NGĀ HOA O TE MĀRA REO

The Friends of Te Māra Reo

Kawerongo / Newsletter #4, Ngahuru / Autumn 2023

"He Ngahuru he inoi!"[1]

E hoa mā, tēnā rā koutou katoa.

After recounting our struggles to contain the moso bamboo which I have long regretted planting 25 odd years ago, I'm delighted to be able to report that it has some redeeming social value after all (even though we are still trying to eliminate it). We have over the years given cut culms to people who have asked for them for community projects and various domestic uses (it is an extremely versatile plant), and two families harvest the new edible shoots each Spring. A few people have also helped us cut the culms – but this is a dangerous and specialized job; the culms are very heavy and each should be cut close to the ground with a reciprocating saw and the base poisoned within a few seconds of being cut. We keep our gate locked to minimize unwelcome incursions, but even so some people have little hesitation in pulling up with a trailer or van, climbing over the fence and helping

[1] *"Autumn [the tenth month], request time!" – As the crops are lifted in Autumn, requests to share in the produce will multiply*. [Photograph of prototype floating wetland raft, by Liz Tupuhi. Lake Waikare, Te Kauwhata, March 2023.]

themselves to already cut culms or cutting their own and leaving the debris scattered around for us to clear away. That of course is another reason for our wanting to get rid of the bamboo!

***Carex secta,* Mātātā**
(Photo: (c) Wayne Bennett, NZPCN)

However the good news is that a few months ago we were contacted by Glen and Liz Tupuhi on behalf of Ngā Muka Curious Minds floating wetland rafts project, to supply the bamboo to construct these special rafts designed to promote phytoremedation and wetland remediation. The project involves students from Te Kauwhata High School in the Waikato, and Te Kura o Te Pāroa and Whakatāne Intermediate School in the Bay of Plenty. The students have sourced locally or grown themselves plants known for their phytoremediation properties, including two sedges, *Carex secta* (pūrei or mātātā, illustrated above, left) and wīwī, *Juncus edgariae*, along with swamp mānuka (*Leptospermum repo*), which is known to eliminate *Escherichia coli* (e-coli) bacteria in soil water.

Taro growing along the edges of Lake Inle, Myanmar, retained by bamboo fences and harvested by canoe.

(Photo: (c) Peter Matthews, National Museum of Ethnology, Osaka, Japan.)

The prototype raft, launched in a cove on Lake Waikare, Te Kauwhata, in March, is shown in the photograph on the first page. Seven more rafts were launched at Te Kauwhata in April, and two more in Whakatāne after that. We are hoping that as the project develops, they will also experiment with taro, a traditional crop known for its value as a water purifier, and which is grown in floating gardens in parts of Southeast Asia. Those on Lake Inle in Myanmar are retained on the lake edges by bamboo fences. The taro leaves are harvested by canoe for export to Korea as well as local use, and the corms fed to pigs. Dr Peter Matthews, a New Zealander now based at a research institute in Osaka, Japan, who has for many years studied the cultivation and use of taro around the world, sent me some information about the growing of taro in aquatic environments, along with photographs from his expedition to Myanmar. He notes that around Lake Inle "The houses are built on stilts, so can accommodate flooding, and everyone gets around by canoe. In my photos we can see bamboo fences being used to hold the edge along one of the main canals out of Taungyi town, into the lake. Everywhere along the edges I could see wild taro growing, though they are highly managed". He also notes that "The stolons and root systems surely do help to hold banks and catch sediments and build up the area of saturated soil around the lake". We have in the past supported proposals to investigate the possibilities for using taro to help with phytoremediation in local wetlands, but despite its status as a traditional crop (it has been grown in the Waikato since the fourteenth Century) the projects have not been funded.

In Memoriam

Maile Melrose 1951-2013

Maile Melrose, a very good friend of Te Māra Reo, died at her home in Kealakekua, Kona, Hawai'i, on January 18, aged 71. I was never able to meet her in person, but I visited the Amy Greenwell Ethnobotanical Garden in Kealekekua in July 2010 at the urging of some Hawaiian friends.

