

Cyperus sanguinolentus *
<https://inaturalist.nz/observations/41018183>

Cyperus ustulatus

Dactylis glomerata *

Dianella nigra

Dichelachne crinite

Eleocharis acuta

Eleocharis gracilis
<https://inaturalist.nz/observations/39715140>

AK 380158

Ficinia nodosa wīwī

Ficinia spiralis pīngao

Gahnia lacera

Holcus lanatus *

Isachne globosa

Isolepis cernua

Isolepis inundata
<https://inaturalist.nz/observations/39642711>

AK 380161

Isolepis prolifera

Isolepis sepulchralis *
<https://inaturalist.nz/observations/39642713>

Juncus acuminatus *

Juncus articulatus *

Juncus bufonius *

Juncus dichotomus *

Juncus edgariae

Juncus effusus *

Juncus pallidus

Juncus prismatocarpus

Lachnagrostis billardierei

Lagurus ovatus *

Lepidosperma laterale

Lilaeopsis novae-zelandiae

Lilium formosanum * Formosan lily

Luzula picta var. *picta*

Machaerina articulata

Machaerina juncea

Machaerina rubiginosa

Machaerina sinclairii

Microtis unifolia

Morelotia affinis

Paspalum dilatatum *

Paspalum distichum *

Phormium tenax harakeke

Poa anceps

Pterostylis banksia

Rhopalostylis sapida

Rytidosperma biannulare
<https://inaturalist.nz/observations/39715138>

Schoenoplectus tabernaemontani

Schoenus apogon

Schoenus maschalinus

Spinifex sericeus kōwhangatara

Sporobolus africanus *

Triglochin striata

Typha orientalis raupō

Vulpia sp. *

Zoysia pauciflora
<https://inaturalist.nz/observations/38563386>

Purewa Revisited: 33 years of change in an urban Auckland cemetery

Timothy J. Martin

Inspired by enforced lockdown in eastern Auckland suburbia, and a 1987 article by a botanical forefather (Gardner 1987), I explored an overlooked place almost on my doorstep. Purewa Cemetery, one of the oldest cemeteries in Auckland, sweeps down a broad slope from St Johns Road to the south-eastern railway line and the edge of Purewa Creek. A full account of its early history, and its vegetation in the mid 1980s, is provided by Rhys Gardner's article "Purewa and its Cemetery", published in 1987. The

intent of this article is to provide an account of key changes over the past 33 years, particularly changes in tree species and cover, and any new additions to its naturalised flora. The article covers the same area described by Gardner (1987), and includes the entrance drive between St Johns Road and Parsons Road known as Fancourt Reserve. This article excludes an account of mown lawns, and the well-kept gardens associated with the cemetery buildings. A notated species list is provided in Appendix 1.

Main burial areas

Gardner (1987) described the ornamental trees in the cemetery as “growing well but otherwise rather ordinary” and I am rather inclined to agree. For a cemetery established in the late 1880s, the site could have had a more varied and mature tree cover, with a high representation of indigenous or otherwise notable species. The current tree flora is dominated by common urban exotics such as liquidamber (*Liquidamber styraciflua*), pin oak (*Quercus palustris*), silver birch (*Betula pendula*), monkey apple (*Syzygium smithii*), poplar (*Populus* spp.) and Japanese cedar (*Cryptomeria japonica*). As noted by Gardner, pōhutukawa (*Metrosideros excelsa*) is found throughout the cemetery, often forming avenues along roadways, with a canopy up to 12 m tall. Pūriri (*Vitex lucens*) and tōtara (*Podocarpus totara*) up to one metre diameter are the next most frequent indigenous trees. Six of the seven English oaks (*Quercus robur*) mapped by Gardner survive, and are now up to 162 cm diameter (Table 1). Average growth rates for five of the oaks over the past 33 years indicate that some of the oaks have nearly stopped growing in diameter, while others continue to increase in diameter c.7 mm per year. The largest oak mapped by Gardner, at 170 cm in 1986, is no longer present. Other impressive exotic trees present in the cemetery include a mature manna gum (*Eucalyptus viminalis*) and bangalay (*E. botryoides*), a giant sequoia (*Sequoiadendron giganteum*), and three old and beautifully gnarly *Magnolia grandiflora*. With the passage of time, more recent plantings, including a bunya bunya (*Araucaria bidwillii*) will add to the tree cover of the site.

