

Hello Everyone,

Our next trip is 10 days away on Wed 18th June. I've arranged for us to meet Kate Pedley 10.30 at the new [UC Earth Science Garden](https://www.canterbury.ac.nz/news-and-events/news/2025/university-rocks-geology-education-with-new-garden) at the University. This has only recently had its official opening and looks very interesting. The garden forms a stylised map representative of Canterbury and the South Island, showcasing major geological formations and fault line. As parking is incredibly difficult, I'm going on the bus. One leaves Sumner at 9.06, Ferrymead at 9.23 getting to the university at 10.04 which would give us plenty of time to wander through to the garden. However, you may prefer to go straight there on your own. It would be good to have a reasonable turn out so please try to come. See more on (<https://www.canterbury.ac.nz/news-and-events/news/2025/university-rocks-geology-education-with-new-garden>)

Recent trip

21st May

Graeme Worner's Forest and Fern Factor

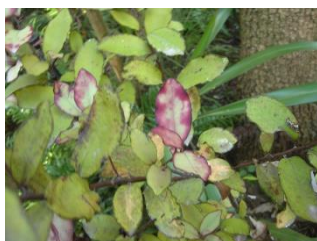
Graeme Worner

Graham showed us through his garden which was planned by John Marsh to have areas for a cricket lawn, putting green, forest and pool. The house looks out over all this. The cricket lawn is huge but he enjoys mowing it. At first, he mowed with a hand mower and it took him all day!

In the beginning he made the mistake of planting 80 beech trees and should have put in manuka and kanuka first. The beeches were slow to grow without protection. A lot of the trees came from Trees for Canterbury. The walk through his forest of native trees was amazing. About 150 species were planted years ago and now there are seedlings growing throughout. Pittosporums and mahoe are takeover trees, though mahoe is frost tender. There are different regions in the forest, one for kauri and another for kowhai.



Graeme pointed out many features as we walked through, like this giant mamaku tree fern.



The pond meandered through and there were many paths in different areas of forest. Some trees had died and been partially cut down allowing epiphytes and ferns to grow in the rotting trunks.



Nothing goes to waste and Graeme uses the wood of dead trees for his fire and a series of 8 compost bins which yield good compost from his lawn clippings every six weeks. His wife uses a lot of this in the flower beds.

We spent over an hour wandering through while Graeme explained things, admiring the trees and ferns there and then reluctantly left to follow him in procession to Fern Factor.



made of green spikes to ferns can fall in easily.

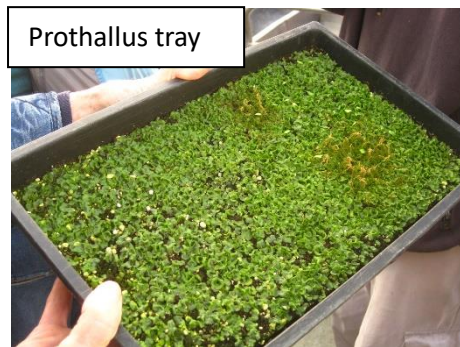
Fern Factor Visit. Graeme and Paul took us through the development of the ferns from start to finish. It starts with cleaning the underside of a frond with spores. They fall off and explode as dust out onto paper. They are packeted up and put in the fridge. Later the spores are sprayed onto 4 trays at a time and bagged into sealed green trays with controlled light and water. They have found LED red and white light gives the best growth conditions. This room had six shelves on



each side covered with trays. Later with tweezers they are potted into small plug pots about the size of your little finger nail. They have a homemade gadget put holes into the soil mix so the little



They grow on in greenhouses on roller benches, from tiny shoots to bigger plants, get transplanted into larger pots, and hardened off gradually until big enough to sell in 10cm pots after a year. It takes another year for them to double in size and price. The greenhouses have complex machines to regulate humidity, fogging and misting. Watering would saturate the plants which is bad. Most benches have a flood-and-drain facility which soaks the pots for 7 seconds and as it drains, draws oxygen into the soil.



These huge punga are waiting to go to the new stadium. Graham and Paul have to plan a year or more ahead. Most firms want plants to sell in mid-February and then again in early April. Ferns germinate at different rates so planning is essential to get them all ready at the right time. They are shipped all over New Zealand. Paul told us they recently had an order for 600 of this, 400 of that etc., from a big nursery chain. The quantities are mind-blowing. Plugs sell at \$1.90.

Graeme also undertakes research projects to try to maximize fertilization and development and save waste. He showed us what he looks at through the microscope to check germination rates. A 1cc cup holds 300,000 spores. It was a most interesting trip.

Wed 18th June Visit to the Earth Science Garden at Canterbury University. Meet Kate Pedley there at 10.30 for a talk.

Our **bank account is U3A Botany/Geology 03 1599 0139475 000**. You can contact me on 384 3475 or by email patwandpate@gmail.com