around from Te Muri Point towards Spaniard Creek opposite Wenderholm. These are all large patches compared to the 30-cm. patch which I found on the south coast of Tawharanui Regional Park. All of these finds of this delicate plant are on land where sheep and cattle would have been grazing some years ago before. The large new enclosure, perhaps better described as an exclosure, on the Scandrett Regional Park gives us a good chance to watch the natural regeneration establish.

We also saw a more unusual example of introduced plants settling very well into the natural habitat and competing very strongly with the native plants - *Furcraea foetida*. (There are quite a number of the common ones like agapanthus and arum lilies.) Well known on nearby Kawau Island where Sir George Grey planted it, *Furcraea foetida* is spreading away from the old historic Scandrett homestead on the north coast. Perhaps it was an early example what can happen when gardeners give away plants! If it dispersed without human aid from Kawau that is a greater concern, but I am inclined think a few plants would have been given away. Related to *Agave,* some of the leaves were about two metres high and flower spikes were visible rising very much higher. These plants have been described as capable of yeilding "a fine fibre" and can grow "without cultivation on the worst clay hills."

The afternoon visit gave us insight into an interesting new conservation enclosure which already complements the area of native forest at Martins Bay. I understand that further enclosures are planned and the areas should become richer for botanists and the general public alike.

Impressions of the UK visitor Pouto 26-29 January 2001

Daphne Fielding

I want to write this to thank the members of the Bot. Soc. for including me in their field trip to Kaipara. I was thrilled when Graeme Hambly invited me to come, but reluctant to leave my husband Tim, and one-time governess Peggy, behind at Red Beach where we were staying.

Then panic set in: I would know no one - untrue.
I would know no plants - nearly true.
I wouldn't be able to eat the food - I have a wheat allergy - need not be true.
I did not have the necessary clothes and equipment: beg, borrow, but not steal.
I was eventually persuaded to join; Peggy said "Go."
I was offered a lift on Friday and Tim would collect me on Sunday evening.

I was most interested in the Maori welcome on arrival; Graeme, the field trip info, and my guide book had explained the significance and protocol. I was all ready to press noses and was slightly disconcerted to be kissed on the cheek in French style.

Sleeping in the Meeting House was a bit like sleeping in the dorm. at school - but that was girls only. Showers and dining also in the same pattern. Our division into groups was like school houses. Being '*splendens*' made one stand up straight and try hard.

Throughout I found people kind and helpful, welcoming at all times and generous in sharing knowledge on outings and in the evenings. I really appreciated it. Thank you.

The first evening walk gave me the next opportunity to 'compare and contrast' as in school essays. So similar, yet so different. The absence of colourful flowering plants (except the aliens) is my overwhelming impression of the New Zealand flora; yet it is full of interest.

The rushes and sedges are a large group. I had started off thinking: *Schoenoplectus tabernaemontana* - know that, have it growing in the River Arun at home, But *S. lacustris* is our common native one. Our bulrush *Typha latifolia* is not quite as tall and the seedhead is a darker brown than *T. orientalis* New Zealanders seem as confused as we are. It was all Leigh Hunt's fault: The Pre-raphaelite painted a picture of Moses in the bulrushes; he painted *Typha*. In the UK bulrush was *Schoenoplectus*, literally used for weaving rush baskets and mats. Confusion has reigned ever since. Moses would actually have been found amongst the papyrus, *Cyperus* - just to add to the fun! *Typha* was re-named reedmace, but the name has not stuck. Recently botanists have given up the unequal struggle and call it bulrush; *Schoenoplectus* has become clubrush.

Your native cyperus, *C. ustulatus* is a superb plant. It would look good in a bog garden, though I have never seen it thus. We have other species: we have many juncus, including *J. acutus* and *maritimus* , but not *pallidus*; *J. effusus* is our commonest rush. We do not have to worry about *Isolepis* or *Uncinia* which pair I found a constant cause of confusion. The restiad, *Apodasmia*, I quickly learnt. We can get some of the South African species as garden plants - and again I thought them very garden-worthy.

Saturday am. The arrival of Bigfoot. Whow! What a machine! This was real expedition stuff. I had never seen anything like it before. Off we go to the beach, then the dunes. Whow! What dunes! I am sure we don't have anything like them in the UK, and the best I

know are at Coto Donana in southern Spain. Compare and contrast again. Here there are vast expanses of sand, much of it stabilized. There are smaller areas with the sand still moving through the umbrella pines (*Pinus pinea*). One sees in Spain dunes with the tops of the pines sticking out – the trees can still survive, but if completely covered they die. Here I was introduced to amazing plants. There I met wonderful birds, from the Spanish Imperial Eagle downwards.

