



Lizzy Leckie and Kaetaeta Watson weaving the overalls, 2016. Photograph courtesy of John Watson

material in place. The overalls also provided the conservator with potential evidence of past use. Holes were found on the sides and the chest, and could, given their location, suggest battle wounds. The hole on the right side of the chest also suggests that the wearer of these overalls may have not always worn a cuirass, as this area is covered when worn with a cuirass. Therefore the original wearer of this armour may have been a warrior that also played a supporting role in some battles. These holes provide evidence for how the armour was used, and so it was decided not to fully repair them. Instead the conservator covered them with nylon netting to prevent them from increasing.

Besides telling us things about production and use-wear conservation can also provide scientific evidence for the materials used in objects. We already knew from historical records that Kiribati armour was made from coconut fibre string, and that the cuirasses are often decorated with human hair. However we wanted to confirm this. Scanning electron microscopy and light microscopy showed that this cuirass was definitely made from coconut fibre string, and decorated with human hair. Further DNA analysis of the hair could also give clues about the location and lifestyle of the donor of the hair.

Conservation, like historical records, also has its limits and in order to be able to understand the weaving techniques used in the production of the armour we approached another discipline. Artists Chris Charteris, Lizzy Leckie and Kaetaeta Watson drew on the knowledge from existing records to further explore, in detail, Kiribati armour found in museum collections in New Zealand. Their research sought to identify knotting and weaving techniques that would then allow them to make their own suit of Kiribati armour. Besides reconfirming the original materials used to make the armour, looking at the historic armour revealed the techniques and processes used. For example, the artists could tell that most cuirasses looked as if they were made in one piece starting at the bottom and working up and around. They followed this technique

and found it to be successful. They also realized that needles or awls would have been used to make the cuirass, and so Charteris made several whalebone needles for use in the process. However the study also brought up some questions. The plaiting technique observed in the coconut fibre string that was used for the overalls was not recognized as a way of making Kiribati string now, as the string is always rolled. The artists suspected then that the plaiting and the knot used with it might be the same or similar to that used in the construction of fishing nets. Following further research into local commercial fishing nets, and with help from members of the Kiribati community this was revealed this to be true. This breakthrough occurred after the overalls had been made, and so the arms were made using this netting knot, which uses only one continuous string.

The final suit of armour is named Kautan Rabakau in Kiribati, which means awakening the knowledge. In making this armour the artists hope to protect and awaken the knowledge within it. In Kautan Rabakau it was decided not to use the traditional coconut fibre as this is very precious and not easily sourced in New Zealand. The artists wanted to use materials that were available around them, just as makers in Kiribati would have done. They also wanted to show their own contemporary version or interpretation of the armour. The cuirass is made from a twisted polyethylene twine used for fishing trawl nets and was dyed brown as it represented their feeling of respect

Kautan Rakakau by Kaetaeta Watson, Lizzy Leckie and Chris Charteris 2016 (2017.14.1-3, 2017.15). Modelled by Isabella Levet. Photograph by Lizzy Beckie



toward the armour. It also went well with the natural colour of the overalls, which were made from sisal bailing twine, chosen for its availability, thickness and the slightly hairy nature of the fibre. For the core fibre of the cuirass instead of the plaited coconut fibre the artists used a commercially brought 5mm manila rope, commonly used today used for boating, and chosen for its firmness and strength. Patterns were added to the cuirass using polyester slinging twine used for attaching ropes to fishing nets, and this was also dyed. The process of making the new armour has been a long and time-consuming one. It has revealed the amount of time, strength, perseverance, and community involvement needed to complete the armour, and it very much reflects the Kiribati way of life, which is to work together.

The rapid decline in production of this type of armour is generally attributed to the influence of both missionaries amongst the islands and the arrival of the British in 1892, both of whom introduced new laws and attempted to pacify the islands. IKiribati do not make anything that is not needed, and so with no need for the armour, it is likely that their offering



T-shirt designed by Barane Ieretita, 2016 (2016.166)



Sarong printed with the image of the warrior (2016.167)

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to tourists, government officials, explorers, whalers and other visitors is one of the reasons so many are now found in museums across the world. Whilst the battles that necessitated this armour are over, Kiribati now faces the new challenges of climate change and the effects of westernisation on traditional life and culture. For one of the artists 'the importance of the armour today for the IKiribati is to reconnect with their ancestors, to admire and be proud of their creativity. The symbol of the warrior, printed on t-shirts and te be (sarongs) shows power and strength and the renewed interest will hopefully awaken IKiribati to discover more about their history and skills of our ancestors' (Kaetaeta Watson 2016).

Bringing together these different ways of looking at Kiribati armour and capturing everything we could about it, has allowed what is important to emerge.

The Island Warrior should allow you to see not just one thing about the armour, but many things. Most importantly it should encourage you to look at objects, and to then look again.

