everyone. I've not mentioned names as I don't want to upset anyone by leaving them out. But I hope my helpers will recognise themselves and take heart that they are remembered.

I was glad of the lift back to base. My husband Tim was there to meet me. Collected my things and off we went - wonderful memories.

The next day we flew down to Stewart Island - but that is another story.

I would love to see any of you if you are coming to England. Sussex has a good range of habitats: ancient woodland (not ancient at all, but managed for centuries), downland, water meadows and coastal areas,

PS: Could slip in *Triglochin* - Oops! I know it as arrow-grass. It also grows in Awn valley, but ours is 8" 20 cm tall and I have only seen it in fruit.

Tall Araucarian Tales

Graeme Hambly

This article is properly a pendant to that which appeared in the Dec 2000 issue of the Auckland Botanical Society Journal, "*Araucaria heterophylla* and its relatives", by R. Gardner, G. Hambly and Justin Kneiber. But whereas anyone will recognise the former as a typical, not to say exemplary portion of Rhys Gardner's taxonomic and literary acuity, this article aims to contribute a more personal tone, and record some of the more quotidian pleasures, or more truthfully the confusions, of botanical investigation.

Our investigation began through Justin's intention to document some of the historic plantings of Araucariaceae (*Araucaria* and *Agathis*) within the Auckland region. At the outset, he made what now seems a symbolic discovery: at the turn-off to Port Albert on the Kaipara Harbour, stand three tall and very solitary trees, anonymously rowed in single file on an exposed hillside. We quickly recognised a bunya-bunya (*Araucaria bidwillii*), and of the other two, for lack of alternatives, assumed that one must surely be a Cook's (*A. columnaris*), and the other a hoop pine (*A. cunninghamii*).

But we were also party to rumours concerning more exotic sightings within Auckland itself, most notably G. Platt's assertion of *A. nemorosa* (Commercial Horticulture c. 1998) for Mt. Roskill. When we eventually got there, all assumptions were soon to vanish. On the top of the hill was a low and squat tree, distinctively shapeless but for this reason reminiscent of the tall shapeless tree at Port Albert. Both shared extremely scabrid, but typical "eutacta" (one of the two to four sections in genus *Araucaria*) whipcord foliage: this tree must also be *A. cunninghamii*, so we assumed with scarcely a moment's hesitation. But where then was the "nemorosa"? Further downhill was a tree that resembled a Norfolk Is. Pine, but which was leaner and more bent. Knowing that in Araucaria, the (female) cone-scales and (male) strobili revealed important differences between species, we collected samples from underneath the tree. For we already knew from Rhys that the herbarium in Noumea, New Caledonia, had to everyone's astonishment, re-identified the "nemorosa" as *A. columnaris*. Both species hail from that country and presumably were closely related, hence the apparent confusion. We were therefore curious, and eager to form our own conclusions.

But what exactly was *A. columnaris*? Some texts describe "columnaris" as very close to Norfolk Is. Pine (*A. heterophylla*), and we had heard that mature "columnaris" was growing at the Auckland Domain, in the magnificent grove of naturalising bunyas, interspersed with Norfolks. After collecting cones from this site, (which took two visits and much consternation, sorting out what cones came from what tree), we felt that at long last, we had a good profile for Cook's pine: male and female cones and scales, and a partially-juvenile to adult foliage range. In particular, this species had a highly distinctive, somewhat "shaggy" male strobilis (confirmed by the drawings in Flore de la Nouvelle Caledonie), which not only seemed (by the same source) clearly to distinguish this species from other New Caledonian species but more particularly, made it appear remote from Norfolk Is. pine as well. To confirm this profile, we also made collections from local (Whangaparaoa) Norfolk Is. pines and young Cook's pines, hoping to establish a similar range of features. Remembering that Cook's pine has an indisputably distinctive male strobilus, we quickly ascertained that the female cone scale on the Norfolk Is. pine is comparably idiosyncratic: it has (in profile) an unmistakeable perpendicular juxtaposition of ligule and apophysis. Further, applying a magnifying glass (x10) to the leaves, we observed a pattern of white dots (which Rhys later identified as stomatal resin plugs), which differed between the species.

What then was the identity (in the light of our recent observations) of the mystery tree at Mt. Roskill? Initially, I made a complete blunder. I discerned female scales that indicated Norfolk, but pollen cones that showed Cook's, ergo a hybrid. I had not bothered to examine with a magnifying glass the individual sporophylls. It was Justin who later discovered that the "shaggy" strobili in fact derived from an adjacent, but moribund and hence scarcely visible, fir tree! No hybrid then, simply a lean Norfolk Island pine. But if not this, where was that extraordinary tree, that was either *A. nemorosa* or *A. columnaris*?

