



## When Intelligence Made a Difference

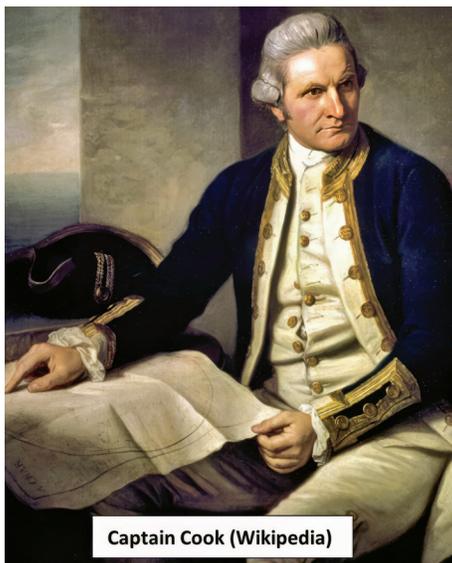
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### Tupaia, the Master Navigator

by Peter von Buol

[Editor's Note: Long before Geospatial-Intelligence (GEOINT) entered the lexicon of the field of intelligence, its elements, especially understanding the Earth, were practiced by ancient generals and explorers. While the Tahitian Tupaia was a master Polynesian navigator, he was much more – a true GEOINT expert in the 18th Century, who guided the British explorer Captain James Cook during his first Pacific expedition of 1768 to 1771. Much of Captain Cook's reputation as a successful explorer and navigator is due to Tupaia.]

For nearly 250 years, mysterious charts attributed to Tupaia, the greatest Pacific navigator of the 18th Century, have presented more questions than answers. Long considered indecipherable, these charts show 130 islands (of these, 74 are named) within a 2,000-mile radius of Tahiti.



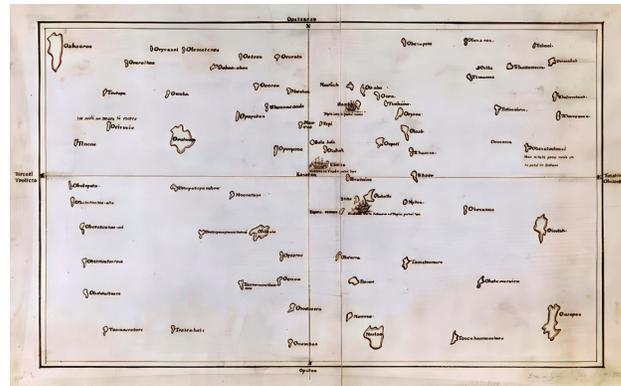
Captain Cook (Wikipedia)

Now, after more than six years of study, German-based researchers Lars Eckstein and Anja Schwarz believe they have unlocked the secrets of Tupaia's charts. Trained in literary and cultural studies, the pair first became interested in his charts while co-teaching courses in colonial travel writing

at Germany's University of Potsdam. Their course materials had included the journals of Captain James Cook. Cook's journals mention Tupaia as having an encyclopedia knowledge of the Pacific and include a copy of his chart. Back then, it was assumed there was only one version of it. Later, their extensive research led them to conclude three different versions of the chart were made. Eckstein said:

The chart fascinated us. We read up on the existing research on it, and began using it, again, mainly in teaching, as a key example of the encounter between different knowledge traditions. The [chart] was really helpful to explain to students that a Eurocentric view of the world is just one way of seeing and organizing it-and that just because we don't know enough about other knowledge traditions, dismissing them as inferior or dysfunctional is highly problematic.<sup>1</sup>

Work on the chart began while Tupaia was sailing aboard Cook's HMB Endeavour in 1769-1770. As translator and guide, Tupaia had been indispensable to the ship's officers and crew, as well as its team of civilian scientists, during a three month stay on Tahiti. Tupaia had learned English two years earlier during the visit of the British navy's HMS Dolphin.



Tupaia's 1769 Map (British Library)

According to Eckstein and Schwarz, three drafts of the chart were made. There are significant differences between the two remaining versions. The first draft only includes 58 islands. The final version includes 74 islands. Cook describes an intermediate

1. Lars Eckstein and Anja Schwarz (2019), "The Making of Tupaia's Map: A Story of the Extent and Mastery of Polynesian Navigation, Competing Systems of Wayfinding on James Cook's Endeavour, and the Invention of an Ingenious Cartographic System." *The Journal of Pacific History* 54(1), pp. 1-95. (<https://www.tandfonline.com/doi/full/10.1080/00223344.2018.1512369>). See also Lars Eckstein and Anja Schwarz, "The Making of Tupaia's Map Revisited", *The Journal of Pacific History* 54(4). <https://www.tandfonline.com/doi/full/10.1080/00223344.2019.1657500>.) For a shorter summary of the research findings, see: <https://www.uni-potsdam.de/en/iaa-alc/tupaia-map.html>.

version in his own journals. Unfortunately, that version no longer exists.

