

Some interesting plants in the Auckland University grounds

M. D. Wilcox

Thirty eight people turned out on 19 September 1998 for the guided walk around the grounds of the University of Auckland, led by Grounds Superintendent, Tony Palmer. In recording the highlights, it is hard to know where to start, or stop, such was the diversity of botanical treasures to be found in intimate corners between buildings or in the thematic collections in various parts of the campus. In concluding the morning's walk, Tony, who has cared for these grounds for thirty years, informed us that we had covered only about a quarter of his estate. Here then is but a small selection of species, emphasising the northern offshore island New Zealand trees and shrubs, and some of the more rarely-seen exotics.

New Zealand plants

Alectryon grandis Cheeseman

Three Kings titoki. Great Island, Three Kings Islands. Very rare (Oliver 1948). Cultivated trees on Auckland University campus. Sapindaceae.

Astelia chathamica (Skottsb.) L.B.Moore

Chatham Islands. Sometimes cultivated, and known as 'Silver Spear'. Asteliaceae.

Beilschmiedia tawaroa A.E.Wright

Tawaroa. Waiwera to Northland, near the coast, and Bay of Plenty. Hen & Chicken Islands, Lady Alice Island, Cavalli Islands, Poor Knights, Fanal, Little Barrier, Great Barrier, Arid Island, Kawau Island, Ponui, Tiri, Cuvier, Mercury Islands (Wright 1984). A large tree. On Little Barrier, there is no tawa, but plenty of tawaroa. The University specimen is from Aorangi, Poor Knights. Lauraceae.

Carmichaelia williamsii Kirk

Poor Knights, Little Barrier, Hauraki Gulf, Aldermen Islands. Near Hicks Bay, East Cape. Shrub to 4 m. Flattened branchlets. Yellow flowers. Fabaceae: Fabioideae.

Coprosma acutifolia Hook.f.

Tree to 10 m. Kermadecs (Sykes 1977). Rubiaceae.

Coprosma waima A.P.Druce

A distinctive species discovered in 1986 on Mt Hauturu, 640-670 m, Waima Range, Northland, New Zealand (Druce 1989, Forester 1989). Opposite and decussate, sessile leaves. Cultivated examples at the Auckland University. Rubiaceae.

Cyathodes robusta Hook.f.

Chatham Island mingimingi. Chatham Islands. Syn. *Styphelia robusta* (Hook. f.) Sleumer. Cultivated at Auckland University. Epacridaceae.

Elingamita johnsonii G.T.S.Baylis

Three Kings Islands. West Island and Hinemoa Rock in the Princes Islands (Baylis 1951). Tree to 4 m. Cultivated in Auckland. Hort Research, Mt Albert, and Auckland University. Red fruits. Myrsinaceae.

Geranium traversii Hook.f.

Chatham Islands. Has large flowers. Cultivated at Auckland University. Geraniaceae.

Hebe insularis (Cheeseman) Cockayne & Allan

Three Kings Islands (Oliver 1948). Cultivated at Auckland University, along with many other northern hebes. Scrophulariaceae.

Hedycarya "Poor Knights"

A distinctive and attractive shrub in cultivation. From the Poor Knights Islands. Monimiaceae.

Ipomoea cairica (L.) Sweet

Slender, vigorous climber with 5-7 lobed leaves. Tropics. Northland. Cultivated in Auckland (formerly *I. palmata* Forssk.). Raoul Island, Norfolk Island (abundant). Good example at Maori Studies building, Auckland University.

Macropiper excelsum subsp. *peltatum* R.O.Gardner

Three Kings Islands (f. *delangei*) and Poor Knights Islands (f. *peltatum*). Poor Knights, Mokohinau Islands, Great Barrier Is, Great Mercury Island (Gardner 1997). Green shoots, large glossy green leaves. Often cultivated in Auckland. Piperaceae.

Macropiper excelsum subsp. *psittacorum* (Endl.) Sykes

Kermadecs. Lord Howe Island, Norfolk Island (Sykes 1992). Piperaceae.

Macropiper melchior Sykes

Three Kings Is. Commonly cultivated in Auckland. Drupes are free (Sykes 1992). Large glossy leaves. Piperaceae.