A key change since 1986, and one that I deplore, is the loss of botanical character and wildness caused by the oldest trees reaching the end of their lives, and by overly judicious maintenance. In contrast to the 1980s, much of the ground cover could be now be summarised as grass, graves, and glyphosate (Fig. 1). Gardner mapped the ancient cabbage trees (tī kōuka; *Cordyline australis*) alongside the drive between St Johns Road and Parsons Road (Fancourt Reserve), describing them as 8 m tall and hollow-based. These were evidently old in the 1980s, and now have been reduced to one lone survivor: a hollow stump (65 cm diameter) with a few re-sprouted stems (Fig. 2). The old hawthorn (*Crataegus monogyna*) trees, the largest being 9 m tall, are also all gone – victims of age, or perhaps felled due to their old age – an undesirable form of ‘arboricultural euthanasia’. It would be fitting if the cemetery restored these historic features with new plantings.

The small tributaries of Purewa Creek visible in aerial photographs from 1940, and also shown in Gardner’s map, have also disappeared in the name of progress. The two westernmost streams are now only overland flow paths. The third stream, on the

eastern boundary, has been filled in for its lower reaches, and, in the upper reaches, retains a poorly defined stream channel that flows during heavy rain.

Gardner’s 1987 account also speaks to an almost whimsical wildness of the place, referring to trees ‘redeeming themselves by having naturalised on cracking masonry of older graves’, sexton’s bride (*Raphiolepis umbellata*) decking “hundreds of graves”, and four species of rose (*Rosa canina*, *R. rubiginosa*, *R. gallica*, and *R. wichuriana*) spreading and suckering over graves, paths, and masonry. Pōhutukawa were noted as having established in

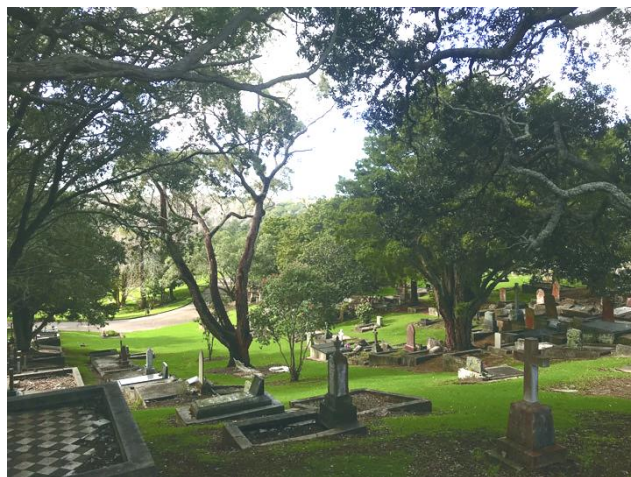


Fig. 1. Grass, graves, and glyphosate – Central east-facing slope of cemetery with treeland dominated by totara. Mature bangalay (*Eucalyptus botryoides*) left of centre with *Metrosideros collina* to right of base, 29 Aug 2020. All photos by the author.



Fig. 2. Old tī kōuka in Fancourt Reserve, St Johns, 25 Apr 2020.

their hundreds, and Gardner also found the first known naturalisation of Kermadec pohutukawa (*Metrosideros kermadecensis*) on the mainland. His writings speak of a botanical exuberance that is now sadly missing. Today, with a regular mowing regime and generous application of herbicides, the cemetery has a “clean and tidy” appearance. Only one sexton’s bride was found adorning a grave, and most self-sown plants are restricted to the lesser-maintained wild corners. Small seedlings of the indigenous tī kōuka, karamū (*Coprosma robusta*), coastal karamū (*C. macrocarpa* var. *minor*), karo (*Pittosporum crassifolium*), ngaio (*Myoporum laetum*), and tōtara occur occasionally in cracks in the graves, alongside seedlings of common exotics such as black nightshade (*Solanum nigrum*). Less common naturalised plants of the burial areas include silky oak (*Grevillea robusta*), also noted as naturalised by Gardner (1987), and camellia (*Camellia* sp.), with several seedlings found on one old grave. The absence of any taller trees and shrubs on the graves, and in some places the remains of old stumps, points to maintenance and removal of woody species on graves. Other naturalised species not seen in 2020, but noted by Gardner in 1986, include buddleia (*Buddleja davidii*) and lantana (*Lantana camara*); these are now presumably absent due to weed management.