In 2007 I had visited native plant gardens and reserves on several Hawaiian islands (including the Big Island of Hawai'i) to get ideas for planning Te Māra Reo. However, at that time I did not know about the Amy Greenwell garden. This turned out to be the garden that I was looking for! I mentioned it briefly in the "news" for July 2010, and included a full account of my visit in the retrospective commentary on developments in Te Māra Reo in August 2018.

It was about then that I heard the disquieting news that the Bishop Museum was no longer funding the garden, and it was possible that it would be sold to private interests. I joined the "Friends" group through their website, and after that made direct contact with their president, Maile Melrose.

Maile was the cousin of Amy Greenwell, who had started the garden and entrusted it to the Bishop Museum when she died. Quite apart from the native Hawaiian plants that she re-established there, Amy Greenwell's garden was also the remnant of an important archaeological site, one of the traditional Ahupua'a land divisions, a narrow slice of territory starting at the top of the hill or mountain and ending at the sea, so that the inhabitants had access to the full range of ecosystems which contributed to their well-being. In this case, unfortunately, both the inland and seaward ends had been cut off, but the stone walls and some other features of the remnant landscape were still visible. We ourselves are at the river end of a similar Māori land division, which starts inland at Kainui, 7 miles or so away, and ends at a narrow strip of the Waikato River between Ngāruawāhia and Horotiu.

When the Bishop Museum decided to discontinue their sponsorship of the garden in 2016, Maile spearheaded the efforts of the Friends group, firstly to keep the garden running as a going concern, and then to raise the funds needed to purchase the land and to set up a trust which would ensure the long-term sustainability of the enterprise. This, in addition to her other activities as a leading member of the Kona Historical Society and other community organisations.

I corresponded with Maile about our plans for Te Māra Reo, and was inspired by her warmth and dedication. I had sent her copies of our first two Newsletters, and was surprised when the third one was returned "undeliverable". I wrote to Dr Noa Kekuewa Lincoln, now teaching at the University of Hawaii, and who was doing some volunteer work at the garden when I visited in 2010, to get a current email address for Maile. It was good to be back in touch with Noa, but very sad indeed to learn that Maile had died just a week earlier. She will be missed by the many people that she inspired with her love of plants, and also with her prodigious energy and knowledge and enthusiasm for local history. She has left a tremendous legacy through ensuring that the work which her cousin started will continue and be accessible to future generations.

Ka whati te tī, ka wana te tī, ka rito te tī. Kia hoatu ki a ia te okiokinga tonutanga.[2]

Ngā Mihi – Thanks

We are grateful to all the people who have helped us, directly and indirectly: members of the NZPCN and others in Aotearoa and overseas who have allowed us to use their photographs to illustrate our web pages, friends who have encouraged us to continue with the project, and those who have generously provided us with advice and information. Our thanks go also to those who from time to time helped with subduing the bamboo and also with putting at least some of the felled culms to good use. Ngā mihi nui rawa atu ki a koutou katoa.

Ko Raumati i te Māra ~ Summer in the Garden

Bottom 4 metres of the trunk of a 25-year-old kauri after Cyclone Gabrielle, 14 February 2023.

Although 2023 has been a turbulent year when it comes to rain and wind, we have been fortunate to have been bypassed by most of the ill-effects felt in other parts of the country. Cyclone Gabrielle in February was a partial exception, with a large and very heavy limb torn from a Eucalyptus tree crashing onto one of our kauri trees and snapping it off about 4 metres above the base, completely blocking our driveway in the process. My son Alan was away in Wellington at the time so although very sad about the fate of the kauri, I was happy to discover I could still wield a chain saw skillfully enough to clear the remains of the kauri and the gum tree from the drive after a day's work. On the plus side, our supply of firewood has been substantially augmented. A multi-trunked houhere (also excellent firewood) was also made insecure in its moorings, and came down in one of the later storms, fortunately without any collateral damage.

