

rikawa: Tasmanian Aboriginal Kelp Water Containers

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rikawa: Tasmanian Aboriginal Kelp Water Containers

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Abstract ————————————————————————————————————
ADSTIGCT

Water containers made of kelp from lutruwita (Tasmania) are one of the rarest object types found in ethnographic museum collections. Only two, well-documented, historic examples still exist. The British Museum holds one given to it in 1851, after the Great Exhibition of London. An older example, which formed part of the collections of a French naturalist engaged on the d'Entrecasteaux expedition in southern lutruwita in the early 1790s, was located at the musée du quai Branly – Jacques Chirac in 2019, after it had been mislabelled and was thought to be lost for several decades. The technical and cultural information that these two containers evidence is invaluable to Aboriginal people (palawa) in lutruwita today. This paper discusses and reflects on the on-going collaborative research, which involves the Tasmanian Aboriginal community as well as museum scientific staff and curators, in an effort to better understand these rare objects and the once lost techniques they exemplify.

Keywords

Tasmania, cultural renewal, provenance, non-invasive analysis, museum collections

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rikawa : récipients à eau en algue de Tasmanie

Résumé

Dans les collections ethnographiques des musées, les récipients à eau en algue (kelp) de lutruwita (Tasmanie) comptent parmi les objets les plus rares. Seuls deux exemplaires historiques bien documentés subsistent. Le British Museum en conserve un, qui lui fut donné en 1851 à l'issue de l'Exposition universelle de Londres. Un autre, plus ancien et que l'on croyait perdu, se trouvait autrefois dans la collection d'un naturaliste français ayant pris part à l'expédition d'Entrecasteaux, qui visita le sud de lutruwita au début des années 1790. Il a été localisé en 2019 au musée du quai Branly – Jacques Chirac, où il était mal identifié. Les informations techniques et culturelles dont ces deux récipients témoignent ont aujourd'hui une valeur inestimable pour les communautés aborigènes (palawa) de lutruwita. Cet article revient sur la recherche collaborative menée actuellement sur ces objets par les communautés aborigènes, en partenariat avec les scientifiques et les conservateurs de musées, dans le but de mieux comprendre les techniques, un temps disparues, que ces objets illustrent.

Mots-clés

Tasmanie, renouveau culturel, provenance, analyse non-invasive, collections muséales

NDA: palawa kani, the composite language revived from the scant records of more than nine different original languages of lutruwita, is written without capital letters.

We pay respect to the palawa community of lutruwita, and in particular to the makers of rikawa past and present. This research was supported by the musée du quai Branly – Jacques Chirac (Département du patrimoine et des collections), the British Museum, and the University of Tasmania. Our deepest thanks go to our colleagues in these institutions, as well as the Muséum d'histoire naturelle in Le Havre, Muséum national d'histoire naturelle in Paris and Tasmanian Museum and Art Gallery in Hobart. We are grateful to the owner based in Canberra, for his agreement to a temporary export of the container he owns for use in the workshop.

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The baskets are not empty. They are full of makers, their stories, their thoughts while making. The baskets are never empty.

All of the thoughts jump out of the baskets onto all of us.

palawa artist Verna Nichols (2009)



Fig. 1. – rikawa collected during the d'Entrecasteaux expedition, 1792 © Musée du quai Branly – Jacques Chirac, inv. 71.2012.0.4874

(8 x 14.5 x 10.5 cm). Photograph Pauline Guyon.

In 2019, the identification at the musée du quai Branly – Jacques Chirac (mqB-JC) of a kelp water carrier (rikawa) from south-eastern lutruwita (Tasmania) collected in the early 1790s in the vicinity of Recherche Bay, most likely on lunawuni (now called Bruny Island) by French officers of the d'Entrecasteaux expedition, was a game changer. After being lost – yet never forgotten – for more than one hundred years it was finally found, mislabelled, amongst the African collections of the mqB-JC. Astoundingly, this modest artefact bearing catalogue number 71.2012.0.4874 (Fig. 1), taken from a campsite of the nununi people and made only of vegetable materials, had reached the mqB-JC in an excellent condition, once having formed part of the collections of voyage naturalist Jacques-Julien Houtou de La Billardière. Apart from a small chip on one side and a missing string fibre handle, it was intact. This state of preservation together with a well-documented history of its collection made it an unrivalled source of evidence to study long lost techniques once mastered by palawa/pakana¹

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^{1.} palawa and pakana are two words revived through the palawa kani language program which mean the same thing: Tasmanian Aborigine/Aboriginal. palawa is probably more commonly used and more widely known as it was the first one to be revived and collectively used to refer to the modern

women of lutruwita, as well as a priceless cultural treasure. It is the oldest kelp water carrier known in the world, the oldest container (or rikawa) of palawa to have survived and further, the oldest ethnographic artefact from lutruwita still extant. Importantly, it is the only known ethnographic object to directly attest to pre-colonial knowledge, ways of life and palawa relationships to the environment. The French who collected it observed use of such objects but not their manufacture or its maker.

