

Kia ora, gday and welcome to the History of Aotearoa New Zealand, Episode 21: Flax for Dummies. This podcast is supported by our amazing Patrons, such as Mads and Scott, who I called David last episode cause I'm full of the big dumb. Sorry Scott!. If you want to support HANZ go to patreon.com/historyaotearoa. Last time, we told the famous story of how Maui slowed the sun to give us long days and how he attained fire. Before that we were talking about whakairo rakau, wood carving, what it was, what it meant and the tools that were used to make the amazing pieces of art we see all over Aotearoa. Today we will continue on with the arts although this had more of a practical purpose as opposed to carving's more historical, artistic and spiritual one. In saying that though, weaving was, and is, steeped in custom, tradition and tapu, which you should really see is a running theme by now. So the next few episodes are going to be about what Maori were wearing and how those clothes were made, continuing to build that picture of how a typical person in pre-European Aotearoa would have looked, acted and what their daily lives would have been like.

If you remember back to the earlier episodes when Maori first arrived in New Zealand, the Land of the Long White Cloud was much colder, wetter and generally a lot less tropical than the East Polynesian lands that they had just migrated from. This required some drastic changes in the way they lived with protection from these new elements being a high priority. The initial problem they encountered though is that the traditional plants they used to make clothing didn't survive in this new climate. One of the more important plants that East Polynesian turned Maori brought with them was aute, paper mulberry, which was used to make tapa, a type of cloth used to make garments. Not many of these survived the initial journey and replanting but Joseph Banks, one of the key members of Captain Cook's crew, did record that there was a small group of these trees that was being cultivated and protected in the northern North Island and noted that although not much tapa was made, it was highly prized, especially in small pieces for earrings. Overall, however, paper mulberry was not widely cultivated so new sources of fibre were needed to make more highly protective clothes.

Thankfully, Aotearoa had a bunch of native plants that were suitable for the job and although Maori had seen not many, if any, not many, if any of these before, they were quickly able to figure out the best way to process them to get the best fibre and then how to weave that fibre into something to wear. Like most parts of Maori culture during this time, what you used depended on what was available so plants like houhere lacebark, kiekie which is a climbing shrub found on trees in lowland forest, piango or cutty grass which grows in coastal areas and the good ol' cabbage tree. All of these were used for a variety of weaved goods, not just clothes, which we will talk about later, but none of these were really the key to Maori weaving success. That esteemed honour goes to harakeke, flax, which actually isn't part of the flax family, it's a lily. Anyway, this plant is found all over Aotearoa and anyone even remotely familiar with the New Zealand landscape will be able to pick it out immediately with its distinctive, blade-like leaves with tall stalks that occasionally flower. This is THE plant when it comes to Maori weaving and what we will spend most of our time on as most garments and items made with traditional weaving techniques are made from this plant.

Not all flax is created equal though. For starters, there are two main species of flax, the harakeke we have already mentioned, which is common New Zealand flax, and wharariki, mountain flax. Wharariki is found generally along exposed coastlines and at altitudes of 1300m. It reaches about 1.6m in height with low hanging seed pods, drooped leaves and lime green or yellow flowers. This plant was sometimes used for weaving but the leaves produced less fibre of generally lesser quality, something that was noted by later European settlers. Wharariki had nothing on the mighty harakeke, which grows to a whopping 3m in height with flower stalks growing up to 4m. It has much stiffer, stronger leaves, red orange flowers that produce nectar that tui feed on and can survive in a

range of soils and climates, even swamps, something that will become a key component of the post-colonisation flax industry. From these two species there are 60 known varieties which were grown in pa harakeke, flax plantations that were highly prized by a hapu. A pa harakeke would have multiple varieties of flax that were cultivated for their strength, softness, colour and fibre content with different tribes having different uses for each variety. The identities of each flax variety were often highly guarded secrets, in case any neighbouring hapu, or even neighbouring whanau, was trying to get an edge. Although the leaves are what we are mostly interested in, Maori used all parts of the plants for many different uses. Dried flower stalks were used to make mokihī, rafts and the nectar was used to sweeten food. The sap was also used to treat boils, wounds, relieve toothaches with the juices being used as an antiseptic. Bindings were made from the leaves too for broken bones and matted together to dress wounds but they were of course used for that all-important weaving.

There are few different types of weaving that were used for different purposes and used different parts of the plant. Raranga, plaiting, is what many of you are likely more familiar with, the interlacing of leaves which was used to make mats, sails and kete, baskets. There is also whatu, weaving which is kinda like knitting but without the needles and just using your fingers, which made clothing, fish traps and nets. The last is whiri, braiding, to make rope and cord. We will talk about these more later on but that gives you a general idea of what harakeke was used for. Before we can get to making stuff though, let's go back to the start. We have a nice, fully grown flax and we need to get the leaves to turn into a nice cloak for your man or maybe you have seen Wiremu's wife, Anahera, has made a real nice mat and damn, do you want a nice mat for your whare too. So, all we got to do is cut some leaves, slap them together and bang, we got something, right? By the implication of this long-winded question, you have probably guessed that it isn't that straightforward.

