A history of *Leptospermum scoparium* in cultivation: Garden selections

The second of a two-part series

Murray Dawson[1]

Part One of this series discussed those plants of *L. scoparium* J.R.Forst. & G.Forst. found in the wild that had ornamental qualities – white, pink or red flowers, single or double flowers, and shrubby, prostrate or dwarf growth habits.

Once these plants became established in horticulture they gave rise to further cultivars with new combinations of desirable features. These garden-derived cultivars are mostly selections from chance, open-pollinated seedlings, but some deliberate hybridisation within *L. scoparium* has also taken place. The horticulturists most involved in seedling selection and plant breeding of *L. scoparium* are Dr W. E. Lammerts (California, USA), E. F. Jenkin and Sons (Victoria, Australia), Jack Hobbs (Auckland, New Zealand), Messrs Duncan and Davies (New Plymouth, New Zealand) and Graham Hutchins (Essex, England). This second article reviews the origins of these garden selections.

Since Part One of this article was published, Terry Hatch (of Joy Plants, Pukekohe) contacted me with details of a further discovery from the wild. In July 1984 Terry collected a very low growing mat forming mānuka on the peninsula north of Mahinepua, near Whangaroa Harbour, in Northland. This single wild plant covers an area of some 10 m^2. Material was brought into cultivation through cuttings and plants maintain the low growth form only attaining some 2.5 cm in height. Plants form a dense ground cover and flowers are white and well displayed. It was named *L.* 'Mahinepua' after the place of discovery.

Selections from *L.* 'Nichollsii'

L. 'Nichollsii' was recognised in Part One as an historically important parent. This cultivar became widely grown in New Zealand, Australia, the UK and the USA, and several new cultivars were selected from its seedlings. Compared with today's diverse cultivars these old selections show limited variation. All have the red single flowers (of various shades) characteristic of *L.* 'Nichollsii', and most originated from open-pollinations and perhaps even self-pollinations.

The first selection was *L.* 'Boscawenii', raised by the Rev. A. T. Boscawen (of Cornwall, England) in 1909 from seed of *L.* 'Nichollsii' received from New Zealand. When he exhibited *L.* 'Boscawenii' in May 1912, it received an RHS Award of Merit. The Rev. Boscawen later raised *L.* 'Roseum', which received an RHS Award of Merit in February 1928.

Fig. 1 *L. scoparium* 'Boscawenii Minor'. **A**, whole plant with dwarf growth habit. **B**, close-up of small leaves and red single flowers.

L. 'Boscawenii' and its parent *L.* 'Nichollsii' were crossed perhaps by James Coey before he acquired the Slieve Donard Nursery in Newcastle, Ireland to produce *L.* 'Donard Beauty', a cultivar with large, cerise-pink flowers (Donard Nursery Catalogue, 1916; Nelson and Deane, 1993). *L.* 'Donard Beauty' received an RHS Award of Merit in 1916. A later sport from *L.* 'Boscawenii', named *L.* 'Boscawenii Minor' (Fig. 1A–B) is an outstanding dwarf cultivar.

Another dwarf cultivar is *L.* 'Nichollsii Nanum' (Fig. 2), raised by Mr J. Hope of The Ness, Wirral, Cheshire, now the Botanic Garden of the University of Liverpool (Metcalf, 1963; Bean, 1973). *L.* 'Nichollsii Nanum' won an RHS Award of Merit in 1953. *L.* 'Nichollsii Pygmaeum' is a similar cultivar and was first listed in the Duncan & Davies Nursery Catalogue about 1928.

Fig. 2 *L. scoparium* 'Nichollsii Nanum'. Photo: Jeff Irons.

Other likely *L.* 'Nichollsii' seedlings include, with the earliest found nursery catalogue in brackets, *L.* 'Nichollsii Gloriosum' (1937, Marchant, Keepers' Hill, England), *L.* 'Nichollsii Grandiflorum' (c. 1934, raised by the Slieve Donard Nursery, England; also cited in Nelson and Deane, 1993), *L.* 'Nichollsii Improved' (1925, Duncan & Davies, New Zealand), and *L.* 'Nichollsii Magnificum' (1954, W. Hazlewood & Sons, NSW, Australia).