Metrosideros bartlettii Dawson

Large tree to 25 m. Grows alongside streams or swamps within valley-head forest remnants (Dawson 1985). Three known colonies. Te Pahi and Unuwahao area, far north. Small white flowers. Bark distinctive pale grey to whitish, soft and spongy, separating into thin flakes. Seedlings epiphytic on trees or tree ferns. It was first discovered by John Bartlett in 1975, Radar Bush. Cultivated specimen at Auckland University, growing very well near the Thomas Building. Myrtaceae.

Myoporum debile (Andr.) R.Br.

Australia. In New Zealand, formerly recorded from Raglan and Kawhia, but now extinct in the wild. Cultivated at Auckland University, near the marae. Prostrate. Myoporaceae.

Myrsine kermadecensis Cheeseman

Small tree. Kermadec Islands (Sykes 1977). Cultivated at Auckland University. Myrsinaceae.

Myrsine oliveri Allan

Tree up to 6 m. Great Island, Three Kings Is. Cultivated at Auckland University. Myrsinaceae.

Nestegis apetala (Vahl) L.A.S.Johnson

Coastal maire. Offshore islands. Poor Knights, Hen and Chickens, Great Barrier Is., Whangarei Heads, Mokohinau Islands, Norfolk Island. Small tree to 6 m. Very common on Fanal Island, forming pure stands. Pigeons feed on the fruits. University tree from Stanley Island, Mercury Islands (Taylor and Lovegrove 1997). Oleaceae.

Olearia traversii (F. Muell.) Hook.f.

Akeake. Chatham Islands. Tree to 10 m. Very commonly used in revegetation work in New Zealand. Has opposite leaves. Asteraceae.

Olearia "Waima"

Waima Ranges, Northland. Currently undescribed (Forester 1989). Cultivated at Auckland University. Asteraceae.

Pennantia baylisiana (W.R.B.Oliver) Baylis

Rare tree discovered on Great Island, Three Kings, in 1945 by Dr Geoff Baylis. Originally described as *Plectomirtha baylisiana* and assigned to the Anacardiaceae (Oliver 1948), but subsequently changed (Baylis 1977). The single known tree in the wild has been described as a female (Sleumer 1970), though there have been arguments about this. Cultivated at the Hort Research Mt Albert Research Station, and Auckland University, Auckland. Icacinaceae.

Pisonia brunoniana Endl.

Parapara, bird-catcher tree. New Zealand. Scattered occurrence on east coast from Northland to East Cape. Hen Island, Three Kings. Australia, Norfolk Island, Lord Howe Island, Kermadecs (Sykes 1977, 1987). Spreading shrub or tree to 6 m. Brittle branches. Fruits have sticky surface, and can entrap small birds such as silvereyes, fantails, and grey warblers. Cultivated, often as cv. 'Variegatum'. Syn. *Heimerliodendron brunonianum* (Endl.) Skotts. Nyctaginaceae.

Pittosporum fairchildii Cheeseman

Shrub to 4 m. Northland and Great Barrier Island. Three Kings Islands. In cultivation at Auckland University. Pittosporaceae.

Pouteria costata (Endl.) Baehni

Tawapou. (Formerly *Planchonella novo-zelandica* (F. Muell.) Allan, and *P. costata* (Endl.) Pierre ex H.J. Lam.). Coastal tree in New Zealand. Tree to 15 m. Good examples in coastal forest at Bethell's Beach. Cultivated trees in Cornwall Park, Auckland. Mt Camel (Houhora), Whangarei Heads, Poor Knights Islands. Seeds can be strung into beads. University specimen from Aorangi (Poor Knights). Sapotaceae.

Scaevola gracilis Hook.f.

Kermadec Islands. Procumbent subshrub (Sykes 1977). Cultivated at Auckland University. Goodeniaceae.

Streblus smithii (Cheeseman) Corner

Three Kings Islands, New Zealand. Specimens at Hort Research, Mt Albert, Auckland. Auckland University. Large leaves, 10-20 cm long. Moraceae.

Tecomanthe speciosa W.R.B. Oliver

Great Island, Three Kings. Only one plant ever found (Oliver 1948). A robust, woody stem-twining climber. Common in cultivation, by cuttings, but can also be grown from seed. White flowers, in May, June. Good examples the University. Bignoniaceae.

