Kia ora, gday and welcome to the History of Aotearoa New Zealand, Episode 6: I'm here to hunt moa and chew kauru, and I'm all out of moa. Before we crack back into the good stuff I just wanted to go over some admin. As you may have noticed, the episodes are pretty consistently coming out every two weeks. After dipping my toes in and then dunking myself, I have settled into what I think is a good rhythm. Research and write for two weeks, then record and edit on the weekend, release on Sunday or Monday. I think this strikes a nice balance of getting a good amount of content out to you guys in a timely manner but also makes sure I'm not overextending myself with all the other commitments that I have. The retelling of Maori myths help as well as they require no research, just some more editing, so I can have an extra few weeks for research if I think I need it. I also want to acknowledge the fact that we are now over 75 followers on Spotify with Apple Podcasts being about half that. Clearly some of you out there have been telling your mates about the podcast and I just wanted to thank you sincerely for spreading the word. A big thank you to those of you out there who have sent me kind messages too, it really helps knowing there are real people out there listening, learning and enjoying the podcast. Makes all the effort worth it!

Now, lets get back to Aotearoa, around the 13th-14th centuries. Maori have just arrived in their waka, their Great Fleet of canoes into a land that was very unfamiliar. They came from a tropical environment, sandy beaches, palm trees and everything else you associate with a Pacific island. Where they had arrived was not only vastly different in the sense that the north was subtropical but the further south you went, it got more temperate until it was cold and harsh in the deep south, one of the closest places to Antarctica. New Zealand even had snow, something Maori had no concept of prior in the Pacific. This drastic change in climate, with plants and animals seen no where else in the world, would require them to rethink their entire society, what they grew, what they wore, what kind of tools they would need, houses they could live in and the skills to make use of the local materials to create all of these things, materials they likely had never seen before. This is to say nothing of the fact that New Zealand is 100 times larger than its outlying islands, 180 times larger than the Society Islands and 1100 times larger than the Cook Islands, places that pre-Aotearoa Maori would have been familiar with.

The early settlers of Aotearoa are generally grouped into three stages as their Polynesian culture changes into the distinctly Maori culture. The colonisation phase goes from about 1200-1400, the transitional phase from 1300-1600 and the traditional or tribal phase from about 1500-1800. The overlap across each phase is because not every group of Maori in New Zealand shifted into each phase at the same rate at the same time. Generally speaking, the lower South Island groups tended to be on the later end of changing phases as the climate forces on them were much different to the rest of the country, namely it was to bloody cold to grow most stuff. But I'm getting ahead of myself, this episode we are going to focus on the colonial phase, with the other two phases to get episodes of their own. This should give us a general overview of what life was like so we are set up to do some more focussed episodes of various aspects of Pre-European Maori life.

When Maori arrived they didn't exactly settle down in major permanent settlements, they were sort of semi-nomadic. There was usually a home base that would consist of things like major dwellings, gardens, facilities for tool making and storage areas for food but the community would also move around a series of stations that would serve one or a small handful of purposes. Depending on the time of year, Maori could be at stations centered around the hunting and gutting of moa and seals, foraging for seafood or collecting minerals. It is thought that whole communities may have been nomadic rather than just say the hunters or miners and as such it is thought there was less specialisation of jobs amongst the community than there would be in later generations. Louise Furey, the Curator of Archaeology at the Auckland Museum describes a home base type settlement

