

Discovery Briefing

He kitenge1

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Kia ora

Welcome to the second volume of **Discovery Briefing**².

Our publishing objective is to increase the breadth of our human, historical and geographic content as well as our publication frequency, with a wider view of **Te** moana nui a Kiwa - the great ocean of Kiwa (Pacific Ocean), and Polynesia in particular, as significant research and discovery activities are now focused there.

We want to encourage participation and contributions.

Organisations which encourage, enable, manage, and expose to the public research which is within the scope of our objective are welcome to submit individual and/or regular updates for us to share with our readers. Individuals researching within our scope are also encouraged to contribute.

This includes all nations at the edge of **Te moana nui a Kiwa.**

Our web portal, which is currently being built, will enable discussion of relevant subjects, published material, as well as access to databases of all of the material we publish. This **Briefing** will then derive from the material published on our portal, which will be updated on an ongoing basis.

Comments on the subject areas that interest readers are very welcome.

Please share our briefing with interested people. They can subscribe using our contact details - discovery@edgeoftheocean.info

ngā mihi

Michael Ross

¹ He kitenga derives from kite which translates to words such as see, perceive, find and discover

² (Formally known as *Discovery Miscellany*, published by Penny Griffith).



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Edge of the Ocean

At the Australian Map Circle conference in Canberra in 2007 I introduced and spoke to a new concept - the Polynesian exploration of the Pacific Ocean was about finding the edge of the ocean, not about finding new parts of the known land, the traditional European perspective.

This new research approach evolved from my study of the differences between Polynesian and European exploration purpose, focus, and navigation, particularly in *Te moana nui a Kiwa* - the great ocean of Kiwa (Pacific Ocean) following my research and academic publications on Abel Tasman's 1642 voyaging.

Polynesian explorers were (and still are) working within a framework of natural guides/references (ocean, wind, stars, birds, sea creatures, and historic knowledge). They were then able to "fish up" islands, as their oral histories tell us. They had clearly sailed to the "edge of the ocean" in that locality.

Hundreds of years before Europeans and Vikings expanded their "hugging the shores" exploration approach and ventured across oceans, having developed their technical tools/references, the Polynesian people had reached and established settlements in all of the "Polynesian Triangle" including Hawaii, Rapanui, and Aotearoa. The island edges of *Te moana nui a Kiwa* had been "fished up"

Not surprisingly, this new approach had a mixed reaction from the audience...the traditional European exploration champions resisted this new perspective often labelling it as a "word game", rather than considering the value it might bring to scholarship. Others wanted to explore it further.

I encourage further research from a Polynesian perspective, into the exploration of *Te moana nui a Kiwa* by both Polynesians and Europeans.

ngā mihi

Michael Ross



Matariki

Matariki marks the beginning of the Māori new year, but the chief advisor to the government on the subject says there's something there for everyone.



Professor Rangi Mātāmua. Professor Rangi Mātāmua Photo: Waikato Museum

Professor Rangi Mātāmua told RNZ's Morning Report Matariki is about celebrating and remembering those people we have lost in the last year, celebrating who we are at the moment, with the festivities and feasting, and also looking to the future and planning for the year ahead.

But more than just that, Mātāmua said the star cluster has historically been important to multiple different cultures.

"It is a New Zealand celebration because there is not a single person in the country who does not descend from people who used that group of stars to understand the change of season, the new year, planting, harvesting ... so the purpose of it is universal.

"It's more than just a day off or a point to make money, it's about sharing and really reaffirming who we are as a nation."

https://www.rnz.co.nz/national/programmes/morningreport/audio/2018898210/rangi-matamua-on-the-significance-of-matariki

https://www.rnz.co.nz/news/national/493655/matariki-star-cluster-universal-for-all-people-professor



The man who brought Matariki to the masses

Dr Rangi Mātāmua (Ngāi Tūhoe) is a shining star in the realm of indigenous knowledge. Rangi holds the esteemed position of professor of mātauranga Maori at Massey University, but many of us may know him for his work in advocating for the Matariki public holiday, a groundbreaking achievement when it was announced in 2021, and first celebrated in 2022.