Introduced plants

Bocconia frutescens L.

Tree celandine, South American poppy tree. Mexico. Example at Alberton Homestead, Mt Albert, Auckland. Greenish flowers. Example at Auckland University. Papaveraceae.

Brunfelsia australis Benth.

Yesterday, today, and tomorrow. Southern Brazil. Shrub. Has violet, pale blue, and white flowers on the bush at the same time. Several examples at the Auckland University. Solanaceae.

Calodendrum capense (L.f.) Thunb.

Cape chestnut. South Africa. Useful timber. Ornamental tree to 15 m. Pink flowers. Fine specimen in grounds of Auckland University (Old Government House, near beehive). Example in the Auckland Domain. Albert Park. Rutaceae.

Colletia cruciata Gillies & Hook.

A spiny, leafless, shrub. (syn. *Colletia paradoxa*). Uruguay, South America. N-fixing. Specimens at Western Springs, Botanic Gardens, and Auckland University campus, Auckland. Flowers in April-June. Rhamnaceae.

Erythrina caffra Thunb.

Cape Kaffirboom. South Africa. Large historic tree in the Auckland University grounds (old Govt. House). Also at Mansion House, Kawau Island - a huge tree, planted by Sir George Grey. Brilliant scarlet-orange flowers. The official tree of Los Angeles. Fabaceae: Faboideae.

Ficus auriculata Lour.

Roxburgh fig. (syn. *Ficus roxburghii*). Himalaya region, India, to S China. Spectacular large leaves and cauliflorous fruits. A fine example at Hort Research, Mt Albert, Auckland. Tree at the Auckland Zoo. Auckland University. Moraceae.

Harpephyllum caffrum Bernh. ex Krauss

Wild plum, umgwenya (Xhosa, Zulu). South Africa. Evergreen tree to 15 m. Separate male and female trees. Ornamental tree. Good specimen near Thomas Building, University of Auckland. Several at Western Springs, Auckland. Auckland Zoo. Dark red fruit. Sour fruits are relished by children. They make a good wine, and jelly. Decoctions of the stem bark are used as a medicine as a blood purifier or emetic. Also for facial sauna and skin washes, and to treat acne and eczema. Anacardiaceae.

Ilex perado subsp. *platyphylla* (Webb & Benth.) Tutin

Tree. Winged leaf stalks, flat leaves. Canary Islands, Azores. Large example, Auckland University. Aquifoliaceae.

Illicium anisatum L.

Japanese anise tree. Japan, Korea. Shrub or tree. Aromatic bark and leaves. White flowers in spring. Examples at Auckland University. Illiciaceae.

Ipomoea coccinea Scheidw.

Central America. Ornamental shrub with showy, red, tubular, flowers. Examples at Auckland University, Anthropology area. Solanaceae.

Koelreuteria paniculata Laxm.

Golden rain tree. An ornamental tree from China. Large papery brown fruits with black seeds. Sapindaceae.

Lagerstroemia indica L.

Crepe myrtle. Commonly cultivated in New Zealand. Large shrub with smooth, brown bark and pink or purple very crumpled flowers with numerous stamens. Lythraceae.

Lonicera hildebrandiana Coll & Hemsl.

Giant honeysuckle, Burmese honeysuckle. Myanmar, Thailand, Yunnan (China). Large evergreen climber. Excellent example in the grounds of the old Government House, Auckland University, climbing up an oak tree. Caprifoliaceae.

Maytenus boaria Molina

Maitén. Chile. Evergreen tree to 25 m. Good ornamental. Large tree in the Auckland University grounds (Old Government House). Celastraceae.

Neolitsea sericea (Bl.) Koidz.

Japan, Korea, China. Examples at Auckland Botanic Gardens, Eastwoodhill arboretum, and Auckland University. Lauraceae.

Oncoba spinosa Forrsk.

Snuffbox tree. South Africa. Tree to 6 m. Spiny. Large camellia-like white flowers, and glossy serrulate leaves. Edible golden-yellow fruit, with very hard shell. Specimen at Auckland University, near Thomas Building, producing fruit. Flacourtiaceae.