[1] Landcare Research, PO Box 40, Lincoln 7640, New Zealand; dawsonm@landcareresearch.co.nz

The two superior selections, *L*. 'Boscawenii Minor' and *L*. 'Nichollsii Improved', became widely distributed. Over a certain period, many plants sold in New Zealand as *L*. 'Nichollsii' were actually *L*. 'Nichollsii Improved' (Metcalf, 1963). It is possible that *L*. 'Nichollsii Improved' is now sold as *L*. 'Red Ensign', but this needs verifying by a critical comparison of live plants.

Lammerts' selections

Controlled hybridisation of *L. scoparium* was pioneered by Dr W. E. Lammerts, a well-known plant breeder of California, USA. Dr Lammerts made one cross, *L*. 'Nichollsii' (seed parent) with a pink double-flowered pollen parent in 1939, and then grew many F_2 hybrids. The identity of Lammerts' original "Rose Double" pollen parent is in doubt. "Rose Double" is considered illegitimate as a cultivar name by Metcalf (1963) and myself, because we know of no other published record of this name. Lammerts' (1945) description reads:

> "...Rose Double has pale pink flowers and a semi-dwarf habit when grown in Southern California. The foliage is soft, finely cut and looks attractive during the entire year. The flowers appear from March until May and have been quite realistically called miniature Cecile Brunner roses."

I suggest the true identity of this important parent to be *L*. 'Flore Pleno'. Armstrong Nurseries' 1939 catalogue (Ontario, California, USA) listed *L.* 'Flore Pleno', giving it the common name "Dwarf Rose-Flowered Tea Tree". The catalogue description reads:

> "Here is one of the most beautiful little flowering shrubs ever offere[d] for California gardens. It grows fairly erect but never gets very large, has soft, fine-cut, dainty foliage which looks the same all the year. In March and April it produces great quantities of little double pink blooms which look like little Cecile Brunner Roses."

This wording is close to that given by Lammerts for his pollen parent. The Armstrong Nurseries Catalogue is dated the same year as Lammerts' initial cross, so plant material was available at that time through the nursery trade. It seems that Lammerts obtained his pollen parent from unnamed material growing at the Strybing Arboretum (Golden Gate Park, San Francisco). The late Arboretum Director, Eric Walther, imported the pink double-flowered mānuka from New Zealand several years earlier (Reiter, 1963).

Seven F_1 hybrids survived from Lammerts' original cross and seed was collected from three of these in 1943. More than 1000 F_2 seedlings were raised, of which 830 plants survived for field-planting in 1944. Variation among these F_2 plants was exceptional, exceeding Lammerts' "fondest hopes". Characters such as growth form, flower colour and doubleness, and flowering period were greatly improved compared with the parents (Lammerts, 1945, 1946).

Fig. 3 *L. scoparium* 'Red Damask'. **A**, whole plant. Photo: Murray Dawson. **B**, close-up of red double flowers. Photo: Roy Edwards.

Lammerts was the first breeder to incorporate the red flower colour from *L*. 'Nichollsii' into a double flower. This is exemplified by *L*. 'Red Damask' (Fig. 3A–B), which received a Californian Horticultural Society (CHS) Plant Award in 1948, an RHS Award of Merit in 1955 and an RNZIH Award of Garden Excellence in 1966. Another red double-flowered cultivar, *L*. 'Ruby Glow', received a CHS Award in 1947 (Reiter, 1963). Other cultivars released by Lammerts include: *L*. 'Bouffant', *L*. 'Fairy Rose', *L*. 'Floradora', *L*. 'Garnet Star', *L*. 'Milky Way', *L*. 'Pompon', *L*. 'Red Sparkler', *L*. 'Rose Chiffon', *L*. 'Rosenelf', *L*. 'Rose Red', *L*. 'Scarlet Carnival', *L*. 'Snow Flurry', *L*. 'Snow White', and *L*. 'Twinkle'.

A later sport from *L*. 'Scarlet Carnival' arose in New Zealand, in the nursery of Duncan & Davies. This was named *L*. 'Fiesta' and appeared in Duncan & Davies' 1962 Nursery Catalogue (Metcalf, 1963, 2000).