For starters, we can't just go in there rip, shit and bust cutting down whatever leaves we want, certain traditions need to be observed, traditions which may seem odd and superstitious but are rooted in keeping the plant healthy and the subsequent weaving pristine. For example, flax was not gathered at night, when it was too dark to see, in the rain, where it will be too wet to work, frost, making it too brittle or wind as the leaves would be too difficult to cut. Any trimmings and waste from later steps were placed under the plant in the soil, returning Papatuanuku's gift back to her, but also creating compost for the plant. Later on when weaving, weavers would not be allowed to eat, drink, smoke or not weaving in front of strangers to stop them from getting distracted and making mistakes. Another custom that was followed was that a woman was not allowed to weave or even enter a pa harakeke when she was menstruating given at that time she would be out of balance, physically, mentally and spiritually. Now, you're probably wondering what practical purpose that would serve and some of you may have already guessed. Ladies, think about how you get when it's that time of the month and fellas, think about how your Mrs. gets at that time of the month. Ya get tired, ya get cranky, irritable, cramps, you might tire easily, shorter attention span, all of which can lead to a mistake in the weaving process. For those of you that are raging cause you think I'm a massive sexist, well, chickity check yourself before you wreck yourself because all of that was actually taken from a book by a woman to be considered to be one of the modern weaving greats, Erenora Puketapu-Hetet, so their her words, not mine. On a side note, her, her daughter, Veranoa, and their wider family have made a lot of the cloaks you see in museums, exhibitions and even on foreign dignitaries and New Zealand locals of high station, so if you see a kakahu, traditional Maori cloak, chances are this family made it. They're also extremely prominent in the carving world as well. Anyway, assuming you observed the proper traditions, you needed to cut the right leaves on a downward slope as close to the base of the plant as you can possibly get. The centre shoot of the

flax plant is called the rito with leaves directly next to it called the awhi rito or matua in some northern iwi. These leaves are never cut as they represent the centre of a person or the younger folk in a community, cutting them away would quickly cause a person or community to wither away, just like cutting these leaves would cause the plant to wither and die. As such the outer leaves only are taken, the leaves that the plant can afford to lose.

After the leaves were removed from the plant the ribs that run the length of the leaf would need to be taken out which would leave behind strips of flax. In modern times haehae are used to perform this task, which are basically pieces of wood with small nails sticking out or an old shearing comb. They can be intricately carved or just be a block of wood but the way they work is you would use different sized haehae depending on how much of the leaf you wanted to remove as the 'nails' are set at different distances on each tool. The leaf would be placed on a hard surface and the haehae pinned on top of it. The leaf was then pulled along which would split the ribs of the harakeke from the rest of the leaf. This is, however, a modern invention. Pre-European Maori weavers had to use the next best equivalent, their fingernails, which does not sound very pleasant at all. The ribs and other offcuts from this stage are returned to the flax plant as compost. The newly made strips were now sorted based on their length by holding them in a bundle with the cut ends together. The free hand then grabs the tips and shakes the bundle, making the smaller strips fall away and leaving a nice bunch of strips that are of all roughly equal length. This is important for later on in the weaving process as fibre that is of the same length is easier to work with and give a better finished product than if all your strands are widely different lengths. These strips, although decent for raranga, weren't really that good for whatu or whiri, the fibre inside is what was needed. The leaves were scraped, often with a mussel shell, to remove the outer green layer and most of the moisture of the leaf which stops the fibre from rolling up too much. The actual technique that was used was the shell was held against the underside of the leaf, which was on a hard surface. The other hand then pulled the leaf strip, which removed the material, in a similar fashion to how you would curl strips of paper or ribbon with scissors. Sometimes a small incision is made to make this process easier. Once the excess is removed, any leftover waxy stuff is scraped off too to leave some hairlike fibres. If a closer weave is desired the strips will be boiled in bundles for up to 5mins before they put into cold water, hung to dry and scraped. This shrinks the harakeke strips, which can also be used for raranga if not being stripped.

This fibre is called muka, the all important part of the flax leaf used for weaving all sorts of stuff but just cause we have extracted it from the leaf doesn't mean we are ready to use it just yet. The muka strands were too small to use so they were twisted together through miro, twining. This was basically taking strands and rolling them together with the palm and wrist. The amount of strands would depend on the item being made, for cloaks it could 10-20 strands. When these strands were rolled together, they formed a whenu, which were soaked overnight to remove any residual green stains. These whenu would later be used for weaving and to go back to a cloak, it could contain 600-700 whenu, each made of 10-20 strands of muka. By now you should be seeing just how much work this all takes and we haven't even finished processing the fibre yet!