Thanks to Alan's efforts with occasional help from visitors, we have made good progress in battling the moso bamboo, especially on the northern side of the garden. Ironically, this also has a down-side, as the more bamboo is felled, the less protection we have from strong winds. If it were not so invasive, a few strategically placed copses would be very useful, aesthetically as well as guarding trees against losing limbs or being bowled over in the occasional gale.

The karaka (*Corynocarpus laevigatus*) took a break from flowering this year, but the wet weather has been very much appreciated the ferns. It has allowed the para (the King Fern, *Ptisana salicina*) to make a complete recovery after two of our three clumps were rolled on by cows which then ate the fronds of all three a few years ago. Para is a very resilient fern as long as its roots are left intact

[2] "The tī is felled the tī revives, the tī puts forth new shoots". May she rest in peace. [Photo: *West Hawai'i Today*, 4 July 2020]

(luckily the plants were not discovered by feral pigs which have also visited the garden in the past). The tree-ferns have also flourished, although a couple of ponga had their luxuriant new fronds badly tattered during February's cyclone; they are slowly recovering their former glory.

Launch of floating phytoremediation raft, Te Kauwhata. 6 April 2023. Photo: Liz Tupuhi.

Later, when summer had turned to Autumn, the prototype plant raft featured on the cover page was supplemented by the real things on 6 February, one shown being launched in the photograph above.

The demise of the kauri although distressing was not tragic – there are more than 40 other 25-year-old kauri trees still flourishing here – but it did bring home to me rather dramatically the precariousness of the venture. Not the web site – it could be maintained and expanded almost anywhere, but Te Māra Reo itself. I managed to clear the driveway of fallen trees because I had to, but I can no longer cope with this kind of work on a sustained basis, the way I could a few years ago. Nor can I expect my son, who is visiting rather than permanently resident and has his own busness to manage, to take responsibility not just for organizing the garden but attending to all the labouring work as well.

My plan was to develop an ethnobotanical garden and resource centre on our family land which could evolve into a haven for native plants (especially those with names inherited from tropical Polynesia), birds and invertibrates, and a field-station for researchers. It would also be an interesting

place for people to visit, and we could organize occasional workshops and seminars on plant-related topics. My immediate family and I would continue to occupy the house and its environs, while the garden itself would be managed by a Trust, which could eventually acquire the whole property if we needed to move elsewhere, or on our demise.

There have been times over the last 15 years when this idea has seemed to be on the verge of becoming a reality. However with the erosion of time, diminution of finances, and the growth of bamboo have pushed it ever further into the mists.

Nonetheless I still intend to press ahead with re-establishing a miniature version of the 5000 year pathway from Taiwan to Aotearoa, tracing its way through the acre of felled bamboo from the gate to our tree-fern garden with the help of plants whose names were first coined at various stages along the way. This may at last become the start of something bigger, and also save the place from developers, the contemporary successors of the nineteenth-century "Men of the Axe" who reduced the verdant forest to clear fields devoid of native vegetation.

An impossible dream, perhaps, but a dream nonetheless. We'll report on progress in future editions of this newsletter.

Additions and Updates to the Web Site

The chart below summarizes the pages which have been added to the website or substantially revised so far this year. The lack of a page for **tītoki** was mentioned in the previous Kawerongo. This has now been remedied, and in the process I discovered what was to me a very interesting fact – the famed tītoki liqueur contains nothing actually derived from the tree or its fruit. The flavourings are synthesised. The prototype brews did contain some natural ingredients, including kawakawa (*Piper excelsum*), but it was decided it might be too dangerous to try these out on the general public.

The Tree Fern pages are now complete, and the discussion of their names, which occupied a lot of space in the last newsletter, is concluded (for now) in this one. Revision of the page for Proto Polynesian ***Pala** raised an intriguing question about a species of moss, *Campylopus vesticaulis*, found on Easter Island. Chilean botanists list it as found also in Aotearoa, but some local botanists say this species is not part of our flora. Enquiries are proceeding!

