

Map Matters



Issue 43

Autumn 2022

This is the 43rd edition of Map Matters, the newsletter of the Australia on the Map Division of the Australasian Hydrographic Society.

Dear Readers,

This issue we have quite a few announcements/news articles. The wreck of the *Endeavour* was in the news again, some museums that were closed are now open again, but of course, always Covid permitting.

We also report a death, a webinar, a prize competition, and exhibitions in a museum or on the internet.



Robert King contributed an article about early maps of New Zealand, and John Welch wrote an article about an early map of Port Stephens, as depicted on the "First map of Australia from Nicholas Vallard's atlas, 1547". The area he says is Port Stephens is marked as Cap amato on that map. It is near the top of the Vallard map, close to a horse's head sticking out of the water. See:

<https://nla.gov.au/nla.obj-231809408/view>

I hope you will enjoy MM43 and wish you all good health for the coming winter season.

Marianne Pietersen
Editor

NEWS

Vale Michael Young

Elly Spillekom of the Dutch Australian Foundation (DAF) in WA, informed me that last month Michael Young died. He was the originator of the idea to build an authentic replica of the *Duyfken* in 1993, and recruited a passionate group of Western Australian maritime enthusiasts to the project.

The group became the "Duyfken 1606 Replica Foundation" under the leadership of Michael G. Kailis, who was instrumental in helping raise \$3.5 million for the project.

Immense interest was generated throughout the Western Australia community and thousands of people helped support the project, either financially or with hands-on help: "The Friends of the *Duyfken*" and the "*Duyfken* 1606 Club" represented the wider community and business supporters.

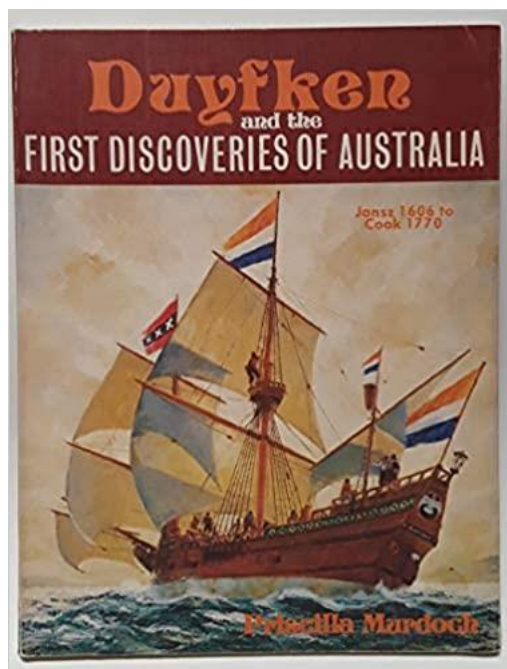


Michael Young. © Gillian Peebles, 1993.

Funding was provided by the governments of the Netherlands, Western Australia, Queensland, and Australia as well as the Lotteries Commission of WA, private donors, the MG Kailis Group of Companies and a whole raft of other companies and members of the community, especially the Dutch Community.

The *Duyfken* replica was completed in 2000, and after a maiden voyage to Cape York, she sailed to the Netherlands. Upon returning to WA, she was moored in Fremantle and other WA ports where she was open to visitors, specially school kids. She is now moored in Darling Harbour, at the Australian Maritime Museum, Sydney.

The book, that inspired Michael Young to build the replica of the *Duyfken*, is the book "*Duyfken and the First Discoveries of Australia*", written by Priscilla Murdoch. In the photo above Michael is holding a copy of the book.



Published in 1974, still available at Amazon.
Also at the NLA on-line.

W.A. Maritime Museum

School holiday program Saturday 9 April to Sunday 24 April, 10am – 2pm, “Trade Winds”. Collect exotic spices for your CLUE Sheet, decorate a scented spice bag and listen to stories about working for the Dutch VOC Shipping Company.

The Shipwreck Museum in Fremantle still offers an exhibition on [Wooden Boat Building in WA](#), till Sunday, 1 May 2022.

This exhibition shows the importance of wooden boat building in Western Australia, and marks the 25th anniversary of the construction of the *Duyfken* replica in Fremantle.

Facemasks must be worn, proof of vaccination required, use your phone app to check in, and distance must be kept.

See: visit.museum.wa.gov.au



Maps of the Pacific

The NSW State Library has a most interesting map exhibition, “Maps of the Pacific”. Explore the beauty, art and science of mapping across three centuries, through an exhibition of maps, charts, atlases and globes featuring the Pacific, held in the Library's magnificent collection.

This free Exhibition closes on [April 25](#).

<https://www.sl.nsw.gov.au/exhibitions/maps-pacific>



State Library of NSW

2022 Ristow Prize in the History of Cartography

The Washington Map Society has announced *the 2022 Ristow Prize in the History of Cartography*. The prize is awarded for an academic paper in the history of cartography. Applicants must be full- or part-time undergraduates, or individuals in a first-year doctoral position at an accredited U.S. or foreign college or university.

Please note that the deadline for submissions is 1 June 2022.

For more information see the website of the Washington Map Society:

<http://www.washmapsociety.org/Ristow-Prize.htm>

ANZMaps Webinar, Thurs 19 May

Australian and New Zealand Map Society Webinar, Thurs 19 May, 12-1pm AEST - Pictorial Mapmakers

Pictorial maps convey information using illustrations, images and text to engage the viewer. They gained popularity in the first half of the 20th century, and are undergoing a renaissance as contemporary mapmakers find creative ways to expand traditional notions of cartography.