Wildflower area

In the southwest corner of the cemetery (E-Block), a volunteer has recently begun a beautification programme, with plantings of flowers on old graves. The initiative has the support of cemetery management, and in May 2020 approximately 20 graves were adorned with botanical colour. Many of the flowers planted are now naturalising, including poppies (*Papaver* sp.), sweet alyssum (*Lobularia maritima*), Californian poppy (*Eschscholzia californica*), marigolds (*Tagetes* sp.), nasturtium (*Tropaeolum majus*), evening primrose (*Oenothera biennis*), sweet pea (*Lathyrus latifolius*), columbines (*Aquilegia* sp.), foxglove (*Digitalis purpurea*), and pot marigold (*Calendula officinalis*). These shallow rooted, short-lived species pose little threat to the



Fig. 3. Abyssinian banana naturalised on the boundary of Purewa Cemetery and Tahapa Reserve East, 26 Apr 2020.



Fig. 4. Forest in eastern gully, 24 Apr 2020.

structural integrity of graves, and perhaps in time this initiative might be embraced by the wider cemetery, allowing for a return to a wilder state befitting of its years.

Table 1. Diameter of English oaks (*Quercus robur*) in 1986 and 2020. Measurements in 1986 from Gardner (1987).

Tree	Diameter (cm) in 1986	Diameter (cm) in 2020	Increase in diameter (cm)	Average diameter growth rate per year (mm) 1986-2020
1	120	140	20	6
2	80	96	16	5
3	140	162	22	7
4	120	123	3	1
5	120	127	7	2

Forest

Two areas on the margins of the cemetery are forest that receive little attention. Along the western boundary, a line of mature exotic trees including monkey apple and macrocarpa (*Cupressus macrocarpa*) increase in width on the lower slopes to form a patch of dense exotic forest where mature tree privet (*Ligustrum lucidum*) is also in the canopy. This forest straddles the boundary of the cemetery with the adjacent Tahapa Reserve East. Naturalised plants are common here, arising from seeds spread by birds or the dumping of waste from the cemetery gardens. The usual suspects are present, such as woolly nightshade (*Solanum mauritianum*), Canary Island palm (*Phoenix canariensis*), stinking iris (*Iris foetidissima*) and a yellow-flowered canna lily (*Canna* sp.), but there is also a naturalised grove of Abyssinian banana (*Ensete ventricosum*) (Fig. 3) and dense carpets of pin oak seedlings. On the eastern boundary of the cemetery, in a steep-sided gully backed by houses along Gowing Drive, the vegetation is dominated by several tall suckering clumps of a large-seeded banana (*Musa* sp.), māpou (*Myrsine australis*), and māhoe (*Melicactus ramiflorus*), festooned with morning glory (*Ipomoea indica*) (Fig. 4). Species present in the understorey include fairy crassula (*Crassula multicava*) and wild seedlings of bangalow palm (*Archontophoenix cunninghamiana*).

Gardner's 1986 map shows the land between the railway line and Purewa Creek as mixed scrub dominated by tree privet and brush wattle (*Paraserianthes lophantha*), with patches of bracken (*Pteridium esculentum*), a mature English oak, and several old hawthorn. On a late autumn day, and in an almighty deluge of rain, I set off with the company of Peter Hull to explore this area. Rather than crossing the railway line, we accessed the area via Kepa Bush Reserve (Gardner 2009, Cameron 2015) to avoid unnecessary collisions with trains. After considerable scrub-bashing and stream fording, we came to the site of Bishop Selwyn's 1844 settlement. Today, a few patches of rank grassland and bracken remain on the banks of the creek, but the vegetation here has now developed into exotic forest dominated by tree privet, with localised patches of Chinese privet (*Ligustrum sinense*) and māpou. Like Gardner, we also searched in vain for any sign of the settlement; a few lengths of rusting iron were not enough to get our historic juices flowing. Ivy (*Hedera helix*) was locally abundant in the understorey, and most indigenous plants were restricted to the immediate banks of the creek – often near-vertical with exposures of sandstone. Here, the indigenous ferns huruhuruwhenua (*Asplenium oblongifolium*), *Polystichum neozelandicum*, rough maidenhair fern (*Adiantum hispidulum*), and button fern (*Pellaea*