By this stage, with great relief, we had involved Rhys, who, as everyone knows, is personally known to every plant in Auckland. He talks of writing an excursion flora for the region, but could just as easily produce a street directory. Being on speaking terms with, (I should say, related by family to) every possible tree, he was the most witty, entertaining and intelligent botanical guide (I should say anthropologically, informant) we could possibly have had. He soon revealed to us that the tree at the top of the hill at Mt. Roskill, was actually the mystery tree. Really? *Araucaria cunninghamii* was also *A. nemorosa* and *columnaris* besides!

But we were not long to be astonished. We had already established an enviable technique. Every reputable amateur or professional botanist trudges Auckland's streets, with supermarket plastic bags stuffed full of assorted plant bits and pieces, each individually marked on the outside in felt pen, "col-whan" (short for *columnaris*-Whangaparaoa) or "het-dom" (*heterophylla*-Domain). Hence we immediately and eagerly shopped at Cunningham's also, but uncertain now whether this store was really a branch of the established chain, we put in a mail order to head office. *A. cunninghamii* was widely reputed to grow at a site in Tauranga, and Rhys kindly sent some samples by post. This was not the result which by now we were expecting, but the female cone-scale characters from both stores were identical. Whatever the Tauranga tree was, so too was the Mt. Roskill specimen. (One character which Rhys's excellent drawings obviously cannot show, is the beautiful chestnut brown colour, and delicate papery texture of the bract scale wings).

This established the basic framework, and the rest as they say, was detail, or in Rhys's case, an exquisite atavistic botany, as he recovered Latin spells and formulae from the patriarchs, and speculated poetically on the significance of "columbea" (the Latin means dove, as in St Columba); a dove is present, for the section of flat-leaved Araucarias, in the shape of the female cone scale. Rhys's interest was not merely tactile (as with a x20 lens, he rubbed leaf margins), but incisive as well, cutting seeds in half. The latter gave, to my mind, his most charged discovery, because it seemingly relates the thickness of the seed coat (technically, the ovuliferous scale), to the size of the beaks of predating parrots in each location. New Caledonia has small parrots, Australia moderate, but Norfolk Island is famed for its extinct massive-beaked parrot (*Nestor productus*), a close relative of the kaka. Henceforth, we may need to think of the Norfolk Island pine and kaka inseparably, entwined rather as the eagle and prickly pear for Tenochtitlan, now the escutcheon of modern Mexico.

Another much misidentified tree, at Western Park, Ponsonby, now quickly revealed its true identity as *A. cunninghamii.* Even long distance botany profited, as our glance across the same valley pursued, and metamorphosed a supposed *A. columnaris* into an exceedingly ill *A. heterophylla.* Typically, senescent Norfolk Is. Pines, in contrast to Cook's, have a few uppermost branches which significantly overtop the remaining tree underneath.

Thus we return symbolically, to the three tall trees which Justin at the very outset sighted at Port Albert. Like all objects of great age and ancient origin, Araucarias inspire much speculation and phantasy, but despite the many conjectures and rumours, only three "eutactas" it seems, still stand to welcome the clear light of Auckland's day.

Threatened Native Plant Garden opens at the Auckland Regional Botanic Gardens, New Zealand

Steve Benham, Brent Torrens

One of the most significant events in the twenty-five year history of the Auckland Regional Botanic Gardens (ARBG) was the opening of a major new collection – the Threatened Native Plant Garden (TNPG) on 29 September 2001. One hundred and ten invited guests attended on a glorious spring day.

Administered by the Auckland Regional Council / Te Rauhitanga Taiao, ARBG is New Zealand's most northerly botanic garden and located just south of Auckland City. Development of the Gardens began in the mid 1970s and they were officially opened in 1982. The Gardens cover 67 hectares, including 12 hectares of native forest and a diverse range of plant collections. From the beginning there has been a strong focus on native plants of northern New Zealand, with plant conservation taking on a significant role in 1994. This work has steadily increased over the last seven years to include ex-situ collections of threatened plants, education and public awareness of these plants and the provision of plant material for re-introductions, translocations and scientific research.

In 1995 ARBG formed a working partnership with the Department of Conservation (DoC), local nurseries, Technical Institutes, Auckland University and the Auckland War Memorial Museum herbarium. Together these agencies formed the Auckland Plant Conservation Working Group. In 1997 a special Development Plan working group of educators and scientists gave a strong mandate for the Gardens to become a resource centre for regionally threatened