Pages added or revised January-June 2023

Change made	*Pages*
New pages	***taputoki**, **titoki**, ***(pa)para/parapara**, ***puka-tea**, **pukatea**
Substantial revisions	***kopi/kopi**, **ramarama/horopito**, ***mamaku**, **mamaku**, ***kalaka**, **karaka**, **karakariki**, **whauwhau**, ***ponga**, **ponga**
Revised and reformatted	***pala**, **para**

Classifying the Tree-Ferns.

We ended the section on "collecting ferns" in the last newsletter noting that the NZPCN database still grouped the New Zealand scaly tree ferns under *Cyathea,* whereas several overseas ones now followed Rolla Tryon's system and placed them with *Sphaeropteris* (the mamaku) and *Alsophila* (all the rest). While I was sending out the newsletters, I asked one of our botanist friends what I thought was an innocent question, that is, why the NZPCN had not followed the overseas examples. It seemed that the botanists maintaining the NZPCN database had been considering this possibility for some time, and perhaps unfortunately my question precipitated the change. Not long after this, I found out that other New Zealand botanists have followed the old system, and would continue to do so. Furthermore, the authoritative Australian Plant Census also regarded *Cyathea* as the appropriate generic name covering all three divisions (*Cyathea*, S*phaeropteris*, and *Alsophila*), as do the Biota New Zealand and Te Papa databases.

The plot then thickened. One of the botanists at Te Papa informed me that not only had they stuck with *Cyathea*, but they had also retained the older configuration of the genus *Blechnum*, instead of dividing it up into several smaller genera (*Lomaria*, *Cranfillia, Parablechnum*). They considered that the differences among these groups of plants were not sufficient to require the changes of generic name with the resulting disruption and potential confusion. I had already revised all the entries for *Blechnum* in 2018, when the change was made by NZPCN, and had also changed the tree-fern names by the time I found there was an alternative system still in active use, underlined by the publication of Manaaki Whenua's *Checklist of the New Zealand Flora: Ferns and Lycophytes*[3]. Since I was still revising the tree fern pages I included a note about taxonomic changes on each of them before putting them on the web.

I had lamented the replacement of what seemed to me the very appropriate and ancient specific name of the former *Cyathea dealbata* by Colenso's more recent *tricolor*, but it was pointed out to me that there had already been an *Alsophila dealbata*. Never mind that the latter is now known as *Sphaeropteris glauca* (or *Cyathea contaminans* – there's a photo on the page for Proto-Polynesian *Pala). Once a name has legitimately been given to a plant it is is rather like a permanently reserved parking lot, and belongs to the species concerned, even if it turns out to be a duplication or later changed. Since what turned out to be a specimenn of *C. dealbata* had been described as *Cyathea tricolor* and (for a while) accepted as a new species in the 1880s, "tricolor" was the oldest unused specific name available for the newly reassigned species of *Alsophila*. The good news is that if you follow the Landcare/Te Papa path you can still call it *Cyathea dealbata*. And of course, Ponga is still Ponga (but slightly ambiguous).

> We invite you to grow deeper with the native plants that share your home .... These plants are at the very foundation of our ecosystems, the livelihoods of our communities, and the essence of culture. **When we care for native plants, we care for each other. [**NTBG Newsletter, April 2023**.]**

[3] Schönberger, I.; Wilton, A.D.; Brownsey, P.J.; Perrie, L.R.; Boardman, K.F.; Breitwieser, I.; de Pauw, B.; Ford,K.A.; Gibb, E.S.; Glenny, D.S.; Greer, P.A.; Heenan, P.B.; Maule, H.G.; Novis, P.M.; Prebble, J.M.; Smissen, R.D.; Tawiri, K. (2022) Checklist of the New Zealand Flora – Ferns and Lycophytes. Lincoln, Manaaki Whenua-Landcare Research. http://dx.doi.org/10.26065/mbaa-dy27

Visitors to the Website

So far this year we have had visitors to the website from 91 countries, but, as was the case last year, three countries – Aotearoa New Zealand (71%), the United States (11%) and Australia (5%) account for the vast majority. The others contributing 0.4% or more were the United Kingdom (0.9%), Germany and Indonesia (both 0.6%), India, Canada and Samoa (0.5% each), and Fiji and France (0.4%). Last year China, the Philippines and Brazil were among the "top 11" in the country list; so far this year they have been edged out by Indonesia, Samoa and France.

