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The provenance, date and significance of a Cook-voyage Polynesian sculpture

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The techniques of archaeological science have been fundamental to advances in understanding the prehistoric past, but are also of great importance for the interpretation of world art, and especially of artefacts in ethnographic collections, too often provenanced and dated impressionistically.

The Museum of Archaeology and Anthropology in Cambridge holds a collection of some hundred artefacts collected during the first voyage of James Cook to the Pacific. The objects are of exceptional historic significance for two reasons. Far fewer artefacts were obtained during the first voyage than in the course of either the second or third; indeed, the growth of interest in indigenous material culture was itself an important strand in the history of the expeditions. This group, moreover, was brought together by Cook personally, given by him to his Admiralty patron, Lord Sandwich, and presented by Sandwich to Trinity College in October, 1771, only three months after the *Endeavour's* return to England. A delivery note in the form of a list, and an early inventory, are extant in the College's archives, and constitute the core of the documentary evidence for the collection's provenance (Gathercole 1998; Salmond in press; Thomas et. al. in press). The collection was placed on deposit at the Museum of Archaeology and Anthropology in two stages, in 1914 and 1924, and has been held there since.

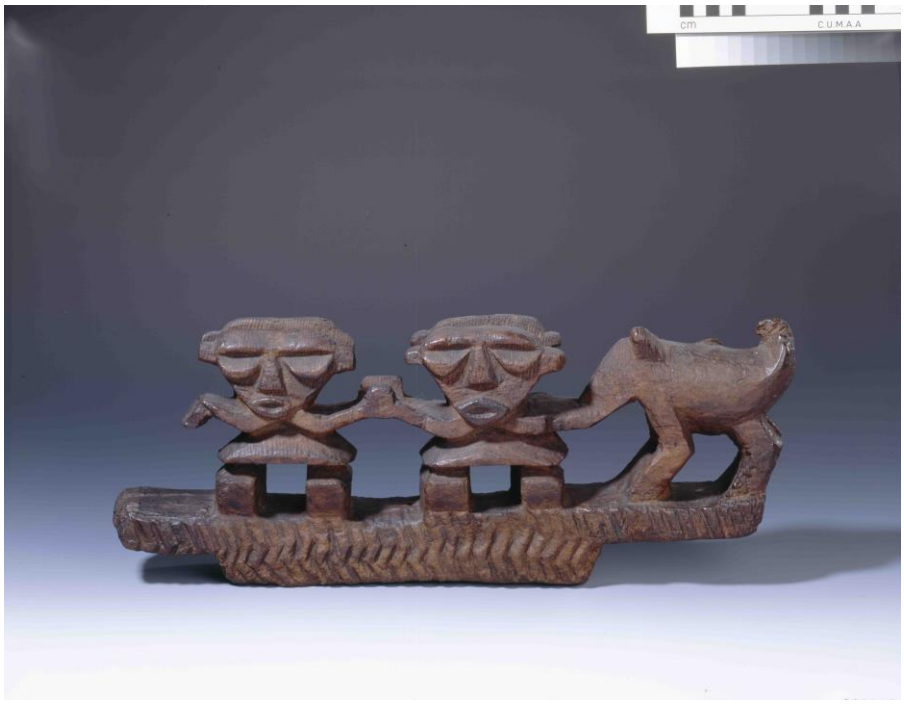

Figure 1

Of these objects, a formally unique sculpture of two double figures and a quadruped, referred to as an 'ornamental carving' in the early inventories, is one of the most celebrated works in the Museum's collections (Figure 1; accession number D 1914.34). From the 1930s onward, the piece was cited by ethnologists for its affinities with the Kaitaia carving, an important prehistoric gateway element from northern New Zealand (Figure 2; Auckland Museum, Ethno 6341). Though its own place of origin was uncertain, the Cambridge work appeared to exemplify the affinities between archaic Maori art and forms in eastern Polynesia, the region from which New Zealand had been settled (Emory 1931; Skinner 1931). The piece has also been considered a masterpiece of Oceanic art and included in major exhibitions in Honolulu, Washington, Paris, Bonn, Vienna and Bern, among other places, since the 1970s.

Figure 2

Where is it from?

