

Naturalised plants in New Zealand: new or noteworthy records

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This article provides records for the continuing naturalisation of exotic plant species in New Zealand - for previous records see the third and fourth volumes of the "New Zealand Flora" (Healy & Edgar 1976; Webb, Sykes & Garnock-Jones 1988), and the first update to the latter work (Webb, Sykes, Garnock-Jones and Brownsey 1995).

In making their lists of "wild", "naturalised" or "adventive" plants the authors above adhered to what has been known informally as "Healy's Dictum", that is: outside a fenced area, IN; inside a fenced area, OUT. Our standards are perhaps not always as strict, for example, we have included Persian lilac (*Melia azedarach*), which so far is known "wild" only as seedlings near the parent trees. But we have tried not to be vague about the relevant field or herbarium observations - is the plant in question producing viable seeds? Are seedlings appearing locally or more widely, and under what circumstances, and are they reaching maturity? Is vegetative growth usually followed by colony fragmentation? Etc., etc.

Most of the following records are new. Others are extensions of range, or amplify or correct previously published information.

GYMNOSPERMS

CUPRESSACEAE

Cupressus sempervirens L. Mediterranean cypress
Gardner 8028, Auckland, Purewa Cemetery 25 August 1996, AK 228853. A single 1 m tall plant of columnar habit, with female cones, in grave masonry, close by the parent tree. The first NZ record comes from a collection made by Bill Sykes (Webb *et al.* 1995) from grassland in a Nelson cemetery.

MONOCOTYLEDONS

COMMELINACEAE

Gibasis schiediana (Kunth) D.R. Hunt
de Lange, Motutapu Island, Old Farm Settlement, 28 March 1995, AK 222590. In the lawn and round the fence of an island resident's garden. This succulent plant had established from a discarded wedding bouquet.

Tradescantia cerinthoides Kunth flowering inch-plant
de Lange, 18 Oct 1995, Wellington Harbour, Matiu (Somes) Island, AK 223886. Several metres outside an old garden site, on rocky ground. The plants here probably arose from garden refuse. It has also been reported from Rangitoto Island, as a garden relic (Sykes 1992). It appears to be of much slower growth than wandering Jew (*T. fluminensis*).

CYPERACEAE

Schoenoplectus californicus (C.A. Mey.) Palla
A. E. Wright 9697, Dargaville, edge of Wairoa River at Band Rotunda, 1 Jan 1990, AK 192826; dup. CHR! Also seen near mouth of Waikato River, e.g. C. C. Tanner, 10 Feb. 1992, AK 224069, det. W. R. Sykes. This sedge grows in deeper water than the otherwise similar-appearing native *S. tabernaemontani* (C.C. Gmelin) Palla (formerly *S. validus*) and is a larger plant, with culms that are distinctly trigonous towards their tips; the hypogynous bristles around its nut are plumose rather than scabrous.

S. californicus is principally a species of the coastal swamps of North and South America (and some Pacific Islands, including Hawaii). It is known in Australia only from a single site near Newcastle (K. L. Wilson, *pers. comm.*).

MUSACEAE

Ensete ventricosum (Welw.) Cheeseman Ethiopian banana
Gardner 7706, Auckland, Ponsonby, 4 Dec 1995, AK 228609. Self-sown plants in a large old garden. This spectacular species is now common in Auckland, having come onto the market fifteen or so years ago. Differing from the bananas (*Musa*) in being non-suckering, it grows for five or six years or perhaps somewhat longer, flowers and dies. The plant whose specimen is cited here made abundant short orange fruit, and the chunky black seeds, slightly more than 1 cm diameter, apparently germinated here and there in the garden without the help of birds. It is unclear why naturalisation has not previously been reported, but some time might be needed for the seedcoat to rot.

ORCHIDACEAE

Bletilla striata (Thunb.) Rchb.f. Chinese pagoda orchid
de Lange, Hamilton, Mangaonua Stream, 29 Jan 1996, AK 227104. Low epiphyte on crack willow, in a dense mat of *Pyrrosia eleagnifolia*. It is conceivable that this colony arose through flood-deposition of garden material, but Molloy (1991) has noted that the species seeded into his garden at Riccarton, Christchurch.