Tasmania, now known in the reconstructed language palawa kani, as lutruwita, is located nearly two hundred kilometres away from the southeast coast of the mainland of Australia, from which it was once joined when sea levels were lower, but since approximately 12,000 years ago, separated by Bass Strait. It comprises a large eponymous island and many smaller ones that shelter some of the richest and most distinctive ecosystems on the planet. The modern names of many places are explicitly related to early European voyages during which these islands, bays, and channels were first charted. These include of course the voyage of Dutch navigator Abel Tasman, who visited the area (but did not encounter any Aboriginal people) in 1642, James Cook and two French expeditions respectively led by Antoine Bruni d'Entrecasteaux (1791-1794) and Nicolas Baudin (1800-1803). These Western names, however, should not obscure the fact that Aboriginal people first settled in lutruwita some 40,000 years ago, and that over the millennia they developed a distinctive material culture, of apparent simplicity and yet extreme ingenuity. That unique civilization though, was critically endangered and – in truth – almost completely erased from the surface of the earth through one of the most brutal colonial episodes of modern history.²

The "small but strong"³ surviving community of palawa people in lutruwita today, including artists and curators, has in recent decades initiated several major revitalization processes, to recover aspects of their unique culture. Research has thus been undertaken to retrieve and revitalize extremely altered and much lost original languages as well as lost techniques in object making

Tasmanian Aboriginal community and is therefore the term used in this article. pakana, however, has been revived from the language of the northeast of lutruwita/Tasmania where many families are descended from.

^{2.} See Ryan, 2012.

^{3. &}quot;Rex Greeno – Paperbark canoe," 2015, available on the National Gallery of Australia's YouTube channel: https://www.youtube.com/watch?v=7Fd6-yhy05E.

and use. Among the most emblematic objects of lutruwita's material culture, baskets and other containers, made by women, have received particular attention — and palawa men such as Rex Greeno have also revived making watercraft from various plant fibres. Several types of baskets and containers have been studied and reproduced, while also fuelling independent creative processes.⁴ Among these, a kind of vessel formerly made by Aboriginal women from large kelp leaves and used to collect, transport and drink fresh water has perhaps received the greatest attention, having no equivalent elsewhere in the world.

Since the 1990s, contemporary palawa artists have experimented, turning both to the abundant natural resources from local ecosystems and to the contrastingly scarce historical sources available to them to better comprehend the means and needs of their ancestors. In this endeavour, travelogues and illustrations produced during the d'Entrecasteaux (1791-1794) and Baudin expeditions (1800-1803) proved to be of considerable importance. The interactions they recount pre-date the official colonial period, which formally began with the establishment of the British colony at Risdon Cove (Hobart) in 1803. In these pictorial and written archives, kelp water carriers are numerous. French authors seemed astonished by them, although they described them as common, almost trivial. Yet, until December 2019, it looked like no kelp water container collected during these French expeditions had survived.

This paper explores what changed for local communities as well as scientists when they gained access to one more historical specimen to work from: with only one other historical kelp container known so far, it not only doubled the corpus of reference, but also considerably strengthened it by providing a unique example of palawa material culture existing prior to British colonisation of that island. That rediscovery occurred at a time of critical museological endeavour and exhibition-making in lutruwita, placing these extremely rare artefacts in the context of the very current palawa cultural affirmation endeavours and museum-based research and activism.

The engagement of palawa people with historic rikawa in collections continues the strong tradition of community activism in lutruwita for the return of Ancestral Remains and cultural objects, extending back to the 1970s. An important part of this work has included not only community activism

^{4.} See Gorringe, Gough, 2009.

and cultural endeavours by organisations such as the Tasmanian Aboriginal Centre but also the roles played by palawa staff working as curators in museums in lutruwita and elsewhere, including by co-authors Rimmer and Sculthorpe. This critical engagement of palawa people and museums echoes similar developments in other parts of the world, such as in Canada, the United States of America and in Aotearoa/New Zealand. Our emphasis for this paper, however, is primarily on materials and techniques rather than the broader engagement with museums by Indigenous people.

The paper also builds on the early results of a recent study undertaken at the mqB-JC in partnership with several French and international institutions and experts, including members of source communities. This interdisciplinary research, aimed at a better understanding of the two documented historical water carriers, intends to enhance their role as exemplar objects of reference to identify other possible undocumented ones, held in museums or private collections, and also to contribute to ongoing revitalization processes. Ultimately, this paper highlights the value of cultural materials held in museums as reservoirs of techniques. Most importantly, it sheds light on what historic objects might represent for current custodians of a particularly altered yet resilient culture in their quest to regain knowledge, reconnect with their ancestral traditions, and be empowered by those.

Techniques, revitalization and cultural resilience

The words of palawa artist Verna Nichols, with which this text begins, emphasise the role of baskets and other containers made of plant materials as objects of memory. They remind us of the importance of women's fibre work in the transmission of Aboriginal knowledge in lutruwita.

In 2009, an exhibition at the Tasmanian Museum and Art Gallery (in Hobart), titled tayenebe, was the culmination of a two-year research project (2006-2008), during which seven workshops were organised throughout lutruwita. During these gatherings, several generations of Aboriginal women had worked together to reclaim techniques and knowledge that

^{5.} See for example, Langford, 1983; Sculthorpe, 2021; Rimmer, 2023.

