Riteakawarau and our ridge track for incorporation in a revived NZ Walkways System.

Doing as geologists must do at high places, Alan explained regional structure to us; we then regained the shelter of the taraire groves for lunch. Botanists then did as they must do and we bush-crashed down to Pebblebrook Creek on what was sufficiently wet and steep and slippery enough not to be a leading ridge, though in fact it was. The forest is a mixture of young podocarps, taraire, puriri and tawa; a pleasing feature was the thigh-high 'river' of parataniwha along the overgrown road lower down on the slope.

The long walk back along Pebblebrook Road to the cars in watery afternoon sunshine had some fine naturalistic touches: the old ditch-and-bank hawthorn roadsides now overtaken by totara trees, the Waitoki Stream bridge with its single large kauri tree burnt-out at the base supposedly by some Maori woman long ago, Nature's rustic artwork in the shape of a huge, bleached and rotted-out macrocarpa stump adorned by karamu and a cabbage tree sapling, the ancient oak and karaka trees of the King family homestead site, and the current efforts of Winstones to restore scrub to land close to the quarry yard.

Our thanks to Winstones for giving us access to this fine and extensive area. We certainly hope we can say that we have not seen the last of it.

An *Alseuosmia* in the afterlife

M.W. (Wendy) Patterson

The parent bush of *Alseuosmia macrophylla*, presumably of Waitakere stock from the Oratia area (G. Davidson pers. comm.), was sold by Oratia Native Plant Nursery to someone unknown, who gave it to the Forest and Bird trading table, where it was bought by Frances Kelly, who planted it at Te Kaha Road, One Tree Hill, in a sheltered corner. It was quite a few years before it flowered, and when it did it chose the time when Frances was away in China, while I baby-sat the plant. I paid several visits and finally could report that the first flower was green with a touch of red; later flowers were a good pinky-red.

On 20 July 1994 at a farewell lunch for Frances she gave me a twig of the bush with one flower out, good colour, good fragrance – I had to carry it about all day but in the evening put it into an earthware vase 10 cm tall filled with tap water. I kept up the water supply and was rewarded with 3 more flowers. Shortly after this I lifted it up and was amazed to find that it had lots of good roots, so I left it in its vase, and gave it nothing but tap-water.

In 1995 it had 3 flowers in August. In 1996 it produced 4 flowers, and the remains of one flower, and one miniature berry (that failed to expand, seedless ?) are still on it. In 1997 and 1998 it didn't flower but grew a new shoot in three bursts, 25.6 cm long. I was looking forward to flowers on the new shoot when on 19 April 1999 after a short illness the cutting died – aged 4 years 9 months.
Voucher specimen: AK 237917.

Motutapu: Healing hill sides

Alistair MacArthur

An account of the Auckland Botanical Society field trip to Motutapu Island, and a little of Rangitoto Island, on Sunday 22 August 1999.

As it happens I start to write this up with echoes in my ears of some disquieting accounts about forest destruction. While trying to get over the latest flu.....some call it Australian, and it certainly bounces up and down like a kangaroo and whizzes back like a boomerang.....I have heard the B.B.C.

World service science/nature programs. An account of two thousand fires at one time in the Amazon forests, and huge palls of smoke, choking people in other tropical forests, gave cause to be thankful this sort of thing is not happening on such a vast scale here. In so many parts of the world it seems imperative that we gain an understanding of the regeneration of the forests, and other ecosystems, natural to our districts. This field trip was outstanding in this respect. We examined in detail a large gully replanting site which was started on almost bare hill sides about five years ago; we moved on later to study the natural regeneration in gullies containing the largest remnant of natural forest, similarly showing progress after about five years.

Twenty-four of us assembled near the Islington wharf, thankful for the promise of much better weather, considering the cold, windy, and wet day just past. Mike Wilcox was leading us, Alan Esler was with us, Mike Maran was a new member, and we had some overseas students as visitors. Alan Esler's presence was especially valuable in view of his earlier involvement with the Gulf Islands; Alan had been active as the botanist with the Department of Scientific and Industrial Research at Mount Albert.