At home sailing the Pacific Ocean, Tupaia had asked to join the *Endeavour* just days before the ship was scheduled to leave Tahiti. Believed to be about 45 years old at the time, Tupaia was close in age to Cook. While the British explorer respected him, Tupaia had formed his closest friendship with the 26-year-old Joseph Banks. In fact, it seems highly likely Banks and Tupaia had forged a special relationship as *taio*, or bond friendship.<sup>2</sup> Such a relationship allowed Tupaia, who was highly-educated in many aspects of Tahitian life, to freely share his knowledge with Banks and Cook. “He is certainly a most proper man, well-born, chief, a *Tahu`a*, or priest of this Island, consequently skilled in the mysteries of their religion; but what makes him more than anything else desirable is his experience in the navigation of these people and knowledge of the Islands in these seas; he has told us the names of above 70, the most of which he has himself been at,” wrote Banks in his description of Tupaia.



HMB *Endeavour* off the coast of New Holland (Dutch East Indies)  
Crop of painting by Samuel Atkins, National Library of Australia (nla.pic-an5921609)

Throughout the *Endeavour*'s stay on Tahiti, many islanders had expressed interest in traveling all the way to Great Britain. Cook had been reluctant to accept a passenger. After all, Cook had no guarantees the British government would pay for a visitor's expenses, not even a distinguished one. Stepping in to pay for

2. For an explanation of a Tahitian bond or brother *taio* friendship see Chapter 20, “Friendship,” <https://manifold.uhpress.hawaii.edu/read/ancient-tahitian-society/section/7530cdf5-8a6d-4496-9826-570059e25c61>

Tupaia's expenses was Banks, who was wealthy and well-connected.

In his journal, Cook provides a written appreciation for the addition of Tupaia to his ship's complement.

This man had been with us most part of the time we had been upon the Island which gave us an opportunity to know him: we found him to be a very intelligent person and to know the Geography of the Islands situated in these seas, their produce and the religion laws and customs of the inhabitants than anyone we had met with and was the likeliest person to answer our purpose.<sup>3</sup>

Among those who wrote laudatory words about Tupaia was Robert Molyneux, Master of the *Endeavour*. As master, he was the officer responsible for navigation and sailing. While still on Tahiti, Tupaia had already freely shared some of his knowledge with Molyneux. “[Tupaia was] infinitely superiour in every Respect to any other Indian we have met with, he has conceiv'd so strong a friendship with Mr. Banks that he is determined to Visit Britannia.”<sup>4</sup>

Tupaia was a master star navigator who had been trained at Ra'iatea's Taputapuatea temple. New Zealand historian Dame Anne Salmond, who has written extensively about Tupaia, describes the temple as “one of the most famous voyaging centers in Polynesia.”<sup>5</sup> Tupaia was the son and grandson of master navigators. Early on, he had learned how to memorize distinct star and sun paths and to make careful astronomical observations. Tupaia also memorized island lists that included basic information about each named island. This included the size of an island, whether or not it was a high or low island; whether or not it had a coral reef; the location of its good harbors, and foodstuffs. He also knew if an island was inhabited and if the islanders were friendly. In addition, Tupaia knew the name of an island's high chief. Tupaia's knowledge also included the directions of ocean currents and swells and how to analyze winds and cloud formations. He also had extensive knowledge of natural history.