^{6.} For example, see Krmpotich, Peers, 2013; McCarthy, 2016; Lemire, Peers, Whitelaw, 2021.

had been largely suppressed for over a century, following the decline of the Aboriginal population in the aftermath of brutal colonisation. ⁷ tayenebe means "exchange" and refers to mechanisms of transmission, essential to the production of plant made containers. The project enabled palawa women from across lutruwita to take part in the process of revitalization initiated by palawa Elders, including Ida West (1919-2003), Lennah Newson (1940-2005) and Muriel Maynard (1937-2008). At the beginning of the 1990s, they experimented and produced artworks reflecting their innovative spirit, drawing on cultural memory and generational connection to Country. ⁸ The tayenebe project explicitly emphasized a return to historical sources.

The exhibition of works produced during the tayenebe project alongside earlier baskets made since the end of the twentieth century highlighted the ongoing connections between people and plants specific to the lutruwita environment. The formal and technical elements of baskets made by palawa women was emphasised, including, uniquely, containers made of bull kelp (*Durvillea potatorum*) formerly used to collect, transport and consume fresh water. In recent years, contemporary kelp water carriers (known as rikawa) have become emblematic of the rebirth of palawa material culture, being increasingly represented in Australian museums and art galleries, receiving dedicated media attention. The tayenebe project stressed the historical roots of these contemporary accomplishments, along with the important role of museum collections and early literary and pictorial sources in revitalization processes.

For a long time, it was indeed an engraving from Baudin's voyage (Fig. 2) that served as the main, if not the only, visual reference. This explains the formal proximity of kelp water carriers produced until the early 2000s, by palawa artists and Elders like Eva Richardson (1936-2023), Leonie Dickson (1950-2017), and Verna Nichols (born in 1947). Other early representations of these objects, as well as several written descriptions, did exist, but most of them remained in rare repositories, known only to a few specialists, in

^{7.} Gorringe, Gough, 2009, p. 26.

^{8.} Ibid., p. 27.

^{9.} See for example Aitken, 2022; Cutting, 2022; Morse, 2023; and "Kelp Water Carrier Returns to Tasmania | Emirates," 2023, available on the Emirates Airline's YouTube channel, https://www.youtube.com/watch?v=O3eP9Awap9s.

^{10.} Douglas et al. (eds.), 2018, p. 198.

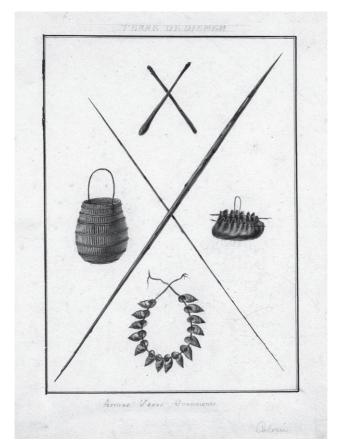


Fig. 2. – "Terre de Diemen. Armes et ornements" (Diemen Land. Weapons and ornaments), pl. XIII, by Claude-Marie-François Dien in 1807, after a drawing by Charles Alexandre Lesueur

© Muséum d'histoire naturelle, Le Havre, inv. 18.011.2.

part because they remained untranslated into English and were inaccessible to most Aboriginal people. The first European who noted (but did not illustrate) these items was Lieutenant George Mortimer, who in July 1789 came across the remains of an Aboriginal fire and around it saw several baskets and "three small buckets for holding of water, made of a tough kind of seaweed, and skewered together at the sides."

^{11.} Mortimer, 1792, p. 20.



Fig. 3. – Drawing by Jean Hubert Piron, "Paniers et vase à eau du Cap de Diemen," c. 1792 (Baskets and water vessel from Cape Diemen)

© Musée du quai Branly – Jacques Chirac, inv. PP0143629-Z686580.

A precious drawing by Jean H. Piron (Fig. 3), the artist on the d'Entrecasteaux expedition, kept at the mqB-JC faithfully represents the kelp container which has now been identified, as well as two woven plant fibre baskets still missing. Yet, it remained virtually unknown in lutruwita until Bronwen Douglas, Wonu Veys and others first published it in 2018, following on from research led since 2016 by palawa artist and curator Julie Gough. Gough emphasizes, also, that the drawing represents what are today considered invaluable cultural items "as disembodied ethnographic objects." It has to be emphasised, furthermore, that such written descriptions and visual documents produced at the turn of the eighteenth and nineteenth centuries, remain the work of outside observers, most of them men. 14

The difficulty that artists, most of them women, face is increased by the fact that alternatives to these few images and objects are rare or non-existent. So rare, in fact, that each surviving object becomes exceptionally valuable. The information it contains, and the variants it represents are irreplaceable. ¹⁵

^{12.} Gough, 2018.

^{13.} Douglas et al. (eds.), 2018, p. 191-192.

^{14.} Gorringe, Gough, 2009, p. 28.

^{15.} Ibid., p. 14.

1 + 1 make two historical specimens – perhaps three

At the time of the tayenebe project and even the publication by Douglas *et al.* (2018), only one actual historical water container was known, housed at the British Museum (Fig. 4, catalogue number Oc.1851,1122.2). Collected and probably commissioned by Joseph Milligan (1807-1884) in 1850, that cultural object was first displayed at the Great Exhibition of London, in 1851, and shortly after donated to the British Museum.

