Metrosideros excelsa ×M. robusta Metrosideros fulgens Metrosideros perforata Metrosideros robusta Mida salicifolia Myrsine australis Myrsine salicina Nertera dichondrifolia Nestegis lanceolata Olearia furfuracea (ABS) Olearia rani Parsonsia ?heterophylla Passiflora tetrandra Pittosporum cornifolium Pittosporum eugenioides Pittosporum tenuifolium Pomaderris phylicifolia Pseudopanax arboreus Pseudopanax crassifolius Ranunculus reflexus Rhabdothamnus solandri Rubus australis Rubus cissoides Schefflera digitata Sophora microphylla Streblus heterophyllus Toronia toru Vitex lucens

### **MONOCOTS** excl. grasses & orchids

Astelia banksii Astelia solandri Astelia trinervia Carex dissita (ABS) Carex lambertiana (ABS) Carex solandri (ABS) Collospermum hastatum Cordyline australis Cordyline banksii Cordyline pumilio Dianella nigra Freycinetia banksii Gahnia lacera Gahnia pauciflora Gahnia setifolia Isolepis reticularis Rhopalostylis sapida Morelotia affinis Ripogonum scandens Schoenus maschalinus Uncinia banksii Uncinia uncinata

### ORCHIDS

Acianthus sinclairii Caladenia [carnea] Diplodium alobulum Diplodium brumalum Diplodium trullifolium Drymoanthus adversus Earina mucronata Ichthyostomum pygmaeum Nematoceras trilobum Pterostylis agathicola Pterostylis banksii Simpliglottis cornuta Singularybas oblongus Winika cunninghamii

### GRASSES

Microlaena avenacea Microlaena stipoides Oplismenus hirtellus

## Whangarei Weekend, 17-18 September 2011

### Maureen Young

Whangarei is rather too far for Aucklanders to travel for a normal monthly day trip, so for the September field trip a booking was made at the Whangarei Youth Hostel and several members stayed over-night for a weekend's botanising. Northern members, Lisa Forester from Northland Regional Council (NRC) and Andrew Townsend, the Department of Conservation (DoC) botanist for Northland, were our leaders. This was also an opportunity for more northerly members and friends to attend a Bot Soc trip.

# Saturday 17 September - Maungatapere Mountain

**Trip participants:** Sara Brill (NRC), Jan Butcher, Lisa Forester (NRC), Sharen Graham, Leslie Haines, Penny & Steve Palmer, Helen Preston Jones, Laura Shaft (NRC), Doug Sheppard, Val Tomlinson, Andrew Townsend (DoC), Maureen Young.

Maungatapere Mountain (359 m; approximately 10 km SW of Whangarei) is classified as ecologically significant in the Protected Natural Area Programme (PNAP) report for the Whangarei Ecological District (Manning 2001). It is the only volcanic cone in this area to have a complete forest cover, and is renowned for the swamp forest in the crater. It is in a mixture of private ownership and public land (administered by DoC as a scenic reserve). Thirty hectares (42%) is protected by QE II open space covenants, 22 ha. (31%) is protected as a scenic

reserve and 19 ha. (27%) is in private ownership with no legal protection. The parent soil type is classified as Kerikeri Volcanics basaltic scoria cone (Manning 2001). The NRC, following extensive public consultation, has developed an integrated pest management plan. This involves the Council reducing the animal pest population density down to a low level that the community is then able to maintain (D. McKenzie, pers. comm.). An indication of the success of this strategy was the vast numbers of taraire (*Beilschmiedia tarairi*) fruit (just at the stage where a jelly-like substance was appearing on them) littering the slopes of the mountain. We were surprised at this, as none of us had seen such quantities before.

Life-long Maungatapere resident, Peter Grove, with his wife June, made us welcome on their property, so we parked our cars there and commenced our botanising. (See Appendix for species list.) A small area of bush spread from the base of the mountain onto the Grove's flats, and we explored this first. It was the only rock forest that we encountered, as the steep slopes were mostly rock-free.

Before we climbed the fence into the broadleaf forest there was a comment that the taraire looked a suitable host for the orchid, Drymoanthus adversus, and sure enough a plant was seen on a branch right above the fence. Lisa thought that the rocks would be good habitat for the filmy fern, Hymenophyllum flexuosum, and we soon found that too. Tradescantia *fluminensis* and climbing asparagus (*Asparagus* scandens) were unwelcome pests spreading over the rocks, and Sara (biodiversity officer for the NRC) had to be persuaded to give up destroying plants of queen-of-the-night (Cestrum nocturnum) so we could get on with our walk. The naturalised tamarillo (Cyphomandra betacea) caused more delay, as the fruit was temptingly ripe.