According to Eckstein and Schwarz, the word lists compiled by Cook and Molyneux were one of the

3. Captain Cook's journal is in the British Library. Copies are available on the Web.

4. Robert Molyneux's logbook from *Endeavor's* explorations resides in the National Library of Australia.

5. Professor Dame Anne Salmond of the University of Auckland is also an anthropologist and historian. Her book is *The Trial of the Cannibal Dog: The Remarkable Story of Captain Cook's Encounters in the South Seas*, Yale University Press, 2003. Ra'iatea is an island in the Society Islands 126 nautical miles northwest of Tahiti.

keys to understanding what Tupaia had been trying to share. Cook and Molyneux's lists have only 39 islands in common. That meant Tupaia shared different information with the two men. Only by looking at all the available information were they able to understand what Tupaia was attempting to share. Eckstein wrote:

One of the lists was sung or recited for Cook, which had been thought lost. We [actually] found a copy of it an unpublished manuscript by Johann and George Forster (the scientists who sailed on Cook's second voyage). The other, and the one which was actually used when that chart was drawn, is recorded in Molyneux's [handwritten] log.<sup>6</sup>

While Molyneux's account has been published, its accompanying word list was not included. Eckstein added:

It is still only around in manuscript form. [Before us], we know only one modern day scholar (Salmond) who actually worked with it. The only others who had all resources at hand to do this comparison were probably the Forsters, in the 1770s.

By carefully studying the island lists, Eckstein and Schwarz came to the realization the sequences of islands were describing voyaging routes. "The more research we did into Polynesian navigation, the clearer it became to us the narratives, and thus sequences, must matter," Eckstein said.

Another key to understanding what Tupaia was trying to share was his placement of the word *avatea*, the Tahitian word for noon, on the charts. Daily, Cook and his officers would record their astronomical observations at noon. "Our argument is that *avatea* marks a bearing to the North, from whichever island and route you place yourself on. To get from 'noon' to 'north' we had to trace 'avatea' in the accounts of the Forsters, where it is used as the *te ra avatea* (the sun at noon). We also found a drawing in the diaries of Banks (or Solander) showing the course of the sun, where the zenith position is marked as 'avatea te mahana' (again, the sun at noon)."

Cook and his men would stop the ship every day at noon. Using a sextant, Cook would record the position of the sun at noon. This data enabled Cook to calculate his ship's latitude. Cook also benefited from a recent invention, the chronometer. Being able to tell

time accurately meant he was able to also calculate the ship's longitude. According to Eckstein and Schwarz,

Tupaia placed north, indicated by the little word *avatea* [Tahitian for noon], in the center of the map and thus quit the abstract cartographic space set up [for him] by the Europeans [on board the *Endeavour*]. Every island which he would from now on enter on the first draft of the chart was a center, a center from which a *pahi* [Tahitian for sailing canoe] could depart on a specific voyaging path.

Tupaia's chart describes two long-distance voyaging routes. The first connects Rotuma Island, in Fiji, with Easter Island (Rapa Nui), via Samoa and Tonga, the southern Cook Islands and the Austral Islands, then to Mangareva and Pitcairn. This remarkable route encompasses a fifth of the earth's circumference. The second long-distance route connects Tahiti with the Hawaiian island of O`ahu.

To sail to O`ahu, Tupaia begins in Ra`iatea. From there, he guides the vessel to sail through the Tuamotu Islands for Nuku Hiva, in the Marquesas Islands. From there, he advises to sail northwest to Oahu[rou]. Intriguingly, a chant from Ra`iatea recorded in the early 19th century describes just such a voyage. In this chant, one has to first sail past a nearby island "where the fire ever kindles."<sup>7</sup>

Two place names on O`ahu recall the connection to Ra`iatea and Taputapuakea. Today, Laniakea is a popular beach and surfing-spot, north of Haleiwa. Laniakea is the Hawaiian translation of Ra`iatea. Kapukapuakea is the Hawaiian translation of Taputapuakea and was the name of a nearby *heiau*.<sup>8</sup> "The evidence that this is indeed O`ahu really only follows from an understanding of the logic of Tupaia's chart, this is knowing the routes, and understanding what we have called the *avatea*-system, which provides the bearings from island to island travel on the routes," Eckstein said.

After Tupaia joined the *Endeavour*, Cook had been eager to set sail to explore and survey the islands of Huahine, Bora Bora and Ra`iatea, northwest of Tahiti, and add more islands to his own charts of the Pacific. It would also provide him with an opportunity to stock

6. Largely dependent on verbal history, in Polynesian cultures historical stories are often sung.

7. This is a reference to the eruptions of Mauna Loa, the largest volcano on the Big Island of Hawaii and in the world.

8. The Laniakea beach is on the north shore of O`ahu in the Hawaiian Islands where professional international surfing competitions are held. "A *heiau* is a Hawaiian temple. Made in different architectural styles depending upon their purpose and location, they range from simple earth terraces, to elaborately constructed stone platforms." (Wikipedia).

up on provisions before heading south to search for *Terra Australis Incognita*, the mythical southern continent many believed existed in the southern hemisphere. With Tupaia as navigator, Cook and his officers were confident sailing would go smoothly. According to Christina Thompson, author of the newly-released book, *Sea People*,<sup>9</sup> Tupaia impressed Cook when he asked a man to dive into the water to measure the keel of the British ship. With these measurements, Tupaia was able to calculate the ship's safe entry into an island's lagoon.