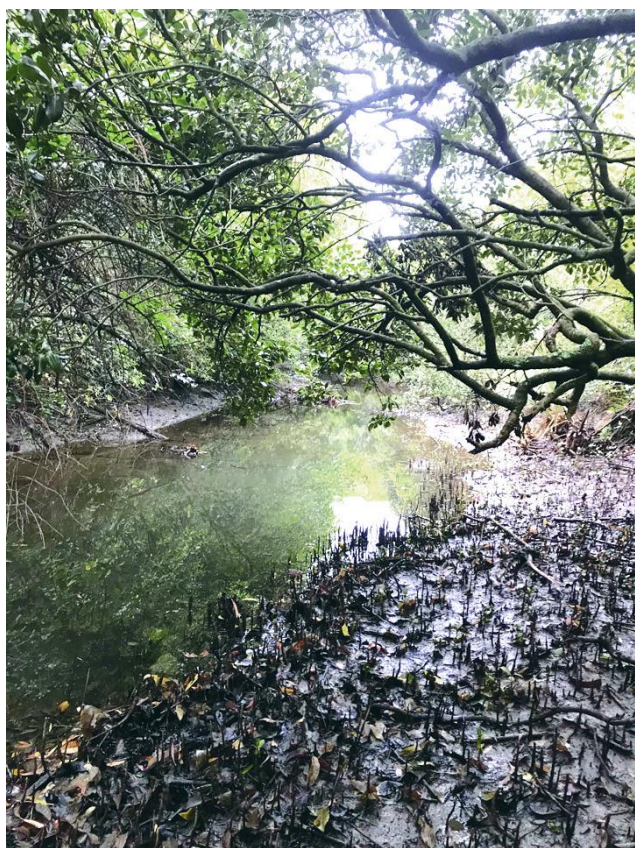


Fig. 5. Mangroves in Purewa Creek near the site of Bishop Selwyn's 1844 settlement, 3 May 2020.



Fig. 6. One of the old English oaks (*Quercus robur*) dating from the 1800s, edge of Purewa Creek, 3 May 2020



Fig. 7. Aerial photographs of Purewa Cemetery in 1940 (left) and 2020 (right). Sourced from Auckland Council GeoMaps mapping service. <https://www.aucklandcouncil.govt.nz/geospatial/geomaps/Pages/default.aspx>

rotundifolia) are present, along with *Carex lambertiana* and *C. flagellifera*. Mangroves (*Avicennia marina*) 3–4 m tall fill most of the width of the tidal creek at this point (Fig. 5). Where small tributaries have deposited sediment at their confluences with the main creek, other indigenous shoreline species are present including tūtae kōau (New Zealand celery; *Apium prostratum*), pūrua grass (marsh clubrush; *Bolboschoenus fluviatilis*), toetoe upokotangata (giant umbrella sedge; *Cyperus ustulatus*), and māakoako (sea primrose; *Samolus repens*). Further downstream, the old English oak found here by Gardner is still in good health; an impressive tree surrounded by tree privet (Fig. 6). This secluded and forgotten creek-side is set for substantial change; by the time of writing in September 2020, the vegetation clearance for the construction of the Glen Innes to Tāmaki Drive Shared Path had been completed. A swathe of tree privet has been felled and soon the area will be a commuter route.

Tree cover past, present, and future

The tree cover of Purewa Cemetery has increased substantially over the past 80 years (Fig. 7). In 1940, there were few mature trees, and most of the tree cover was recent plantings alongside access roads. A notable increase in tree cover then occurred from 1940 to 1959. This change was primarily due to the increasing maturity of trees alongside the access roads visible in the 1940 aerial photograph (Fig. 7, left), and new plantings in the main burial areas. By 2020 (Fig. 7, right), mature trees occur as avenues alongside most of the access roads, and throughout

the main burial areas as specimen trees. New plantings have also been completed in the north-east. However, a gain in tree cover across the cemetery with time is not necessarily cumulative. Mature trees of shorter-lived species, such as poplar, silver birch, and *Eucalyptus* species are entering decline, with canopy die back and the formation of tree hollows. In the winter of 2020, older trees throughout the cemetery were felled. Hopefully their loss is addressed by additional plantings, with a focus on indigenous species and long-lived exotic species of historical or botanical merit. A progression from weedy exotics, such as monkey apple and tree privet, to species that would have been characteristic of this valley before human settlement, would also be highly desirable. Plantings of kohekohe, taraire (*Beilschmiedia tarairi*), pūriri, and kahikatea (*Dacrycarpus dacrydioides*) would bolster the ecological linkages across the valley with Kepa Bush, and the urban forest remnants of the wider urban area. Pest plant control and indigenous plantings would also protect the one remaining area of forest vegetation of natural origin in the eastern gully – the persistence of this area is currently precarious at best.

