

tree with pale blue fruit and broad leaves. This showed certain similarities to Cordyline kasper which we saw a little further on. C. kasper comes from the Three Kings Islands and is not yet well known in New Zealand but is now available from nurserymen. Its broad leaves and sturdy trunk distinguish it from C. australis, but the similarity to the Norfolk Island species and the fact that the Auckland and Northland C. australis varieties are wider leaved than the N.Z. average suggests some connection of all three species in the not too distant past.

A tree with leaves like broad rewarewa leaves proved to be a Macadamia. This is a Queensland native now grown extensively in Hawai and California as a commercial crop, producing very hard shelled nuts which have a very pleasant flavour.

Other plants in this area were Xeronema callistemon, which in late spring has brilliant red brush like flowers; and Elingamita johnsonii, another Three Kings tree which is rarely seen outside special gardens.

Stuart Dawes, who last year intrigued us with his slides and lecture about Central and South American plants for our orchards and gardens, showed us some of his present plants under test. Probably of most interest were the Pepinos, which when selected for the best strains should provide a very tasty new plant for our gardens. Also the Naranjilla, from the Solanum family, which looks like a rather prickly leaved rangiora and produces orange-like fruit for juice purposes. It could be the basis for a fruit juice industry.

To complete the morning we had a quick look through some of the labs on the top floor of the Hamilton Building and a glance at the work on plant physiology being done there.

After lunching in secluded spots in the grounds we drove to the Centennial Scenic Drive where we spent a short time looking at the Park Information Centre and the nature trails now being set up there. Then on to Spragg's Bush, where a circular track took us through fairly typical Waitakere bush with a couple of large kauris and brought our varied day to a close.

FLAT BUSH AND TOTARA PARK - 21st. June

Flat Bush east of Papatoetoe was new to most of us and proved to be an interesting remnant of kahikatea bush which is now preserved as a reserve and should develop and thicken up as time passes. It appears to have been grazed as part of a farm and the eastern areas especially have very light undergrowth, but new small plants are now developing well. As in the case of Miller's Bush at Warkworth, we append a list of species for comparison with lists of later visitors to gauge what changes are brought about by exclusion of cattle etc.

The area as its name implies lies in a wide flat valley and must have once been a typical example of the kahikatea bush which supplied such a vast quantity of white pine for New Zealand

butterboxes up to the 1930's, and there are still many good kahikatea present. Other features are one or two very large Tetrapathaea tetrandra vines towards the north end which must be a good age, having diameters of 10-12 centimetres and rising sixteen metres as they clamber over adjacent trees. Their reproductive effect is seen in numerous young plants in many distant parts of the bush.

There is also a very widespread element of Coprosma arborea present, and the young plants proved very difficult to distinguish from C. spathulata which is also present but to a minor extent: whereas in some districts the young plants up to 1.5 m (5 ft) have numerous points of difference, brown backs, variation in petiole wings, oval lamina etc., in this case the young C. arborea was very often spathula-like and only the berries on small plants and two rows of hairs on the underside of petioles in C. spathulata (a tip from Mrs Marie Taylor) made diagnosis possible. There were many tall C. arborea present and one example was measured at breast height as about 100 cm circumference, which is about 32 cm (13 inches) diameter, and its height was well over the 10 m given by Allan as usual for the species. Similar trees at the Cascades are also about 15 m and this appears to happen when competition for light occurs.

Distinguishing Melicope simplex from Melicytus micranthus proved an interesting task and it seems that an article from Miss Crookes on means of separating the many similar small leaved plants would be very helpful, especially if good line drawings were made to accompany it.

The following list of species made in about 1½ hours can be considered preliminary, rather than exhaustive.

FUNGI Numerous small species and also basket fungus.

FERNS AND ALLIES

Lycopodium billardieri	Elechnum frazeri
Asplenium flaccidum	Cyathea dealbata
" falcatum	Pteridium aquilinum
" lamprophyllum	var. esculentum
" lucidum	Pteris tremula
Blechnum filiforme	Pyrrosia serpens

GYMNOSPERMS

Dacrydium cupressinum
Podocarpus dacrydioides
" totara

MONOCOTYLEDONS

Collospermum hastatum
Cordyline australis
Freycinetia banksii
Oplismenus sp.
Ripogonum scandens
Rhopalostylis sapida

DICOTYLEDONS

Alectryon excelsus	Laurelia novae-zelandiae
Beilschmiedia taraira	Melicope ternata
" tawa	" simplex
Clematis paniculata	Meliccytus micranthus
Coprosma arborata	" ramiflorus
" areolata	Metrosideros perforata
" spathulata	" fulgens
Corynocarpus laevigatus	" diffusa
Cyathodes fasciculata	Nestegis lanceolata
Dysoxylum spectabile	Pseudopanax crassifolium
Geniostoma ligustrifolium	Rubus australis
Hedycarya arborea	Tetrapathaea tetrandra
Knightia excelsa	Vitex lucens

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Totara Park Reserve is fairly well known to our members, so we have simply listed only those plants not noted as present at Flat Bush. As the two areas are not very far apart, this list gives some indication of what has gone from Flat Bush in the years of farm grazing. Noted at Totara Park were some large tawa specimens and a Cordyline australis 17 metres tall under taller trees.

FERNS ETC.

Tmesipteris tannensis	Dicksonia squarrosa
Adiantum cunninghamii	Lastreopsis glabella
Elechnum capense	" velutina
" lanceolata	Leptopteris hymenophylloides
Cyathea medullaris	Pteris macilenta
Cyclosorus penniger	

GYMNOSPERMS

Agathis australis
Phyllocladus trichomanoides
Podocarpus ferrugineus
" spicatus

MONOCOTYLEDONS

Cordyline banksii
Earina mucronata
Uncinia sp.

DICOTYLEDONS

Aristotelia serrata	Leptospermum scoparium
Brachyglottis repanda	" ericoides
Carpodetus serratus	Miehlenbeckia australis
Coprosma australis	Myrsine australis
" lucida	Paratrophis microphylla
Fuchsia excorticata	Parsonsia sp. (large)
Haloragis sp.	Schefflera digitata