Sought-after Plant Names

The table below lists the top five (and for the last 2½ years the top ten) plant-name pages visited in each of the last 5½ years. Poroporo remains the perennial favourite – it has been in the top five ever since the site was first monitored by Google Analytics in 2015. Why is still something of a mystery. It does come up within the first few items in a Google search, which may be the cause or the result of the frequent enquiries. Or it could be just a coincidence.

The only other name that has come close to rivalling poroporo is kauri, which was one of the top five from 2015 to 2021, and in the top ten until this year. The kauri is of course an iconic New Zealand tree, but you would have to look very hard to find the Te Māra page for it on Google – people would have found this page through the website rather than being directed to it by a search engine. Kawariki, which has shot up in popularity from the middle of last year, does come up close to the top of a Google search. People familiar with King Tawhiao's tongi mentioning this tree are often curious as to its identity, so with the increase in the prominence of the Kīngitanga, it is not so surprising that interest in this plant is increasing.

[Continued on next page.

Front-Runners in the Hit Parade, *in order of frequency:*

2018 Jan-Dec	2019 Jan-Dec	2020 Jan-Dec	2021 Jan-Dec	2022 Jan-Dec	2023 Jan-June
Kauri	**Kauri**	**Mānuka**	**Poroporo**	Hue	*Whau*
Poroporo	**Poroporo**	**Poroporo**	Hue	Rengarenga	Rengarenga
Tawa	**Mānuka**	**Kauri**	**Mānuka**	**Poroporo**	**Poroporo**
Nīkau	Nīkau	**Kōwhai**	**Kōwhai**	Pūriri	*Kawariki*
Pohutukawa	**Kōwhai** / **Whara**	**Whara**	Raupō	Puka	Hue

6th to 10th place: *So far this year*: Miro, Hīnau, Puka, **Whara**, Raupō
2022: **Kōwhai,** Raupō, Hīnau, **Kauri**, **Mānuka**
2021: **Tawa**, Pūriri, Aute, **Kauri**, Rengarenga

Names are coded to indicate when they were first included in the "top five": **2015**, 2017, 2018, **2019**, 2021, 2022. This year's first appearances are in *italics*. There were no new names in 2016 or 2020.

The relative popularity of particular plants is probably a combination of the attention they get on search engines, and the particular interests of people who know about Te Māra Reo and consult the site to get information about the plants which happen to interest them at the moment and their names. The fluctuations are intriguing, nonetheless. What interests me in this respect is that it is the Māori name pages featuring the local plants which are so overwhelmingly to the fore. I would like to see the proto-Polynesian ones, sometimes even more interesting than their New Zealand counterparts, also attract attention.

E Whai ake ana: New Names for Old, and Old Names for New.

Despite the general conservatism of taxonomists (because of the confusion and inconvenience that can result, most don't like changing the names and configurations of species and genera unless there's a compelling reason to do so), a significant number of the scientific names of even the small set of plants within Te Māra Reo's primary area of interest have been changed since H. H. Allan's *Flora of New Zealand* was published in 1961. I am continually discovering this as I prepare new pages and revise or update older ones for the website.

Because the Māori and English names can themselves sometimes refer to several quite different plants, an unfamiliar scientific name may lead people to wonder whether the page or reference actually relates to the plant they are interested in. With this in mind, I intend to prepare for the next newsletter an outline of the changes affecting plants in our database, listing the names used in some of the books people are most likely to have referred to and their currently accepted equivalents. Since at the moment there are two systems in use in New Zealand, an international one and its Australasian counterpart,, which are occasionally in conflict (as with the names of some of the ferns), this will not solve all of the problems, but will at least bring people up-to-date with most of the relevant changes.