Tupaia knew the languages and customs wherever they landed in the Society Islands and he willingly served as Cook's translator and intermediary. He also instructed the British how to behave at each stop. Tupaia also had a hidden talent. While still on Tahiti, among those whom he had been befriended had been Sydney Parkinson, the ship's 24-year-old artist. Today, it is believed their friendship resulted in a remarkable collaboration, a series of folk-art style images of 18th century life in the Pacific. While most of these images are of indigenous peoples, one image includes a blue-coated British man. The man seems to be offering a piece of cloth to a Maori warrior. For centuries, the artist had remained unknown. More than two decades ago, however, in an 1812 letter Banks wrote reminiscing to botanist Dawson Turner in 1812, he revealed the artist's identity.

Tupaia, the Indian who came with me from Otaheite, Learned to draw in a way not Quite unintelligible. The genius for Caricature which

all wild people possess Led him to Caricature me & he drew me with a nail in my hand delivering to an Indian who sold me a Lobster.

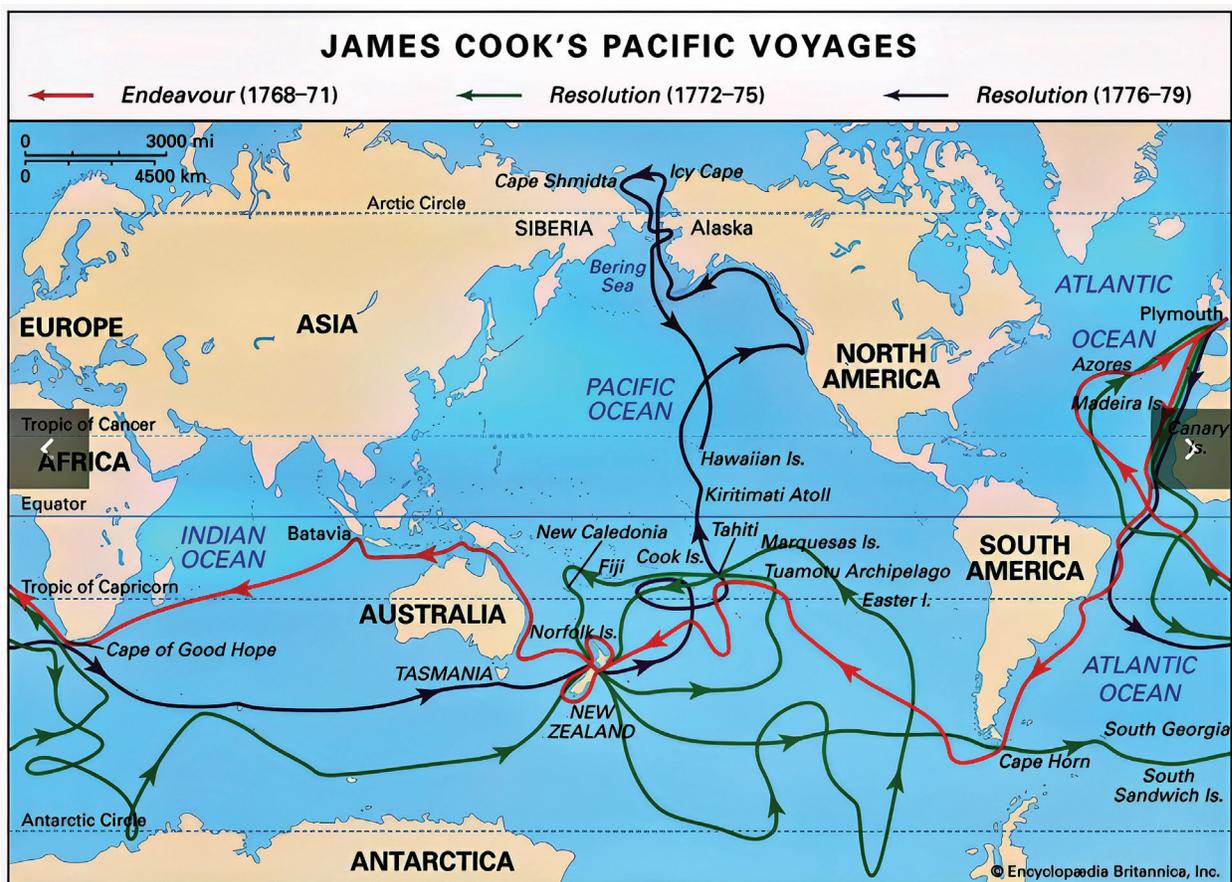
As they sailed from island to island, Tupaia impressed the ship's crew and its scientific delegation. Generously and patiently, Tupaia shared what he knew. Trained as a high priest and a master navigator, who sailed to faraway islands, Tupaia possessed an innate ability to communicate languages. On board the *Endeavour*, he became even more adept at English. The exchange worked both ways. During their discussions with Tupaia, Banks and Parkinson improved their own understanding of Tahitian vocabulary and grammar. Cook also improved his understanding and use of Tahitian.