Once we commenced our climb the weeds were less prominent, and kohekohe (*Dysoxylum spectabile*) became the commonest species in the broadleaf forest that grows so typically on volcanic soils. The steep slope kept the pace slow, even for botanists, and allowed time to study the vegetation in detail. It was a good opportunity to learn to differentiate the species of *Tmesipteris*, as all four species known in Northland were present. All trees of towai (Weinmannia silvicola) were carefully checked, as makamaka (Ackama rosifolia) was on the species list that we had been given, and separating these two species is always a brain-teaser for Bot Soccers when they venture north. Whangarei is as far south as makamaka grows, so it would have been interesting to find it. An ancient puriri (Vitex lucens) supported many lianes and epiphytes, including Griselinia lucida and Pittosporum cornifolium. A few saplings of mangeao (Litsea calicaris) were seen.

Once the rim of the crater was reached we decided to delay the gratification of entering the promised swamp forest below, and instead walked half way around the rim. Here was a good population of the shiny-fronded Asplenium lamprophyllum, and a hybrid was determined as A. flaccidum ×A. lamprophyllum. Crown fern (Blechnum discolor) was plentiful, and as rare as gymnosperms were, it was here that we saw a few totara (Podocarpus totara) and added one small tanekaha (Phyllocladus trichomanoides) to the list. Maori earthworks were common, with several welldefined pits. Someone picked up a single half-opened flower of *Clematis paniculata* that was obviously female, but the ring of stamens had us rather puzzled; later reading confirmed that they are abortive. The Groves were pleased when we reported this find to them, as clematis has not been seen on the mountain for many years.



Fig. 1. Swamp forest in the crater of Maungatapere Mountain. Photo: L. Forester, 17 Sep 2011.

At last it was time to enter the swamp forest in the crater (Fig. 1), and we hoped fervently that the water would not be too deep. Fortunately for our purposes the north is drying out rapidly, and apart from a few wet mossy areas that we could avoid, we got across dry footed. Once down in the crater we were astounded by the quality of the trees there. Nothing had prepared us for the sight of the huge trees of pukatea (Laurelia novae-zelandiae), some multitrunked (Fig. 2), and swamp maire (Syzygium maire), soaring overhead. The trunks were straight and free of branches, and our estimates of their height ranged from 25 m. upwards. Kahikatea (Dacrycarpus dacrydioides) was not as common as the other two species, but a few huge trees overtopped them. The circumference of the largest of these was 5 m. What little understorey was present was composed of wheki (Dicksonia squarrosa), kanono (Coprosma grandifolia) and pigeonwood (Hedycarya arborea), with a very few raukawa (Raukaua edgerleyi). We walked carefully; the abundant looping pneumatophores of the swamp maire, with spongy white bark, were lying in wait to trip us. The creeping fern, Microsorum

*scandens*, found these roots a good host, as did, but less commonly, the filmy fern *Hymenophyllum demissum*. Kiekie (*Freycinetia banksii*) and hen and chicken fern (*Asplenium bulbiferum*) grew *en masse* as the groundcover.

After this highlight a careful descent was undertaken and we were then welcomed into the home of Peter and June for a debriefing. They confirmed the rumour that carmine rata (*Metrosideros carminea*), which they knew as the spring-flowering rata, was present in several places.



Fig. 2. ABS members admiring a large pukatea in the crater of Maungatapere Mountain. Photo: L. Forester, 17 Sep 2011.

### Sunday 18 September – Parihaka Scenic Reserve

**Trip participants**: Jan Butcher, Jerome Demmer, Sharen Graham, Leslie Haines, Helen Preston Jones, Jacqui Knight, Doug Shaw, Doug Sheppard, Val Tomlinson, Andrew Townsend (DoC), Diana Whimp, Maureen Young.