Listen to Melinda Clarke, Adam Mattinson and Anton Thomas speak about their craft in producing contemporary pictorial maps. Melinda has published maps of Melbourne and recently released a map of the Bellarine Peninsula in Victoria. Adam is currently working on a Tolkien style map of the Yarra Ranges, located in Melbourne's outer north. Anton has drawn a map of North America and his Wild World nature map is nearing completion.

From May, you can register to attend the webinar via Zoom at

<https://anzmaps.org/news/>.

For an example of a pictorial map, see 'The wonder map of Melbourne', courtesy State Library Victoria.

<http://handle.slv.vic.gov.au/10381/136023>

Two Centuries of Cartography of New Caledonia

I have become the proud owner of a book published in 2021 by the Maritime Museum of New Caledonia. It is called "Deux siècles de cartographie calédonienne (1774-1979)", and yes, it is in French. It was compiled by Alain Le Breus and Pascal Rota and consists of historical maps, starting with a map dating to the James Cook visit to New Caledonia in September 1774.

The maps follow history with navigators d'Entrecasteaux, Dumont d'Urville, Dumoulin and hydrographers Bouquet de la Grye, Chambeyron, Banare and others.

The final major map is from 1967, with a small relief map dated 1979. The book illustrates not only historical, geological and thematic maps, but also instruments used over the years by the cartographer and hydrographer. There is plenty of explanation along with the maps, and some historical background is also given. The political circumstances in the Pacific in the 1940s are also mentioned, and how this created the need for specific maps.

The National Library of Australia also has a copy.

See website: www.museemaritime.nc

Maps in the Wild

If you are interested in “Maps in the Wild”, map art, classical and decidedly non-classical maps, (such as street furniture art below), have a look at [Mappery – For the love of maps](http://www.mappery.org) or <http://www.mappery.org>



Indonesian islands (green) on street furniture in The Hague.

Dutch Archives Project—VOC ships’ journals

Dutch archives relating to four VOC (United East India Company) ships that were wrecked on the Western Australian coast are now available online:

<https://journals.museum.wa.gov.au/landing-page>

The project is a partnership between the Western Australian Museum, the Netherlands Embassy in Canberra, and the State Archives in The Hague.

The online resource presents a transcription of the ships’ journals (in 17th century Dutch) together with high resolution images of the original manuscript, and a translation into English. The journals describe the voyages as well as the shipwrecks, so will be of interest to maritime historians. Introductory notes explain some of the symbols used in the journals, such as recording deaths.

It is hoped that this is the start of a series that will cover all VOC encounters with Australia, not just shipwrecks.

Australian National Maritime Museum in Sydney

The Museum is now open, but COVID-19 safety protocols are in place.

The Museum offers 3 hr sailing trips on the *Duyfken*, they offer a link on their website to a 50 minutes radio program “*The Endeavour*, *The Endurance* and shipwrecks still to be found.” More about the *Endeavour* below.

The Museum has a new gallery exploring the story of navigating and voyaging around Australia. It is called 'Under Southern Skies'. The importance of night skies to early navigators, not just the Europeans, but also the Africans, Chinese, Malaysians and Pacific Islanders, is highlighted.

A new Exhibition will be opening in May, "Shaped by the Sea", which tells the story of our maritime history

Source: Website of Australian National Maritime Museum

For more info and bookings go to: <https://www.sea.museum/>



Wreck of the Endeavour

As reported in MM 40 in Autumn 2020, research had revealed that the former *Endeavour* ended its life as the *Lord Sandwich*, which was scuttled by the British in the harbour of Newport, Rhode Island, during the American war of Independence. As another 12 ships had been scuttled that day, some very detailed underwater research was needed to identify which of these ships was Cook's *Endeavour*.

On Thursday, 3 February, 2022, the Australian National Maritime Museum announced that the wreck of Cook's *Endeavour* had been found.

According to an article in the Guardian of that day, this announcement has caused the 22-year partnership between the US and Australian researchers, to identify James Cook's ship, to descend into a row.

For details see:

[Row erupts over wreck in US waters identified as Captain Cook's Endeavour](#) | [Australia news](#) | [The Guardian](#)

	The Other New Zealand
	<div data-bbox="1321 239 1481 273" data-label="Text"><p>Robert King</p></div> <div data-bbox="328 351 1235 385" data-label="Section-Header"><p>The Other New Zealand on Hessel Gerritsz’s 1622 Map of the Pacific</p></div> <div data-bbox="403 445 1404 866" data-label="Image"></div> <div data-bbox="466 911 1342 945" data-label="Caption"><p>Fig.1. Inscription on Hessel Gerritsz’s c.1622, <i>Mar del Sur: Mar Pacifico</i>.</p></div> <div data-bbox="328 1028 1458 1140" data-label="Text"><p>Before New Zealand there was ‘Nieu Zeelandt’. The great map made by Hessel Gerritsz around 1622, ‘<i>Mar del Sur: Mar Pacifico</i>’, bore an inscription to the south of New Guinea that read:</p></div> <div data-bbox="426 1176 1437 1523" data-label="Text"><p>Nieu Zeelandt, east of Ceram, sailed to by Jaspas Janss. de Jonghe, Duÿfjenslandt [the land of the <i>Duyfken</i>], opposite Cay (Kei) and Aru, Modder eylandt (Mud-island), the Vuÿle bancken (the Foul grounds, reefs at the western end of Torres Strait), the coast from 9 to 14 degrees [South], sailed to by J. Rosingeyn, the north coast of the Papouas with its prolongation to 246 miles east of Maba [on Halmahera], navigated by J. le Maire, here placed as laid down by the said discoverers, are looked upon together as parts of Nova Guinea.</p></div> <div data-bbox="426 1556 1437 1816" data-label="Text"><p>What is found thereabouts in the Spanish maps, and differs greatly from this and does not agree on these parts, is here omitted until we are better informed. Those who sailed westward about Nova Guinea in the yacht of Pedro Fernandez de Quiros to 10 degrees [South] through many islands and shoals and over 2, 3 and 4 fathoms for as many as 40 days, estimated that Nova Guinea did not extend beyond 10 degrees to the south.</p></div> <div data-bbox="426 1848 1437 1926" data-label="Text"><p>If this be so, then the land from 9 to 14 degrees would be a separate land, different from the other N. Guinea.¹ [My translation].</p></div>



Fig.2. Hessel Gerritsz's *Mar del Sur: Mar Pacifico*, c.1622.