The group was:	Brian Cumber	Catherine Yong	David Wilson
	Ann Fenn	Steve Cook	Yvonne Weeber
	Oliver Noessler	Sonja Sandner	Lisa Clapperton
	Alistair MacArthur	Enid Asquith	Paul Asquith
	Mike Wilcox	Alan Esler	Leslie Haines
	Annette Lindsay	Carol McSweeney	Juliet Richmond
	Rich Afford	Leola Afford	Joan Kember
	Mike Maran	Maureen Young	Doug Shaw

John and Sandra Wotherspoon met us in their capacity as Conservation Officers. I had known both in earlier years when they were working for the Auckland Regional Council Parks Service. I first remember Sandra when she was part of the team working on the Waitakere Ranges Protected Natural Areas Survey and John's work as a Park Ranger took him to many parts of the Regional Parks network. It was a pleasure to meet them, and their two little boys, in this new endeavour. They extended great help to us by giving us another ferry ride.....this time all seated in the two D.O.C. utility vehicles..... across some kilometres to a high point on the eastern side of Motutapu Island. It was agreed that we would have had to do a second trip if we had numbered twenty-five!

The elevated site commanded a view in all directions around the Hauraki Gulf, and back towards Auckland; in World War Two this place was occupied by heavy gun emplacements; and further down the hill, a number of concrete buildings and tunnels associated with the defence post can still be seen. We spent a little while looking thoughtfully around the entrances to the underground magazine chambers, and I should think many of us had private thoughts about what we owed to the people who built and operated defences such as these. When asked what she knew about one of the gaunt buildings, Sandra said she had been told it had been the original map room for the military operations, and added that "they felt too vulnerable

there and moved into a different map room underground, inside those tunnels." As we looked around the site a group of young men and women military cadets were busy giving the old pathways and entrances a good clean-up, to make it more presentable for the many visitors anticipated at the time of the Americas Cup yacht races. We walked away southwards in the direction of Home Bay, to enter the top of an extensive valley, fenced out about five years earlier for the purpose of regenerating the natural forest cover.

Sandra drew our attention to the effects of the ash layer deposited by the eruptions of the nearby Rangitoto Island volcano a few hundred years past. On places with easy slopes this has resulted in a layer of friable soil about a metre deep, favourable for plant growth. In a few steeper places where the recent volcanic material had washed off, it was very evident that conditions were much more harsh for any plant life. Deep masses of the volcanic material exist in the valley floors, creating unusual wetlands much further up the valleys than would otherwise occur. The large conservation enclosure included substantial examples of all these soil conditions. It was evident that just a few remnant native trees had still been growing in the valley when it was fenced out from the surrounding farmed pasture. A very few kohekohe *Dysoxylum spectabile,* rewarewa

Knightia excelsa, mangeao *Litsea calicaris* (Fig.1.) had survived, but showed various adverse effects of prolonged exposure to open windy conditions; similarly a few pohutukawa *Metrosideros excelsa* survived.

Fig.1: Mangeao – *Litsea calicaris*

Several species had been used to form the greatest part of the regeneration plantation, spaced at 1.5 to 2.0 metres: Manuka *Leptospermum scoparium,* and to a lesser extent kanuka *Kunzea ericoides,* coastal karamu *Coprosma macrocarpa*, karamu *Coprosma robusta,* cabbage tree *Cordyline australis,* koromiko *Hebe stricta,* ngaio *Myoporum laetum* and whau *Entelea arborescens.* It seemed very fortunate, however, that a number of canopy tree species had been planted at the outset. Conditions must have been far from easy at times during the past five years, which included the Auckland water crisis year and the El Nino summer, but very good progress had been achieved in spite of losses. In some places, particularly among groups of kanuka, the canopy was starting to close, and sheltered conditions more favourable for natural regeneration were developing. Young trees such as puriri, kohekohe, rewarewa, totara, and pohutukawa were establishing, much to the credit of the people who had made the planting decisions, at least as I see the situation. The fact that mahoe *Melicytus ramiflorus* and mapou *Myrsine australis,* are already represented in the plantings must ensure that their seeds will soon be available in the plantation area and that the natural regeneration process will start many years sooner than would have been the case if the so-called "low impact" planting management programme had been followed. In my experience on many regeneration areas on the mainland, trees such as a young puriri are far more likely to have birds perch in them and deposit seeds successfully than manuka or kanuka, valuable as these are in the scheme. The young mapou had been dispersed as single plants very widely around the valley, and this seemed very fortunate as the nearest significant natural forest remnants were quite distant, perhaps a kilometre or more away. This very valuable component of a regenerating forest would almost certainly have taken ten to twenty years to start appearing in appreciable numbers. Kikuyu grass *Pennisetum clandestinum,* already has some hold on the valley and the surrounding pasture land, and it seemed very fortunate indeed that the regeneration process had been given the well planned "kick start" with a variety of native trees capable of gaining height and spread to create the conditions where natural vegetation can gain a hold fairly soon. The same planting carried out now would be facing formidably greater problems with kikuyu grass. D.O.C. and its officers are to be congratulated on getting the planting started during the window of opportunity before the African grass presented waist-deep problems like those encountered in many mainland park regeneration enclosures. There seemed to be no reason to suppose that the island environment would favour kikuyu grass any less. Indeed the places where it was establishing looked as if they had the full potential to cause severe smothering problems. Another grass *Cynodon dactylon*, forms thick mats on slopes, but was dying off *en masse.* I noted with interest the suggestion made by Alan Esler that, in and near the bottom of the gully, the planting of some kahikatea *Dacrycarpus dacrydioides,* would have been a good move to help establish a strong canopy early. I have been working exactly along those lines in a mainland regeneration area severely infested with kikuyu grass.