https://youtu.be/VPifXPYVRJk

 $\frac{https://thespinoff.co.nz/partner/10-07-2023/this-is-kiwi-the-man-who-brought-matariki-to-the-masses}{masses}$

Matariki – Te Tau Hou Māori



Pou Temara of Ngāi Tuhoe relates a legend of the formation of the Matariki star cluster. Tāwhirimātea, the atua (divine presence) of the winds and elements, wages war against his older brothers because they had separated their parents, Ranginui (the sky) and Papatūānuku (the earth). In his anger, he tore out his eyes and flung them into the heavens. Matariki is an abbreviation of 'Ngā mata o te ariki Tāwhirimātea' ('The eyes of the god Tāwhirimātea').

https://teara.govt.nz/files/high_source/5158-tvnz-h.mp4

Source:

Paul Meredith, 'Matariki – Te Tau Hou Māori - Heralding the new year', Te Ara - the Encyclopedia of New Zealand, http://www.TeAra.govt.nz/en/photograph/5156/matariki-the-pleiades (accessed 13 July 2023)

Ngāti Toa Rangatira

https://youtu.be/hqxifXxMHAw



News and Events

Māori inhabitants on Enderby Island (Auckland Islands)



Evidence gathered from a recent combined archaeological trip, run by the University of Auckland, Ngāi Tahu and the University of Canterbury, to the sub-Antarctic Island of Enderby (in the Auckland Islands) could confirm not only an earlier Māori arrival date in this country but also any extended and later occupations.

It follows previous research 20 years ago done by Ngāi Tahu archaeologist Professor Athol Anderson, who found Māori had been on Enderby, and lived off the bird and marine mammal life from as early as 1400CE.

https://www.teaomaori.news/maori-inhabitants-on-enderby-found-archaeologists https://youtu.be/CRHJm0mR8Nq

Last known Māori seagoing sail to return home



Te Rā, the only remaining Māori flax seagoing sail in existence, held in the British Museum, is returning to New Zealand. For the first time in centuries, New Zealanders will be able to get a close-up view of the sail when it will be unveiled at the Canterbury Museum later this year.

There are many legends about the sail. Some say that it was gifted to Captain James Cook, while others say it was given to famed Tahitian guide Tūpaia who accompanied Cook on one of his voyages in the Pacific.

But what is known is the sail was donated to the British Museum by James Edge-Partington in the 1800s.

"The age of this particular sail is two hundred years. It's been at the British Museum for over 100 years."

https://www.teaomaori.news/last-known-maori-seagoing-sail-return-home

https://www.youtube.com/watch?v=pbce2Hu5wpI



Moananuiākea Voyage - Polynesian Voyaging Society



Video Overview of Moananuiākea Voyage

Tracking the voyage

https://hokulea.com/moananuiakea/

Hōkūle'a Departs Angoon and Arrives in Kake, Alaska - Hōkūle'a (hokulea.com)



Additional Information

https://www.samlow.com/HawaiikiRising.htm

https://www.samlow.com/sail-nav/SacredForests-thestoryofHawaiiloa.htm

https://www.facebook.com/groups/PolynesianNavigators/

https://www.facebook.com/hokuleacrew



Research

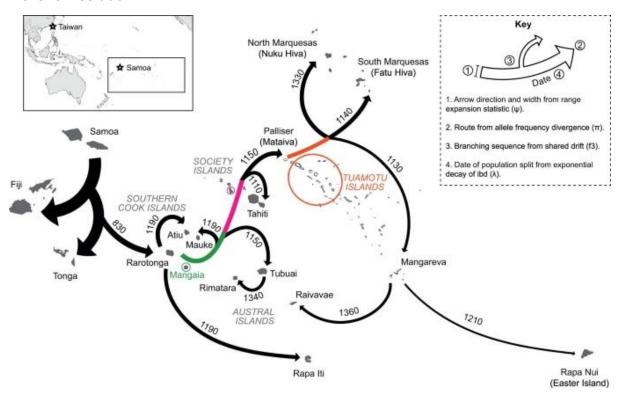
There have been many public claims, both informed and ill-informed, about early and more recent Polynesian genetic profiles and their sources.

In the interests of communicating to our readers validated information on this critical issue, and other matters, we begin here an ongoing briefing on both academic research, and native knowledge recording.