Gerritsz was appointed chief hydrographer of the United East India Company (VOC) in October 1617. The previous year, a discovery momentous for Pacific navigation had been made during the voyage of the *Hoorn* and *Eendracht* under Jacob Le Maire and Willem Schouten from Texel in Holland to Ternate in the Moluccas for the Australische Compagnie (Australian Company). This was the strait between Tierra del Fuego and Staten Land (now Isla de los Estados) which was given the name of the *Strate le maire* (Strait Le Maire). This was a shorter and less dangerous way into the Pacific Ocean than the Strait of Magellan.

Le Maire and Schouten had also discovered a number of islands during their voyage across the Pacific, which Ferdinand Magellan had missed because he took a more northerly course. It was therefore considered by the VOC to be a favourable moment for the drafting of a general chart of the Pacific Ocean that would bring together, in a way useful for navigation, all the knowledge that was possessed about this vast sea that was so important for reaching the Spice Islands by a western route from Holland, and Gerritsz began work on his great map as soon as he was appointed and produced it in 1622.²

As stated by Gerritsz in another inscription on his map, Le Maire's route is indicated by a dotted line and the islands he found given Dutch names.³

The route into the Pacific by the Strait Le Maire was confirmed by the Nassau Fleet under the command of Jacques L'Hermite, which departed Amsterdam for the Spice Islands in April 1623 (with Gerritsz's map in its possession) and returned to Holland under Witte Cornelisz de With in 1626.⁴



Fig.3. Nieuw Zeelandt on Hessel Gerritsz's c.1622, *Mar del Sur: Mar Pacifico*.

So where was the 'Nieu Zeelandt east of Ceram' mentioned in Gerritsz's inscription? His map does not show Ao Tea Roa, as it was then known to its inhabitants and to which the name "New Zealand" was subsequently attached. Turning to the map, the island of *CENAM* can be seen, also identified as *Céram* (now Seram), and to the east of it, *Nieu Zeelandt* as part of the south coast of Papua (*Custe vande Papouas*). The other places mentioned in the inscription, *Duyffiansland*, *Kee* and *Aru*, *Modder eyland* and *Vuylebanken*, are also shown, as also *Nueva Guinea* inscribed over what was subsequently called Carpentaria or Cape York Peninsula.



Fig.4. *Relacion de vn memorial que ha presentado a su Magestad al Capitan Pedro Fernandez de Quir*, Pamplona, 1610.

The name, '*Nieu Zeelandt*', had been put on the map following the voyage of the *Duyfken* to explore the southern coast of New Guinea, 1605-1606. On 18 November 1605, the *Duyfken* sailed from Bantam under the command of Willem Janszoon (the master, whose name was often abbreviated to "Jansz.") and the upper-merchant Jan Lodewijkszoon Roosingein. The ship passed through the Arafura Sea to the south of New Guinea as far as the *Vuylebanken* (the western end of the Torres Strait, of which the navigators remained unaware), eventually going into the Gulf of Carpentaria, the coast of which Janszoon took to be a continuation of New Guinea, sailing as far as Cape Keerweer.⁵

The *Duyfken* arrived back at Bantam in June 1606. Gerritsz recorded in another inscription on his chart that:

Aris Claessen, merchant with Jacob le Maire, opines that there is land farther south, according to the information of the Indians, which may be well the continuation of that land which is called here Nova Guinea, sailed by Jan Rosingein in the year 1606.⁶

