

New Zealand

Lynn and I began our trip to New Zealand (NZ) on February 5, 2013 by flying from Atlanta to Los Angeles and staying overnight near the airport. On February 6 we flew for 13 hours directly to Auckland, NZ arriving on February 8 because we crossed the international date line just east of NZ. In Auckland we made a connection to *Rotorua* in a small plane the same day.



Rotorua is in the north central North Island and would be our base for three days. It is a city on the shore of a large lake of the same name. The name is Maori and is short for *Te Rotorua-nui-a-Kahumatamomoe*, "*The second great lake of Kahumatamomoe.*" Lake *Taupo* in central North Island is larger. *Te* is Maori for *the*, *nui* is Maori for *large*, *roto* is Maori for *lake* and *rua* is Maori for *two*. *Kahumatamomoe* was an early Maori explorer. *Maori* should be written *Māori* but I will dispense with the macron over the a.

Geography of NZ

New Zealand is in the southern hemisphere about 1,500 km east of Australia. It is made up of two large islands, the North Island and the South Island, and several other smaller islands. In the North Island Auckland is located at latitude 36.85° south, about as far south as Virginia Beach, Virginia is north. Queenstown is located at latitude 42.0428° south, about as far south as Boston, Massachusetts is north. Thus, the whole country is as long as the distance from Massachusetts to Virginia and is the size of Great Britain or Japan. It is located exactly where the Australasian plate meets the Pacific plate, and the relative motions are complex. In the North Island the main event is the subduction of the Pacific plate under the Australasian plate and in the South Island the main event is translation of the plates. The result is a lot of geothermal activity in the North Island, especially around *Rotorua*, and in the South Island the Southern Alps have formed and risen and have been shaped by ice age glaciations into very steep walled fjords (spelled fiords in NZ). The map below explicitly shows where many of our stops occurred, as will become apparent as we continue this narrative.



The total population is less than 4.5 million persons. The Maori make up about 15% of the population, having arrived between 1300 CE and 1250 CE. Europeans started arriving in the 17th century and today like to be called *Kiwis*. Auckland is the most populous city by far with 1,397,300 persons, followed by the capital, Wellington, with only 395,600 persons. Much of the South Island's southwest region, the Fiordland National Park, is uninhabitable because of its extreme verticality. The native forests were rich in tree ferns (Pteridophyta), conifers (Pinophyta) and many flowering plants (Magnoliophyta). Notable in the third group are: the beeches, cabbage trees, lancewoods, manuka (of honey fame), and rata. The first two groups were extant during the reign of the dinosaurs and were food for herbivores as well as the substrate for the present day coal seams that are abundant in the country. There are almost no native mammals on the Islands, except for a few species of bats. In the sea, of course, there are seals, whales, orcas, dolphins and porpoises. On land the native species of animals was dominated by birds, of which many were flightless, such as two 12 foot tall extinct *moas* (*Dinornis robustus* and *Dinornis novaezelandiae*). The Maori killed of the last *moa* probably only 100 years after their arrival. Today all flightless birds are under attack from non-native species such as stoats (weasels), feral house cats and the Australian possum. Unlike our possum, which looks like a large rat, the NZ possum is cute and woolly. Indeed, its wool is prized and mixed with Merino wool to make excellent yarn for expensive garments such as sweaters. Possums make up the majority of road kills.

Agriculture is big on the Islands. Forestry is practiced everywhere with very large tracts of planted trees, mainly Douglas firs. These monoculture forests are in stark contrast to the native forests that contain many tree ferns, as well as many other species. Cultivars of wheat and kale are grown, vineyards are common in the northern South Island, but by far the biggest breed grown is sheep.







This is now being challenged by cattle for meat, cattle for dairy products and cattle for export to China, deer for meat and leather and even alpacas for wool. Nevertheless we saw thousands of sheep throughout the country, even the occasional black sheep. Fortunately the Maori have regained control over many parcels of land and are protecting the native plant and animal species. Many Kiwis have joined them in this effort.

Chronicle I

February 9. We arise early in order to meet our guide at 6:30 am. He is a Kiwi and has been hired by the Black Sheep Tour Company to take us bird watching in the *Kaharoa* Conservation Area. *Kaharoa* means *large seine* or *dagnet*. It's segments, *kaha* and *roa* mean respectively *loud* and *long time*. Maybe this refers to the loud bird we are looking for, the *kokako*. To get to the conservation area we travel on windy roads through hilly farmland. There are a great many rabbits and we see a Harrier hawk.