Acknowledgements

I gratefully acknowledge Rhys Gardner for writing the 1987 article that inspired this botanical odyssey, and his comments on the draft. Nick Goldwater provided editorial input, and Mike Wilcox provided his Purewa tree list that assisted with plant identification.

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Appendix. Annotated species list for Purewa Cemetery, excluding mown lawns and well-kept gardens, based on author's observations from April-September 2020.

* = exotic	o = occasional	dbh = diameter at 1.2 m (centimetres)
a = abundant	s = scarce (<5 individuals present)	MW = recorded by Mike Wilcox 2012
c = common		P = only planted specimens seen
l = local		RG = recorded in 1987 by Rhys Gardner

Ferns and fern allies

<i>Adiantum hispidulum</i>	l	Purewa Creek forest
<i>Asplenium oblongifolium</i>	l	Purewa Creek forest
<i>Cyathea medullaris</i>	s	Purewa Creek forest
<i>Nephrolepis cordifolia</i> *	l	dense patches in less-maintained areas
<i>Pellaea rotundifolia</i>	l	Purewa Creek forest
<i>Polystichum neozelandicum</i>	s	banks of Purewa Creek
<i>Psilotum nudum</i>	s	growing in pot on grave
<i>Pteridium esculentum</i>	l, RG	Purewa Creek forest and eastern gully
<i>Pteris tremula</i>	o	eastern gully, western boundary forest
<i>Pyrrosia elaeagnifolia</i>	c	epiphytic on cemetery trees

Conifers

<i>Agathis australis</i>	o, P, MW	recent planting
<i>Agathis robusta</i> *	s, P	eastern gully
<i>Araucaria bidwillii</i> *	s (1), P, MW	one cultivated tree, c. 8 m tall
<i>Araucaria heterophylla</i> *	o, P	cultivated tree
<i>Cedrus deodara</i> *	o, P, MW	cultivated tree
<i>Cryptomeria japonica</i> 'Elegans' *	s (1), P	one mature planted specimen in main burial area
<i>Cryptomeria japonica</i> *	c, RG, MW	planted specimens throughout
<i>Cunninghamia lanceolata</i> *	s (1), P	cultivated tree, western side of cemetery in main burial area
<i>Cupressus macrocarpa</i> *	l, RG, MW	large trees on western boundary
<i>Cupressus pendula</i> *	s (1), P, MW	one cultivated tree, synonym <i>C. funebris</i>
<i>Cupressus sempervirens</i> *	o, P, MW	cultivated tree
<i>Pinus patula</i> *	o, P	cultivated tree
<i>Podocarpus totara</i>	c, RG, MW	planted specimens throughout and saplings on graves
<i>Sequoiadendron giganteum</i> *	s (1), MW	mature tree on eastern boundary
<i>Taxodium distichum</i> *	o, P, MW	cultivated tree, Fancourt Reserve
<i>Thuja plicata</i> *	s, P, MW	cultivated tree

Monocots

<i>Agapanthus praecox</i> *	l	several naturalised patches, especially on cemetery boundaries
<i>Allium triquetrum</i> *	l	naturalised in less maintained areas
<i>Alstroemeria</i> sp. *	l	dense carpet in shade of trees on boundary of Fancourt Reserve
<i>Archontophoenix cunninghamiana</i> *	o	small seedlings in exotic forest, eastern gully
<i>Aristea ecklonii</i> *	l	naturalised in eastern gully
<i>Asparagus scandens</i> *	o	naturalised in less maintained areas
<i>Bolboschoenus fluviatilis</i>	l	freshwater seepage on edge of Purewa Creek
<i>Carex flagellifera</i>	l	banks of Purewa Creek
<i>Carex lambertiana</i>	l	banks of Purewa Creek
<i>Carex virgata</i>	l, P	eastern gully
<i>Chlorophytum comosum</i> *	s	growing from dumped garden waste, western boundary
<i>Clivia miniata</i> *	l	growing from dumped garden waste, western boundary
<i>Colocasia esculentum</i> *	l	several patches in eastern gully