POACEAE

Cymbopogon sp.
Gardner & de Lange, Manurewa Botanic Gardens, 23. 11. 1994, AK 224354. Seedling in the hedge, lawn edge etc., near the parent plant. This lemon grass forms tussocks a metre or more tall. It was removed from its site in the Botanic Gardens in February '96 when it was obvious that seedlings were being too freely produced. The plant seems to have been introduced under the name *C. procerus*, an Australian species, which it is not (S. Jacobs, *pers. comm.*).

DICOTYLEDONS

ANACARDIACEAE

Schinus molle L. pepper tree
Gardner 7622, Auckland, Judges Bay, 30 April 1995 AK 228610. Young plants of all sizes in scrub at the foot of the sea-cliff, on clay talus. The likely parent trees grow in the park at the cliff-top. Although the species is recorded by Webb *et al.* (1988) as occasionally naturalising there are no other specimens in AK that are definitely of wild plants.

ASTERACEAE

Chrysanthemum carinatum Schousb. summer chrysanthemum
de Lange 2983 & E. K. Cameron, Auckland, Papatoetoe, Kohuora Crater, 12 Oct 1994, AK 222767. Numerous flowering plants on the semi-compacted surface of a landfill.

CAMPANULACEAE

Wahlenbergia planiflora P.J. Smith
The taxon described in a preliminary way by Petterson (1993) as *Wahlenbergia* "Akaroa", from several localities on the eastern edge of Banks Peninsula, keys to *W. planiflora* in Smith's revision of the genus in Australia (1992). In particular, it is an alternate-leaved glabrous plant, with a large rotate corolla whose lobes are about 6 times as long as the tube, and with a style notably swollen just under the stigmas (e.g. Gardner, cultivated ex Akaroa Heads, 12 Nov 1994, AK 228612.). Peter Smith tentatively agrees with our determination (*pers. comm.* to PJ de L.).

CRASSULACEAE

Bryophyllum daigremontianum Ram.-Ham. et Perrie devil's backbone
de Lange, Motutapu Island, Old Farm Settlement, 28 March 1995, AK 222469. One plant under an island resident's house. Like *B. delagoense* and *B. cv. 'Houghtonii'* this species spreads by detaching marginal plantlets, in this case from a cultivated plant on the terrace above.

FABACEAE

Cercis siliquastrum L.

judas tree

de Lange, Auckland, Mt Albert, Councillor Drive, 15 Dec 1995, AK 225375. A sizeable sapling on a roadside bank among *Agapanthus* cv. and *Calystegia sepium*, close by the planted parent tree. At this site it seems that plentiful and viable seed is produced, but not many seedlings come up, and few of these survive more than a year or two.

Erythrina caffra Thunb.

coral tree, kaffir boom

Gardner 5338, New Plymouth, Rogan St, 23 Sept 1987, AK 178586. Seedlings occurred plentifully in the gutter debris alongside this historic tree.

Erythrina crista-galli L.

coral tree

Gardner 5421, Auckland, Oakley Hospital, 29 Nov 1987, AK 179126. A few seedlings were found "on the dry north-facing clay cutting below the parent tree" (Gardner 1992). The habitat implied for the plant naturalised in Tauranga (Webb *et al.* 1995) might be a similar one.

Gleditsia triacanthos L.

honey locust

de Lange & Crowcroft, Auckland, Mt Albert, St Lukes Road, 6 Dec 1995, AK 225377. One seedling (first seen in Nov '93) in rough pasture near a planted avenue of adult trees; when collected c. 80 cm tall and with a very deep root system. In March '96 one of us (P J de L) saw near the bottom of Queen Street in Auckland City wild honey locust seedlings, in cracked pavement near planter-boxes of the species.