Well-known the carving may be; but there has been no certainty or consensus concerning what it is or where it is from. Stylistic features prompted Kenneth Emory and H. D. Skinner to associate it with the Austral Islands, a view shared by Adrienne Kaeppler, author of studies of foundational importance of the Cook voyage ethnographic collections (Kaeppler 1978, 2009, 2011). Though Steven Hooper was more hesitant, stressing the piece's sheer singularity, he also noted that features including the zigzags are consistent with Australs styles (Hooper 2006: 198). Kaeppler (1978: 159) claimed that a museum label identified the work as from 'Oheteroa' (the name given to Rurutu in the first-voyage journals and records), but this appears to be an error: no such label is now known to exist, and the earliest records, the delivery note and the Trinity Librarian's inventory, both state that the carving was from Tahiti.

It is unlikely that the carving was obtained in the Austral Islands, during the brief encounter between the *Endeavour* and a few men in canoes off Rurutu that took place over 14-15 August 1769 (Beaglehole 1955: 155-56). Barter occurred, and some barkcloth in the Cambridge collection was almost certainly collected at this time (Adams 2016), but the accounts of the encounter contain no hint that anything like an 'ornamental carving' might have been acquired, nor is it likely that such a sculpture, presumably a highly valued representation of ancestors or deities, would have happened to have been in a canoe at the time, still less that it would have been presented in the context of casual traffic. Yet the piece was not necessarily created where it was collected; scholars of Africa as well as Oceania point increasingly to the fluidity of artistic identities and to the propensity of objects to circulate through exchange or otherwise well beyond their milieux of origin (Berns, Fardon and Kasfir 2011).The sculpture might have been made in the Austral Islands, but found its way to Tahiti either as a gift or as loot some time prior to the four-month 1769 sojourn of the *Endeavour*. Most commentators have not addressed this question, but simply attributed the work to the Austral Islands; this is how it has been provenanced in all relevant catalogues and publications of recent decades, including those published by Museum of Archaeology and Anthropology curators (Kaeppler 1978: 159-60;

Gathercole, Kaeppler and Newton 1979: 99; Kaeppler, Newton and Kaufmann 1993: 414; Tanner 1999: 46; Hooper 2006: 198; Kaeppler et. al. 2009: 165; Elliott and Thomas 2010: 50; Brunt et. al. 2012: 73).

What is it?

The carving consists of a base that is deeper in its central section than at each end, upon which are mounted linked anthropomorphic figures and an animal. The four-legged creature is certainly either a dog or a pig; to a European eye, it resembles the former rather than the latter. If, given the stylization of the whole composition, no definitive identification can be made, the upturned tail makes a pig more likely, pigs were more significant as gifts and prestigious feast foods than dogs, and while the representation of either in sculpture from the period of early European contact is rare, pigs do appear in whale-ivory and bone works from the Austral Islands (Hooper 2006: 210, 213).

While the animal is sculpted in the round, the quasi-human figures are doubled, hence the work can be viewed from either side, it has no front or back. The sides of the support bear vigorous diagonal hatching that is extended to form a zig-zag in the deeper part, which is approximately but not fully centred. If the object is oriented so that the quadruped is on the right, the left end of the deeper base coincides with the outer leg of the left-hand figure, but the right end of this base extends further on the right hand side, and is beneath the point at which the second figure's arm becomes the snout or nose of the animal.

The perplexing feature of the carving is its compositional incompleteness. The conjoined figures suggest a chain that 'should' have continued. The arm of the figure on the left is broken off, so we have no sense of how it might have terminated. The angle downard of the 'free' arm indicates that whatever was once present did not simply balance the linked right-hand figure and the creature. A need for balance is suggested by the arrangements of figures that are otherwise conventional in related Polynesian sculptural traditions. Figures that we know or presume represent ancestor-divinities may be free-standing, they may fully occupy an architectural space, a pair may be balanced, or a chain may

join to form a circle, as in the well-known drums from the Austral Islands. Although there are exceptions to the principle, such as Rarotongan staff gods (which also feature a cleft between double figures), the Cambridge carving has the marked appearance of a residual work, the detached end of a longer piece, that has been sculpturally tidied through the smoothing and shaping of something that now has the look of a short handle, where figures may formerly have continued.