<i>Cordyline australis</i> *	I, RG, MW	old trees in Fancourt Reserve, planted and self-sown elsewhere throughout
<i>Cortaderia selloana</i> *	o	eastern gully
<i>Cyperus ustulatus</i>	I	banks of Purewa Creek
<i>Ehrharta erecta</i> *	c	widespread, also epiphytic on mangroves in creek
<i>Hedychium gardnerianum</i> *	s	western boundary forest
<i>Heliconia subulata</i> *	s	spreading vegetatively into Fancourt Reserve from adjacent property
<i>Iris foetidissima</i> *	I	western boundary forest and at bases of mature trees throughout
<i>Lomandra longifolia</i> *	I, P	eastern gully
<i>Monstera deliciosa</i> *	I	large clump spreading vegetatively, eastern boundary
<i>Musa</i> sp. *	I	several large suckering clumps in eastern gully, fruiting
<i>Phoenix canariensis</i> *	I	western boundary forest, seedlings only
<i>Rhoplostylis sapida</i>	I	Purewa Creek forest, established seedling
<i>Trachycarpus fortunei</i> *	o	occasional mature palms to 10 metres tall throughout
<i>Yucca gigantea</i> *	s	growing from dumped garden waste, western boundary
<i>Zantedeschia aetheopium</i> *	s	growing from dumped garden waste, western boundary

Dicot trees, shrubs, woody climbers

<i>Acacia longifolia</i> *	s (1), MW	naturalised shrub near entrance
<i>Acuba japonica</i> *	o, P	small shrub of shaded gardens
<i>Agonis flexuosa</i> *	o, RG, MW	occasional trees in western half of cemetery, some perhaps self-sown on graves
<i>Alectryon excelsus</i>	o, P, RG, MW	cultivated tree
<i>Anredera cordifolia</i> *	I	growing from dumped garden waste, western boundary
<i>Araujia sericifera</i> *	I	railway edge of cemetery
<i>Avicennia marina</i> subsp. <i>australasica</i>	I, RG	abundant in tidal reaches of Purewa Creek
<i>Betula pendula</i> *	c, P, MW	mature trees throughout, some older specimens felled winter of 2020
<i>Camellia</i> sp. *	o	occasional small trees throughout, seedlings wild on one grave
<i>Casuarina cunninghamiana</i> *	o, RG, MW	cultivated tree
<i>Cinnamomum camphora</i> *	s (1), P	cultivated tree
<i>Coprosma macrocarpa</i> var. <i>minor</i> *	s (1), RG	one established shrub c. 1.5 metres tall on old grave
<i>Coprosma repens</i>	o	planted shrubs and naturalised, including as an epiphyte
<i>Coprosma robusta</i> *	I, RG	shrubs and small trees in forest areas, and occasional seedlings on graves
<i>Corynocarpus laevigatus</i>	o, RG, MW	cultivated tree, Fancourt Reserve
<i>Crataegus monogyna</i> *	I, RG, MW	Purewa Creek forest. Old trees within cemetery noted by RG have been removed
<i>Dysoxylum spectabile</i>	o, P	occasional mature cultivated tree
<i>Erythrina</i> × <i>sykesii</i> *	o, P	cultivated tree
<i>Eucalyptus botryoides</i> *	o, P, RG, MW	mature tree, noted as naturalised by RG
<i>Eucalyptus viminalis</i> *	o, P, MW	cultivated tree
<i>Euonymus japonica</i> *	o, RG, MW	naturalised, occasional throughout and also epiphytic
<i>Fatsia japonica</i> *	o	naturalised shrub
<i>Ficus pumila</i> *	o, RG	on old graves and boundary fences
<i>Ficus rubiginosa</i> *	o, RG	epiphytic on <i>Phoenix canariensis</i>
<i>Fraxinus</i> sp. *	c, MW	cultivated trees. <i>F. americana</i> , <i>F. angustifolia</i> , <i>F. excelsior</i> , and <i>F. velutina</i> noted by Mike Wilcox (2012)
<i>Gomphocarpus fruticosus</i>	o	on old graves
<i>Grevillea robusta</i> *	o, RG, MW	several mature trees, including self-sown adults and one seedling on graves
<i>Hedera ilex</i> *	I	Purewa Creek forest and on old graves
<i>Hedycarya arborea</i>	o	western boundary forest
<i>Hibiscus syriacus</i> *	s	small plant in western boundary forest