There was an opportunity to look at a significant area of wetland as we made our way down the valley. I listed some of the plants which our members were examining there: *Paspalum distichum, Isachne globosa, Schoenoplectus tabernaemontani, Elaeocharis acuta, Isolepis prolifer, Juncus usitatus,* and *Festuca arundinacea.*

On the hillside nearby there was quite a strong colony of a very well known poisonous weed, hemlock *Conium maculatum.* and I commented to someone nearby that I had experienced, briefly, a numbing sensation at the back of my nose one time when I had operated a brushcutter among large

plants and breathed in the pungent odour of the cut stems. This, I suppose, was a slight indication of the way that a numbing sensation was said to have overcome those sentenced to die by drinking a potion of this plant in ancient times. I also commented that we can be thankful we do not have to contend with the related water hemlock (*Cicuta virosa*) of North America. A book in the Auckland public library (read about 1976) titled "Roots," described this as the most poisonous plant known, having an attractive parsnip-like root which, if eaten, causes a person to be in agony and beyond medical help in about a quarter of an hour, and dead through total muscle spasm in little over half an hour. (A check on the library computer shows that two copies are still there, one being in the basement. The author is Douglas Elliott. Read the last page and you won't need any horror movies for weeks.) It was interesting to note how substantial open areas in the conservation enclosure had filled with the native grass, *Microlaena stipoides.* Just as I have observed in similar enclosed areas on the mainland, this grass forms dense mats which quite strongly resist invasion by Kikuyu grass. It also seems to resist regeneration of native vegetation, but not to the extent that Kikuyu grass does.

As we moved out of the planted valley we saw the evidence of a few *Datura stramonium* plants that had been killed, presumably with herbicide. Someone nearby called them Devil's thorn apple, but the Volume IV flora, and also H.E. Connor's book on poisonous plants in New Zealand give no indication that thorn apples belong to the Chief Executive Officer of the place down below. Another unpleasant member of the *Solanaceae,* apple of Sodom, *Solanum linnaeanum,* is probably seen by the D.O.C. staff on the island as something devilish in origin. The prickly shrubs were scattered over many parts of the pasture land in great numbers, probably thousands.

Moving nearer to the flats in Home Bay, Mike Wilcox drew our attention to several pine trees a little way up the slope on the other side of the valley. He showed us the distinctive stalked cones of the Aleppo pine *Pinus halepensis.* Nearer to us, just over the fence, was a Corsican pine *Pinus nigra* subs. *laricio,* with the smallest cones I have seen on any pine. Whoever planted them added interest to our day, and the trees did not show any signs that they were spreading about in this habitat. Mentioning this recently to a young person involved in conservation work, I encoun-tered an unfavourable attitude towards trees like this, leading me to wonder what schools of thought make young people aware of conservation issues in New Zealand and nowhere else on the planet! We certainly need to be on the watch for overseas species that show signs of spreading seriously, but I wonder if we are going to grow so cautious that interesting and possibly very valuable exotic trees are scarcely ever given a home around the spacious grounds of old historic homesteads. I have seen only one *Pinus maximartinezii,* as yet only about as tall as a man, in a well-known collection near Tiniroto. I wonder if some people in future generations would be very grateful if management of old historic gardens allows for innovative planting of a few trees such as the pinyon nut pines of Mexico, or trees which might eventually provide insight into how to grow valuable timber for specialist requirements.