Kaeppler has suggested in various publications that the piece may have been a 'canoe ornament' or 'end-piece', referring to a sketch made, most likely in September 1777, by John Webber of a Tahitian canoe (Figure 3; 1978: 159-161; 2009: 165). Close examination of the drawing however reveals that the relevant feature bears no resemblance to the carving (Figure 4); though a sculpted form of some kind, it does not appear to incorporate either ancestral or animal imagery, and is curvilinear, not angular. The claim for a canoe setting is not inherently implausible, given the importance of canoes as expressive vessels and as bearers of other figurative art, and the appearance of back-to-back figures on Marquesan canoe prows of similar scale - but in these cases a larger, forward-facing figure is the dominant element of the sculpture. Even if the carving is a remnant of a larger form, it is hard to relate the part that we have to anything even loosely analogous to the Marquesan prows, or to a canoe carving of any other kind.

Figure 3

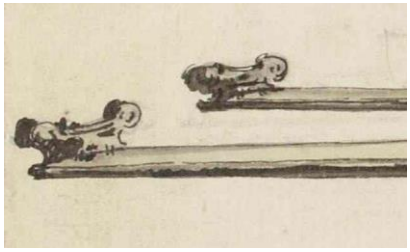

Figure 4

More probably, the work formed part of a gateway over an entry into a ritual precinct, or the compound of a person of high status. It could have formed one end of a beam and been matched by an opposed counterpart; some other element, such as a larger central figure, might well have formed part of the structure. The suggestion that the piece might have belonged in such a setting is inspired by the affinity with the Kaitaia carving (although that work has a front and back: the central figure is not janiform), but it is important to be explicit that we do not postulate any particular link between the two: except in the deeper sense that both are products of a Polynesian and Oceanic art history in which architectural forms were often vehicles for the expression of ancestral power, reinforced by doubled figures, and that both drew on a range of conventions

including the angular presentation of the face, present in both works as well as in others from many parts of the Pacific.

The sculpture embodies a further anomaly in the sense that the upraised tail of the quadruped exposes the anus, implying defilement, or perhaps specifically a directional defilement - that the area to the side of the carving was *noa* rather than *tapu*, a space free of sanctity.

New evidence

The apparent historical significance of this sculpture, and the longstanding nature of speculation concerning it, prompted us to undertake analysis that might resolve the question of where the carving was from.

A series of wood shavings across eight or more tree rings were taken from the base of the carving, totalling less than 1cm cubed of material. All material was processed in the Dorothy Garrod Laboratory for Isotopic Analyses at the McDonald Institute for Archaeological Research, University of Cambridge. These samples were separated for two distinct scientific analyses for both regional and temporal context. First, to process the wood samples into α-cellulose for analysis of the oxygen isotope ratio in tree rings in order to identify the climatic region, and therefore likely provenance, of the wood used for the carving. Second, a small portion of the samples was sent to the University of Oxford Radiocarbon Accelerator Unit for 14C radiocarbon dating.

The isotopic analysis of cellulose from sampling tree ring data show great potential for climatic reconstruction, as they are archives of the carbon, hydrogen and oxygen extracted from the environment each year and fixed in the annual rings. Carbon dioxide and water from the environment are ultimately converted by the tree to make cellulose. This process has been modelled and therefore the final chemical composition of the cellulose, expressed as variations in isotopic ratios of the elements, can be used to reconstruct the original environmental conditions of the tree's growth (McCarroll and Loader 2004; McFarlane et. al. 1999).

Isotope ratio measurements are expressed using the delta (δ) notation, for example the ratio between the different oxygen isotopes - ^{16}O and ^{18}O – is expressed as a $\delta^{18}O$ value measured in parts per mil (‰). Ocean water is the largest body of water on the planet and has a defined stable isotope ratio of 0‰ for both δD (hydrogen isotope) and $\delta^{18}O$ (oxygen isotope). As water vapour forms over the oceans, the mass differences between water molecules formed with various isotopes of H and O cause lighter water molecules to evaporate first, therefore, the water within a cloud is isotopically lighter than ocean water itself (Dansgaard 1953). As the cloud moves inland from the ocean, heavier water molecules condense first and precipitation along the coast is isotopically heavier than the water vapour remaining in the cloud. However, the precipitation is isotopically lighter than ocean water. The continual evaporation and condensation fractionation processes within a moving cloud create a geographic pattern of isotope ratios within water across landscapes. Plants and animals incorporate H and O isotopes directly from their local water sources (Kazimierz et al. 1993). Thus, the stable isotope analysis of collected organic materials may reflect geographic isotope differences and be useful in determining a sample's region-of-origin.