Residents of Whangarei are fortunate to have this forest-clad hill (241 m.) right on their doorstep, in the Western Hills. There are several tracks that can be followed, and Andrew chose to take us through Mair Park to the Hatea River (just where the salt water gives way to fresh), then up the Drummond Track and down the Dobbie Track. The Dobbie Track is named for the man to whom so many fern-lovers owed a debt of gratitude in earlier years, for his writing of the fern book affectionately known as "Dobbie", and later as "Crookes and Dobbie" (Dobbie & Crookes 1951)

A short walk from the carpark to the river took us through bush where both lemon (*Citrus limon*) and tamarillo were naturalised, a clue to the northern latitude we were in. Between the bush edge and the mown river flat was a small flood zone, and here Andrew pointed out the tiny creeping *Leptinella tenella* (threat status: declining) growing alongside *Triglochin striata, Lilaeopsis novae-zelandiae, Callitriche muelleri* and *Apium* "white denticles". *Coprosma propinqua* and *Carex secta* were other remnants of the original native riverside vegetation. As we crossed the bridge the creeping fig (*Ficus pumila*) growing up a tree could, at a cursory glance, be confused with rata.

Our first impression on starting up the Drummond Track, and for the rest of the day, was the glorious diversity of the small-leaved *Alseuosmia* growing there abundantly (Fig. 3) The growth form ranged from trailing shrubs to small tree-like shrubs with slender trunks and branching heads. The leaf-shapes were completely variable, even on a single plant (see Eagle (2006) for illustrations of some of the many leaf forms of this puzzling genus). Some plants could fit into what is understood as *A. banksii* var. *banksii*, some into *A. quercifolia* and others could perhaps pass as *A. banksii* var. *linariifolia*, but with such wide variation and no clear boundaries, it seems arrogant to try to make them fit into convenient species<sup>1</sup>. A few small greenish flowers were still present.



Fig. 3. One of many forms of *Alseuosmia* found in Parihaka Reserve. Photo: A. Townsend, 18 Sep 2011.

<sup>&</sup>lt;sup>1</sup> In 1963 a bus-load of 32 ABS members travelled north for Anniversary Weekend (Warren 1963). On visiting Coronation Reserve, also in the Western Hills of Whangarei, Warren reported: "*Alseuosmia* was plentiful, but puzzling as usual where there is more than one variety growing in the district. Some appeared to be *Alseuosmia banksii*, some were clearly *A. quercifolia*, some had the characteristics of both, while others had the leaves of both on the one plant". A couple of days later, on visiting Parihaka, he wrote: "*Alseuosmia* was present, but here it was A. linariifolia only, although only a short distance from Coronation Reserve as the crow flies".

Of the several orchids seen, *Corybas cheesemanii* was flowering and fruiting, *Pterostylis alobula* and *P. trullifolia* were in late flower, and *Nematoceras macranthus* was in bud. The softly blue/green fern, *Loxsoma cunninghamii*, was present in several places. The "umbrella" ferns were well represented with *Sticherus flabellatus, S. cunninghamii, Gleichenia dicarpa* and *G. microphylla* all being present. Lunch was eaten near the viewing platform at the summit of the park, and a squally shower that passed over then was the only rain we experienced during the weekend, despite a rather dismal forecast.

After lunch we explored the gumland scrub a short distance from the summit road. The two species of *Gleichenia* grew abundantly, with *Schoenus tendo*, toru (*Toronia toru*), *Dracophyllum lessonianum* and the occasional young kauri (*Agathis australis*). On the

downward walk we passed several trees of kawaka (*Libocedrus plumosa*). Back at the river we tried to check the species of kowhai growing there, but with the new leaves still emerging and out of our reach we decided to leave it as *Sophora microphylla*, as listed in the species list provided by Andrew.

One of the pleasing features of the bush walk was the relative lack of weeds. Seedlings of Phoenix palm (*Phoenix canariensis*) were quite common, but no larger plants were seen and apart from a sapling of monkey apple (*Syzygium smithii*), there was little to report.

All participants were very pleased with the two days botanising in this region which is within Auckland Botanical Society's sphere of interest, but which has been little visited by us.

#### Acknowledgements

Our thanks to Peter and June Grove for welcoming us on to their property; to Geoff and Pam Adams for permission to cross their land when I did a recce; to Don McKenzie (NRC) for information about the pest management plan; to Lisa Forester and Andrew Townsend for leading us in the field.

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# Appendix: Vascular plants seen on Maungatapere Mountain (Nigel Clunie, Lisa Forester, ABS [17/09/11]), and on Parihaka Scenic Reserve (Andrew Townsend, ABS [18/09/11]).