These whenu were then tied into bundles of about 50, called whiri whenu and each of these was soaked in cold water for a few minutes, placed on a cold stone and beaten with a patu muka. This was basically a stone club that removed the water from the muka and softened it in the process. The whiri whenu was turned until all the fibre had been beaten, at which point it would be put back into the water and the process repeated two more times. The whiri whenu was also rubbed to make it even softer and more pliable.

Those are the general steps to preparing harakeke fibre for weaving. These steps would vary depending on flax variety, the item you were making, the weaving technique to be used, the finish you wanted to achieve and even just between iwi so if you any out there have whanau into weaving, don't come at me saying this or that part is wrong, it's just meant to be a general overview. At this point you could begin weaving if you wanted, some varieties of flax will have already achieved a white bleach colour by now that was highly coveted for certain items, like cloaks. However, if you were feeling a bit fancy or wanted to add some pop to your weaving, you could dye your muka. Dyeing was often a pretty involved process since Maori didn't have the fancy synthetic dyes we have today. It required a lot of rubbing and washing to really get the colour into the fibre and have it stay with the traditional colours being mostly yellow, gold, brown, black, red, dark blue and grey. In the modern era this has been expanded due to the introduction of synthetic dyes, which require a lot less work to get into the fibre. These modern dyes are also used for the colour red, as despite it being a traditional colour, the techniques of how it was made has unfortunately been lost. Dyes came from a variety of places such as yellow from the roots of the karamu and kakano trees, tan from the bark of the tanekaha, rolling the muka in hot ashes. Most dyeing techniques involved boiling the muka by placing hot, volcanic rocks into the water with the appropriate bark or roots and sometimes rolling the fibre in the ashes of a fire. Black was also a very common colour but required a bit more work to get it into the muka. The bark from makomako, hinau/whinau or tutu would be pounded and mixed with cold water, soaking the muka in it. Sometimes kanuka bark would be used for this as well, though it wasn't pounded. After leaving it overnight, the muka would be dipped or buried for up to two nights in paru, a special, dark mud, high in iron salts. It was then removed, washed and dried, leaving a nice, permanent black colour which was highly sought after so iwi mud sources were a closely guarded secret. The thing about paru though is that it's quite acidic meaning fibre treated in this way didn't tend to survive very long so we don't have any early examples in the archaeological record. One of the interesting things about this whole process is that the traditional times for gathering, boiling and dyeing fibre was in autumn and summer, with winter and spring being the time for the actual weaving. The thinking is that this may have been due to most fibre producing plants being in season during the autumn and summer months, giving the best fibre. The summer months, that is December, January and February, also have much nicer weather, way better for being outside and gathering flax, with the fibre being drier. The autumn months, March, April and May, tend to be colder but still fairly pleasant, lending themselves more to lighting a fire for boiling and huddling around it. Winter of June, July and August is pretty horrible so you would certainly want to stay indoors and weave and I guess in spring it's just nice to weave in the decent weather, having already done your gathering and boiling.

Assuming you did all of that stuff correctly, you would now have some whenu, potentially in various colours, that can be used for weaving! As mentioned earlier, there are three main forms of weaving, raranga, whiri and whatu, plaiting, braiding and weaving respectively. Raranga is the one over the other type technique that you might be familiar with, utilising unprepared or prepared harakeke, depending on what was being made. Items made with this technique include kete, baskets, rourou, small food basket, tatua, belts and whakiri, floor mats. There was also raranga tatahi, open plaiting, which was a slightly different technique that could be used to quickly make strong baskets made of unprepared flax. Whiri was more like hair plait, producing long, narrow, tubular like result which was good for ropes and cordage. These could be made from three to 32 interwoven threads. The finest cord was used for pendants but it also had applications in fishing and hunting gear, such as a device used to hold a Judas kaka to lure in others to catch, along with bindings in waka and whare for suspending clothes and personal items. Another use for whiri was strapping in sandals, carrying heavy loads on the back, suspension bands on cloaks, belts and other garments. Whatu is the

knitting technique, though it didn't use needles. In fact, none of these techniques use tools, more often than not they are performed with nothing but hands. Whatu used the muka whenu we talked about to produce all sorts of garments including rain capes and the highly coveted kakahu cloaks, the finest of which were worn by rangatira. All of these techniques have remained largely unchanged over the centuries despite the loss of many other traditional Maori techniques due to the arrival of Europeans.

Next time, now that we have turned harakeke into a material for weaving, we will discuss what this was being turned into such as kete, baskets, fish nets, tukutuku panels, piupiu, a type of skirt, and the famous kakahu, cloaks. Form, function and style is what it will be all about to build more of that picture of what a person in pre-European Aotearoa looked like!

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