Jenkin's selections

The single greatest producer of new cultivars of *L. scoparium* is the nursery of E. F. Jenkin & Sons, Cranbourne South, Victoria, Australia; few people realise how many cultivars they have raised. The late Mr E. F. Jenkin began seedling selection in the mid-1960s, using open-pollinated seed from *L*. 'Album Flore-pleno'. This plant was growing among a mixed hedge of potential pollinators – other popular mānuka cultivars at that time, including *L*. 'Fairy Rose', *L*. 'Lambethii', *L*. 'Red Damask', *L*. 'Robert Tarrant', and *L*. 'Scarlet Carnival'. From the seedlings of *L*. 'Album Flore-pleno' one plant was selected and named *L*. 'Pink Pearl' (Fig. 4). This was the first cultivar released by the nursery and was selected for its early flowering and abundant double flowers. *L*. 'Pink Pearl' seems a misnomer, as the flowers are white, but it was named after the colour of its unopened flower buds. Because of this confusion it has also been called *L*. 'Pearl' by Jenkin's nursery.

Fig. 4 *L. scoparium* 'Pink Pearl', with pink buds and white double flowers.

Fig. 5 *L. scoparium* 'Crimson Glory', close-up of dark red double flowers. Photo: Jack Hobbs.

Fig. 6 *L. scoparium* 'Gaiety Girl'. Photo: Jack Hobbs.

Seed was collected from *L.* 'Pink Pearl' and from 3000 seedlings the following cultivars were selected: *L.* 'Ashburton Wax', *L.* 'Crimson Glory' (Fig. 5), *L.* 'Dawn', *L.* 'Fascination', *L.* 'Gaiety Girl' (Fig. 6), *L.* 'Jubilee', *L.* 'Rose Glory', *L.* 'Sunraysia' (Fig. 7A–B), *L.* 'Winter Cheer', and *L.* 'Winter Gem'. These were called the "Floral Hybrid" range and all have double flowers (Jenkin, 1967; Bertie, 1970).

Fig. 7 *L. scoparium* 'Sunraysia'. **A**, flower buds and flowers on stem. Photo: Roy Edwards. **B**, close-up of pink and red toned double flowers. Photo: Murray Dawson.

Fig. 8 *L. scoparium* 'Abundance'.

This work was continued by E. F. Jenkin's sons, Colin and Robert. As well as those listed above, the nursery raised the following cultivars: *L.* 'Abundance' (Fig. 8), *L.* 'Apollo', *L.* 'Atlantis', *L.* 'Austraflora', *L.* 'Autumn Glory', *L.* 'Ballerina', *L.* 'Big Red', *L.* 'Blossom' (Fig. 9), *L.* 'Burgundy Queen', *L.* 'Cherry Ripe', *L.* 'Civic Pride', *L.* 'Coral Candy', *L.* 'Fantasia', *L.* 'Festival', *L.* 'Flora Queen', *L.* 'Red Ballerina', *L.* 'Red Heart', *L.* 'Rosy Morn', *L.* 'Royal Statesman', and *L.* 'Spectrecolour' (Jenkin, 1967, 1975; Bertie, 1970; Anon., 1972; Jenkin's Nursery Catalogue, 1991; *Australian Horticulture*, Sept 1986 & other years; Colin and Robert Jenkin, pers. comm.).

Fig. 9 *L. scoparium* 'Blossom', with coral-pink double flowers.

L. 'Festival' was named (Jenkin, 1975) but never offered for sale. *L.* 'Ashburton Wax' is so named as it was produced at the original nursery site in Ashburton (Victoria, Australia) and has waxy flowers. *L.* 'Ballerina' originated from a side-branch mutation of *L.* 'Pink Pearl' (Anon., 1972) and *L.* 'Red Ballerina' was produced from a side-branch sport of *L.* 'Ballerina'. Most of the other recent cultivars raised by the Jenkins are of unknown parentage, and are selections from random, open-pollinated crosses (Robert and Colin Jenkin, pers. comm.).