Following α-cellulose extraction protocol based on Loader et al. 1997, analyses were conducted on D 1914.34, and comparative wood samples (cellulose isotopes) from Tahiti, Rurutu (Australs, French Polynesia), and New Zealand - the islands considered as potential candidates for the origin of the wood. The oxygen isotope results for the comparative islands shows Rurutu with the lowest range in $\delta^{18}O_{cellulose}$ 26.5‰-27.6‰. Tahiti falls in a middle range of results with mean $\delta 18O_{cellulose}$ values of 28.3‰-30.0‰. New Zealand has the highest range of oxygen isotope cellulose values at 31.3‰-33.6‰. The ranges seen in these values are supported by the ranges seen in water samples from the islands (WISER). The $\delta^{18}O_{cellulose}$ of the carving, D 1914.34 falls directly into the same range as Tahiti with a value of 28.7‰. Despite environmental variation for each island, McCarroll and Loader suggest that the use of stable isotopes in tree rings could provide 'perfect annual resolution and statistically defined confidence

limits' within paleoclimate research (2004: 771). Caroline Cartwright (Wood Anatomist, Department of Conservation and Scientific Research, British Museum), has identified the wood as *Ficus* sp., which is consistent with the Tahitian provenance; though without a firm species identification of the wood used for the carving, our conclusions drawn from the isotopic data must remain cautious as there is isotopic variation amongst tree species in the same climatic region. In particular, the possibility of the wood originating elsewhere within the Society Islands archipelago cannot be excluded; the islands are close and contacts among them were very frequent, hence objects moved frequently between their inter-connected communities.

[Table A here]

One sample of wood was sent for dating at the Oxford University Radiocarbon Accelerator Unit in the Research Laboratory for Archaeology and the History of Art. This sample comprised of sub-surface shavings of wood from varied locations on the carving (one from each site sampled for isotopes) and thus should capture the 'average' age of the tree. Pre-treatment procedures used by Oxford would have removed any contaminates not visible. The uncalibrated radiocarbon date produced is 142 ±25 years CalAD (i.e. before 1950). This date has been calibrated using the southern hemisphere calibration curve, ShCal13 curve (Hogg et al. 2013) in OxCal version 4.2 (Bronk Ramsey 2009). Two possible date ranges (2σ) were produced by the calibration - 1690-1728 CalAD and 1805-1950 CalAD (Figure 5). While the probability for the earlier date range (1690-1728 CalAD) is only 18.9% compared to 76.5% for the latter range, the firmly documented acquisition of the piece excludes the latter date range as incorrect, an artefact of the calibration curve. Thus it is most likely that the tree that the piece was carved from was living during the period of 1690-1728 CE, felled no earlier than 1690, and no later than 1728.

