search for the remains of the *San Francisco*.

“Unfortunately, his team didn’t find anything,” she said. “The seabed is deep, and most of the remains will have been washed away.” But that led to an in-depth discussion about just how little we still know about the Manila galleons.

Since then, the TRANSPACIFIC team has delved into rare manuscripts, diaries and maps from museum and library archives around the world. They have also drawn on archaeological findings and historical data to reconstruct winds and ocean currents.

“We’ve found so many materials that we realised we’re actually only scratching the surface,” said Schottenhammer. “There’s so much more to investigate.”

Balm for wounds

One fascinating finding concerns Peruvian balsam, a resin from the *Myroxylon balsamum* tree in Latin America, long valued as a topical antiseptic. Carried into Asia on the Manila galleons, it spread beyond China’s elite and even reached the country’s Qing army.

“I found that a general of the Qing army wanted to get more of this substance,” said Schottenhammer. “If it was used in the army for healing sword wounds, it shows how even what seem like marginal aspects of trade could have an important impact.”

Such findings resonate today as interest grows in natural remedies and plant-based medicines, with many medicinal drugs, herbs and plants used on galleons originating in the Americas

To dig deeper into medical exchanges, the team reconstructed the inventory of Agustín Sánchez, a Spanish “barber-surgeon” who died aboard the *San Martín* galleon in 1592.

Along with tools like syringes, knives, or scissors, his collection also included medical texts. One of these recommended mixing leaves from a narcotic plant called picietl – or Aztec tobacco – with lime and garlic to make a remedy believed to cure disease, ward off venom and protect against evil spirits.

Other prized substances included camphor, a natural antiseptic sourced, for example, from the camphor laurel tree native to East Asia.

Finding the right mix

According to Dr Mariana Sánchez, a KU Leuven researcher in early modern Hispanic history of medicine, European travellers embraced indigenous knowledge, adapting treatments for tropical climates.

“It seems the travellers really understood that native knowledge was important,” said Sánchez.

The research team also explored other puzzles, such as how sailors secured enough drinking water for the long Pacific crossings.

Galleons appointed a “water constable” (alguacil de aguas) and developed methods to purify seawater and collect rainwater. Islanders also soon realised water was a prized commodity and began trading it with foreign sailors.

“For a galleon with a crew of several hundred, you needed a lot of water,” said Dr Mathieu Torck, a maritime historian at KU Leuven. “A local barter economy thus developed among indigenous island populations for water and other provisions much needed by the Europeans.”

Another revelation was the possible role of chocolate. Despite the gruelling Pacific voyages, some records show surprisingly low mortality rates among crews.

“From the start, we wondered how the Spanish managed to sustain this trade for 250 years across such huge distances,” said Torck.

One possible clue lies in frequent references to cacao on board. As it is rich in flavonoids, the researchers speculate that it may have boosted the effects of vitamin C, staving off scurvy when combined with fruit and vegetables.

Shaping our understanding of globalisation

The TRANSPACIFIC team is now developing a digital database to trace the flow of goods, people and ideas over three centuries of trade. Their work reveals how knowledge travelled, how informal and seemingly marginal factors affected trade, and how cultures intertwined. Their research will conclude in 2026.

“We hope that these studies will entirely change our view of the historical trans-Pacific trade,” said Schottenhammer. “They reveal how deeply connected the world was, long before modern globalisation.”

As the researchers continue to uncover hidden links, it reminds us how much the legacy of this global trade route still resonates in our lives today.

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