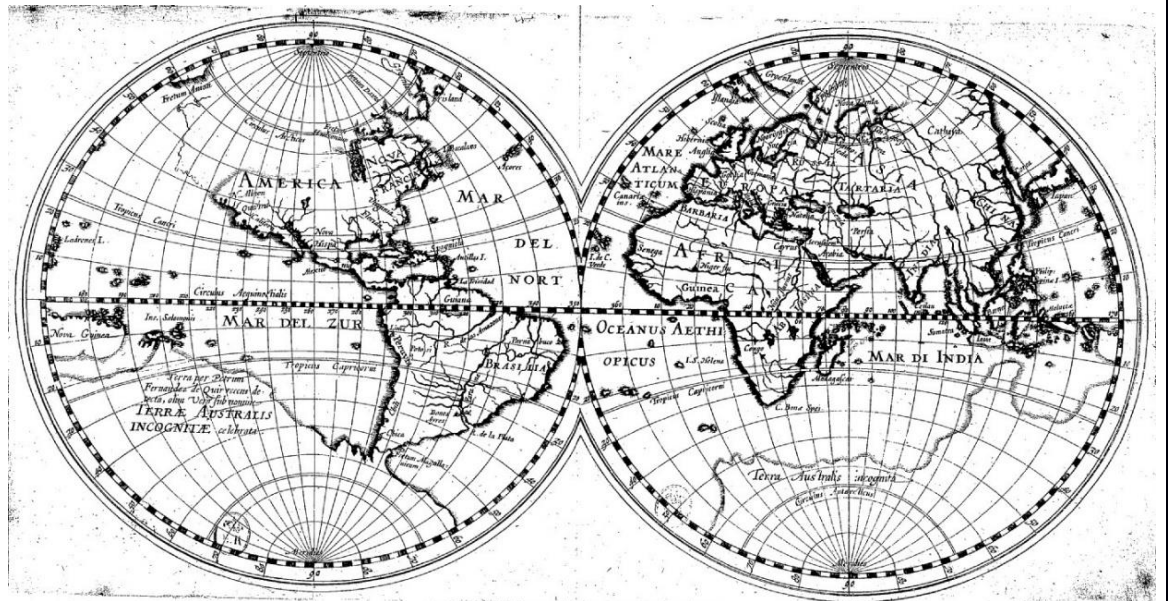


Fig.5. *Terra per Petrum Fernandez de Quir recens detecta, olim vero sub nomine TERRAE AUSTRALIS INCOGNITAE celebrata*, on an untitled map of the world in Hessel Gerritsz, *Beschryvinghe van der Samoyeden Landt*, t'Amsterdam, H. Gerritsz, 1612.

From the first inscription quoted, where he mentions "those who sailed westward about Nova Guinea in the yacht of Pedro Fernandez de Quiros", Gerritsz was obviously aware of the passage through the strait between New Guinea and Cape York in northern Australia in October 1606 by the *San Pedrico* and *Los Tres Reyes Magos* under Luis Váez de Torres and Diego de Prado, who were part of the expedition to the Solomon Islands commanded by Pedro Fernandez de Quirós.

Gerritsz had obtained a copy of the edition published under royal licence by Carlos de Labayen in 1610 in Pamplona of the eighth of Quiros' fourteen printed memorials

Zelandt with the gownongapi [volcano] east of it, were sailed to by Jasper Janssen de Jonge.⁹

Apparently, it was Jasper Janssen de Jonge who gave the name *Nieúw Zelandt* to the land he had discovered on the coast of New Guinea, on a voyage undertaken sometime earlier to that of Willem Janszoon and Jan Rosengein.¹⁰

Very little is known about the voyage or voyages of Janssen and Francken to New Guinea. A “Jasper Jansz” is recorded in the Dutch National Archives as chief merchant at Amboina in 1608 and its Lieutenant-Governor in 1610, succeeding Frederik de Houtman as Governor in 1611. He was the Zeeland representative on the first Council of the Indies in 1610, which might explain his choice of name for the coast he explored.¹¹

Abraham Francken was second mate on the *Utrecht*, a ship in the “Moluccan fleet” that left Texel for Bantam on 23 April 1601 as part of the Fifth *Schipvaart* (1601-1603): at Mauritius he is recorded as having been transferred to the *Duyfken* as first mate.¹²

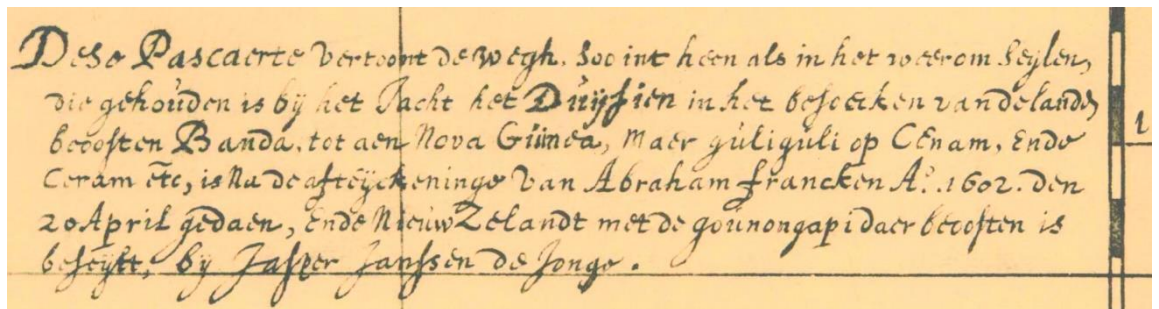


Fig.7. Inscription on the *Duyvken* Chart: *Dese Pascaerte vertoont de wegh, soo int heen als in het weerom seylen, die gehouden is by het Jacht het Duyffien.... Ende Nieúw Zelandt met de gownongapi daer beoosten is beseÿlt, by Jasper Janssen de Jonge.* (This paskaart [nautical chart] shows the way followed on both the outward and return voyages by the yacht, the *Duyffien* [*Duyfken*] in exploring the lands east of Banda up to New Guinea... And Nieúw Zelandt with the gownongapi [volcano] east of it, were sailed to by Jasper Janssen de Jonge). F.C. Wieder and Martinus Nijhoff Publishers, 1925.