Many of the *L. scoparium* selections released by E. F. Jenkin & Sons are similar – the numerous white, pink and red double-flowered cultivars being subtle variations on a theme. *L.* 'Apollo', *L.* 'Autumn Glory', *L.* 'Dawn', *L.* 'Fascination', *L.* 'Red Heart', and *L.* 'Winter Gem' have been replaced by improved cultivars and are no longer sold by the Jenkin's nursery. Others are exceptional and have superseded Lammerts' releases. The best ones are probably *L.* 'Ballerina' (one of their biggest sellers), *L.* 'Blossom', *L.* 'Burgundy Queen', *L.* 'Crimson Glory', *L.* 'Jubilee', *L.* 'Pink Pearl', *L.* 'Red Ballerina', and *L.* 'Royal Statesman' (Robert and Colin Jenkin, pers. comm.).

Fig. 10 *L. scoparium* 'Wiri Joan'. **A**, plant with flowers. Photo: Murray Dawson. **B**, close-up of small bright red double flowers. Photo: Jack Hobbs.

Hobbs' selections

Further *L. scoparium* breeding has been undertaken by Jack Hobbs, curator of the Auckland Regional Botanic Gardens, New Zealand. Most of Hobbs' breeding work was undertaken in the 1980s and early 1990s, and he uses the prefix "Wiri" followed by a feminine name in all of his cultivars. Hobbs (1989) collected open-pollinated seed from *L.* 'Blossom', *L*. 'Fascination', *L*. 'Keatleyi', *L*. 'Martinii', *L*. 'Red Ensign', *L*. 'Red Falls', and *L*. 'Rose Glory'. About 300 seedlings were planted out in 1982, and from these, four cultivars were selected and named in 1986. These are: *L.* 'Wiri Amy' (named after Amy Hobbs; seed parent *L*. 'Red Ensign'), *L*. 'Wiri Clare' (named after Clare Jew; seed parent *L*. 'Martinii'), *L*. 'Wiri Joan' (named after Joan Hobbs; seed parent *L*. 'Rose Glory'), and *L*. 'Wiri Lesley' (named after Lesley Haines; seed parent *L*. 'Martinii'). Hobbs (1991) considered the outstanding cultivar to be *L*. 'Wiri Joan' (Fig. 10A–B), with its attractive green foliage and small intensely bright-red double flowers. *L*. 'Wiri Clare' and *L*. 'Wiri Lesley' are both seedlings from the triploid cultivar *L*. 'Martinii' (Dawson, 1990). As a general rule, seed from triploid plants is uncommon, but I have also grown seed of *L*. 'Martinii' on.

Jack Hobbs collected and sowed another seed batch in September 1986, and planted them out in 1987. In 1991, two selections were made and named (seed parent in brackets): *L*. 'Wiri Kerry' (named by a Danish grower after his wife Kerry Kortegaard; seed parent *L*. 'Wiri Amy') and *L*. 'Wiri Linda' (named after Linda Noack; seed parent *L*. 'Rose Queen'). *L.* 'Wiri Kerry' is a dwarf cultivar that produces red double flowers, a unique combination of characters within the same plant.

Hobbs then began making deliberate crosses. Selected cultivars were hand-pollinated for seed production. Progeny were sown in March 1990, and 262 seedlings were planted out in October 1990. Hobbs' named selections from this batch, with parent(s) in brackets are *L*. 'Wiri Adrienne' (named after Adrienne Ramskill; open-pollinated seedling of *L*. 'Rose Queen' × *L*. 'Sherryl Lee'), *L*. 'Wiri Donna' (named after Donna Grieg; seed parent *L*. 'Crimson Glory'), *L*. 'Wiri Sandra' (named after Sandra Hobbs; seed parent *L*. 'Sherryl Lee'), *L*. 'Wiri Shelley' (often misspelt "Wiri Shelly" and named after Shelley Whittaker; *L*. 'Kea' × *L*. 'Wiri Sandra'), and *L*. 'Wiri Susan' (named after Susan Burgess; seed parent *L*. 'Kea') (Jack Hobbs, pers. comm.; *Commercial Horticulture*, Dec 1991 and Jan 1995). *L*. 'Wiri Shelley' (Fig. 11) has flowers of an unusual shade of pink. *L*. 'Wiri Susan' has large white single flowers.