Paths and timings of the peopling of Polynesia inferred from genomic networks

Nature volume 597, pages522–526 (2021) https://www.nature.com/articles/s41586-021-03902-8

Alexander G. Ioannidis, Javier Blanco-Portillo, Karla Sandoval, Erika Hagelberg, Carmina Barberena-Jonas, Adrian V. S. Hill, Juan Esteban Rodríguez-Rodríguez, Keolu Fox, Kathryn Robson, Sonia Haoa-Cardinali, Consuelo D. Quinto-Cortés, Juan Francisco Miquel-Poblete, Kathryn Auckland, Tom Parks, Abdul Salam M. Sofro, María C. Ávila-Arcos, Alexandra Sockell, Julian R. Homburger, Celeste Eng, Scott Huntsman, Esteban G. Burchard, Christopher R. Gignoux, Ricardo A. Verdugo, Mauricio Moraga, Carlos D. Bustamante, Alexander J. Mentzer & Andrés Moreno-Estrada



Polynesia was settled in a series of extraordinary voyages across an ocean spanning one third of the Earth³, but the sequences of islands settled remain

 $^{^3}$ Low S. Hawaiki Rising: Hōkūle'a, Nainoa Thompson, and the Hawaiian Renaissance (Univ. of Hawaii Press, Low 2019).



unknown and their timings disputed. Currently, several centuries separate the dates suggested by different archaeological surveys⁴⁵⁶. Here, using genome-wide data from merely 430 modern individuals from 21 key Pacific Island populations and novel ancestry-specific computational analyses, we unravel the detailed genetic history of this vast, dispersed island network. Our reconstruction of the branching Polynesian migration sequence reveals a serial founder expansion, characterized by directional loss of variants, that originated in Samoa and spread first through the Cook Islands (Rarotonga), then to the Society (Tōtaiete mā) Islands (11th century), the western Austral (Tuha'a Pae) Islands and Tuāmotu Archipelago (12th century), and finally to the widely separated, but genetically connected, megalithic statue-building cultures of the Marquesas (Te Henua 'Enana) Islands in the north, Raivavae in the south, and Easter Island (Rapa Nui), the easternmost of the Polynesian islands, settled in approximately AD 1200 via Mangareva.

This research is discussed in this interview:

https://www.youtube.com/watch?v=ycRcWK7pMoM

Video Sources:

Ioannidis, Alexander G., et al. "Native American Gene Flow into Polynesia Predating Easter Island Settlement." Nature, vol. 583, no. 7817, 2020, pp. 572–577, https://doi.org/10.1038/s41586-020-24....

Ioannidis, Alexander G., Javier Blanco-Portillo, Karla Sandoval, Erika Hagelberg, Carmina Barberena-Jonas, et al. "Paths and Timings of the Peopling of Polynesia Inferred from Genomic Networks." Nature, vol. 597, no. 7877, 2021, pp. 522–526, https://doi.org/10.1038/s41586-021-03....

Moreno-Mayar, J; Víctor, et al. "Genome-Wide Ancestry Patterns in Rapanui Suggest Pre-European Admixture with Native Americans." Current Biology, vol. 24, no. 21, 2014, pp. 2518–2525, https://doi.org/10.1016/j.cub.2014.09....

Ioannidis, Alexander G., Javier Blanco-Portillo, Karla Sandoval, Erika Hagelberg, Carmina Barberena-Jonas, et al. "Paths and Timings of the Peopling of Polynesia Inferred from Genomic Networks." Nature, vol. 597, no. 7877, 2021, pp. 522–526, https://doi.org/10.1038/s41586-021-03....

Eckstein, Lars, and Anja Schwarz. "The Making of Tupaia's Map: A Story of the Extent and Mastery of Polynesian Navigation, Competing Systems of Wayfinding on James Cook's Endeavor, and the Invention of an Ingenious Cartographic System." The Journal of Pacific History, vol. 54, no. 1, 2018, pp. 1–95,

https://doi.org/10.1080/00223344.2018

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⁴ Kirch, P. V. On the Road of the Winds (Univ. of California Press, 2017).