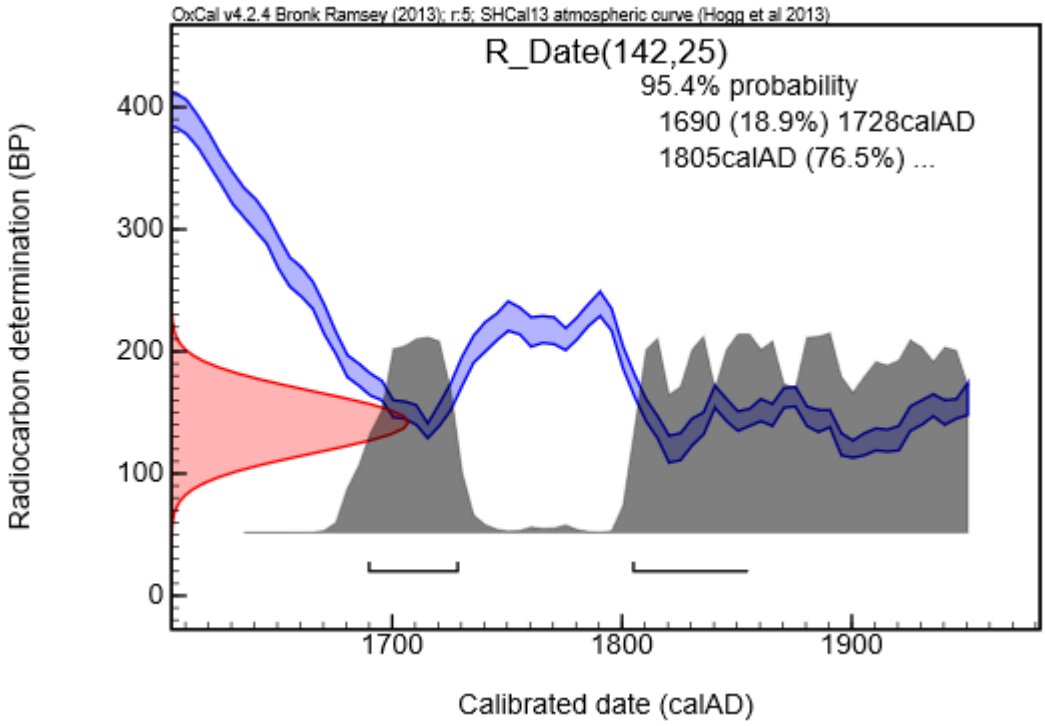

Figure 5

Implications

Steven Hooper suggested in his important survey of early Polynesian ritual arts that this sculpture 'could already have been an antiquity' at the time of its acquisition (2006: 198). We too had noted that several areas of breakage on the piece were as heavily patinated as its overall surface (Figures 5, 6), implying that in its broken form it was already old: it had led, perhaps, one life as part of a lintel or gateway carving and a further life as a relic or trophy of some sort, kept as a detached work, probably within a *marae* or temple precinct. The dating exercise does not substantiate this particular intuition, but indicates that the sculpture was a half-century old, perhaps eighty years old, at the time it was collected by - or most likely, for whatever reasons, presented to - Captain Cook.

Figure 6

Figure 7

These discoveries not only decisively alter our understanding of this iconic work, they also imply fresh perspectives in the art history of the Pacific. First, it is clear that the association of region and style upon which the cataloguing and identification of objects routinely depends must be reconsidered. What has been referred to as the 'one tribe, one style' approach has long been questioned for both Africa and Oceania (Kasfir 1984), and it has been well understood that motifs and forms travelled within regions, blurring what were presumed to be tribal boundaries or 'style provinces'. Yet major recent projects, such as the collaborative investigation of Benue River arts showcased in a Fowler Museum and Quai Branly exhibition, have extended our sense of this fluidity of artistic identities (Berns, Kasfir and Fardon 2011). In the valid and indeed essential work of associating specific stylistic traits with particular places or cultures, we need to be more aware of the cases where people, artistic conventions and artefacts themselves moved, for instance through exchange networks or by way of creative appropriations. We also need to bear in mind that the styles associated with particular islands or island groups of a certain period may have been in place for mere decades, as opposed to generations or centuries. Distinctions between various Tahitian and Austral Island works of the end of the eighteenth century or the first decades of the nineteenth are readily apparent. But, if the sculpture in Cambridge is in any way representative, a late seventeenth or early eighteenth century 'Tahitian' style may have well had 'Australs' traits, perhaps because artists from the Australs were resident in Tahiti: these populations certainly interacted in ways that cannot at this stage be precisely reconstructed (Hooper 2006: 208).

There is a second significant implication. While tribal art dealers emphasise the antiquity of the pieces they offer for sale, scholars assume that if an ethnographic artefact is known to have been collected in 1800 or 1850, it was not old at that time. Without usually articulating their assumptions, they typically consider that environmental conditions among other factors make it unlikely that objects are likely to be more than a few decades old. In the case of ritual assemblages made out of wicker, fibre and light-sensitive cloth and paint, most examples are indeed likely to have been obtained by field collectors when the pieces were new, in the

immediate aftermath of their use. But in the case of solid wooden objects the issue is less clear. If a sculpture was on the outside of a house or in some other exterior setting, it will have been exposed not only to rain and wind, but periodically to tropical cyclones. We would also expect canoe carvings to have suffered sustained exposure, and thus to have weathered and rotted over a relatively short period, though the fact that prestigious canoes were commonly sheltered under cover, out of the water, for extended periods complicates the inference. If it is not valuable to speculate further about the likely life-spans of historic objects, it will be clear that *if* a portable sculpture is wrapped and protected, there is no reason why it should not be preserved for a century or longer. If, in all likelihood, there are few pieces in collections with the antiquity of the lintel, there is a major, potential endeavour around the dating of works of Oceanic art that has barely begun.