Fig. 11 *L. scoparium* 'Wiri Shelley', with pink single flowers. Photo: Jack Hobbs.

The most popular "Wiri" selections still available include *L*. 'Wiri Joan', *L*. 'Wiri Kerry', *L*. 'Wiri Linda' (Fig. 12), *L.* 'Wiri Sandra' (Fig. 13), and *L*. 'Wiri Susan'.

Fig. 12 *L. scoparium* 'Wiri Linda', with white double flowers. Photo: Jack Hobbs.

Fig. 13 *L. scoparium* 'Wiri Sandra', with pink single flowers. Photo: Jack Hobbs.

There is a plant sold under the name *L*. 'Wiri Lisa' (e.g., Gaddum, 2001; *New Zealand Plant Finder* online, 2010) but this cultivar was not named or released by Jack Hobbs (pers. comm.). It may still have been one of his crosses, but named by someone else, because Jack's evaluation material was grown at several nurseries and was also accessible to the public visiting Auckland Regional Botanic Gardens.

Duncan and Davies' dwarf selections

The late Sir Victor Davies (a founder of Duncan & Davies nursery, New Zealand) used the dwarf cultivar *L.* 'Nanum' (see Part One) as a seed parent to produce seedlings from which the well-known "Nanum" range was selected. Twelve cultivars were released and all were named after New Zealand native birds. They were first listed in the Duncan & Davies 1956 Nursery Catalogue. *L.* 'Huia', *L.* 'Kiwi' (Fig. 14A–B) and *L.* 'Ruru' are floriferous, probably the best, and are still available. Still occasionally grown are *L.* 'Kea', *L.* 'Kotare' and *L.* 'Tui' (Fig. 15). No longer available are *L.* 'Kakapo', *L.* 'Kotihi', *L.* 'Tara', *L.* 'Tawaki', *L.* 'Weka', and *L.* 'Whekau'. Only *L.* 'Tui' is taller-growing – the other "Nanum" cultivars are dwarf except for occasional reversions of individual plants. Some of these "Nanum" cultivars have possibly been renamed by Australian nurseries.

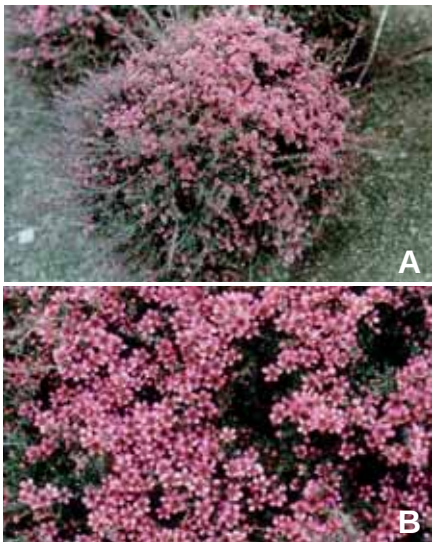

Fig. 14 *L. scoparium* 'Kiwi'. **A**, whole plant with dwarf growth habit. **B**, close-up of red single flowers.

Fig. 15 *L. scoparium* 'Tui'. Photo: Roy Edwards.

Hutchins' dwarf selections

In England, Graham Hutchins of County Park Nursery has raised a series of dwarf cultivars (County Park Nursery information sheets 17–19, 1989; County Park Nursery online catalogue, 2010; Graham Hutchins, pers. comm.). In 1977 he used *L.* 'Nichollsii Nanum' as a seed parent and placed it near several other *L. scoparium* cultivars that were potential pollinators. Open-pollinated seed was collected from *L.* 'Nichollsii Nanum' and sown in 1979, with some 2000 seedlings grown on. Hutchins selected for dwarf growth habit, dark foliage and good floral characters, retaining about 50 dwarf seedlings the following summer for further evaluation. After another year or so six plants were considered promising and four of these were given cultivar names: *L.* 'Fred's Red', *L.* 'Linnet', *L.* 'Redstart' and *L.* 'Robin'.