At: <http://nla.gov.au/nla.obj-1066939647>

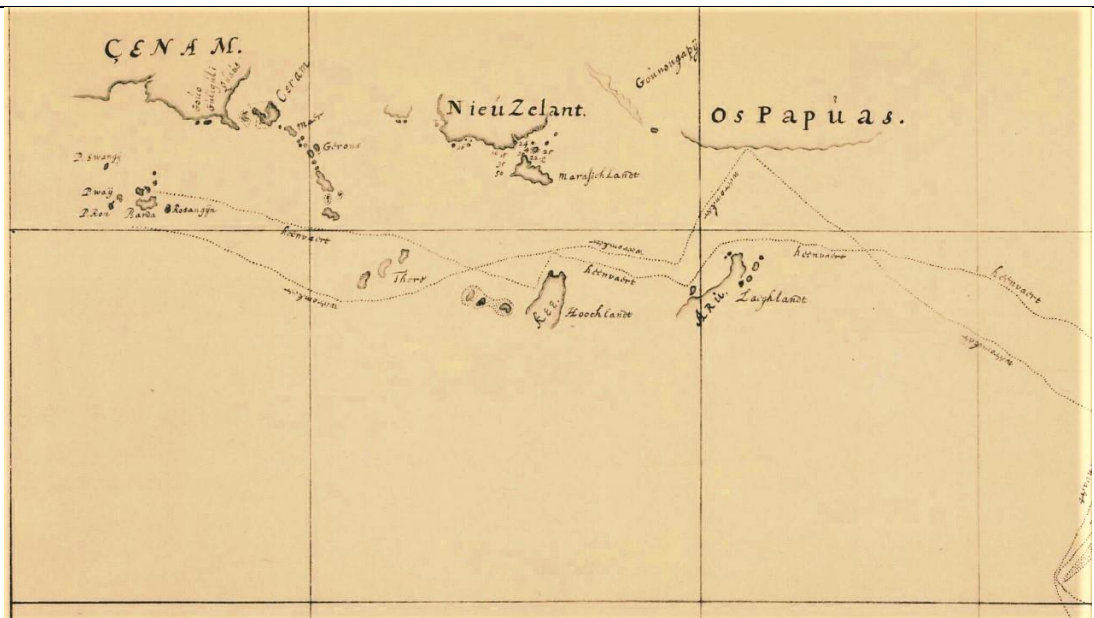


Fig.8. *Nieu Zeelandt* on the Duyvken Chart. F.C. Wieder and Martinus Nijhoff Publishers, 1925. At: <http://nla.gov.au/nla.obj-1066939647>

Jan Tent noted that Jasper Janssen de Jonge's *Nieuw Zelandt* had passed into obscurity by about 1630. There were only a handful of maps that showed the name or a form of it, such as on *Indiae Orientalis Nova Descriptio* by Jan Jansson.¹³

The name, in the form *Zeelandia Nova*, replaced *Staete Landt* (Staten Land), Abel Tasman's name for Ao Tea Roa, on the VOC charts around 1645, just after the 1642-1644 expedition of Tasman and François Visscher to that country. This is shown on Joan Blaeu's map, *Archipelagus Orientalis sive Asiaticus*, published in 1659 in the *Kurfürsten Atlas* (Atlas of the Great Elector).¹⁴

No record has been found explaining the reason for the VOC transferring the name from the south coast of New Guinea to Abel Tasman's Staten Land.¹⁵



Fig.9. *Nieu Zeelandt* on Jan Jansson & Jan Jansson, *Indiae Orientalis Nova Descriptio*, 1630.

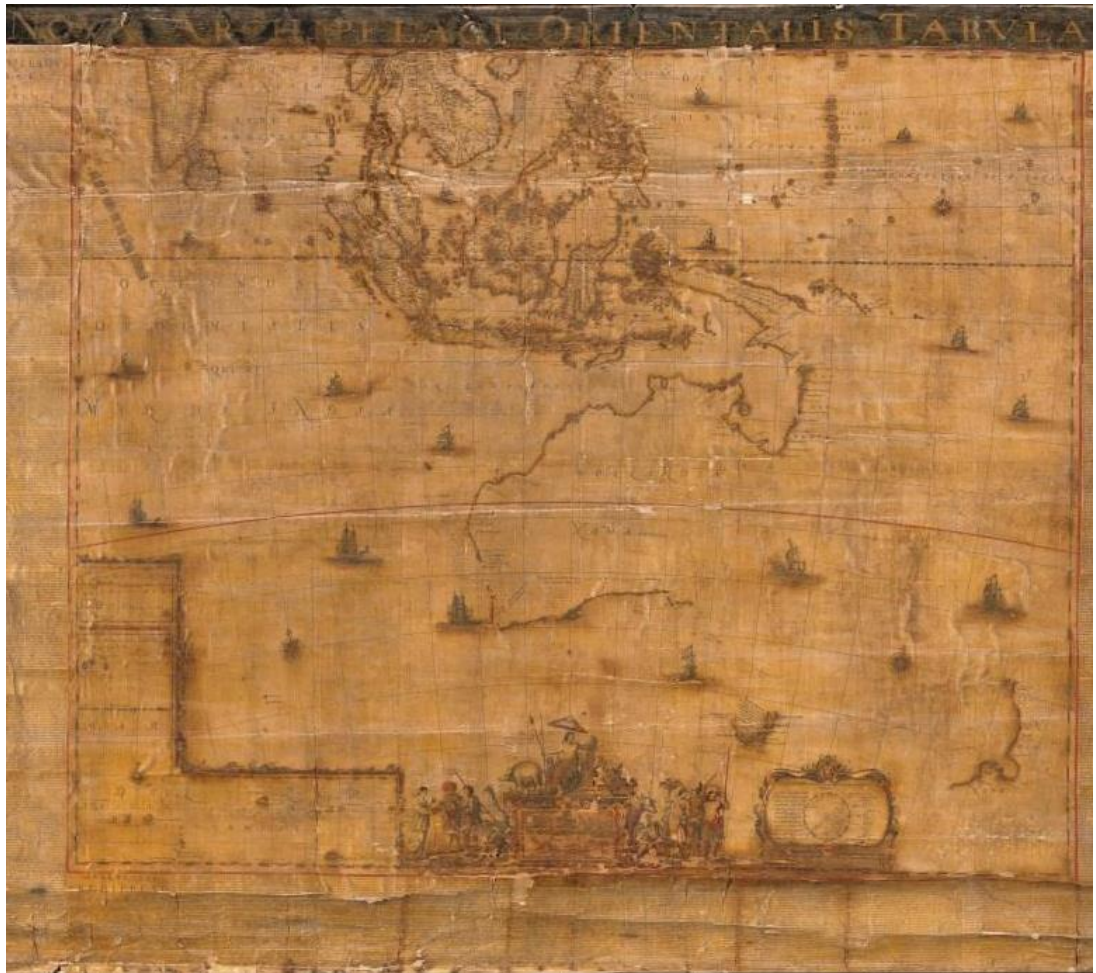


Fig.10. *Hollandia Nova & Zeelandia Nova*, on Joan Blaeu, *Archipelagus Orientalis sive Asiaticus*, 1659.