found in Northland, in her 2002 research paper. Likely occupied in the early 1300s, Houhora, 50km north of modern Kaitaia, contained a wide variety of tools like adzes, bone needles and harpoon points, fish hooks, tattoo chisels as well as tools for making other tools like drillpoints, hammerstones, sandstone files and scrapers. There was also some evidence of them engaging in social activities like dart throwing. Since this was a coastal settlement in sub-tropical Northland, snapper was the dominant food, which will please the fishing listeners to know that snapper seems to have always been New Zealand's favourite fish. Big game like moa was likely caught some distance away and brought back in large pieces, the same was likely done with adult seals with juveniles or pups being brought back as is. There is also evidence of dolphins being hunted with the bone harpoons as well. Meat from these animals was usually cooked in an umu, a pit lined with heated, usually volcanic, rocks. Food was wrapped in leaves and placed into the pit with the dirt being piled back on top providing insulation, creating an oven. I can already hear the gears turning in the heads of the kiwis in the audience thinking this sounds familiar to something else in New Zealand. And you would be right, an umu is basically a hangi, essentially the Maori term for the same thing. As far as I can tell the two words are more or less interchangeable, although hangi usually refers to cooking specifically cabbage tree, which we will talk about in a minute. In any case, I will refer to earth ovens as hangi in future, since that is what we call them in the modern day. Other parts of these animals were used to make a variety of tools, such as the mandibles used for making fish hooks and teeth drilled to make necklaces.

In comparison, the late Roger Duff, former director of the Canterbury Museum, describes a seasonally occupied hunting camp near the Wairau River, part of a larger settlement that we will talk about in a bit. The station was used primarily for fishing and fowling with the river mouth giving access to the sea for fish like whitebait and kahawai which ran seasonally with herrings, eels and flounder found year round along with banks of shellfish. Swans and ducks were found nearby and were likely hunted during the annual moult when they couldn't fly. Moa likely found further away, being rounded up in the plain or driven down from the hills and into a cul de sac where they could be more easily killed. Driftwood was the common source of fuel for fires as trees were scarce in the area with the cooking area being situated some distance from the main habitation area.

Food was obviously a major part of Maori life, or anyone's life ever really. Apart from the most southern regions where it was too cold, Maori cultivated things like kumara, yam, taro, gourds, the plants that they brought with them from their Pacific Island homes. Foraging for plants was also common with tree ferns becoming a regular part of the diet along with the roots of bracken fern, the best of which came from deep, moderately fertile soil in humid regions, which was mostly in the North Island. Along with the root, the pith was also eaten, particularly of the mamaku, Aotearoas tallest tree fern and the karaka tree produced a fruit with edible flesh and a nut great for storage that was edible once soaked and steamed to extract the poison. Probably the most interesting plant Maori made use of though was the cabbage tree turning the roots and lower stems into a sugary, toffee like substance called kauru. It was made by selecting young trees between about 1-2m tall to cut down and the outer bark stripped to get at the fibrous pith. This was then spread out and sun dried on platforms, sometimes for weeks. Once the stalks had been dried, they were wrapped in bundles of flax, soaked in water and laid into a hangi, where they would remain for anywhere from one night to two whole days. The process of cooking the cabbage tree was considered tapu, sacred, and was usually accompanied by some ceremony. During this time, there were certain restrictions on what you could do, such as the men were not allowed to visit their wives. If the hangi was opened and it was discovered that the kauru wasn't cooked just right then it was known a couple broke this rule and would be summarily found by the tohunga and killed by patu. You don't mess with a dude's sweets. If all the fellas decided they could keep away from their wives for a couple

nights then the kauru should have been turned into a kind of sweet floury substance with some wood fibre in it which was packed away for later use. Water could be added to turn into a porridge like substance but it was often eaten just as is as a Maori version of chewing gum or liquorice.

All of these though were just sides and delicacies, they weren't the bulk of the early Maori diet. That was held by protein. Some we have already talked about, swans, seals and sea lions, fish, shellfish, dolphins and whales. The big source of protein though was birds, such as a flightless goose, adzebill, pelicans but dwarfing them all, literally, was the moa, especially in the South Island, again, where nothing could really be grown. Estimates for moa butchered at the mouth of the Waitaki River alone during this two hundred or so long period range from 29-90k. Quite a wide range, granted, but it still shows why Roger Duff called this period "the moa hunter period of Maori culture", they were an ideal food source, flightless, usually big meaning they were easy to spot and had lots of meat and no fear of ground based predators given their main natural predator was the equally huge Haast Eagle. There is also evidence of Maori using moa egg shells as water carriers, with one egg found near Kaikoura measuring 24 by 17.8cm, substantially larger than an emu egg.