L. 'Fred's Red' is still available in the UK (*RHS Plant Finder* online) and was named after Fred Rumsey, who at that time was a student working at the nursery. Following Duncan & Davies' example of naming their "Nanum" range after New Zealand birds, Hutchins has named his other dwarf cultivars after British birds. *L.* 'Redstart' has a spreading habit and was considered a good cultivar with many plants sold. *L.* 'Robin' is suitable for alpine gardens, as it is very dwarf, compact, and slow growing. However, being so slow growing makes it difficult to propagate (Graham Hutchins, pers. comm.).

In 1986 Hutchins collected open-pollinated seed from several named cultivars of *L. scoparium* growing at his nursery, and raised several hundred plants. Dwarf cultivars selected from this later sowing, with the name of the seed parent in brackets where known, are *L.* 'Avocet' (*L.* 'Pink Champagne'), *L.* 'Bunting', *L.* 'Chiff Chaff' (*L.* 'Kiwi'), *L.* 'Firecrest', and *L.* 'Redpoll'. *L.* 'Redpoll' is probably the best dwarf cultivar selected at County Park and is still available from the nursery (County Park Nursery online catalogue, 2010). It has dark red foliage and has replaced most of Hutchins' earlier selections.

Several other dwarf cultivars are in the trade whose origins and raisers I do not know (e.g., *L.* 'Aurora Nana Rosea' from the USA and *L.* 'Pink Lady' from New Zealand).

Hutchins' other selections

From the mid-1990s, Graham Hutchins has raised several non-dwarf selections of *L. scoparium* (County Park Nursery online catalogue, 2010; Graham Hutchins, pers. comm.). One of his best is *L.* 'Wingletye', named after Wingletye Lane (a lane outside his nursery). This selection is upright growing, has good foliage and first-rate red flowers that are smaller than most cultivars but very free flowering. *L.* 'Wingletye' arose as a seedling from an open-pollinated red- and probably double-flowered cultivar. In turn, *L.* 'County Park Pink' is a pink-flowered seedling from *L.* 'Wingletye'.

L. 'Essex' arose as a seedling in cultivation from *L.* 'McLean' (see Part One). *L.* 'Essex' has white single flowers with a reddish receptacle in the centre of each flower.

Hutchins selected *L.* 'Pink Falls' from a seedling of the well-known cultivar *L.* 'Red Falls'. It has the same cascading growth habit but with pink (instead of red) single flowers.

Other cultivars raised by Graham Hutchins include *L.* 'County Park Red', *L.* 'Moko', *L.* 'Pink Frills' (upright growing, free flowering and with pink flowers), and *L.* 'Pink Splash' (no longer available from his nursery). As far as I am aware, none of Hutchins' dwarf or other selections are available in New Zealand.

Other New Zealand selections

Two historical New Zealand-raised cultivars are *L.* 'Sandersii' and *L.* 'Walkeri'. The parentage of these is unrecorded and neither cultivar is grown nowadays. According to Metcalf (1963), *L.* 'Sandersii' was raised by Mr C. Sanders, New Plymouth, and *L.* 'Walkeri' was raised by Mr F. Walker, Wanganui, who also established *L.* 'Keatleyi' in cultivation (see Part One).

About 1961–1962, shortly after his nursery opened, Ellaby Martin[2] (of the former Martin's Nursery, Hamilton) collected open-pollinated seed from various *L. scoparium* cultivars

[2] Misspelt "Alaby" Martin in my earlier version of this article (Dawson, 1997b).

growing in several gardens. From the seedlings raised he made the following selections and released them about 1966–1968: *L*. 'Cherry Brandy', *L*. 'Elizabeth Jane', *L*. 'Pink Champagne', and *L*. 'Pink Martini'. The seed parents were not recorded and the pollen parents are also unknown. *L*. 'Elizabeth Jane' was named after Martin's daughter, the others after beverages (Ellaby Martin, pers. comm.).

A semi-prostrate selection was raised by Ken Davey of New Plymouth about 1970 while employed at Duncan & Davies' nursery. Ken Davey (pers. comm.) collected open-pollinated seed from *L*. 'Pink Cascade', *L*. 'Pink Champagne', *L*. 'Red Damask', and a prostrate white-flowered mānuka that was never released, all growing in an old stock bed that was being removed. From these seedlings, *L*. 'Red Falls' (Fig. 16A–B) was selected and given to Richard Ware (Plant Production, Napier), who propagated and first marketed it in 1975. The seed parent of this cultivar is *L*. 'Pink Cascade' and the pollen parent is thought to be *L*. 'Red Damask'. *L*. 'Red Falls' has an attractive weeping habit and red single flowers.