The Exhibition catalogue reads:

66 231. Model of a water-pitcher, made by the aborigines of Van Diemen's Land. This water-pitcher is made of the broad-leaved kelp, and is large enough to hold a quart or two of water. The only other vessel possessed by the aborigines for carrying a supply of water was a sea-shell, a large cymba, occasionally cast upon the northern shore of Van Diemen's Land, which contained about a quart.¹⁶

A doctor, keen naturalist and colonial administrator, Milligan spent nearly 30 years in lutruwita (1831-1860). In 1847, as the officially appointed "superintendent of the Aborigines" he supervised the transfer of forty-seven Aboriginal people who had survived the "Black War" against them, ¹⁷ back from exile on Flinders Island off the north east coast where they had been removed to in the early 1830s. They were taken to an ex-convict station at Oyster Cove, not far from Hobart, where the kelp container was most likely made. ¹⁸ In 1850, Milligan was appointed secretary of the Royal Society of Van Diemen's Land lutruwita). In that capacity, he was centrally involved in obtaining, by means unknown, the Aboriginal objects for the 1851 Great Exhibition of London. ¹⁹ At the end of the Exhibition, he donated five palawa objects displayed there to the British Museum, including the kelp water vessel.

^{16.} Ellis, 1851, p. 997.

^{17.} Ryan, 2012.

^{18.} Gorringe, Gough, 2009, p. 23.

^{19.} Ibid., p. 15.



Fig. 4. – rikawa donated to the British Museum by Joseph Milligan in 1851, after being exhibited at the Great Exhibition in London

© The Trustees of the British Museum, inv. Oc.1851.1122.2 (6.5 x 16 x 11 cm).

In 2008, the British Museum published a series of photographs of this object on its website as part of its Collection Online project. This two-dimensional access to a three-dimensional object, including several different angles, helped reframe the artists' understanding of the shaping of kelp containers. This gave rise to a second generation of contemporary water carriers, different from those modelled after the engraving from Baudin's expedition. According to Verna Nichols and Leonie Dickson, this better understanding of how the different materials had been assembled allowed for the creation of carriers that were both easier to make and more functional. Using shorter sticks, pointed at one end only, they made kelp containers that were more stable and from which one could drink directly. Many questions remained, however. In particular, the artists wondered about a possible treatment of the raw kelp, or surface treatment of the container. Was it possible, for instance, that it had been greased with animal fat or smoked, which would explain its excellent state of preservation 170 years after being made?²⁰ The term "model," used in the Exhibition catalogue was also surprising. Does it mean that this is a functional water carrier? After all, it was probably only made to illustrate a type of object, materials and techniques used by palawa people. Did the dimensions, materials and other features differ from those of containers described by French navigators fifty or sixty years earlier?



Fig. 5. – Kelp purse

Private collection Canberra, date and provenance unknown (8 cm in diameter).

These elements underline the importance of comparing textual descriptions and illustrations with three-dimensional objects. They also remind us that a single historical specimen – however valuable – leaves many questions unanswered, particularly as the conditions under which it was made and the identity of its maker remain critically unknown.²¹

In this light, the kelp water carrier collected during the d'Entrecasteaux expedition is an invaluable cultural treasure. In 2019, its identification was made through collaboration between mqB-JC and British Museum staff, as well as through the work of several specialists in France and abroad. Eventually, infrared spectroscopy – a non-invasive method of analysis, that provides a distinctive chemical signature for each material – confirmed that kelp samples collected during the d'Entrecasteaux expedition, and now housed at the Muséum national d'histoire naturelle in Paris, and the material of which container 71.2012.0.4874 in the mqB-JC was made were chemically identical.

Shortly after the identification was confirmed, the mqB-JC contacted the Tasmanian Museum and Art Gallery, as well as the Aboriginal community via the Tasmanian Aboriginal Centre to inform them of the discovery. Soon, high-definition images were taken and published online on the mqB-JC website, with a specific webpage dedicated to the container and its history.

^{21.} Ibid., p. 23.

^{22.} See Leclerc-Caffarel, Servain-Riviale, 2021.



Fig. 6. – Zoe Rimmer examining kelp containers in the Conservation Lab at the musée du quai Branly – Jacques Chirac, in April 2022

From left to right: Anne Liénard, Cléa Hameury (Muséum d'histoire naturelle, Le Havre), Zoe Rimmer and Gaye Sculthorpe (British Museum).

Photograph Stéphanie Leclerc-Caffarel.

While promoting museum-based research, the creation of the webpage was mostly aimed at providing access to the container to French and international audiences, including Aboriginal people in lutruwita. From the point of view of a history of techniques, however, this was only the beginning of a research process that is still in progress.

In 2020, another "old looking" kelp container (Fig. 5) was brought to our attention by a private collector in Canberra, Australia. He had acquired it several years previously from a market stall, The Green Shed, in Mugga Way – a recycling reselling depot of unwanted household objects. As its shape and size differ from those of the two previously mentioned, this third item prompted more research questions. In addition to determining making techniques and materials from the British Museum and mqB-JC examples, which could be brought into practice by contemporary makers of kelp carriers, it was now a critical concern to authenticate if this was a possible third historical item.