The sort of materials Maori were making tools from to do all this were from all over Aotearoa. Obsidian for knives from Mayor Island in the Bay of Plenty, basalt from Coromandel, greywacke from Hauraki Gulf, argillite from Nelson area, all used for adzes with greywacke also used for patu, clubs. Serpentine, also from Nelson for jewellery and fishing hooks, chert for drills, files and other tools, silcrete for cutting implements, both from Otago and pounamu, greenstone in West Otago and Westland, for jewellery and weapons. We will have more to say about pounamu as our story progresses. Since not everyone had ready access to same minerals material culture in each region was different depending on what they could get their hands on. In saying that though, we do find evidence of trade and communication, for example Mayor Island obsidian is found much further afield from its mining point.

One possible site for this trade was one found at the Wairau Bar, a gravel bar formed at the mouth Wairau River, near modern day Blenheim, Marlborough. We may do a more focussed episode on the dig at a later date as this is an extremely important site given it is the oldest and largest human settlement to date found in New Zealand, having been occupied initially in the 1280s. The site covers about 7 hectares and includes small rectangular houses, several cemeteries and large middens. In these middens a variety of debris was found including, and warning here come a bunch of numbers, 39t of argillite debris from adze manufacture, 1600t of mostly cockle shells, 33t of bone from about 4000-12000 moa along with 2400 moa eggs. This settlement was clearly catering to a large number of people over the years, more than a few hundred like most other settlements we know of. The adzes found at Wairau are of particular interest as they were found to be in a typical East Polynesian style, that is, in a style of the same people where early Maori migrated from. An adze, if you didn't know what it is, is basically a type of axe typically used in cutting wood, not exactly something you would necessarily think would warrant you wanting one from a far off place than one you can get closer to home. Yet, we find that adzes made from argillite in Marlborough have made their way all over Aotearoa, more so than adzes from any other part of the country. It's thought that the community at Wairau Bar traded their adzes for tools made of other materials, like obsidian and silcrete blades from the North Island and Otago, respectively, or that they were traded for other treasures made from wood, fibre or feathers. Further evidence for the hypothesis that this settlement was from some of the first settlers comes from the settlers themselves. Analysis of isotopes of carbon, nitrogen and strontium in the teeth of buried individuals suggests that they had not lived their long and their diet was not rich in protein, in fact, there were high rates of periodontal disease, gingivitis. This would imply that their diet was high in starch and sugar, perhaps

these guys were just really keen on that kauru! Now, given I've already told you that Maori in this period were basically just having a century long BBQ, why were these people eating lots of plants? Well, it's possibly because they migrated down from the North Island, where kumara, high in both starch and sugar, had a much better time growing. It may also be due to them having a formerly more tropical diet, from say East Polynesia. It's hard to say and the research is always on going and prone to change, especially as techniques get better and more accurate. A little side note about these individuals, they were found with a large amount of grave goods, which can be all sorts of stuff from jewellery, weapons, adzes, you name it, someone was buried with it. A large amount of grave goods usually indicates that the individual was of high status, given that poor people couldn't really afford to chuck a useful adze into the ground. Wairau is also an interesting settlement as it is thought to have particular significance to early Maori as a central meeting point. Wairau sits near the north most point of the South Island, a place that would have been an easy halfway point for groups to travel to from both ends of the country to meet, trade, exchange marriages. Alternately it is thought Wairau may have held heavy religious significance as well.