Fig. 16 *L. scoparium* 'Red Falls'. **A**, whole plant with weeping growth habit. **B**, close-up of flowering branch with red single flowers.

Triploid cultivars from *L*. 'Keatleyi'

L. scoparium in the wild and cultivars in horticulture are mostly diploid ($2n = 22$). However, *L*. 'Keatleyi' is tetraploid (see Part One), possessing twice the usual chromosome number ($2n = 44$). Furthermore, three triploid ($2n = 33$) cultivars are known, *L.* 'Martinii' (Fig. 17), *L*. 'Lambethii' and *L*. 'Helene Strybing', and the intermediate chromosome number provides evidence that they are crosses between the tetraploid *L*. 'Keatleyi' and diploid cultivars (Dawson, 1990, 1995).

Fig. 17 *L. scoparium* 'Martinii', with dark pink flowers with crimson stamens.

My chromosome counts support Harrison's (1974) suggestion that *L.* 'Martinii' is a cross between *L*. 'Keatleyi' and *L*. 'Nicholsii'. He also considered *L*. 'Lambethii' to be the same cross, as it is very similar to *L*. 'Martinii'. *L.* 'Martinii' arose in New Zealand as a seedling in Mr Martin's nursery in Aramoho, Wanganui, and bears his name. It received a Royal New Zealand Institute of Horticulture Award of Garden Excellence in 1965. *L*. 'Lambethii' is an Australian-raised cultivar that appeared about the same time as *L.* 'Martinii', and both are listed in the Duncan & Davies Nursery Catalogue, c. 1945. Both are outstanding cultivars and still widely grown.

Seed of *L*. 'Keatleyi' was collected by Eric Walther, of the Strybing Arboretum, USA, about 1949. From the batch of seedlings, a chance hybrid arose and was named *L*. 'Helene Strybing', to commemorate the Arboretum's benefactor (Reiter, 1963; Menzies, 1967). *L*. 'Helene Strybing' received a CHS Award in 1966, and is still widely grown in the milder regions of the USA. It was introduced into New Zealand by Mr L. J. Metcalf in the late 1950s or early 1960s (Metcalf, 1963; Lawrie Metcalf, pers. comm.). The cultivar name is often misspelt "Helen Strybing".

Another cultivar that may have *L*. 'Keatleyi' parentage is *L.* 'Ray Williams'. This cultivar has large capsules, pale pink flowers, and leaves characteristic of *L*. 'Keatleyi'. *L.* 'Ray Williams' arose as an open-pollinated seedling in the late Ray Williams' home nursery (the Alpine Nursery) in Watsonville, south of Santa Cruz, California, USA, some time before 1984. This cultivar is still grown in the USA but is not available in New Zealand.

Notes on cultivation

Like most leptospermums, *L. scoparium* prefers a well-drained acidic soil, a shade-free aspect, and a temperate climate. Some genotypes and cultivars of *L. scoparium* may tolerate temperatures down to −10 °C (Huxley et al., 1992). For example, the "Nanum" range of cultivars seems reasonably hardy, which fits with the montane origin suggested in Part One for *L*. 'Nanum'. Other cultivars, particularly those from var. *incanum* (such as *L*. 'Keatleyi'), are more frost tender (e.g., Bean, 1973).

Mānuka cultivars flower in New Zealand mainly between November and January, but the flowering period can extend many more months. They are mostly grown as ornamental flowering shrubs, but are occasionally also used for cut flower production, and in some European countries for annual indoor pot plants. Commercial propagation of *Leptospermum* cultivars is achieved through semi-ripe cuttings.

Most *L. scoparium* cultivars grow to medium-sized shrubs, 1.8 m to 2.5 m tall, suitable for most gardens. A few are taller growing, to 3 m or more after several years. A light yearly pruning, immediately after flowering, is the recommended method for keeping plants compact. A few cultivars have a naturally good compact growth form, such as *L*. 'Crimson Glory', *L*. 'Fiesta', *L*. 'Karekare', and *L*. 'Scarlet Carnival'. However, all of the upright growing cultivars will eventually develop a somewhat open and less attractive growth habit.