The third implication of our findings is more specific. If the sculpture is Tahitian, and was collected on that island, it was acquired during the *Endeavour's* visit, between mid-April and mid-July 1769. The date of its presentation may be narrowed down, albeit speculatively. It is unlikely that the piece was given to Cook in some sudden way upon arrival. Elite Tahitians needed time to get the measure of the mariners, and consider what they had to gain or lose from the encounter. It is most likely that Cook obtained the carving while making a circuit of the island, in part by boat and largely on foot, in the company of Joseph Banks and Tahitian guides, between 26 June and 1 July: during this tour they stopped at many *marae* and noticed many representations of divinities (*atua*); this was the period when, away from the ship and from routine preoccupations, Cook was most fully absorbed by the encounter with Tahitian culture and its art forms (Beaglehole 1955: 105-113). But no particular date would alter the conclusion that the work is the first piece of figure sculpture collected by a European from any part of Oceania that remains extant and identifiable today. In March 1700, William Dampier collected 'images' from New Britain, but they almost certainly never reached England, or any collection. It is possible that Quiros, Roggeveen, Byron or Bougainville obtained objects of one sort or another, but no reference appears to be made to any acquisition in any journal or publication, nor was the

project of acquisitive natural history part of, or vital to these voyages (other than Bougainville's), as it so notably was for that of the *Endeavour*. Just two months after leaving the Society Islands, participants in Cook's first voyage would reach New Zealand and collect extensively there, but this 'ornamental carving' was perhaps the very first work acquired that amounted to something other than an implement or utensil. Alongside sketches of ornaments, carvings and other works by Banks' draughtsman and remarks Cook made upon god-images (e.g. Joppien and Smith 1985: 121-123, 155; Beaglehole 1955: 112), its acquisition inaugurated European interest in, commentary upon, and regard for the arts of Oceania.

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2014. For details of chemical pretreatment, target preparation and AMS measurement. *Radiocarbon* 46 (1): 17-24. And *Archaeometry* 44 (3 Supplement 1): 1-149.

Figure captions

1. Sculpture of two double figures and a quadruped, L 53 cm, Museum of Archaeology and Anthropology, Cambridge (D1914.34)
2. The Kaitaia carving, 14th century (attr.), L 225 cm, Auckland Museum (Ethno 6341)
3. John Webber, *A canoe of a chief of Tahiti,* September 1777, pen, wash and watercolour, 36.4 x 52.7 cm, BL Add MS 15513, f. 26.
4. *A canoe of a chief,* detail.
5. Single plot calibration of the date produced for D 1914.34. The calibration curve is in blue; the radiocarbon determination from the laboratory (142 ±25) in red and the calibrated date ranges in grey.
6. Sculpture of two double figures, detail. Photo: Maia Nuku
7. Sculpture of two double figures, detail. Photo: Maia Nuku

Wood sample	Location	mean $\delta^{18}O_{cellulose}$ (‰)	standard deviation (‰)
D 1914.34		28.7	0.0
Rhamnaceae Alphitonia excelsa Reissek	Tahiti	30.0	0.9
Boraginaceae cordia subcordata Lam.	Tahiti	28.3	0.3
Pandanaceae tectorius Sol.	Tahiti	29.6	0.1
Cucurbitaceae Bryonia tahitensis gray	Tahiti	28.8	0.2
Podocarpus tōtara	New Zealand	33.6	0.3
Podocarpus tōtara	New Zealand	31.3	0.1
Cocos nucifera	Rurutu	27.5	0.4
Hibiscus tilliaceus	Rurutu	26.5	0.6
Thespesia populnea	Rurutu	27.6	0.8

Table A. Oxygen isotope values for α-cellulose samples. Each wood specimen was analysed twice using a Thermo Finnigan mass spectrometer coupled to a high temperature elemental analyser (TC/EA). *PG1 = D1914.34; TH = Tahiti; NZ = New Zealand; RR=Rurutu*