As in the case of the tree ferns, some of the "new" names for these plants are in fact rather old. The **tawāpou**, related to the Hawaiian **kalaka**, was first described as *Achras costata* by the Australian-based English botanist Allan Cunningham in 1839. In 1875 the German botanist F.G.H. von Mueller separated it from the closely-aligned Norfolk species as *A. novazelandiae*. After several more re-classifications it became *Planchonella novazelandiae* in Harry Allan's *Flora* (1961), then merged with the pan-Pacific *Pouteria costata*, and finally, so-far, reunited with the Norfolk Island plant, but separated from its other erstwhile namesakes, as *Planchonella costata*. This last step is the result of the 2007 study by Teguh Triono and associates in Canberra and Indonesia.[4]

The refurbished page for Proto-Polynesian *pala includes a picture of the Oceanic tree fern *Cyathea contaminans* (a.k.a. *Sphaeropteris glauca*). This fern would have been familiar to the Polynesian explorers as they ventured through the islands north of New Guinea and on into the Pacific. It had been given the name *Chnoophora glauca* in 1828 by the German-Dutch botanist Carl Ludwig Blume, and also identified as *Polypodium contaminans* by the Danish scholar Nathaniel Wallich in 1829. A little later it was shifted to the genus *Cyathea*, which ruled out the possibility of its carrying

[4] Teguh Triono, Anthony H.D. Brown, Judy G. West, & Michael D. Crisp, "A phylogeny of *Pouteria* (Sapotaceae) from Malesia and Austraia, *Australian Systematic Botany* 28, 2007, pp. 107-118.

its original specific name with it, as another plant had been given the name *Cyathea glauca* in 1804. This made Nathanial Wallich's specific name the prime candidate, and so the fern was known as *Cyathea contaminans* for well over 100 years, until it was shifted to the genus *Sphaeropteris* by Rolla Tryon in 1970, regaining its original specific name and becoming *Sphaeropteris glauca*, the name you will find it under in some recent scholarly publications. However, as I mentioned in the section on "classifying the tree ferns", a number of Australasian botanists and institutions do not accept all the changes proposed by the revisionist botanists, so you may still find this tree rejoicing in its name of *Cyathea contaminans* in some recent publications. I have kicked for touch, and used both names on Te Māra Reo.

The interesting thing about this tangled web is that it illustrates the international nature of botanical description, and also underlines the fact that scientists often disagree among themselves, and their classification and ordering of the natural world is always open to questioning, revision, and change.

He Kupu Whakamutunga ~ Some Last Words

First of all, **Mānawatia a Matariki**. I'm delighted that, thanks to an unexpected and most unwelcome encounter with Covid, it has been possible for me to complete this newsletter in time to meet the Matariki deadline. In view of past delays, things are really looking up!

May the stars shine brightly on all of us, carrying away past troubles and heralding a calmer, more peaceful and productive future.

Finally, all political parties contesting the upcoming New Zealand General Election have had quite a bit to say about education, but I wonder if any of their spokespeople have thought about the role plants might play in this process. Here is a very appropriate meditation from the May 2023 newsletter of the National Tropical Botanical Garden, headquartered in Kalaheo, Kauai, Hawai'i.

> In thinking about the importance of education, we'd be remiss not to recognize the fact that plants in and of themselves have so much to teach us. We are students in more ways than not, and we have a lot to learn from our incredibly diverse, resilient, and selfless teachers. Native habitats teach us the importance of connectedness and balance in a shared place. Our endemic plants who have developed specialized characteristics teach us the value of adaptability in new environments. Even our rarest species who are facing harrowing odds teach us a critical lesson in perseverance.

Heoi anō mō te wā nei – ko te tūmanako kia puta atu anō tēnei kawerongo ā te Raumati 2023/4.

This newsletter was prepared for Te Māra Reo, http://www.temarareo.org, by Richard Benton. Matariki photograph courtesy Hutt City Council. Remains of kauri tree by R.B., Te Māra Reo.