Dwarf cultivars are ideal where space is limited or when used as evergreen, perennial border plants, and are sometimes also used as bonsais. Prostrate cultivars are useful as ground cover plants, or to grow over a rock, wall or bank.

In New Zealand and Australia the most serious pest of *L. scoparium* has been the scale insect *Eriococcus orariensis*, which secretes honey dew upon which a black sooty mould fungus thrives. "Mānuka blight", as it is known, can eventually smother

and kill the host plant. However, in recent years it seems that the original scale insect (*E. orariensis*) has been displaced throughout New Zealand by the less troublesome scale insect *E. leptospermi* (van Epenhuijsen et al., 2000; Derraik, 2008). Scale insects are easily controlled by the application of spraying oil or systemic insecticide, but the unsightly appearance of the black sooty mould discourages New Zealand home gardeners from growing mānuka cultivars (Anon., 2004). Fortunately, most other countries seem free of this pest, a major factor ensuring the survival of the older cultivars now absent from New Zealand and Australia.

Although *L*. 'Wiri Adrienne' (raised by Jack Hobbs) and *L*. 'Red Beauty' (a cultivar bred in the Netherlands by Eden's Creation B.V.) were formerly protected varieties, no *L. scoparium* cultivar has current Plant Variety Rights protection (Chris Barnaby, pers. comm.).

Cultivars that I consider distinct or outstanding are listed in Table 1, along with their horticultural attributes. An asterisk denotes those cultivars I consider to be particularly exceptional.

Final comments

I have comprehensively documented all *Leptospermum scoparium* (mānuka) cultivar origins that are known to me, both from the wild and raised in gardens. However, this is a relatively small number when considering that 150 or so cultivars have been named.

A new cultivar register for *Leptospermum* is in preparation by Lawrie Metcalf and I, updating Lawrie's earlier checklist (Metcalf, 1963). This new register will be available by January 2011 on the RNZIH website (www.rnzih.org.nz).

I would be grateful for further information on mānuka cultivars, but it is likely that the origins of many were never recorded and will remain unknown.

Acknowledgments

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Table 1 Outstanding cultivars of *Leptospermum scoparium.*

Cultivar	Distinguishing features
* *L.* 'Album Flore-pleno'	large white double flowers, long flowering period
L. 'Ballerina'	floriferous, pink double flowers, long flowering period
* *L.* 'Blossom'	floriferous, large coral-pink double flowers
* *L.* 'Boscawenii Minor'	floriferous, red single flowers, dwarf growth form
L. 'Burgundy Queen'	large red double flowers, reddish foliage
L. 'Cherry Brandy'	pink single flowers, dwarf growth form
* *L.* 'Crimson Glory'	floriferous, dark red double flowers, compact semi-dwarf, reddish foliage
* *L.* 'Huia'	floriferous, reddish single flowers, dwarf growth form
* *L.* 'Karekare'	late flowering, white single flowers, distinctive foliage
L. 'Keatleyi'	very large pink single flowers, large leaves
* *L.* 'Kiwi'	floriferous, red single flowers, dwarf growth form
* *L.* 'Lambethii'	floriferous, large pink single flowers darkening with age
* *L.* 'Martinii'	same features as *L.* 'Lambethii'
L. 'Nichollsii Improved'	bright-red single flowers
L. 'Pink Pearl'	pink buds, opening to white double flowers
L. 'Red Ballerina'	large red double flowers, contrasting light green foliage
* *L.* 'Red Damask'	large red double flowers, reddish foliage
* *L.* 'Red Falls'	large red single flowers, prostrate growth form
L. 'Royal Statesman'	floriferous, large pink double flowers, long flowering period, dark foliage
* *L.* 'Ruru'	reddish single flowers, dwarf growth form
L. 'Wairere'	pale pink single flowers, prostrate growth form
* *L.* 'Wiri Joan'	small, iridescent-red double flowers
L. 'Wiri Kerry'	red double flowers, dwarf growth form

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