Pueraria lobata (Willd.) Ohwi

kudzu vine

Gardner 6915, Mangawhai Heads, 4 Jan 1993, AK 215074. A sprawling colony on a sandy roadside. A mower-man decisively began the naturalisation process here by cutting up what might well have been a single planting into several smaller ones. No fruit was seen.

LAURACEAE

Cryptocarya obovata R.Br.

Gardner 6126, Auckland, Mountain Road, Government House, 14 Mar 1991, AK 202967. One seedling in a shrubbery. The magnificent old parent tree several hundred metres away on the "Rocklands" estate on Gillies Avenue stands above a lawn that is sometimes thick with seedlings. One wonders how many other naturalised individuals there are in the large wooded properties around, where native pigeons are still to be found.

LYTHRACEAE

Cuphea hyssopifolia Kunth

false heather

Gardner 7621, Auckland, Massey, Moire Park, 5 April 1995, AK 228613. One vigorous flowering plant deep in kanuka scrub, on the edge of a streamlet. The species might grow in gardens hereabouts, but these are several hundred yards away, and the capsule and seeds have no obviously-superior dispersal capabilities. Webb *et al.* (1988) record false heather from two other localities, Tutukaka and Auckland University.

Cuphea ignea A.DC.

cigar flower

de Lange, Hamilton, Hillcrest, Mangaonua Gully, 27 Jan 1996, AK 226116. Locally common, under willow on clay banks and slip scars. These plants probably originated as garden refuse discarded upstream, possibly as several pieces.

MAGNOLIACEAE

Liriodendron tulipifera L.

tulip tree

de Lange, Nelson, 19 Dec 1995, AK 224593. Sapling 1.6 m tall in a roadside pavement. This plant likely appeared a short time after the closure of a nursery on the adjoining property, which contains mature trees (G. T. Jane, *pers. comm.* to P J de L). Seedlings of birch (*Betula pendula*) and strawberry tree (*Dendrobenthamia capitata*) were also noted here.

The tulip tree on which the adventive record of Webb *et al.* (1995) is based did come from a remote locality, but in fact was planted by a duckshooter (F. Thompson, *pers. comm.* to P J de L, 1995). The site conditions of this and the Nelson plant are very different.

MALVACEAE

Hibiscus syriacus L.

rose of Sharon

de Lange, Hauraki Gulf, Motutapu Island, Old Farm Settlement, 28 Mar 1995, AK 222484. Wildings in hedges and coastal scrub near the parent garden plants. The species has been seen wild on Motuhihe Island (AK !), and also in Hamilton, where it was well-known to P J de L as a plant that regenerated in his parent's garden, on concrete walls and clay banks, and in footpath gravel.

Lagunaria patersonia (Andrews) G.Don subsp. *patersonia* Norfolk Island hibiscus tree
M. Fromont, Hauraki Gulf, Motutapu Island, [cliffs south of] Home Bay, 28 May 1993, AK 222478. A 4 m tall tree under dense pohutukawa. Presumably this tree derived from the adults along the cliff top. The tree has since been destroyed as part of the island's weed control campaign (S. Wotherspoon *pers. comm.*). The species is commonly planted in coastal situations around northern New Zealand and appears to produce abundant and viable seed. In habit, foliage and ecological character it is much like pohutukawa (*Metrosideros excelsa*).

MELIACEAE

Melia azedarach L.

Persian lilac

R. G. Smart, Auckland, Torbay, 2 Aug 1992, AK 209184. Seedlings along a property driveway. Despite the ubiquity of the tree in Auckland's suburbs we know of seedlings only at one other place (Morningside).

MYOPORACEAE

Myoporum insulare R.Br.

boobialla, Australian ngaio

Gardner & de Lange, Manukau Harbour, between Waikaraka Park and Ann's Creek, 13 Oct 1995 AK 228611. Seedlings to small (50 cm tall) adult trees, on a lava islet hardly raised above high-water, among flax and needlegrass. Seedlings of *M. insulare* at this site were also found under the parent bushes, which were several hundred yards away. Ngaio (*Myoporum laetum*) does not occur here.