On August 10, 1769, *Endeavour* made a bittersweet departure from Ra'itea, Tupaia's home island. As a guest of the British, Tupaia had been given a rare opportunity to freely walk around his home island. A couple years later, a British naval officer learned the chief from Bora Bora had been so afraid of Tupaia and the British that he ordered his people to pay the utmost respect to the visitors. Tupaia had wanted to sail west but Cook directed the ship to sail south. Had the British ship sailed on a western direction, it would have reached Tonga, Samoa, the Cook Islands, and Fiji (all places Cook would visit on his second Pacific voyage in 1772-1775). Instead, the *Endeavour* sailed south as Cook obeyed a secret order from the British Admiralty to search for a large southern continent some had hypothesized existed south of the equator.

As they sailed, Tupaia informed Cook they were heading in the direction of Hiti-roa, an island he had last visited more than two decades earlier. Today, the island is known as Rurutu and is part of the Austral Islands of French Polynesia. Upon their arrival, Tupaia attempted to negotiate trade but, overall, the island's inhabitants were afraid of the British.

After their brief visit, Cook continued to sail south. Disappointed, Tupaia questioned Cook's decision. Nevertheless, Tupaia continued to share his knowledge. When asked what he knew of this part of the Pacific, Tupaia told Cook he knew of only one more island to the south, and it was about two days sail. In addition, Tupaia added his father had told him there were two other islands in that direction. Unfortunately, he added, that was all that he knew. He did not know how to locate them. Today, it is believed Tupaia was describing the locations of Tubuai, Raivavae and, most likely, tiny Rapa.

9. Christina Thompson, *Sea People: The Puzzle of Polynesia*, Harper Books, 2022.



As they headed further south, the *Endeavour* experienced cold temperatures and which drastically affected Tupaia's health. Also affecting his health was an intestinal disorder, most likely due to a lack of fresh fruit and vegetables. Despite his debilitating physical ailments, Tupaia continued to collaborate with the *Endeavour's* crew. During this part of the voyage, Tupaia worked with Cook, Banks and others to commit his extensive navigational knowledge to paper. When asked by Cook about any land to the south, Tupaia replied he did not know of any. His response seems to indicate that by 1769, native Society Islanders no longer possessed the sailing directions for roundtrip voyages to Aotearoa (New Zealand).

On October 6, 1769, nearly three months after leaving Tahiti and having traveled about 3,500 miles since leaving Tahiti, the *Endeavour* arrived in Aotearoa. First sighted by the Dutch explorer Abel Tasman in 1642, it had not been visited by Europeans since. Two days after reaching the North Island, the ship sailed into Turanga-nui (Poverty Bay, on the northeast tip of the North Island). Fatefully, a decision had been made to go ashore without Tupaia. This first encounter between the British and native Maori ended disastrously resulting in the death of a Maori warrior. The

next day, escorted by a party of British Marines, Cook and Banks landed with Tupaia by their side. Shortly afterward, the Maori performed a fearsome *haka* to protest the shooting of their comrade.<sup>10</sup> Immediately, Tupaia realized he understood the Maori and he told them the British came in peace and had simply sought fresh food and water. Despite his friendly words, Tupaia warned the British to remain vigilant as he did not trust the fearsome Maori.