⁵ Mulrooney, M. A., Bickler, S. H., Allen, M. S. & Ladefoged, T. N. High-precision dating of colonization and settlement in East Polynesia. Proc. Natl Acad. Sci. USA 108, E192–E194 (2011).

⁶ Schmid, M. M. E. et al. How 14C dates on wood charcoal increase precision when dating colonization: the examples of Iceland and Polynesia. Quat. Geochronol. 48, 64–71 (2018).



Native American gene flow into Polynesia predating Easter Island settlement

Alexander G. Ioannidis, Javier Blanco-Portillo, Karla Sandoval, Erika Hagelberg, Juan Francisco Miquel-Poblete, J. Víctor Moreno-Mayar, Juan Esteban Rodríguez-Rodríguez, Consuelo D. Quinto-Cortés, Kathryn Auckland, Tom Parks, Kathryn Robson, Adrian V. S. Hill, María C. Avila-Arcos, Alexandra Sockell, Julian R. Homburger, Genevieve L. Wojcik, Kathleen C. Barnes, Luisa Herrera, Soledad Berríos, Mónica Acuña, Elena Llop, Celeste Eng, Scott Huntsman, Esteban G. Burchard, Christopher R. Gignoux, Lucía Cifuentes, Ricardo A. Verdugo, Mauricio Moraga, Alexander J. Mentzer, Carlos D. Bustamante & Andrés Moreno-Estrada

The possibility of voyaging contact between prehistoric Polynesian and Native American populations has long intrigued researchers. Proponents have pointed to the existence of New World crops, such as the sweet potato and bottle gourd, in the Polynesian archaeological record, but nowhere else outside the pre-Columbian Americas while critics have argued that these botanical dispersals need not have been human mediated. The Norwegian explorer Thor Heyerdahl controversially suggested that prehistoric South American populations had an important role in the settlement of east Polynesia and particularly of Easter Island (Rapa Nui). Several limited molecular genetic studies have reached opposing conclusions, and the possibility continues to be as hotly contested today as it was when first suggested. Here we analyse genome-wide variation in individuals from islands across Polynesia for signs of Native American admixture, analysing 807 individuals from 17 island populations and 15 Pacific coast Native American groups. We find conclusive evidence for prehistoric contact of Polynesian individuals with Native American individuals (around AD 1200) contemporaneous with the settlement of remote Oceania. Our analyses suggest strongly that a single contact event occurred in eastern Polynesia, before the settlement of Rapa Nui, between Polynesian individuals and a Native American group most closely related to the indigenous inhabitants of present-day Colombia.

https://www.nature.com/articles/s41586-020-2487-2

Genetic characterization of populations in the Marquesas Archipelago in the context of the Austronesian expansion

Our exploration of the genetic constitution of Nuku Hiva (n = 51), Hiva Oa (n = 28) and Tahuata (n = 8) of the Marquesas Archipelago based on the analyses of genome-wide autosomal markers as well as high-resolution genotyping of paternal and maternal lineages provides us with information on the origins and settlement of these islands at the fringe of the Austronesian expansion. One widespread theme that emerges from this study is the genetic uniformity and relative isolation exhibited by the Marquesas and Society populations. This genetic homogeneity within East Polynesia groups is reflected in their limited average heterozygosity, uniformity of constituents in the Structure analyses, reiteration of complete mtDNA sequences, marked separation from Asian and other Oceanic populations in the PC analyses, limited



differentiation in the PCAs and large number of IBD segments in common. Both the f3 and the Outgroup f3 results provide indications of intra-East Polynesian gene flow that may have promoted the observed intra-East Polynesia genetic homogeneity while ALDER analyses indicate that East Polynesia experienced two gene flow episodes, one relatively recent from Europe that coincides roughly with the European incursion into the region and an early one that may represent the original settlement of the islands by Austronesians. Median Network analysis based on high-resolution Y-STR loci under C2a-M208 generates a star-like topology with East Polynesian groups (especially from the Society Archipelago) in central stem positions and individuals from the different populations radiating out one mutational step away while several Samoan and outlier individuals occupy peripheral positions. This arrangement of populations is congruent with dispersals of C2a-M208 Y chromosomes from East Polynesia as a migration hub signalling dispersals in various directions. The equivalent ages of the C2a-M208 lineage of the populations in the Network corroborate an east to west flow of the most abundant Polynesian Y chromosome.