Endnotes:

1. *Nieu Zeelandt, beoosten Ceram besejlt by Jaspar Janss de Jonghe, Duÿffenslandt, tegen over Cay en Aru, Moddereÿlandt, de Vuÿlebancken, de custe van 9 tot 14 graden, besejlt by J. Rosingeyn; De Noordcuste so van de Papouas met syn gefolgh tot 246 mylen beoosten Maba, by J. le Mair bewarg, hier geleÿt sogenigh by de gheneemde Vinders is afgeteÿkent wordente samen gehouden woors sucken van Nova Guinea vat vanden meer in de Spaensche Caerten wort ghevondes seer verscheÿden eën van ander ende niet vel met dise stucken pastende is hier uÿtgelaten tot men meerder claeheÿt becomes. Die maet' Jacht van Pedro Fernando de Quiros omtrent Nova Guinea op 10 graden westaen door veel Eylanden ende Drooghten ende over 2, 3 en 4 vademen wel 40 dagen sÿn gheseÿlt presumeerdes Nova Guinea niet over de 10 graden om Zuidt te strecken so sulep waar so soude meeten plandt vande 9 tot 14 gravesen eën besonder van het ander N. Guinea b'scheÿen; Hessel Gerritsz, 'Mar del Sur; Mar Pacifico', [Amsterdam, c.1622] at:*

<https://collection.sl.nsw.gov.au/record/74VvaAlWDLAl>

also at:

<https://gallica.bnf.fr/ark:/12148/btv1b55007076p/f1.item.zoom>

2. F.C. Wieder, "El Primer portolano Holandés de la Mar del Sur", *IV Centenario del descubrimiento del Oceano Pacifico*, Primer Congreso de la Historia y Geografía Hispano-Americana, Sevilla, 1914, *Actas y Memorias*, Madrid, 1914, pp.517-522. At:

<https://archive.org/details/congresodehistor00cong>

3. *Jacob Le Maire houdende de wegh hier met stippen aangewesenhaft gevonden tuschen de Straet ende Nova Guinea alle de eylanden hier met Duytsche namen genoemt* (the course of Jacob Le Maire is here marked with dots, with all the islands found between the Strait and New Guinea here named with Dutch names); Hessel Gerritz, *Mar del Sur*, c.1622.

4. Justine Van Mourik, "Hartog's Discovery", David Pool (ed.), *Mapping Our World: Terra Incognita to Australia*, Canberra, National Library of Australia, 2013, p.119.

5. "The eighteenth [November], heere departed a small Pinnasse of the Flemmings, for the discovery of the Iland called Noua ginnea, which, as it is said, affordeth great store of Gold"; journal entry of 18 November 1605 by Captain John Saris of the English East India Company at Bantam, quoted in Samuel Purchas, *Hakluytus Posthumus or Purchas His Pilgrimes*, London, 1625, Bk.IV, cap.ii, p.385, at: <http://memory.loc.gov/service/rbc/rbdk/d0401/06190385.jpg>

6. *Aris Claessen, Coopman by Jacob le Maire, meent uijt den Indianen beduytsel suyd op landte wesen, het welck wel soude megen wesen het vervolg van dat hier Nova Guinea staet genoemt, by Jan Rosingein gesejlt inden Jare 1606*; Hessel Gerritz, *Mar del Sur*, c.1622. J. Keuning, "Hessel Gerritsz", *Imago Mundi*, VI, 1950, pp.49-67, 58-59.

7. Gerritsz gave his edition exactly the same title (translated), including the misprint of Quiros' name, as the Pamplona edition: "*Verhael van seker Memorial gepresenteert aen Sijne Majesteyt des koningh van Spangjen by den capiteyn Pedro Fernandez de Quir: aengaende de bevolckinge ende ontdeckinghe van't vierde deel des werelts genaemt Australia incognita, ofte onbekent Australia, zijn grooten rijckdom ende vruchtbaerheyt, ontdeckt by denselven capiteyn.*" The title of the Pamplona edition was: "*Relacion de vn memorial que ha presentado a su Magestad al Capitan Pedro Fernandez de Quir, sobre la poblacion y descubrimiento de la quarta parte del mundo, Australia incógnita, su riqueza y fertilidad; descubierta por el mismo Capitán*". Carlos de Labayen, con licencia del Consejo Real de Pamplona, 1610.