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To these ends, a workshop held at the mgB-JC in April 2022, gathered all three containers for the first time (Fig. 6). Its organization was supported by financial and logistical support from the mqB-JC, the British Museum and the University of Tasmania. The owner of the container in Canberra gave permission for his container to be lent for this workshop and an export permit was obtained for its temporary removal from Australia. Representatives of the palawa community, contemporary makers of kelp containers, scientific staff and curators from the British Museum, mgB-JC, Tasmanian Museum and Art Gallery and other museums worked together during five days.²³ Through visual examination (both macro and microscopic), Fourier Transform infrared (FTIR) and X-ray fluorescence (XRF) analyses of historical as well as contemporary carriers – from the Muséum d'histoire naturelle in Le Havre (Fig. 7a, b and c) – researchers studied and compared the manufacture and details of each container. They also examined and experimented with samples of fresh kelp, collected from several sites in lutruwita especially for the workshop. The main aim was to better understand traditional techniques of making and to compare contemporary practices with historical ones, materialized in rare surviving artefacts. Another important goal was to reach an improved understanding of the materials themselves, including kelp, for conservation purposes. Ultimately, learning about possible conditions and places in which kelp water carriers would have been made and used remained crucial to the palawa community.

Museum based research, contemporary experimentation and techniques as resources

On the British Museum website the kelp water container bearing catalogue number Oc.1851,1122.2 is described as a "Water vessel made of bull kelp (*Durvillaea potatorum*) consisting of a single piece of dark brown

^{23.} The people involved were Stéphanie Leclerc-Caffarel (curator of Pacific collections), Céline Daher (in charge of scientific analyses) and others in the Conservation and Curatorial team from the musée du quai Branly – Jacques Chirac, Line Le Gall from the Muséum national d'histoire naturelle in Paris, palawa curator and scholar Zoe Rimmer (University of Tasmania, and formerly Tasmanian Museum and Art Gallery) and curator Gaye Sculthorpe, then curator of Oceania at the British Museum, as well as Anne Liénard and Cléa Hameury (Muséum d'histoire naturelle in Le Havre).





Fig. 7a.



Fig. 7b.



Fig. 7c.

Fig. 7a, 7b and 7c. – rikawa by Verna Nichols, 2019

(a) 2021.1.5 (7.5 x 15.5 x 11 cm); (b) 2021.1.6 (11 x 13 x 7.5 cm); (c) 2021.1.7 (4 x 12 x 7.5 cm).

© Muséum d'histoire naturelle, Le Havre. Photographs Laurent Lachèvre.

coloured kelp. Sides are gathered together and wooden sticks passed through the folds, preserving its shape. Handle is of twisted fibre, knotted together near the centre." 24

From the photographs, it is easy to discern that the object was made from one circular or oval piece of kelp, folded in the shape of an asymmetrical purse, with no folds on the narrow ends. The folds along the wider sides are held in place by short sticks, said to be tea tree (*Melaleuca sp.*). These pass through holes, regularly perforated along the rim on each side. Unidentified vegetable fibres complete the device. Some fibres are tied along the lengths of the sticks. Another, twisted fibre string, connects them and forms the handle.

Contemporary practice and experimentation demonstrated that it is possible to make similar containers from large pieces of soft, wet kelp, by cutting very broad leaves into circular shapes. Kelp shrinks considerably when drying – reducing in size to about 50% of the original. The rim of circular or oval pieces of kelp needs to be pierced when the kelp is still supple and pliable. At this moment, it can also be folded and shaped quite easily. The tendency of kelp to bounce back into its flat, leaf form must be countered against with sticks and bindings holding it in place, while filling it up prevents it from collapsing. None of these operations is possible once the kelp has begun to dry, after which it starts becoming rather brittle.

In current practice, makers fill containers with sand, to allow the kelp to dry and harden gently while maintaining the desired shape.²⁵ The use of sand in the manufacture of historical kelp containers was a key hypothesis to verify. Microscopic observations, using digital microscope Hirox®, revealed the presence of grains of sand in the cracks and folds of the British Museum, mqB-JC and Canberra carriers, suggesting that sand was indeed used in the manufacture of early specimens. All three present a semi-flat bottom. Whether this shape was integral to the making process or not could not be determined with a sufficient degree of certainty during the workshop.²⁶ The flexibility of rehydrated kelp, discussed in more detail below, did not allow us to be conclusive on this point.

^{24. &}quot;Water-Vessel; Model," *The Brisith Museum*, https://www.britishmuseum.org/collection/object/E_Oc1851-1122-2.

^{25.} See Sculthorpe et al., 2015, p. 225.

^{26.} Nowadays the maker, manipulating the sand regularly throughout the drying process, determines the shape. If containers were left sitting on a flat surface to dry, even full of sand, the bottom

Possible treatments of the kelp, prior to the making of containers, or surface treatment(s) of the containers themselves were also important research questions. Early navigators described kelp water carriers in use near fires, during and after meals, and other social interactions. This, along with the incredible durability in museum contexts of the existing containers, suggested that they could have been smoked or strengthened by their exposure to smoke while they were used beside a fire. Unfortunately, chemical elements indicative of smoking are volatile and smoking residues are difficult to track. FTIR and XRF analyses did not highlight components typical of soot or other combustion products. Historical containers must have been exposed to smoke, as they were used to hold drinking water and fire was the central part of camp, for cooking and eating around. Whether they were deliberately 'smoked' as part of the making process was the research question under investigation. Unfortunately, it was not possible to confirm or dismiss that hypothesis during the workshop. Animal fat was also ruled out. Contemporary carriers made by Verna Nichols in 2020 and now housed in the Muséum d'histoire naturelle in Le Havre had obviously been polished, using a substance containing beeswax, which produces a distinctive signal of esters and fatty acids in FTIR spectra. However, the surface of historical containers did not reveal any added matter. Interestingly, FTIR of fresh kelp samples, collected in southeast lutruwita, did show protein bands, absent from the historical mqB-JC, British Museum and Canberra containers. These proteins matched visible secretions from molluscs. If those once existed in early specimens, it seems they had been washed out, worn off or faded, resulting in the absence of protein signal long after their making.²⁷