We enjoyed our lunch in an old barn near the homestead in Home Bay. There were number of old trees in the vicinity. Perhaps the most interesting was an ombu, *Phytolacca dioica,* a strange Argentinian tree related to the commonly known inkweed, *P. octandra.* Perhaps it was planted about the same time as the strange, hollow specimen of the same species at Albert Park, seen on an earlier field trip. Arum lilies, *Zantedeschia aethiopica,* were in evidence - disquieting in view of the way they are spreading, sometimes by the thousands, in damp places on the mainland. Also seen here, loquat, *Eriobotrya japonica,* can spread about, and Moreton Bay fig, *Ficus macrophylla,* very evidently has its specialised pollinating wasp established at Wen-derholm, so one wonders if conservation-minded people of coming generations will be wishing we had recognised the various figs as incipient weed trees, right now in 1999. (Young Moreton Bay figs are being pulled out of soil-surface locations at Wenderholm Regional Park. Plants perched up trees also cause concern)

After lunch we walked up the ridge west of Home Bay, reaching another of the high points on the island and facing directly back towards the eastern parts of Auckland. Below us lay the coast where any of us who travelled in recent years to Waiheke Island would have seen large pohutukawa trees in dead or dying condition, clearly visible from the ferry. It appears that similar grim scenes would have presented themselves in the forest remnants further inland until a few years ago. The gullies just below us contained the best remnant of native forest on the island, we were told, and most of us went down to look at the results of conservation efforts over the past five years since they were fenced off. (I did not think to ask, but pest control efforts may date back much further.) We made our way across a very wide margin of fenced-off pasture land around the forest remnant, and found

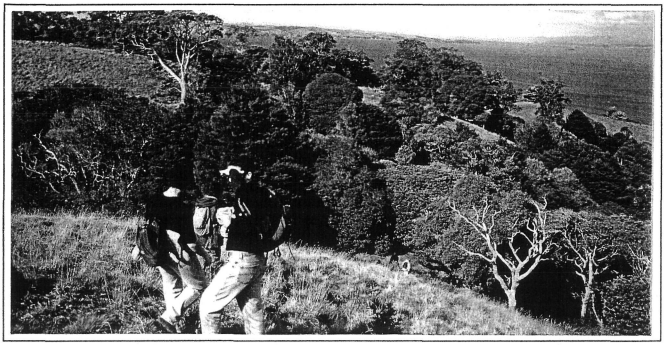

Fig. 2: Fenced off pasture around forest remnant

a pleasing scene of healthy natural regeneration as we moved under the trees.

It was evident that the forest remnant had consisted of totara *Podocarpus totara,* tawa *Beilschmiedia tawa,* taraire *B. tarairi,* some fine large puriri *Vitex lucens,* rewarewa *Knightia excelsa,* kowhai *Sophora microphylla,* mangeao *Litsea calicaris,* whau *Entelea arborescens,* and a few other species. Sandra Wotherspoon said that only two pigeonwood trees *Hedycarya arborea,* were known to exist on the island. She was delighted to find a third as we looked around. The great delight to all of us were the very numerous and healthy young plants of many of these species appearing under the trees, where stock must have been wandering and eating everything a few years past. Tawapou *Pouteria costata* seedlings were appearing, evidently dispersed from trees which Sandra said were further round the coast. The mangeao seedling were especially abundant and some were out at the edge of the forest remnant, promising to extend the forest into the enclosed margin. A few pohutukawa had been planted in the margin at wide intervals, (the only planting) and it seemed likely that birds would start spreading man-geao seeds under them in a few years.

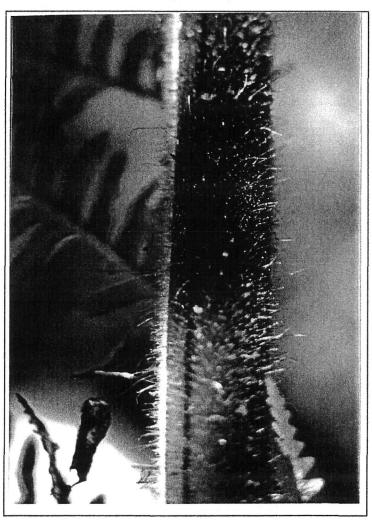

Fig. 3: *Hypolepis dicksonioides*

Hypolepis dicksonioides, establishing strongly in the bottom of the gully, was new to many of us, and I hope my slides will show its thick stipe with abundant hairs (Fig. 3) at some future evening meeting. New to me also was the odd kink in the stems of the few evergreen buckthorn *Rhamnus alaternus* seedlings, which some of us were finding and pulling out. The plants seem to have anticipated people trying to pull them out, and evolved the kink at ground level in such a way that they tend to break off and retain a stump ready to form new growth. Thanks to Sandra for pointing this out; I thought at first she was pulling my leg. As we walked over the ridges back towards Islington Bay we saw much more of the invasive *Rhamnus* problem. We also saw another lesser remnant of native forest on the other side of the gully, and a place where the stream had cut neatly to the bottom of the metre-deep Rangitoto ash layer so that it ran on harder material below. This reminded me of a much earlier visit to the island when Janet Davidson, an archaeologist known to many of us, spoke about evidence of Maori living sites buried under this ash layer.