8. *Terra per Petrum Fernandez de Quir recens detecta, olim vero sub nomine TERRAE AUSTRALIS INCOGNITAE celebrata*, on an untitled map of the world in Hessel Gerritsz, *Beschryvinghe van der Samoyeden Landt*, t'Amsterdam, H. Gerritsz, 1612. At: <https://gdz.sub.uni-goettingen.de/id/PPN341516627?tify={%22pages%22:%5B37%5D,%22panX%22:0.454,%22panY%22:0.344,%22view%22:%22info%22,%22zoom%22:0.871>

9. *Dese Pascaerte vertoont de wegh, soo int heen als in het weerom seijlen, die gehouden is by het Jacht het Duijfen in het besoecken van de landes beoosten Banda, tot aen Nova Guinea. Maer guiliguli op Cenam, ende Ceram etc, is na de afteyckeninge van Abraham francken A°. 1602. den 20 April gedaen, Ende Nieúw Zelandt met de gounongapi daer beoosten is besejlt, by Jasper Janssen de Jonge*; copy made about 1670 of an original map following the voyage of the *Duyfken*, 1605-1606; Günter Schilder, Bernard Aikema, Peter van der Krogt (eds.), *The Atlas Blaeu—van der Hem of the Austrian National Library, Atlas Van der Hem*, Vienna, Oesterreichische Nationalbibliothek, 1996. At State Library of Queensland: https://digital.slq.qld.gov.au/delivery/DeliveryManagerServlet?change_ing=en&dps_pid=IE423741
And at National Library of Australia: <http://nla.gov.au/nla.obj-1066939647>

10. Jan Tent, "No, Australia was never almost named New Zealand", *The Globe*, no.89, 2021, pp.15-22; James Henderson, *Sent Forth a Dove: Discovery of the Duyfken*, Nedlands, W.A., University of

Western Australia Press, 1999, pp.66-67; Peter van der Krogt, *Globi Neerlandici: The Production of Globes in the Low Countries*, Utrecht, HES Publishers, 1993, p.64, plate 2.14.

11. Peter de Bode (ed.), *Tresoor der zee- en landreizen III: Beredeneerd register op de werken der Linschoten-Vereeniging*. Deel LI-C, Zutphen, Walburg Pers, 2007, p.360.

12. Peter de Bode (ed.), *Tresoor der zee- en landreizen III: Beredeneerd register op de werken der Linschoten-Vereeniging*. Deel LI-C, 2007, p.246.

13. Jan Jansson, *Indiae Orientalis Nova Descriptio*, Amstelodami, Apud Joannem Janssonium, 1630. Web. 26 November 2021 <http://nla.gov.au/nla.obj-232492036>

14. This map is reproduced in William Eisler and Bernard Smith, *Terra Australis: The Furthest Shore*, Sydney, International Cultural Corporation of Australis, 1988, pp. 67-84, p.81. See also the wall map version, Joan Blaeu, *Archipelagus Orientalis, sive Asiaticus*, 1663; at: <https://nla.gov.au/nla.obj-232510007>

15. Knight, T. M. (1966). "From Terra Incognita to New Holland". *Cartography*. 6 (2): 82–89 [p. 87]. at: <https://doi.org/10.1080%2F00690805.1967.10437642>

Robert King



Random lovely coastal image of New Zealand.

Confirming an early map of "Port Stephens"

John Welch

The 1547 Vallard map shows two islands, which don't now exist, in the area that is most likely to be present day Port Stephens, may be corroborated. [First map of Australia from Nicholas Vallard's atlas, 1547, ed.] The map's ratio of the length of the "Victoria-Murray river" section to the east coast is appropriate for that era's technology in latitude and longitude. Then the emphasised *Baia Nevo* "New Bay" would fit the location of Port Stephens, NSW, by that ratio of distances but the map shows two unknown islands there.



https://commons.wikimedia.org/wiki/File:Botany_bay_vallard.jpg

Optical Luminescent dating of sand quartz is used to record the last time period when quartz grains were in sunlight before being permanently overlaid, in this case by the Yacaaba sandspit which today joins Yacaaba Head to the mainland near Hawk's Nest, Port Stephens, 45kms NE from Newcastle.

In AD 900, the sand on Yacaaba sandspit near Mean Sea Level (MSL), half-way between Low and High tides, was at an altitude of 0 metres, where today the sand is 4-10 metres above Mean Sea Level. This sand was in sunlight. For at least half the day during AD900, sea-water flowed across the sand and at Low tide the surf also could overflow the sandspit between the ocean and the bay. For a map-maker the area would be underwater, rather than a landform for navigators identifying the bay.

A sand sample was taken from the western side of the sandspit about midway along and 40 metres from the shore of the bay. It was collected after moonset and sunset, to ensure darkness for the quartz, with a time-lag in water-table rise above MSL from Low Tide of about 3 hours ^[1].

The sand came from about .25 metres below the water level, which is the rise at 40 metres inland ^[2].

"Today, the sea level is 13-20 centimetres higher on average than it was in 1900. That's a pretty big change: during the previous 2,000 years, sea level hadn't changed much at all."^[3]

In this case, the sample was from 13-20cm above MSL, with High Tide at 110 cm above MSL. The result remains that the mid-tidal sandbar was submerged for around half the time.

The Optically Stimulated Luminescence (OSL) test report says: "I've attached the report for the one sample from the Port Stephens sandspit. As you'll see, the sample is mixed but contains discrete age components; the likely age of deposition is about 1.1 ka, [1,100 years ago] and with younger components resulting from post-depositional mixing in three phases, early post-European, late 20th century, and modern." - email, Prof Nigel Spooner, The Prescott Environmental Luminescence Laboratory (PELL), University of Adelaide.

The sand auger was inserted into plastic-pipe sleeves, which evidently pushed later sand particles down to the collection level.

The Vallard Map shows a small red island in the middle of the bay which perhaps represents where the Middle Ground sandbar exists today. The larger red island is possibly Corrie Island to the NW. The smaller island tapers towards the harbour heads, suggesting a rapid water flow along that taper, and the shape of the bay would cause a meander, a curving flow of sea-water at ebb tide out to sea. The meander would flow around the north of the red island, draining the 134 sq km of sea-water.