<u>Key</u>

**M** = Maungatapere Mountain

**P** = Parihaka Scenic Reserve. Mair Park to Hatea River, Drummond Track, Dobbie

Track.

\* = adventive species

 $\sqrt{}$  = present

+ = added to the species list by ABS

	Μ	Ρ		Μ	Ρ
Lycophytes			A. flaccidum ×A. lamprophyllum	√+	
Huperzia varia	$\checkmark$		Asplenium gracillimum	√+	
Lycopodiella cernua		$\checkmark$	Asplenium lamprophyllum	$\checkmark$	$\checkmark$
Lycopodium deuterodensum		$\checkmark$	Asplenium oblongifolium	$\checkmark$	$\checkmark$
Lycopodium volubile		√+	Asplenium polyodon	$\checkmark$	
Selaginella kraussiana*		$\checkmark$	Blechnum chambersii	$\checkmark$	$\checkmark$
			Blechnum discolor	$\checkmark$	$\checkmark$
Ferns & Fern Allies			Blechnum filiforme	$\checkmark$	$\checkmark$
Adiantum cunninghamii		$\checkmark$	Blechnum fraseri	$\checkmark$	$\checkmark$
Adiantum diaphanum	√+		Blechnum membranaceum	$\checkmark$	$\checkmark$
Adiantum fulvum	$\checkmark$		Blechnum novae-zelandiae	$\checkmark$	$\checkmark$
Adiantum hispidulum	√+	$\checkmark$	Cardiomanes reniforme	$\checkmark$	$\checkmark$
Adiantum viridescens	$\checkmark$		Cyathea cunninghamii	$\checkmark$	
Arthropteris tenella	$\checkmark$	$\checkmark$	Cyathea dealbata	$\checkmark$	$\checkmark$
Asplenium bulbiferum	$\checkmark$	√+	Cyathea medullaris	$\checkmark$	$\checkmark$
Asplenium flaccidum	$\checkmark$	$\checkmark$	Deparia petersenii	√+	