When we arrived in *Rotorua*, I asked the shuttle driver whether there were any tree ferns in the area. He barely acknowledged the question. As we were

driving through farmland towards *Kaharoa* I asked our guide whether there would be tree ferns in the area. He too barely acknowledged the question. When we entered *Kaharoa* I understood why. We were in dense tree fern forest with some rising 30 feet into the sky. There were many kinds as well as the usual ground ferns and ferns growing on tree trunks and branches. It was spectacular and primordial. Birds were active this early in the day. In the distance we hear a *kokako*, or so the guide says. Then he pulls a tape deck out of his backpack and plays *kokako* calls that were recorded in 1971. These elicit return calls from a short distance away. We play this game for some time but never make a sighting of these beautiful birds. Even when they call from a short distance getting to them would require negotiating dense undergrowth and very steep hills and ravines.



For the remainder of the morning we drive back to *Rotorua* and notice the many fumaroles steaming away around the lake. From some the smell of H_2S , hydrogen sulfide (rotten eggs), is obvious although not too strong. We find our way to a small boat. Waiting are a Kiwi family of four with two very young children, a young Austrian girl traveling alone and the boatman/guide, a Maori. He will take us to *Mokoia* Island in the center of Lake *Rotorua* to look for *kokakos*,

saddlebacks and fantails. Four tribes of Maori own this island and restrict visitation. Our group would be the only group to visit this day. The island is a large volcanic dome covered in native forest rich in tree ferns.





Again we hear but don't see *kokakos*. We do see several fantails and a pair of saddlebacks.



Is it obvious which is which?

We had lunch which the guide provided and which would have fed 12 nicely, in a grove of California redwood trees. During the early years of burgeoning reforestation for timber many trees were tried including the redwoods and eucalyptus trees. The redwoods grow too slowly for commerce and this grove has been left standing as a park. After 100 years the trees are still shorties compared to those in Muir woods just outside of San Francisco.

Our next stop is *Te Puia*. This is simply Maori for *volcano, geyser, hot spring, eruption*. We see erupting geysers, boiling mud pools, various colors of hot springs and other geothermal processes. Sulfur produces rich yellow shades, iron oxides give oranges and manganese oxides yield purples. The Maori traditionally considered these sites as sacred and forbid entrance. Today they reap the benefits of tourism. The kiwi bird is endangered and nocturnal. Thus it is difficult to see. *Te Puia* has a kiwi house where you can watch them in action in a darkened room which they think is in night light. We see our first kiwi scurrying about eating small insects.



The kiwi has hair like feathers, cannot fly and has its nostrils at the distal end of its beak, unlike any other bird. There are 6 varieties in NZ.

After a long day of hiking uneven terrain, we stop by the Polynesian spa. We try different pools up to 39° C, but forego the 42° C pool (that's 107.6° F). This turns out to be a very refreshing way to end day one.

February 10. Our day begins with an 8:30 am pickup arranged by Black Sheep Tours. This time the driver/guide is a Maori, the son of a chief and a member of one of the tribes that owns *Mokoia*. Three other couples are also on board, only one of which would be with us past lunch. We are taken to *Wai O Tapu* in the *Taupo* volcanic zone. *Wai O Tapu* means *sacred waters*. It covers 18 sq. km with the volcanic dome of Rainbow mountain at its northern boundary. We can see only a small part of the area but this includes cold and boiling pools of mud, collapsed craters, steaming fumaroles and colored hot water pools. The colors here are attributed as follows:

green	colloidal sulfur/ferrous salts
orange	antimony
purple	manganese oxide
white	silica
yellow-primrose	sulfur
red-brown	iron oxide
black	sulfur and carbon

This does not account for thermophilic algae that can be yellow, orange and blue-green. The smell of H_2S frequently wafts by. While not quite on the scale of Yellowstone Park, this is a spectacular site.





We move on to the *Waimangu* Volcanic Valley to see the Lady Knox geyser erupt at 10:15 am. *Waimangu* is made up of *wai* meaning *water* and *mangu* meaning *black*. The black water is caused by oil seeping into the pools. There are also boiling mud pools and many craters. The Lady Knox geyser is not regular, erupting every three or four days if left alone. Its orifice is very small and a park ranger drops a pound or so of soap into the opening at around 10:10 am. The surfactant effect of this is to trigger an eruption on cue. A large crowd has gathered

to witness the event. The geyser spews out water and steam to a height of some 40 feet and does so for several minutes. Everyone goes away satisfied. There is a complicated story about Lord and Lady Knox that I will not relate here simply because I cannot remember it. I do remember how the use of soap was discovered. Prisoners were made to labor nearby and would sneak off to the geyser to get washed. One of them dropped soap into the geyser and got a scalding shower.

We see more fantails, some NZ wood pigeons,



and some *pukekos*, New Zealand's answer to the chicken.