We crossed back to Rangitoto Island and had about an hour to look at the remarkable vegetation in the harsh environment on the lava and scoria. As we made the first stop to empty our thermos flasks, Alan Esler drew our attention to the invasive *Cotoneaster lactea* shrubs, the Italian *Linaria purpurea,* and various other exotic plants including: *Aloe saponaria,* smilax *Asparagus asparagoides, Crassula coccinea, C. multicava,* tuber sword fern *Nephrolepis cordifolia* and ratstail *Sporobolus africanus.* Alan also pointed out a little annual grass, *Catapodium rigidum,* growing on the scoria, and *Freesia refracta,* spreading away from the old gardens near the seaside baches. We moved back towards the wharf

along a well-formed track, following the coast a little way, and then moving a few hundred metres inland on the rough, rocky terrain. *Stipa stipoides* was present at the shore, and we soon encountered the curious, primitive *Psilotum nudum.* The necklace fern *Asplenium flabellifolium,* was a little further inland, as were the two *Cheilanthes* species, the woolly cloak fern C. distans and the rock fern *C. humilis.* Some of our members were using hand lenses to examine several species of native orchids flowering among the mosses in the rock crevices. *Pterostylis alobula, Cyrtostylis oblongus,* and *Acianthus reniformis* were mentioned, and tOhere were spectacular patches of *Pterostylis banksii.* The invasive evergreen buckthorn problem was present in many places in the rocky habitat just as it was in the deeper soils on Motutapu Island, and perhaps presenting a greater challenge to combat without damaging the precious small plants close nearby.

Many thanks to those on the committee who chose this location for a field trip. It was a positive experience, especially in the regenerating areas. Much more remains to be learned in this area, and we would do well to return there in future years; other regeneration areas on islands and mainland need to be compared for different influences.

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Fire damage re-growth at Piha

Chris McKain

Just over two years ago, a large fire swept up a steep hillside off Piha road, at the descending road near the beach (Q11 420703). The fire took some time to get under control, so that about six hectares of regenerating bush was destroyed. A year ago during the ginger (*Hedychium* spp.) inspections in the area, I found that the hillside had started to recover from the fire. The previous vegetation, which I was told was pampas grass (*Cortaderia* spp.) and mixed natives had apparently been burnt off. In September 1999, I revisited to check on the control work and was surprised with what I found.

The major revegetation is by toatoa (*Haloragis erecta*), followed by gorse (*Ulex europaeus*). In amongst these are other plants such as fireweed (*Senecio* spp.), manuka (*Leptospermum scoparium*), plantains (*Plantago* spp.), and *Veronica.* Nearly all vegetation was less than 1 metre tall.

What was amazing was the number of natives that recovered from the fire: cabbage trees (*Cordyline australis*), nikau (*Rhopalostylis sapida*), mamaku (*Cyathea medullaris*), karamu (*Coprosma* spp.) and mahoe (*Melicytus ramiflorus*); these last standing out like statues amongst a sea of pale green and yellow.

Walking through the area is very difficult due to the steep slope and the gorse cover (ouch). Fortunately the ginger was confined to one area. It is apparent that the natural processes of recovery of burnt ground is rapid, by both natives and some exotic species.

A list of plants present:

Most abundant were Haloragis erecta 60%, and *Ulex europaeus 30%.

**Agapanthus praecox*
**Araujia sericifera*
**Artemisia* sp.
Carex dissita
**Cirsium vulgare*
Coprosma grandifolia
C. lucida
C. robusta
Cordyline australis
**Cortaderia jubata*
**C. selloana*
Cyathea medullaris
**Erigeron karvinskianus*
Gahnia lacera
Hebe stricta
**Hedychium gardnerianum*
Hydrocotyle spp.
Leptospermum scoparium
**Leucanthemum vulgare*
**Leycesteria formosa*
Libertia ixioides
**Linaria* sp.
**Lonicera japonica*
Melicytus ramiflorus
Passiflora tetrandra
Phormium tenax
**Physalis peruviana*
**Phytolacca octandra*
**Picris* spp.
**Plantago lanceolata*
Pteridium esculentum
Rhopalostylis sapida
**Senecio bipinnatisectus*
**Solanium mauritainum*
Sonchus spp.
**Veronica persica*