Parkinsonia aculeata L.

Jerusalem thorn. Small crooked tree. Native to America. Planted in many countries for fuelwood. Widespread woody weed in Northern Australia. Common in India. Specimen near Thomas Building, Auckland University. Fabaceae: Caesalpinioideae.

Peltophorum dubium (Spreng.) Taub.

South America. Reasonably cold hardy. Planted at Auckland University. 1985. Fabaceae: Caesalpinioideae.

Quillaja saponaria Molina

Quillay. Chile. An evergreen tree to 15 m. Bark is rich in saponin. Used for detergent. Auckland Domain. Auckland University. Rosaceae.

Radermachera sinica (Hance.) Hemsl.

Asian bell flower. China. Ornamental species for gardens. Being planted around Auckland. It tolerates coastal conditions. The "original" Auckland tree is reputed to be the 6 m example beside the Arts & Commerce Building. Bignoniaceae.

Reinwardtia indica Dumort.

Yellow flax. India, China. Shrub with yellow flowers (winter, spring). Cultivated ornamental. Several specimens at the Auckland University. Linaceae.

Rondeletia amoena (Planch.) Hemsl.

Yellow-throated rondeletia. Central America. Shrub. Ornamental. Terminal clusters of tubular, salmon-pink flowers. Several excellent specimens at Auckland University. Rubiaceae.

Strobilanthes anisophyllus T. Anderson

Goldfussia. Recorded as naturalised, Waitakeres, Auckland. Very dark leaves, pink flowers. Popular garden ornamental. Common at the Auckland University, in shrubberies. Acanthaceae.

Tetrastigma voinieranum (Baltet) Gagne.

Chestnut vine. Laos. Used as a screening plant in California. Very vigorous. Excellent example at Auckland University. Vitaceae.

Trochodendron aralioides Siebold & Zucc.

Japan, Korea, Taiwan, China. An evergreen tree. Auckland Botanical Gardens. Auckland University. Trochodendraceae.

Wigandia caracasana Kunth

Large shrub with huge leaves. Mexico, Central America. Good example at Hort Research, Mt Albert, Auckland. Also at the Auckland University, Classics area. Showy purple flowers in September and October. Hydrophyllaceae.

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The Clandestine Flowering of Kikuyu Grass

Pennisetum clandestinum

Alan Esler

Kikuyu grass does have flowers even though sexual reproduction seems to have no place when we see shoots rushing upwards (A on Fig.1), or outwards (B). Flowers develop not on these shoots but on the fascicled side branches (C) of established shoots close to the ground. They are evident from the ephemeral feathered stigmas (1) and the delicate slender stamens (2) up to 50 mm long. They arise from the inflorescence (flower cluster) partly buried among the short leaves (D). Slender conical flowers around 20 mm long arise in the leaf axils and emerge from the sheath (3) further up the stem. Sheaths longer than about 14 mm would obscure most of the flower, and it seems that flowers are not wasted where they could not function. Shoots from the lower axils (4) develop early alongside flowers and soon bury them deeper in the foliage.

The inflorescence has 1 - 4 (usually 3) spikelets (E,F). Each has a single floret (G) (sometimes missing) and two inner bracts - the palea and the firmer, larger lemma partly enclosing it (5). The two outer bracts (glumes) are difficult to see – the upper a few millimetres long and transparent, the lower smaller or absent. The lowest spikelet is usually male though sometimes sterile or seemingly reduced to a lemma. The upper spikelet is hermaphrodite (G) though it may be functionally male or female through the suppression of the ovary or the stamens. Some plants are male only or female only.

Soon after flowering the one or two ovaries in each inflorescence reach their 3 mm ultimate length (H). They become firm and brown within a week or so and the lemmas are quite leathery. The flowers are not entirely

hidden but are clandestine in comparison with other species in the genus well known for its showy heads. Among them are *Pennisetum villosum* (feathertop), *P. latifolium* (Uruguay pennisetum), *P. alopecuroides* (Chinese pennisetum), *P. macrourum* (African feather grass) and *P. setaceum* (fountain grass) . These are all ornamental grasses now well established as wild plants in this country. Kikuyu grass seeds seem doomed to be