The presence of ochre, used in many ceremonial and other contexts throughout Indigenous Australia, was also investigated. Yet, no signal of iron came through in sufficient intensity on the XRF spectra to confirm the presence of red ochre on any of the three containers examined. Red fluorescent spots, numerous on the British Museum container, appeared to be organic. They result from structural change in kelp, during the decaying process, which

part would rot. The container now in the musée du quai Branly – Jacques Chirac collection was most likely in use when collected, still containing water (La Billardière, 1799, vol. I, p. 177). It is therefore remarkable it has retained a functional shape.

^{27.} Proteins can degrade with time but on a much longer period. It is therefore more likely that mollusks secretions were washed out while making/using the containers.

Zoe Rimmer (palawa art practitioner, curator and a researcher previously affiliated to Tasmanian Museum and Art Gallery and now at the University of Tasmania) confirmed. At the time of its manufacture, the kelp from which the British Museum container is made might have been less fresh than kelp used on other specimens. This, of course, raises more questions about the circumstances in which the British Museum example was made, likely at the Oyster Cove Aboriginal Station. In any event, such degraded areas were absent from the other carriers under study. The bottom part of the small purse-like container, from Canberra, showed traces of being scratched. Yet, what we first thought to be a repair did not come across as anything else than kelp in FTIR or XRF spectra. It therefore seems to be the result of a surface abrasion of the kelp, possibly quite old – older than the making of the container – according to botanist Dr Line Le Gall (Muséum national d'histoire naturelle, Paris).

Differences in kelp texture, colour, and transparency among early specimens could not be fully elucidated or considered discriminating features. The British Museum and Canberra containers present an entirely cracked surface, while the mqB-JC's specimen is much smoother. The latter is darker than the others, which share a quite similar brown colour. The container in private hands, however, is the most translucent of the three. With light directly applied against it, it had a distinctive red glaze, while the British Museum and mqB-JC examples remained mostly opaque. In some parts, near the rim or lateral break, the carrier in the mqB-JC collections was slightly translucent, revealing the rich orange colour of the kelp from which it was made. XRF and FTIR analyses, however, showed similar molecular signatures for all of them, conform to a polysaccharide material with phosphorus (P), sulfur (S), chlorine (Cl), potassium (K), calcium (Ca), iron (Fe), bromine (Br) and strontium (Sr) as additional chemical elements related to the presence of sand, salt or others residues.

Experimentation with samples of fresh kelp showed that different textures depended on the nature of the leaf, including its thickness and the part of the plant from which it had been cut, the age and extent of decay of the kelp when collected, the drying process, as well as the manipulation it had undergone during shaping. Contemporary examples from Le Havre have a different aspect altogether. They present a granulated surface, which microscopic observation correlated to small depressions spread across the surface of each artefact, in varying number. These probably resulted from

the application of wax on finished containers, and the use of kelp that had been previously frozen.²⁸ Transparency and colour drastically varied from one sample to the next, as well as from one contemporary carrier to the other, without obvious connection to provenance or even plants. Several samples had been cut from the same stem.

According to these elements, distinguishing one kelp from another in terms of provenance was impossible by resorting only to visual examination (macro and microscopic) and non-invasive methods of analysis like FTIR and XRF. DNA analysis, which requires sampling, has not been tried in the context of this workshop. It would be an interesting tool to use, if comparative samples from the 18th and 19th century could be found. Algae specialist, Line Le Gall (Muséum national d'histoire naturelle, Paris), underlined that kelp populations have changed quite dramatically over the centuries. Water pollution, climate change and other factors (e.g. molluscs demography) have affected them considerably. Current location of kelp forests also differs from 18th-century ones. It therefore remains difficult to track the provenance of kelp used in early containers.

In terms of making techniques, tool use and materials outside of kelp were also investigated. We used the digital microscope (Hirox*) to examine the rim of each container. Aside from observing the laminated structure of the kelp, which did not vary sufficiently to provide relevant information, we were looking for traces left by different tools. It was likely that the water carrier now housed in the mqB-JC had been made by cutting the kelp with stone or shell tools. The British Museum and Canberra items could have been made with lithic or metal tools. Contemporary makers often use scissors and, sometimes, a metal punch. Of all rim surfaces, the smoothest, by far, was that of mqB-JC container (Fig. 8a), followed by the one in Canberra (Fig. 8b), the one in the British Museum, and then the examples in Le Havre. It is unknown whether warmed tools were used in the past. It is not the case today, and early ethnographic accounts and inherited oral knowledge are critically lacking. In the same way, the possibility of having used hot, rather than cool sand, still needs to be investigated.

^{28.} Verna Nichols has confirmed that she used Dubbin® on her rikawa that are now with Le Havre. She cannot remember if the kelp used for the Le Havre rikawa was frozen before use but thinks it is likely as this is often done. Verna and her sister (Leonie) liked to experiment with their work. They used Dubbin® (a leatherwork product made from beeswax, oil and tallow) to help protect and give a shine to their kelp work (personal communication, Verna Nichols, 28th August 2023).