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Cover image: One of the senior students at Rongorongo training college, Beru. Photographed by Reverend George Hubert Eastman, pre 1925, P4912.ACH1





Suit of Armour (Z 7034 Z 7035)

What do we see when we look at objects? For one person an object such as a cup might simply be a means of drinking your tea, whilst to another person it might be a family heirloom, or for someone else an example of the use of porcelain. There are many different ways of looking at objects and understanding them. The Island Warrior exhibition is a case study for considering the multiple ways of seeing objects, and the benefits of bringing these many ways together. The exhibition brings together the perspectives of a conservator, a museum researcher and three artists as a way of understanding a specific object; Kiribati armour.

The historic armour (Z 7034, Z 7035) and weapons (E 1907.603, Z 7052) shown in the exhibition would have been made sometime in the 1800's on one of the Islands that makes up the Republic of Kiribati, a group of thirty three coral atolls and reefs spread out over 3.5 million square kilometres of the Pacific Ocean. Isolated, as an island group, the Islanders would have used the limited materials available around them to produce these fearsome objects.

The research for this exhibition started with what was already known about the objects taken from historic texts written by whalers, explorers, missionaries, government officials and colonial officers, as well as oral histories from IKiribati people. From these sources we know that the suits of armour would have provided protection from the dangerous shark's teeth edged swords, spears, daggers, and coconut wood clubs carried in battle. Each suit is made up of a set of overalls and sleeves made from coconut fibre, with a coconut fibre cuirass worn over the top. The distinctive cuirasses have high backboards to protect from attack from behind, and were often worn with thick belts made from woven coconut fibre or dried ray skin to protect the vital organs. The cuirasses are usually decorated, either with human hair, feathers or shells. Warriors sometimes wore hand armour also made from coconut fibre, and inlaid with shark's teeth along the knuckles. The warriors would also wear fearsome looking helmets made from porcupine fish skin, which dry hard in the sun and provide another layer of protection for the head. These helmets would usually have been worn over a coconut fibre or woven pandanus leaf cap. It is not known where and when this armour was developed in the islands but it has come to stand as uniquely Kiribati, with its influence spreading to the nearby islands of Nauru and Tuvalu also.

Hand guard (2017.13)



Shark's Teeth Trident
(E 1907.603)

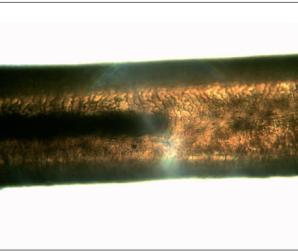
Shark's Teeth Dagger
(Z 7052)

Coconut fibre string, a material still used today, is the main material used for the armour, chosen not just for its availability but also its strength and flexibility. The fibres come from the husk of the coconut, found between the inner shell and the outer skin of a coconut. These fibres are soaked in the water of the lagoon for two to three months, then rinsed and dried. Several fibres are rolled into small strands, which are then rolled together to create long cords. The process of making the armour would have had a powerful ritual associated with it, instilling in the armour the power and strength of the raw materials used to make it. The warriors would also go through a ritual before going into battle in order to turn them into fierce fighters.

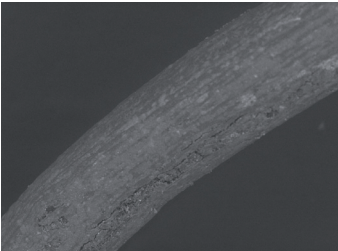
The armour would have been worn in conflict resolution between individuals or groups of people, and generally the fighting would have been related to land-claims or retribution. In all contests the aim was to wound your adversary, not to kill them, as that wound would be adequate retribution. If someone did die during the battle then payment to the wronged party would have needed to have been made through the gift of land. Warriors in armour would have carried a shark's tooth spear tipped with a stingray barb but would never have fought alone, and would have been surrounded by a number of



Detail of porcupine fish helmet (Z 7035)



Sample of human hair
from Z 7034 using light
microscopy. Photograph
courtesy of Jennifer Bates



Sample of coconut fibre from
Z 7034 under a scanning
electron microscope. Courtesy of
Catherine Kneale and Trish Biers

people not wearing full armour carrying branched spears, clubs and small daggers. In cases of inter village or island warfare each side would march in three groups, with the main warriors in the centre surrounded by their supporting troops. When the two sides met the overall outcome would depend on the result of individual challenges made by warriors.

Historical records alone could not answer all of our questions about the armour and so it was necessary to draw on other disciplines to investigate the armour further. Conservation science can be used in conjunction with historical records to give us further clues as to how the armour was made and used. For example the surface of the porcupine fish helmet at the Museum of Archaeology and Anthropology is covered with a layer of what the conservator confirmed to be sand. We know from historical records that one way that the helmets were created was by spearing a porcupine fish while it is fully inflated and then burying it in the sand until it has dried out. The head was then removed and the skin was expanded in order to accommodate the head of the wearer. When the skin of the porcupine fish dries it becomes very rigid and impenetrable, thus perfect for use in armour. Because the sand was linked to way that the helmet was originally created it was surface cleaned with incredible care in order to leave this source