First stop: fossil trees. Whow! What a curiosity! The dunes must have been moving for millennia.

Second stop: marsh. *Eleocharis*. Ha! Know that, but a different species. Do not know the tape-measure plant or other treasures. Realise I am being called to another area and go over to find a beautiful butterfly which has been waiting five minutes to have its photograph taken. Just as well it is early in the morning; later in the day it would have flown off quickly, having warmed up in the sun. We have coppers, *Lycaena*, but not *L. te-rauparahae*. In fact I see very few butterflies in New Zealand. Proves the connection: few plants waste time and energy making pretty petals if there are no colour-seeing insects to pollinate them. No selection for it. Or vice versa?

The exception that proves the rule: *Spiranthes*. Whow! Charming, shocking pink. Why? Our own three species are all white. (*S. aestivalis, S spiralis* and *Goodyera repens*). Nearby are the introduced *Centaurium erythraea* - the same pink, and *Blackstonia perfoliata* bright yellow. Both are in the gentian family: I know gentians should be blue! They grow on our chalk downland.

Next stop: the lake. Sand sedge in perfect condition; it looks stunning. We have a different species (*C. arenaria*) which behaves the same way. Then I'm introduced to a tiny spikerush and other specialties.

Morning tea/lunch/afternoon tea are excellent institutions. Trying to catch up on a bit of nomenclature with the help of new friends. But I'm really just enjoying the whow situation. The huge expanse of dune in sparkling sunshine. The *Spinifex* and marram grass I know, but not pingao. Amazing to see the long stolons spreading through the sand. I love it.

After lunch we go to the bush. Admire broom and ferns. I'm called down to the lake to see *Sparganium*. Revolt! I am digesting my lunch and newly acquired knowledge. Suffering from information overload - No more! Later I discover *Sparganium* is burr-reed. Oops! I know it well. I have ponds choked with two species (*S. erectum* and *S. emersum*) at home.

I decide to go with the birders to another lake. Being a generalist, rather than a botanist, I feel the need to spread my learning. Off six of us go in Bigfoot. Whow again! We charge over the dunes. Then up and down one big dune; like a roller coaster at the fair ground. When we arrive at the lake, Paul the driver lets us out. "Oops!" he says, "I didn't realise we had ladies on board". He and his friend had been giving themselves and the boys a thrill!

However the birders' thrill was the bittern. We had two good views of this large handsome bird. It is very closely related to the British bittern. This bird is incredibly rare and had got down to about forty pairs in just two areas of the U.K. Fortunately numbers are creeping up with conservation measures to its wetland habitat.

Saturday evening: '*splendens*' to the kitchen! Quite a party atmosphere. The regular ladies know exactly what needs to be done and how to cater for 35 people. I am most impressed and help where I can. Later in the evening, I have a conflict of interests: I want to study the books as this is my only opportunity to check what I have seen today, but also I want to join the singsong. I do both and enjoy the back-to-school feeling.

Sunday. Bigfoot turns up again to take us to Pretty Bush. It really is a magic place hidden in the dunes. By this time I am getting confused with the plants: all New Zealand plants are evergreen and look alike - an overgeneralisation. I try hard with ' – cordata', but think 'chordate', with a primitive backbone, or 'caudate', with a tail. This bush has neither! Oh dear! Try ferns instead - but it's not much better. Get to grips with totara and the bigger trees.

Do better with *Muehlenbeckia*, it scrambles over bushes and you could bounce off it as though it were a mattress. Not to be confused with *Coprosma*; some species have similar small green leaves. One species has small blue berries that are not as tasty as bilberries.

I am glad to get back into the sunlight and then to find a rare arable weed. My ambition of the weekend! - *Silene gallica*, a small catchfly in the Caryoph family. I found it last summer in the sandy bulb fields on the Isles of Scilly in SW England. Here it was thriving on sand dunes. But I live on cold wet clay so it would not grow on our farm.

We drive to a lake which is too difficult to access, so go on to the dunes again. Great excitement finding more *Spiranthes*. Then the lead group falls on the ground like dabbling ducks - up tails all. Small starry flowers *Limosella lineata*, and something else. So many treasures. *Gunnera* - I don't believe it – back home it is a garden monster.

To add to the 'beef' count, locusts jumping long distances but not in plague proportions. Then a small green frog reliably identified for me as golden bell frog - alien! Is this the one that is a main food of the white-faced heron (also from Australia, but self-introduced).

The day is getting late. Time to go home. Everyone has been kind and so helpful. Making me welcome was the main feeling. I really appreciated it. My thanks to

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*?