Fig. 8a.

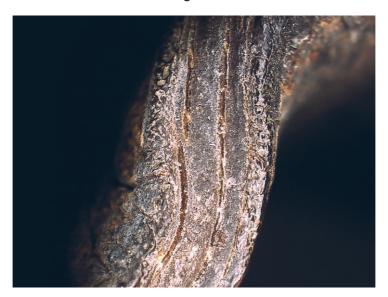


Fig. 8b.

Fig. 8a and 8b. – Detail of rims from kelp containers in the musée du quai Branly – Jacques Chirac (a) and private collection (b), through Hirox® digital microscope, April 2022

Photographs Céline Daher.

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The rather smooth edges of the container found in Canberra suggested it could be an early specimen, and so did the aspect of the kelp, close to the British Museum specimen. Its rounded shape, small size and regularly pierced rim - all around -, however, made Zoe Rimmer think that it could be an early product of revitalization from the 1990s rather than a historical example. Rimmer mentioned that classes and workshops during which kelp container making is taught today often use that circular shape as a basic, less culturally sensitive, form. A cord would go through the holes, all around, drawing the circular edges together slightly to form a bowl shape. This technique is similar to that of coin pouch, a feature that becomes irrelevant once the kelp has dried and is not pliable anymore. Observation with the Hirox® microscope revealed residues of cotton or synthetic fiber in one of the holes. These findings require further analysis. Cotton would not exclude the 19th century as the making period, synthetic fibre, on the other hand, would. The round purse shape, atypical in rikawa, does not exclude it from being a 19th-century item either. Wallaby skin pouches holding the ashes of deceased loved ones were made and kept as sacred amulets. A woman, living on Flinders Island or at Oyster Cove, could also have imitated a Western artefact or made a kelp purse on commission. It is all the more intriguing that in officers' journals, made during the d'Entrecasteaux voyage, the comparison used repeatedly to describe kelp water carriers is "une bourse à jeton" (coin purse).²⁹ C14 dating is now being considered. This could indeed decipher whether the kelp of that artefact was cut prior or after 1945, when C14 data in the Pacific shifted due to the atomic bombing of Nagasaki and Hiroshima, and subsequent nuclear testing in the region.

Iodine (I) was only detected in residual amounts. Dating techniques using that element are also a possible avenue for further investigation; and so is the microscopic observation of grains of sand, which in some cases may provide provenance information. In any event, this specimen remains a mystery to date.

The known historical examples provided more information. Especially, while it has been standard in revitalization practices to use sticks of tea tree (*Leptospermum sp.*), with reference to the British Museum specimen, mqB-JC's earlier container comprises another type of wood.

^{29.} For example, see La Billardière, 1799, vol. I, p. 167.

The distinctive bark left on the sticks suggests it might be Tasmanian currajong (*Asterotrichion discolor*), a plant endemic to lutruwita. According to Miguel de Salas (Senior Curator of Botany, Tasmanian Herbarium) another possibility would be forest daisy bush (*Olearia lirata*). Flat and twisted vegetable fibres look identical on both historical containers (Fig. 9). Zoe Rimmer identified the fibers used to secure the kelp as possibly being "river reed" (*Schoenoplectus pungens*), a plant from which many woven baskets are made. Miguel de Salas, however, suggested a kind of "swordsedges (probably *Lepidosperma concavum*) as the flat fibre in a figure-of-eight that secures the kelp in place [on the British Museum exemplar], and some more processed monocot (rush, reed, lily) for the twisted cord handle." The flat fibre on the mqB-JC rikawa, is more challenging to identify. De Salas provided several hypotheses including: "a stripped bark, such as bootlace (*Pimelea*) or currajong, or instead a processed leaf such as the blue flax lily (*Dianella*)." In the stripped bark is the blue flax lily (*Dianella*)."

These elements suggest that kelp containers were made quickly, with available materials, and not submitted to specific standards of making, but guided by custom and knowledge patterns. Early voyagers describe them as common, emblematic of palawa material culture but not rare. The main material from which they are made, kelp, was abundant - although it now faces becoming endangered due to the effects of climate change. To this day, large kelp plants and leaves wash over beaches on shores around lutruwita, and in rather large quantity. That is where women, including makers of kelp items, collect it today. Information on the collection of kelp prior to British colonisation is lacking. Early descriptions attest that it could be cooked and eaten,³² but other uses might have escaped us. During the last few decades, women have regained some knowledge of working with kelp. This includes selection and preservation techniques that prevent it from rotting before the making of containers and other items manufactured from it. palawa artists such as Vicki West (born in 1960), have become well known for their use of kelp in contemporary and highly sculptural art forms.

^{30.} Personal communication, 1st September 2023.

^{31.} Ibid

^{32.} Entrecasteaux, 1808, vol. I, p. 236; La Billardière, 1799, vol. II, p. 11.



Fig. 9. – Detail of fibre handle from the British Museum rikawa through Hirox® digital microscope, April 2022

Photograph Céline Daher.