https://www.nature.com/articles/s41598-022-08910-w

Ancient voyage carried Native Americans' DNA to remote Pacific islands

"Finding that some Polynesians have genetic ancestry from South America supports long-held theory that ancient populations met and produced offspring."

https://www.nature.com/articles/d41586-020-02055-4

DNA shows how the sweet potato crossed the sea

The humble sweet potato is an immigrant to Oceania. Native to South America, the tuber has proliferated through Polynesia and the surrounding Pacific islands — but no one is sure how it got there. Using genetic evidence from herbarium specimens and modern crops, researchers have now narrowed down the route of the sweet potato, which could provide clues as to the movements of the people who carried it.

At least three distinct hypotheses have been set forth to explain the migration of the sweet potato (Ipomoea batatas). Some archaeologists have taken the similarity between various words for sweet potato — 'kuumala' and its derivatives in Polynesia, and 'kumara', 'cumar' or 'cumal' among Quechua speakers in northwestern South America — as evidence that the tuber proliferated in Polynesia after an early introduction by locals who visited South America, long before Europeans made it there. Another theory is that the sweet potato might have reached Oceania through the natural dispersal of seeds across the Pacific Ocean.

A genetic map of the potato's pathway published today in the Proceedings of the National Academy of Sciences1 throws support to a third school of thought. In the 'tripartite' hypothesis, developed in the 1970s by the archaeologist Douglas Yen, then at the Bishop Museum in Honolulu, Hawaii, the sweet potato arrived in Oceania multiple times2. First, between 1000 and 1100 AD, Polynesian voyagers visited South America and brought the sweet potato back with them, later



spreading it around other Pacific islands; Europeans then transported other sweet-potato lineages to the Philippines and the western Pacific in two separate waves from the sixteenth century onwards. From there, genetically distinct sweet-potato lines would have dispersed throughout Oceania.

The latest study favours this tripartite scenario. A team led by Caroline Roullier, a botanist at the Centre for International Agricultural Cooperation and Research for Development in Montpellier, France, took genetic samples from modern sweet potatoes and historical specimens kept in herbarium collections.

https://www.nature.com/articles/nature.2013.12257

References

- 1. Roullier, C., Benoit, L., McKey, D. B. & Lebot, V. *Proc. Natl Acad. Sci. USA* http://dx.doi.org/10.1073/pnas.1211049110 (2013).
- 2. Yen, D. E. *The Sweet Potato in Oceania: An Essay in Ethnobotany* (Bishop Mus. Press, 1974).

Editor's Note

In 1990/1, in multiple discussions with the "senior" tohunga of an iwi on the East Coast of the North Island I learnt that on two occasions in Polynesian history weather conditions in Aotearoa lead to huge kumera crop failures. That forced Maori (I understand it was his iwi who led) to sail to Rapanui to gather new tubers to restart the crop back in Aotearoa.

DNA reveals Native American presence in Polynesia centuries before Europeans arrived

"Native Americans and Polynesians were in contact across the Pacific Ocean centuries before Europeans entered Polynesian waters, according to a new study published today the journal Nature. Moreover, this initial interaction likely occurred before people settled on Rapa Nui (also known as Easter Island)—the Polynesian island closest to the South American coast that was once thought to be a likely point of contact between the two groups."

https://www.nationalgeographic.com/history/article/dna-pre-columbian-contact-polynesians-native-americans?loggedin=true&rnd=1688112137260



New Research

The purpose of this section is to identify recent academic research of interest, providing links for those readers who wish to explore the research further.

While we are sourcing this material from public information we encourage all researchers to advise us of their projects and progress, in the form shown below.

This first edition highlights some work from the University of Otago Anthropology and Archaeology Department.