Webb *et al.* (1988) record *M. insulare* as often having the appearance of being wild because of the frequency with which it has been planted in remote coastal sites. But the only other specimens that seem likely to be of self-sown plants would appear to be two from Wellington Harbour (Matiu (Somes) Island, *de Lange*, AK 209248; Taputarenga Island, Ogle CHR). Why is this plant not more commonly naturalised?

MYRTACEAE

Syncarpia glomulifera Niedenzu

turpentine tree

de Lange, 27 Jan 1994, Auckland, Massey East, Lawson's Creek, AK 222797. Seedlings from around a parent planting. In July '94 a frost killed the rest of the seedlings and severely damaged the parent.

PITTOSPORACEAE

Pittosporum tobira (Thunb.) Aiton f.

tobira

C. Howden, Sept 1986, Rodney Co., Woodhill State Forest, AK 219608. Flowering sprig and the note "plentifully naturalised among lupins on dunes". We consider that this collection may represent a planting. Tobira certainly has been used for amenity-planting in sand-dune forestry in the Kaipara and Te Aupouri regions at least (D. Game, D. Ogle, *pers. comm.* to P J de L). A collection made by P J de L of the plant from a pine plantation at the Waikato Heads (AK 224070) was of fruiting material, but no seedlings were noticed there.

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Vascular Flora of North Cape (including Kerr Point, Murimotu Id, Surville Cliffs, Waikuku Flat)

E. K. Cameron & Sandra Jones

Introduction

This species list is based on Wheeler's 1963 list and key to communities, slightly modified and reproduced as Figure 1. As "North Cape" is often used loosely, all records (published or herbarium specimens) cannot be assumed to mean the same area as that to which we are referring. Therefore we have only cited records that we know fall within the area covered by Figure 1. Cheeseman's map (1896: plate 23) is reproduced (as Figure 2), to clarify the boundaries of the North Cape District as used last century, also see de Lange & Cameron (1992) for a discussion on this.

Our records for this species list have been obtained from the following sources: Wheeler's 1963 list; other published sources including Carse 1930, Burke 1966, Gravatt 1966, Beever & Jane 1967, Johnstone 1967, 1969, Rae 1970, Druce *et al.* 1979, Beever 1987, Hatch & McCrae 1989, McCrae 1990, Wright and Cameron 1996; observations made by members of the Auckland Botanical Society field trip to the North Cape area 21-24 October 1995; an electronic search of the AK (623 specimens) and AKU (44 specimens) herbaria databases. (Note that neither of these databases is complete. AK lacks half the native dicots and most adventives and AKU lacks most of the ferns); a search of the AK herbarium for recorded species in un-databased families but lacking herbaria voucher specimens; a request to CHR and WAIK herbaria for clarification of location or identification of a few species; 16 CHR vouchers are cited from: Druce *et al.* (1979), de Lange (*pers. comm.*) based upon his CHR specimens, & others checked by CHR herbarium staff at our request; and asking colleagues with a personal knowledge of the area for comment and additions. There will still be some unlocated North Cape herbarium specimens in AK and AKU herbaria. Other New Zealand herbaria, particularly CHR and WELT, will hold many additional North Cape specimens. They were not searched during the compilation of this list.

Impacts on the Vegetation

During our Bot Soc visit (October 1995) browsing mammals were still grossly modifying the vegetation of some areas, especially Waikuku Flat. We saw ample evidence of feral pig, cattle and horse damage. Kikuyu grass was seen growing directly out of horse droppings! On a brighter note a possum/stock-proof fence was being erected just inside the Maori land (see Figure 1 for its location). The Department of Conservation (DoC) hopes to complete the fence (down the cliffs) this coming summer (1996/97). Since our Bot Soc visit, feral animal numbers have been reduced by DoC. Few cattle or horses now exist on the North Cape side of the fence, but possums and probably some pigs are still present (D. McKenzie *pers. comm.*, 1996).