	М	Ρ		Μ	Ρ
Dicksonia squarrosa	$\checkmark$	$\checkmark$	Alseuosmia macrophylla	$\checkmark$	
Diplazium australe	√+		Alseuosmia quercifolia		$\checkmark$
Doodia australis	√+	$\checkmark$	Alternanthera philoxeroides*		$\checkmark$
Gleichenia dicarpa		$\checkmark$	Aristotelia serrata	$\checkmark$	
Gleichenia microphylla		$\checkmark$	Beilschmiedia tarairi	$\checkmark$	$\checkmark$
Grammitis ciliata		$\checkmark$	Beilschmiedia tawa	$\checkmark$	$\checkmark$
Histiopteris incisa	$\checkmark$		Brachyglottis kirkii var. angustior		$\checkmark$
Hymenophyllum demissum	$\checkmark$	$\checkmark$	Brachyglottis repanda	$\checkmark$	
Hymenophyllum dilatatum	√+	$\checkmark$	Callitriche muelleri		$\checkmark$
Hymenophyllum flabellatum	$\checkmark$	$\checkmark$	Callitriche stagnalis*		$\checkmark$
Hymenophyllum flexuosum	√+		Centella uniflora	$\checkmark$	
Hymenophyllum rarum	$\checkmark$	$\checkmark$	Cestrum nocturnum*	√+	
Hymenophyllum revolutum	$\checkmark$	$\checkmark$	Cirsium vulgare*	$\checkmark$	
Hymenophyllum sanquinolentum	v	v	Citrus limon*	•	$\checkmark$
Hvmenophvllum scabrum	v	•	Clematis cunninghamii	$\checkmark$	v
Lastreopsis glabella	v		Clematis paniculata	√+	v
Lastreopsis hispida	v		Convza sumatrensis*		v
Leptopteris hymenophylloides	•	v	Coprosma arborea	v	v
Lindsaea linearis		v	Coprosma areolata	√+	•
Lindsaea trichomanoides		v	Coprosma grandifolia	V	
Loxogramme dictyopteris		v	Coprosma lucida	√+	v
Loxsoma cunninghamii	·	v	Coprosma macrocarpa subsp. minor	• ·	v
I voodium articulatum	√	v v	Coprosma propinqua		• √
Microsorum pustulatum	v v	v v	Coprosma propingua × C robusta	√	v v
Microsorum scandens	v v	v V	Coprosma rhamnoides	v V	v v
Pneumatonteris penniaera	v √	v √	Coprosma robusta	v 1/	v v
Pteridium esculentum	v v	v V	Coprosma spathulata	v v	v v
Pteris macilenta	v √	v v	Coprosma tenuicaulis	v 1/	v
Pteris tremula	v √	v v	Corvocarnus laevigatus	v 1/	7/
Pyrrosia eleganifolia	v √	v v	Conformandra hetacea*	 √⊥	 √⊥
Rumohra adiantiformis	v √	v	Dichondra renens	√+ √+	√ ' √⊥
Schizaea dichotoma	v	٦/	Draconhyllum Jessonianum	V I	v 1 3/
Sticherus cunninghamii		v √	Drosera auriculata		v v
Sticherus flabellatus		v v	Dioscia dunculata Discovilum spectabile	٦/	v v
Tmesinteris elongata	٦/	v	Elaeocarnus dentatus	v v	v v
Tmesipteris lanceolata	v 1/	٦/	Enteles arborescens	v	v v
Thesipteris idiceoidid	∨ ∍/⊥	v	Eriobatrya japonica*		v ./
Thesipteris signationa Traciptoris topponsis	v + √+	./			v v
Trichomanos olongatum	v <del>+</del> ./	v ./	Euclinon audax Ficus pumila*		v v
Trichomanes venosum	v 1/	v	Fuchsia excorticata	2/	v
menomanes venosum	v		Gaultheria antinoda	v	٦/
Gumposporme			Conjoctoma ligustrifolium	./	v ./
Agathic australic		-/	Geranium homeanum	∨ √⊥	v
Ayaulis dustidiis Decrycerpus decrydioides	_/	V ./	Geranium molle*	v + \/	
Daci ycai pus uaci yuloides	V -/	V -/	Conocarnus incana	v	٦/
Libosodrus plumoso	V	V -/	Gricelinia lucida	2/	v
LIDOCEULUS PIULIOSA	-/-	V -/	Hakaa soricaa*	v	./
Phyllociduus unchonnanolues	V+	V -/	Halaragis aracta	./	v v
Pillus Iduidid" Dedecarnus ballii	-/	V -/	Haba macrocarna	v	v v
	v	v	Hebe stricta		v
Podocarpus totara	v	v	Hebe Silicia	-/	v -/
Prumnopitys terruginea	ν	v	Heberia populaca	V -/	V
ει απιτοριεγές ταχιτοιία		V	Hudrocotulo dissosto	v	V
D'astada da va			Hydrocotyle moschata		v+ ./
Dicotyledons	1		Hypochooric radiasta*	-/	ν
	V	,	riypuchuens raulcala" Knightia overlea	v ./	-/
Syzygium smithii*	,	V	Kinginua excelsa	v	V -/
Ageratina adenophora*	$\checkmark$	,	NUILLEA EIICOIUES	_/	V -/
Ageratina riparia*	,	V,	Laurena nuvae-zeidnulde	v	V
Alectryon excelsus	$\checkmark$	V,	Leptecopiiyiid juliipeliild		V
Alseuosmia banksii		$\checkmark$	серинена сенена		ν