<i>Hoheria populnea</i>	o, P	cultivated tree, Fancourt Reserve
<i>Ilex aquifolium</i> *	s (1), P	one old tree, northeastern burial area
<i>Ipomoea indica</i> *	l	eastern gully
<i>Jacaranda mimosifolia</i> *	s (1), P	cultivated tree, western cemetery
<i>Jasminum officinale</i> *	l	naturalised vine, particularly on boundaries of cemetery with adjacent residential gardens
<i>Kunzea robusta</i>	s (1), RG	several mature trees, lower eastern gully
<i>Leptospermum morrisonii</i> "Copper Sheen"	s, P	several small specimen trees, southeast corner
<i>Ligustrum lucidum</i> *	c, RG, MW	dominant tree in Purewa Creek forest, common on western boundary
<i>Ligustrum sinense</i> *	c, RG	Purewa Creek forest, untended areas throughout
<i>Liquidamber styraciflua</i> *	a, P, RG, MW	mature trees throughout (planted), self-seeding or with root suckers at one location
<i>Magnolia grandiflora</i> *	o, P, MW	in main burial area. Two notable old trees as a pair
<i>Magnolia</i> sp. *	o, P, MW	cultivated shrub
<i>Melaleuca citrina</i> *	o, P	cultivated shrub
<i>Melicope ternata</i>	s, P	cultivated tree, Fancourt Reserve
<i>Melicytus ramiflorus</i>	l, RG	eastern gully, and cultivated tree in Fancourt Reserve
<i>Metrosideros collina</i> *	o, P	cultivated shrub
<i>Metrosideros excelsa</i>	c, RG, MW	cultivated tree and naturalised on graves
<i>Metrosideros kermadecensis</i>	c, RG, MW	cultivated tree
<i>Muehlenbeckia complexa</i>	o	western boundary forest
<i>Myoporum laetum</i>	o, RG	small specimen trees and one seedling on old grave
<i>Myrsine australis</i>	l, RG	eastern gully
<i>Nerium oleander</i> *	o, P	cultivated shrub
<i>Nyssa sylvatica</i> *	l, P, MW	several mature trees at cemetery entrance.
<i>Olea europaea</i> *	o, P	cultivated tree
<i>Olearia paniculata</i>	s (1), P	one notably old specimen with a sizeable trunk, Fancourt Reserve
<i>Pittosporum crassifolium</i>	o, RG	occasional small trees throughout, small seedlings wild on graves
<i>Pittosporum eugenoides</i>	o, P	cultivated tree, occasional in main cemetery and Fancourt Reserve
<i>Platanus xacerifolius</i> *	o, P, RG, MW	several mature trees near entrance, and smaller specimens elsewhere
<i>Plectranthus ecklonii</i> *	s	Purewa Creek forest
<i>Populus nigra</i> *	o, P, MW	mature trees alongside cemetery roads
<i>Quercus ilex</i> *	o, RG, MW	trees to 8 metres tall and occasional seedlings, main burial area.
<i>Quercus palustris</i> *	c, P, MW	mature trees throughout, self-sown seedlings in western boundary forest
<i>Quercus robur</i> *	o, P, RG, MW	mature trees to 162 cm DBH, planted late 1800s
<i>Raphiolepis umbellata</i> *	o, RG, MW	on old graves, and banks of Purewa Creek
<i>Schefflera aboricola</i> *	s (1), P	cultivated shrub, Fancourt Reserve
<i>Schefflera actinophylla</i> *	s (1), P	cultivated specimen tree, western cemetery
<i>Solanum mauritianum</i> *	s	small saplings in western boundary forest
<i>Stenocarpus sinuatus</i> *	s, P, MW	several mature trees, one with root suckers. Fancourt Reserve
<i>Syzygium australe</i> *	c, RG, MW	mature trees (presumably planted) on western and eastern boundary, and in Fancourt Res. Naturalised in unkempt areas
<i>Syzygium smithii</i> *	c, RG, MW	mature trees within main burial area, and naturalised in unkempt areas
<i>Tecomaria capensis</i> *	l	growing from dumped garden waste, western boundary
<i>Vitex lucens</i>	c, MW	mature trees throughout main burial area, largest c. 1 metre diam.