"Most river curves have nearly the same value as the ratio of curvature radius to channel width, in the range of 2 to 3." ^[4]

The marine chart of Port Stephens (below) indicates a 1km wide flow along the north of the red island onto the Yacaaba sandspit. The meander radius is measured from the central point of the bend to the middle-line of the flow, or .5km of the 1km width. Then the radius in total is 2-3km, to give the ratio for normal meanders. But Yacaaba sandspit is only 1.5km long, the central point is past Yacaaba Head and the flow would impact the sandspit distant about 1km east of the red island, with its energy obstructed by Yacaaba Head.

In meanders "the flow experiences a radial acceleration around the bend. The centrifugal force acts in proportion to the mean velocity, and acceleration is greatest at the bend apex. Impingement of the high velocity core on the outer bank due to flow inertia will increase shear stresses on the bank, potentially leading to erosion of the cohesive bank." ^[5].

"...meandering streams have been observed in several naturally homogeneous mediums. Two examples are ocean currents (notably the Gulf Stream), and water channels on the surface of a glacier. The meanders, in both cases, are as regular and irregular as river meanders. The overall geometry of a meandering river is an important factor in determining the rate at which its banks will be eroded. In general,

the banks are eroded at a rate that is proportional to the degree with which the river channel is bent".^[6]



<https://www.nsw.gov.au/sites/default/files/2021-06/7a-port-stephens-karuah-broughton.pdf>

Source: Dept Transport NSW, with disclaimer that the datasets shown on the map may be neither up-to-date, accurate nor comprehensive. See:

<https://www.nsw.gov.au/topics/using-waterways/navigation-and-communication/boating-maps>

Today the maximum ebb velocity at Port Stephens entrance is 3.1 knots, and the Mississippi at New Orleans flows at 2.7 knots. Port Stephens is 134 sq kms with about a 2m tidal range, giving 600 billion litres ebb flows a day. The Mississippi flow is 1400 billion litres a day, around twice Port Stephen's flow, and its meander flows erode the banks.

"During the [Mississippi] high river stage, bendway pools may be deepened 20 ft to 40 ft or more by seasonal scour. Such periodic erosion may steepen the toes of the banks from stable slopes to unstable slopes that cause subaqueous failures." ^[7]

The meander channel itself can migrate as banks are eroded. "There is considerable variability in the annual rate of migration in the lower Mississippi River, ranging from <1.0 m/yr to >123.0 m/yr." The river's width at .7 - 3km compares with the Port Stephens heads of 1.5km width.

In Australia, the Lower Murray river can have 1m-2.8m channel-migration a year, but this river is exceptionally stable ^[8].

Sand is moved when the flow is above 10mm /sec, or .03 m/hr.^[9]

At Port Stephens today the ebb flow is above that for 12 hours a day.^[10]

"I have a number of OSL ages from the Yacaaba coast. The spit was eroded away between the late 1500's and early 1800's CE. The sand lobes on the western side of the

spit were produced by storm surge overwash during the 1600-1800 period." _ email Adjunct A/Prof I Goodwin. Macquarie University Marine Research Centre.

This suggests the sandspit was raised to about High Tide level, with occasional overwash by AD 1500. There were temperature changes after the sandspit was underwater at 900AD, with a relative warming before 1500AD, which possibly caused erosion of the small red island in the Vallard map.

"Yes, less high-energy storms and less erosion, or more sediment input to the system will likely help to maintain the sand island" [within Port Stephens]. -email T Salles, School of Geosciences, The University of Sydney.

"...changes in temp at that time are a little contentious... and making generalisations across Australia difficult". - Chang et al. (2017).

"there is a dip at about that time, (NB AD 1300 to 1400 is 650 to 550 yr B.P. on her diagrams) but we are working on completing a record from Kosci that doesn't have that as a cool period... it is, in our record a recovery towards warmth." - email A /Prof S Mooney, Institute of Australian Geographers, UNSW.^[11]

"Paleo sea level data for the Pacific Islands suggest that sea level in the region fell, possibly in two stages, between 680 and 475 cal yr B.P. (A.D. 1270–1475). This was associated with an ~1.5°C fall in temperature (determined from oxygen-isotope analysis) and an observed increase in El Niño frequency. For a long time, it has been clear that these changes - characterized as the 'A.D. 1300 event' - brought about environmental and cultural changes on the Pacific Islands." ^[12].

In 1927, a storm removed Myall Point sandspit, off Corrie Island and about 1km NW of the small red island's possible location. With the red island eroding before 1500AD, the meander would decay and ebb tides would flow out as evenly as today, through Port Stephens heads. The meander-erosion of the sandspit would stop allowing the accretion of the Yacaaba sandspit, which evidently continues steadily. Thus, the red island is gone and Yacaaba Head is no longer an island, fitting the apparent depiction of the 1547AD map. *Baia Nevo* had an unusual geography of safe anchorage adjacent to fresh water in sandy pools.

Governor Macquarie noted this:

"Tuesday 31 Dec 1811, ...we anchored in Port Stephens – The Harbour, however, is good, safe, and capacious, and affords shelter for vessels from all winds. - There is also plenty of good fresh water to be procured on shore in Lagoons and Springs contiguous to the Beach on the South Side of the Bay, and very near our present anchorage off the Nelson's Head." ^[13]

"Whalers and other ships are known to have called into Soldiers Point, well inside the bay [Port Stephens] towards the Karua River, for fresh water supplies in what is now known as Johnny's Well (19th & early 20th Centuries). It is only a few metres from the shoreline." - email, econetworks Port Stephens.

This was in preference to Newcastle's salty Hunter River, and Sydney's unreliable creeks.

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John Welch



The area of the future Port Stephens is circled in black. Editor.



Port Stephens today

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