For six months, Cook circumnavigated the North and South Islands of today's New Zealand. As he had been in the Society Islands, Tupaia was an incredible asset. While not every encounter was peaceful, Tupaia was the ideal intermediary. Wherever the British sailed, Maori respected Tupaia for his knowledge and wisdom. This enabled him to help the British to procure provisions and to obtain vital geographical information. As a high priest and high chief from *Hawaiki* (as the Maori referred to the Society Islands),

10. The *haka* is a Māori war dance or challenge. *Haka* are usually performed in a group and represent a display of a tribe's pride, strength and unity. Actions include the stomping of feet, protrusion of the tongue and rhythmic body slapping to accompany a loud chant. (<https://www.newzealand.com/int/feature/haka/#:~:text=The%20haka%20is%20a%20ceremonial,to%20accompany%20a%20loud%20chant.>)

the ancestral homeland of the Maori, Tupaia achieved legendary status. Many Maori believed Tupaia was the leader of the expedition, not Cook. Throughout the visit, he was showered with gifts of great prestige, including a pair of canoe paddles, a dog-skin cloak and a carved ancestral panel from a Maori meeting house.

While Tupaia recognized he shared common ancestors with the Maori, he identified more with the British. Perhaps, this was due to his close friendship with Banks. It is also known he was horrified by cannibalism, a practice which he repeatedly urged Maori to discontinue. Tupaia seems to have left a tangible reminder of his visit, a painting of a square-rigged ship on the wall of a North Island cave. The style of this painting is similar to those known to have been painted by Tupaia.

In February 1770, the *Endeavour* sailed to the South Island's Queen Charlotte Sound for a brief respite.<sup>11</sup> Tupaia, Cook and Banks used the pause to finalize work on the final version of the chart. Five captions in Tahitian were then added to the chart. Shortly afterward, the *Endeavour* continued its circumnavigation of the South Island, which confirms New Zealand is a group of islands, not the mythical southern continent.

After leaving New Zealand, *Endeavour* sailed for the then-uncharted east coast of Australia. While Tupaia continued to be among landing parties in Australia, he became dismayed when local inhabitants were not able to communicate with him. To the Australians, the unintelligible Tupaia is as feared as the British. Mere sight of him caused them to flee. Despite this setback, Tupaia once again resumed painting scenes. Fortunately, Tupaia was able to forage and hunt for recognizable foods while in Australia and his health began to recover.

After Australia, the next stop for *Endeavour* was the city of Batavia (Jakarta), in what was then the Dutch East Indies. Unfortunately, Tupaia's recovery was brief. He died in Batavia on December 26, 1770; days earlier

11. Queen Charlotte Sound is located on the north shore of New Zealand's South Island in "Cook's Strait" separating the South Pacific Ocean and the Tasman Sea.

his companion Taiato had preceded him in death.<sup>12</sup> *Endeavour's* Sydney Parkinson wrote of their deaths, probably from malaria or dysentery, "When Taiyota [Taiato] was seized with the fatal disorder, as if certain of his approaching dissolution, he frequently said to those of us who were his intimates, *Tyau mate oee*, 'My friends, I am dying.' He took any medicines that were offered him; but Toobaiah [Tupaia], who was ill at the same time, and survived him but a few days, refused everything of that kind, and gave himself up to grief; regretting, in the highest degree, that he had left his own country, and, when he heard of Taiyota's death, he was quite inconsolable, crying out frequently, 'Taiyota! Taiyota!'"<sup>13</sup> Tupaia and Taiato were buried side-by-side on an island in Batavia Harbor. They were not alone in succumbing to illness. Most of the ship's crew, including the scientific delegation and the captain himself, became ill during their stay.

*Endeavour* arrived home in July 1771. While Tupaia had died months earlier, the journals kept by Cook and the others preserved the memory of Tupaia and his remarkable accomplishments. Naturalist Johann Forster provided a succinct and accurate description of Tupaia. He was, wrote Forster, quite simply a "genius."

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12. Taiato was a young servant who accompanied Tupaia from Tahiti. Taiato was kidnapped by Mauris in New Zealand but escaped when the *Endeavor's* crew fired upon the kidnappers. <https://www.bl.uk/the-voyages-of-captain-james-cook/timeline>.

13. From Peter von Buol, "Decoding Tupaia," *Hanahou*, The Magazine of Hawaiian Airlines, (<https://hanahou.com/22.4/decoding-tupaia>).