Dicot herbs

<i>Acanthus mollis</i> *	o	western boundary forest
<i>Alcea rosea</i> *	s	one self-sown plant on old grave
<i>Aquilegia vulgaris</i> *	l	naturalised from recent flower plantings, western cemetery
<i>Calendula officinalis</i> *	l	naturalised from recent flower plantings, western cemetery

<i>Cuphea hyssopifolia</i> *	s	sparingly naturalised in eastern memorial garden
<i>Digitalis purpurea</i> *	l	naturalised from recent flower plantings, western cemetery
<i>Echium plantagineum</i> *	l	naturalised from recent flower plantings, western cemetery
<i>Erodium moschatum</i> *	o	on old graves
<i>Helminthotheca echioides</i> *	o	herb of old graves and boundary edges
<i>Lamium purpureum</i> *	o	herb of old graves and boundary edges
<i>Lapsana communis</i> *	c	common herb of old graves and boundary edges
<i>Lathyrus latifolius</i> *	l	naturalised from recent flower plantings, western cemetery
<i>Lobularia maritima</i> *	s	naturalised from recent flower plantings, western cemetery
<i>Oenothera biennis</i> *	l	naturalised from recent flower plantings, western cemetery
<i>Oxalis exilis</i>	o	on old graves
<i>Papaver</i> sp. *	s	naturalised from recent flower plantings, western cemetery
<i>Pericallis × hybrida</i> *	o	herb of old graves and boundary edges
<i>Physalis peruviana</i> *	s	Fancourt Reserve boundary
<i>Prunella vulgaris</i> *	o	herb of old graves, lawns, and boundary edges
<i>Samolus repens</i>	l	intertidal banks of Purewa Creek
<i>Senecio vulgaris</i> *	c	common on old graves
<i>Solanum nigrum</i> *	c	present on old graves throughout
<i>Sonchus oleraceus</i> *	o	herb of old graves and boundary edges
<i>Tagetes</i> sp. *	s	naturalised from recent flower plantings, western cemetery
<i>Talinum</i> sp. *	s	sparingly naturalised in eastern memorial garden
<i>Tradescantia fluminensis</i> *	l	western boundary forest
<i>Tropaeolum majus</i> *	l	naturalised from recent flower plantings, western cemetery
<i>Veronica persicaria</i> *	o	herb of old graves and boundary edges
<i>Vicia sativa</i> *	o	on old graves
<i>Viola odorata</i> *	s	naturalised along a boundary fence, Fancourt Reserve

Arch Hill Scenic Reserve, Auckland City

Rhys Gardner

Introduction

This 5 ha 'neglected frontage' of bush with mountain-bike tracks, mown grass and revegetation plantings lies east of Western Springs, on the slope that leads down from the Great North Road to the valley floor and the North-western Motorway (Fig. 1). It has been described by Mike Wilcox (2012: 71) as "Auckland weed forest", and as such probably fills the needs of most of its visitors, who come to ride the bike tracks and can be supposed to require only that its larger plants are thornless and its groundcover soft. The lack of specimens in the Auckland Museum herbarium would also seem to be significant.

It is true that the trees here are not of outstanding age, size or character, and that the most abundant native species are familiar ones: silver tree-fern

(*Cyathea dealbata*), hangehange (*Geniostoma ligustrifolium*), coastal karamu (*Coprosma macrocarpa* subsp. *minor*), and cabbage tree (*Cordyline australis*). But for two reasons, first, on Esler's Principle that "You don't need to go to the Old Man Range to do ecology", and second, "That it is better to know a lot about common species than a little about rare ones" (unattributed), its value as a natural habitat seems to deserve a re-evaluation. Here I describe its vascular flora (for a species list see Appendix); in an ideal world its equally educational lichens and bryophytes would have been covered too.

History

The reserve consists of bush on the slopes and on the lower ground two areas of mown grass, between which lies a motorway-side strip of plantings of