During the workshop, one key question pertained to the durability of kelp water carriers, both in museums today, as well as in the past. Once dry, the material is stable and solid. It can break, but experimentation demonstrated that it requires more than a light shock. Kelp is not fragile like glass. It is closer to some hard plastics (and can easily be mistaken for leather). When put back in contact with water, however, modern samples of kelp that had been left to dry for some time, rehydrated and regained their flexibility and leather-like properties. This suggests that kelp carriers could be used repeatedly to transport and consume water, left to dry, and then used again. This unique characteristic of kelp was noticed by the French in 1792-1793. Officer d'Auribeau saw fragments of "fucus" hanging in a shelter and thought it was skin: it was only when another officer placed it in water and it reverted to its original shape that he was convinced that it was in fact kelp.³³

^{33.} Plomley, Piard-Bernier, 1993, p. 353.

The container in the mqB-JC collections today was described as still containing water when it was acquired by the French in lutruwita. This information sheds light on its quite asymmetrical shape. If it held water and was left to dry on an uneven surface, or sideways, it could have collapsed a little on itself.

Experimentation with kelp samples during the workshop also showed that prolonged contact with fresh water was detrimental to the integrity of the kelp. Plunged into a box of fresh water, dry samples expanded considerably. Their surface changed, and after a few hours, they became slimy and began to break apart. Other samples, left in humid and confined conditions (in plastic wrapping) became moldy and began to degrade as well. This indicates that, in the absence of specific treatments – which this study failed to verify with sufficient certainty - kelp water carriers could have been used repeatedly, but only for short periods of time and far from indefinitely. These elements point toward rather disposable artefacts, used a couple of times before they were discarded. The materials from which they are made are not, or at least were not, rare. Although ingenious, the techniques they exemplify are simple. They include the collecting, cutting and piercing of the kelp; shaping it and finding a means to let it dry while preserving a desired shape; finding and collecting vegetable fiber for string lashes and choosing and splicing wooden skewers for holding in place. One can easily imagine that someone experienced could assemble one rather quickly. Fresh water is also abundant in lutruwita. Storing it for long periods of time was unnecessary. The size of all three containers indicates that they would fit into a woman's fiber basket, 34 but it may be tricky to insert and remove without damaging the short wooden sticks.

Another property of kelp, known to Aboriginal communities and algae experts today, is its nutritional value. Fresh water and food were not scarce in lutruwita. Yet they may have been lacking minerals and nutrients present in the kelp. Drinking water from kelp containers might have played an important role in the health of local populations. Similarly, Line Le Gall reported that fresh kelp possesses antiseptic properties, which could have been relevant to a number of situations, possibly including childbirth. This also explains why in Aotearoa, not that far from lutruwita and in a similar climate, Māori people used large leaves of

^{34.} See list of historic baskets and measurements in Gorringe, Gough, 2009, p. 22-26.

kelp to transport and store mutton birds for meat consumption.³⁵ This is the only other known ethnographic example, in Oceania or elsewhere, of kelp used in container making. Māori and palawa techniques, however, remain entirely different.

Although kelp grows in widely distributed areas of coastal southeastern Australia, there is little documentation of its use by Aboriginal people outside of lutruwita.³⁶ In coastal areas near to Adelaide and the Lower Murray region of South Australia, Aboriginal people have been reported as wearing kelp cloaks – as we see in images drawn by artist George French Angas³⁷ – however, recent investigations have noted that this material was possibly sea grass rather than kelp.³⁸ lutruwita was the only place in Australia where Aboriginal people used kelp for making containers.

That uniqueness explains the status of kelp water containers today – that of cultural emblems. No other artefact, including baskets made using a specific "s-stitch twist technique," reaches that level of distinctiveness.³⁹ The scarcity of historical examples, combined with the wealth of technical information they hold makes them cultural treasures. In lutruwita, where colonization resulted in the almost complete annihilation of palawa people, the descendants of the few survivors, still face the dispossession of their land, language and much of their cultural knowledge. In this light, techniques, gestures, ways of life, relations to the environment, and even words, materialized in rikawa (kelp containers) are irreplaceable resources. Revitalization efforts led by palawa women, based on research in archives, museums, and in nature, bear testimony to the women's extraordinary resilience, pride in regaining knowledge, and strength in rebuilding a fragmented cultural identity. Further investigations aim at narrowing down the age and provenance of the kelp container currently in private hands. The British Museum and mqB-JC rikawa rejoined in lutruwita in September and October 2022 for an exhibition and cultural project, in line with tayenebe (2009), titled taypani milaythina-tu: Return to Country (Tasmanian Museum and Art Gallery 2022-2023). Both containers will

^{35.} See for example the põhā tītī or kelp bag housed at the Te Papa Tongarewa Museum: https://collections.tepapa.govt.nz/object/258695.

^{36.} See Thurstan et al., 2018.

^{37.} Jones, 2021.

^{38.} Thurstan et al., 2018, p. 1826.

^{39.} Gorringe, Gough, 2009, p. 3.

stay in Hobart for two years, on a limited long-term loan, as per Australian law on the protection of cultural property on loan. One can only hope that the reconnection of the rikawa with local communities will help in the recovery of technical knowledge and other memories that have been dormant for more than two centuries. From the perspective of museums that hold these rare treasures in their collections, it presents an unprecedented opportunity: to combine local and international knowledge, to better document existing collections, promote cultural diversity, foster dialogue with source communities, and advocate the critical importance of collaborative museum-based research and work on the history of collections, material cultures and techniques.

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