Other settlements like Wairau, albeit of smaller size, are found all the east coast of both the North and South Islands. This is mostly due to the sea played a key role in Maori culture as a source of food and means of travel, such as using mokihi, reed boats, to transport people and produce down river. Though, generally speaking, larger opportunities for foraging led to larger and more infrequent settlements with coastal settlements tending to be smaller with one in each bay. These settlements contain evidence of houses, hangi pits, drying racks, tool use and manufacture, sewing, tattooing and often burials, as we have already discussed, along with evidence of gardening. Now, I say gardening rather than farming as Maori weren't really engaged in large scale agriculture like was going on in Europe or other parts of the world in the 13th century. Agriculture for early Maori mostly consisted of small plots separated by small walls, stone lines, paths or other markers, potentially indicating ownership.

Initially gardening was just something done on the side for the extra nutrients, as mentioned, big game birds hunted for their protein was the main staple of the early Maori diet. There was a problem though. The main way Maori were able to hunt more and more moa was that they were burning large swathes of forest to expose them and potentially to add more space to expand settlements. Pollen and charcoal evidence shows that a series of large fires, which often got out of control in drier areas, were started in the Hawkes Bay, inland North Island, Coromandel and the east coast of the South Island, destroying up to 40% of Aotearoa's forests within 200 years of initial settlement. I'll say that again, nearly half of New Zealand's forest was destroyed before Europeans ever even knew America was a thing, let alone Aotearoa. An additional pressure was also added as although Maori didn't tend to live past the age of 30 the large amount of energy gained from a high protein diet led to high fertility. Skeletal remains show women may have had up to four or five children in their life time, which was really dangerous as you have all likely heard of women dying in childbirth all throughout history. This high fertility naturally led to a huge increase in population, adding additional pressure to their feathered prey. In the end, loss of habitat, heavy hunting pressure, introduced kiore eating eggs and an explosion in population led to the extinction of the moa towards the end of the Maori colonial period. The other birds thus far mentioned, swans, geese, adzebill, coot and one species of duck were also hunted to extinction with the mighty Haasts eagle being starved of its main food source. Other species had a hard time as well, the seal and sea lion breeding grounds were gone on the mainland as Maori didn't distinguish between potentially fertile females, pups and adult males. Shearwaters and petrels were forced to nest off the mainland too due to hunting pressure and rats eating their eggs. With all these formerly abundant food sources being made extinct or forced off shore, the pressure was being reflected back to the Maori

people, they needed to find alternative forms of food if they were going to survive. This is where gardening and storage started to become more and more vital. Kumara was the key plant grown by early Maori as it provided a good source of energy, so efforts tended to focus on its cultivation over other crops. The problem with that though was that kumara needs five continuous months of temperatures above 15 degrees Celsius before it will germinate and produce a decent crop. Now, that's all well and good if you live in the balmy North Island but if you are from the deep south like me (shout out to the listener in Five Rivers on his tractor!) then you will know it's hard to get five days, let alone five months in a row of 15 plus degrees. So, to combat this, heat retaining gravel, walls and other structures were used to make microclimates so that kumara could be grown as far south as Banks Peninsula near modern Christchurch.

It wasn't good enough just to grow the crops though, food goes off and you need to store it effectively, especially over the winter. Previously, Maori had been using pits to store food in but with the need for better storage they evolved into bins and eventually large roofed structures that stored all sorts of things from karaka, kauru, fern root and even barracoota and eels. The biggest innovation though was preserving mammal, bird and fish meat in its own oil and congealed fat, which sounds just absolutely delightful.

The extinction of the moa and other major sources of protein signals the end of the colonial period and the beginning of the transitional period which itself will lead into the tribal or traditional period. Next time we will discuss how Maori got on living in the post moa Aotearoa and how that lead them to becoming a more martial society.

If you want to send me feedback, ask a question, suggest a topic or just have a chinwag you can reach me through email at historyaotearoa@gmail.com or Twitter at History Aotearoa or Facebook at History Aotearoa New Zealand Podcast. Sorry for this episode being a bit all over the show, there was just a lot of good stuff I wanted to get in! I'll also apologise in advance if the next episode isn't on schedule as I am having my wisdom teeth removed next week and I'm not sure how up to research and writing I will be. As always, haere tu atu, hoki tu mai. See you next time!