	M	Ρ		М	Ρ
Leptospermum scoparium	$\checkmark$	$\checkmark$	Astelia trinervia		$\checkmark$
Leucopogon fasciculatus	$\checkmark$	$\checkmark$	Baumea tenax		$\checkmark$
Litsea calicaris	$\checkmark$	$\checkmark$	Bromus sp. *	$\checkmark$	
Lobelia anceps	$\checkmark$		Bromus willdenowii*	$\checkmark$	
Lophomyrtus bullata	$\checkmark$		Caladenia chlorostyla		$\checkmark$
Lotus pedunculatus*	$\checkmark$		Carex dissita		$\checkmark$
Ludwigia palustris*		$\checkmark$	Carex lambertiana		√+
Macropiper excelsum	$\checkmark$	$\checkmark$	Carex secta		√+
Melicytus macrophyllus	$\checkmark$	$\checkmark$	Carex spinirostris		$\checkmark$
Melicytus ramiflorus	$\checkmark$	$\checkmark$	Carex virgata		$\checkmark$
Metrosideros carminea	$\checkmark$		Collospermum hastatum	$\checkmark$	$\checkmark$
Metrosideros diffusa	√+	$\checkmark$	Cordyline australis	$\checkmark$	$\checkmark$
Metrosideros fulgens	$\checkmark$	$\checkmark$	Cordyline banksii	$\checkmark$	$\checkmark$
Metrosideros perforata		V	Cortaderia selloana*		V
Mida salicifolia		√ <b>+</b>	Corvbas cheesemani		√+
Mvrsine australis		√	Crocosmia × crocosmiiflora*	•	V
Nertera dichondrifolia	√	v	Dianella nigra		√
Oenanthe nimninelloides*	•	v	Drymoanthus adversus	√+	•
Olearia furfuracea		v	Farina aestivalis	•	
Olearia rani		v v	Farina autumnalis		•
Peneromia urvilleana	v	v v	Farina mucronata	v v	√
Pittosporum cornifolium	√+	v	Erevcinetia banksii	v v	v
Pittosporum eugenioides	V I	٧	Gabria lacera	v 1/	v v
Pittosporum tenuifolium		v √	Gabria nauciflora	v	 √_⊥
Pomaderris amoena		v v	Calmia paucinora Calmia setifolia		v + √⊥
Prupolla vulgaric*	./	v 1/	Cabria vanthocarna		v + ./
Prunus componulata*	v ∍/⊥	v 1/	Hodychium gərdnəriənum*		v v
Prunus campanulata Decudopapay arborous	V+ ./.	v ./		./	v
Pseudopanax arboreus	v+ ./	v ./	Totolus Idilatus	v	
P seuuopariax crassitolius D srassifolius x D lossopii	V	v ./	Ichthyostomum pygnaeum	V	-/
P. Classilollus × P. lessollil		v ./	Isolepis inunuala		v
Ranunculus amprilunctius	-/	V	Lanidosporma latoralo		v
Ranunculus repens	v -/		Microloona avonaçoa	-/	v
Raukaua eugerieyi Raldana (Canasia) natasitia*	V		Microlaena atinaidaa	V - / .	-/-
Rolland (Senecio) pelasilis**	V+ _/		Microliaena supolues	V+ _/	V+
Rubus cissolaes	v		Microus uniona Maralatia affinia	ν	v
Rubus muticosus agg. *	V	/	Morelotia aminis		V /.
Scheffiera digitata	V	ν	Nematoceras macrantnum	1	v+ /
Senecio dipinnatisectus*	v		Nematoceras trilodum	v	v
Senecio hispidulus	V		Oplismenus nirtellus	ν	V
Solanum aviculare	v	,	Phoenix canariensis*		$\vee +$
Solanum nigrum*		V,	Phormium tenax		V
Solanum pseudocapsicum*		, v	Pterostylis alobula	,	√+
Sophora microphylla	,	, v	Pterostylis banksii	V	√+ ,
Streblus heterophyllus	V	$\checkmark$	Pterostylis trullifolia	,	√,
Syzygium maire	$\checkmark$	,	Rhopalostylis sapida	√,	√,
Toronia toru		√_	Ripogonum scandens	√ <sub>.</sub>	$\checkmark$
Ulex europaeus*		$\checkmark$	Schedonorus arundinaceus*	$\checkmark$	
Veronica arvensis*	$\checkmark$		Schoenus maschalinus		
Vicia sativa*	$\checkmark$		Schoenus tendo		$\checkmark$
Vitex lucens	$\checkmark$	$\checkmark$	Singularybas oblongus	$\checkmark$	$\checkmark$
Wahlenbergia violacea	$\checkmark$		Thelymitra aff. longifolia		$\checkmark$
Weinmannia silvicola	$\checkmark$	$\checkmark$	Thelymitra pulchella Thelymitra sp		
Monocotyledons			Tradescantia fluminensis*	√+	v √
Acianthus sinclairii		$\checkmark$	Uncinia banksii		√ <sub>.</sub>
Allium triquetrum*		$\checkmark$	Uncinia uncinata	$\checkmark$	$\checkmark$
Anthoxanthum odoratum*	$\checkmark$		Uncinia zotovii		√+
Apodasmia similis		$\checkmark$	Winika cunninghamii	√+	
Asparagus scandens*	$\checkmark$	$\checkmark$			
Astelia solandri	$\checkmark$				