Fragments of a Lapita Past: Investigating the emergence, transformations, and interactions of Lapita populations during the early and middle periods of the Lapita cultural complex in the Bismarck Archipelago

Hogg, Nicholas William Stanton

This research is concerned with the earliest Lapita populations of the western Pacific and those that immediately follow, within the Bismarck Archipelago of Papua New Guinea. Driven by research questioning traditional interpretations of the emergence of the Lapita Cultural Complex, it aims to clarify the chronology of populations marked by the presence of Lapita pottery in the Bismarck Archipelago of the Early and Middle Periods, investigate the cultural backgrounds of the earliest Lapita populations, examine the social and cultural transformations these populations underwent from the Early to the Middle Periods, clarify the nature of the extensive social networks which linked dispersed Lapita settlements together, and finally, examine the social and cultural mechanisms behind the establishment and maintenance of such connections over space and time.

http://hdl.handle.net/10523/12740

Ko au te awa, ko te awa ko au: The Connection Between Kāi Tahu/Kāti Māmoe Identity and Cultural Landscapes in Murihiku

Dunn, Marie

For takata whenua, landscapes tell the stories of our whakapapa and experiences as whānau, hapū, and iwi. How we see how whenua interacts with these identities comes down to personal interpretation, where our experiences as takata whenua influence, but do not necessarily dictate, the connection between our Māoritaka and the whenua.

http://hdl.handle.net/10523/12666

Mapping Urban Change: The Archaeology of Te Aro, Wellington

Wooller, B

New Zealand cities in the nineteenth century were rapidly changing and expanding from small colonial outposts to established urban centres.



Transformations of the city environment can be investigated through archaeological analyses, which offer unique perspectives to the field of urban research. Archaeology can reveal the physicality of the past, showing what actually took place as well as giving an insight into the lives of those not commonly represented in historical narratives. Contract archaeological work in New Zealand has produced a large amount of data from excavations in urban centres; however, few studies have utilised these records or provided a broader synthesis of what has been uncovered. This thesis uses archaeological data from the grey literature to track the changing form and function of Te Aro, an innercity suburb of Wellington, as well as to investigate the socio-cultural contexts behind these changes.

http://hdl.handle.net/10523/14770

Opportunities

Prof. Murray Potter joins 'Galapagos of the Southern Oceans' Subantarctic Islands voyage



New Zealand Geographic and Heritage Expeditions are inviting readers to join a special voyage from 30th December 2023 – 10th January 2024 with zoologist, conservation biologist and wildlife photographer Prof. Murray Potter as the onboard expert.

Prof. Potter's research has taken him to diverse locations including the Pacific Islands, Papua Indonesia,

Alaska, and South-east Asia and he is especially interested in studies that integrate the ecology, physiology, and natural history of whole organisms within their natural settings, including how temporal constraints, stress, morphology, and nutrition underpin and interact with an animal's behaviour and ecology. Find out more about the expedition and book your spot...

https://www.nzgeo.com/stories/experience-the-galapagos-of-the-southern-ocean/ https://www.nzgeo.com/reader-expeditions/

General

Australia on the Map

Marianne Pietersen, Editor of Map Matters. Has issued a call for Material for issue 46 which she intends to publish September. She would appreciate any contributions by Sunday, 3 September, 2023.

Tel: +61 402 008 124 mep@pcug.org.au



Polynesian Navigation - Star Compass

https://youtu.be/TWm52IPPZiI

State Library NSW scans historic NSW town maps

More than 4,600 historic plans of 460 regional towns in NSW - including Hazelbrook, Katoomba, Blackheath and more - have just been digitised and made available for the first time on the State Library of NSW's website.

https://www.bluemountainsgazette.com.au/story/8281074/historic-maps-now-available-online/?src=rss

Worth a Visit

The Past Before Us

An Aotearoa New Zealand Heritage and Archaeology Blog for all

https://thepastbeforeus.wordpress.com/

Te Papa Tongarewa

https://www.tepapa.govt.nz/learn/research

https://blog.tepapa.govt.nz/category/pacific/

Auckland War Memorial Museum

This partnership exhibition with Ngāti Whātua Ōrākei marks the 40th anniversary of the iwi's eviction from their ancestral lands on Takaparawhā Bastion Point.

https://www.aucklandmuseum.com/visit/whats-on/on-display/not-one-more-acre

Your News and Views

Your own knowledge, discoveries, content ideas and comments are important to this knowledge platform.

Please email any comments or content to discovery@edgeoftheocean.info