We move on to a high point between Lake *Tikitapu* (Blue lake) and Lake *Rotokakahi* (Green lake). *Tikitapu* means *sacred (tapu) amulet (tiki)* and has to do with a story about a Maori princess. *Rotokakahi* means *lake (roto) mist (kakahi)*. From our vantage point it is easy to see the difference in color between the two lakes. This is due to several factors including mineral content and depth. Blue lake is a recreational spot for Kiwis and Maori, whereas Green Lake is for Maori only.



Later that afternoon we visit the buried village, *Te Wairoa*. This may be translated as *tall (roa) water (wai)*, and refer to the waterfall described below. The village was near Lake *Tarawera* (which means *button fern*). Mount *Tarawera* erupted in 1886 and buried this village up to six feet in ash. Roof tops can still be seen and some excavation has been done that reveal how the Kiwis and Maori lived there together. Over 100 persons were killed. Two beautiful geothermal structures, the white terraces and the pink terraces, that were tourist attractions in their day, were destroyed but had been photographed. We hike down 110 steep steps to see a fantastic, tall waterfall in a thick fern forest, and then we hike up 110 steps.



While in the *Rotorua* area we stayed at the Novotel Hotel near the lake front. This is a high quality hotel near a shopping and dining region. We were stunned by the food prices. A typical dinner would be *a la carte* and offer appetizer, entrée or pasta, main and dessert. Appetizer and sides run 8-18 \$, entrees are 20-30 \$ and mains are 25-40 \$. The portions are not large, and while very good, hard to digest pricewise. It took awhile to realize that we had already paid for them when we paid for the tour package, and eventually I got used to having ~75 \$ dinners.

February 11. Today we get up leisurely and head for the airport. We board a small plane for Wellington, the capital of NZ on the southern coast of the North Island. We arrive early afternoon and check in to the Amora Hotel in downtown Wellington. This is a very comfortable Hotel within walking distance of several attractions including the *Te Papa* national museum run by the government and free to the public. A light rain is falling and we go to the museum about two blocks away. There are excellent exhibits about NZ flora, fauna and culture, as well as a free WiFi café. By international standards *Te Papa* is an excellent, innovative museum, and it can be visited online:

<http://www.tepapa.govt.nz/pages/default.aspx>

Ron plays a fern frond marimba in an exhibition hall.



One of the featured exhibits is a dead specimen of a giant squid, a favorite food of sperm whales. It was caught in a fishing boat net. Also on exhibit were three Orcs from middle Earth.



In the early evening we meet the rest of our tour group for the remainder of our trip to the South Island. This part of the trip, from February 12 until February 24, is also run by Black Sheep Tours and our guide is Dean Lark from around Christchurch. We first met Randy Leonard, an oncology nurse from Kauai. Then we meet Nicki and John Gates from Edmonds, Washington. John and Nicki met at Tektronix years ago where she worked in marketing and he was an electrical engineer. Subsequently he patented inventions, started new companies and did very well. As a Reed College graduate, I knew persons at Tektronix they also knew. And lastly, we met Linda Edwards, who works for Deutsche Bank in New York and lives in New Jersey. This turned out to be a cozy group that got along very well and added the dimension of human interaction to the splendid exposure to geography and nature.

Aotearoa

From the website <http://www.teara.govt.nz/en/1966/aotearoa> we learn the meaning of the Maori name for New Zealand.

“Aotearoa is the Maori name for New Zealand, though it seems at first to have been used for the North Island only. Many meanings have been given for the name but with Maori names the true meaning can often be found only in a mythological story or in historical fiction illustrating either how the name was given or something of the ideas which prompted it. *Aotearoa* is made up of either two or three words, *Aotea* and *roa* or *Ao tea* and *roa*. *Aotea* could be the name of one of the canoes of the great migration, the great magellan cloud near the bright star Canopus in summer, a bird or even food; *ao* is a cloud, dawn, daytime, or world; *tea* white or clear, perhaps bright, while *roa* means long or tall.

The most popular and authoritative meaning usually given is “long white cloud”, and there are two stories current to illustrate this. It seems the voyagers to New Zealand were guided during the day by a long white cloud and at night by a long bright cloud. The more usual one tells how, when Kupe was nearing land after his long voyage, the first sign of land was the peculiar cloud hanging over it. Kupe drew attention to it and said “Surely is a point of land”. His wife, Hine-te-aparangi, called out “*He ao! He ao!*” (a cloud! a cloud!) Later Kupe decided to call the land after his wife's greeting to it, and the cloud which welcomed them. The name *Aotea* was given both to the Great Barrier and to the North Island, but the latter became *Aotearoa*, presumably because of its length.”