

# SENSORY WALK

P C Tomlinson 06/02/10

**Botanical gardens generally do not want you to touch and handle plants. This walk is different. We want you to use your senses. Look, hear, touch, smell the environment. Imagine you cannot see – close your eyes and think what it would be like living in a world of permanent darkness. Try and use your other senses to try and experience and understand where you are.**

## **Louis Braille**

**Louis Braille** (January 4, 1809 – January 6, 1852) was the inventor of braille, a worldwide system used by blind and visually impaired people for reading and writing. Braille is read by passing the fingers over characters made up of an arrangement of one to six embossed points. It has been adapted to almost every known language.

Louis Braille became blind at the age of 3, when he accidentally poked himself in the eye with a stitching awl, one of his father's workshop tools. The injury wasn't thought to be serious until it got infected. Braille's other eye went blind because of sympathetic ophthalmia. There was a time, not long ago, when most people thought that blind people could never learn to read. People thought that the only way to read was to look at words with your eyes.

Braille, a bright and creative student, became a talented cellist and organist in his time at the school, playing the organ for churches all over France.

## **Development of the Braille System**

In 1821, Charles Barbier, a Captain in the French Army, visited the school. Barbier shared his invention called "night writing" a code of 12 raised dots and a number of dashes that let soldiers share top-secret information on the battlefield without having to speak. The code was too difficult for Louis to understand and he later changed the number of raised dots to 6 to form what we today call Braille.

The same year, Louis Braille began inventing his raised-dot system with his father's stitching awl, the same implement with which he had blinded himself, finishing at age 15, in 1824. Inspired by the wooden dice his father gave to him, his system used only six dots and corresponded to letters, whereas Barbier's used 12. The six-dot system allowed the recognition of letters with a single fingertip apprehending all the dots at once, requiring no movement or repositioning which slowed recognition in systems requiring more dots. These dots consisted of patterns in order to keep the system easy to learn. The Braille system also offered numerous benefits over Haüy's raised letter method, the most notable being the ability to both read and write an alphabet. Another very notable benefit is that because they were dots just slightly raised, there was a significant difference in make up.

Braille later extended his system to include notation for mathematics and music.

The first book in Braille was published in 1829 under the title *Method of Writing Words, Music, and Plain Songs by Means of Dots, for Use by the Blind and Arranged for Them*. In 1839 Braille published details of a method he had developed for communication with sighted people, using patterns of dots to approximate the shape of printed symbols. Braille and his friend Pierre Foucault

went on to develop a machine to speed up the somewhat cumbersome system.

Braille became a well-respected teacher. Although he was admired and respected by his pupils, his writing system was not taught at the Institute during his lifetime. The air at the institute was foul and he died in Paris of tuberculosis in 1852 at the age of 43; his body was disinterred in 1952 (the centenary of his death) and honoured with re-interment in the Panthéon in Paris. His system was finally officially recognized in France two years after his death, in 1854

### ***Muehlenbeckia astonii* the wiggly-wig bush TOUCH**

The total population in the wild is estimated to be 2800 plants. The largest population is on Kaitorete Spit, where there are around 2500 plants.' It can live for up to 100 years.

Most *Muehlenbeckia* are scramblers or even weeds, the exception being *M. astonii*, or shrubby tororaro which is a medium to large-sized shrub found in four discrete areas: coastal Wellington, northeastern Marlborough, north Canterbury and Kaitorete Spit just south of Christchurch

The delightfully descriptive name derives from a newspaper article by Ted Reynolds, who at the time had retired to a property on the north side of the Awatere River close to Seddon. In an edition of his regular feature article (Out in the Country) in the Marlborough Express of 18 June 1996 he talked about the large igloo-like plant of *M. astonii* that had been discovered on his property and suggested that, "And all there was to view was the world's biggest wiggly-wig bush". And - so the name has stuck!

The shrubby tororaro is a very ecologically and culturally significant shrub.

An important host for insects which then become a significant food source for many native species of bird and lizard. It also has valued medicinal properties. To Maori, these aspects make the shrub a taonga species of cultural and spiritual importance.

The shrub produces delicate white flowers during summer and autumn. Male and female flowers occur on separate plants though a few male plants occasionally set seed. Fruits are small and white, possibly making up part of lizards' diet. The plant may grow to 4 metres in height, and lives for up to 80 years.

The survival in the wild of *Muehlenbeckia astonii* is threatened by lack of regeneration due to competition from exotic grasses, browsing animals and trampling. It is also threatened by loss of its original habitat through disturbance, fragmentation and fire. Many of the plants that survive in the wild are single plants isolated from others of their species. Because male and female flowers occur on separate plants, these specimens have no opportunities to reproduce.

### **A collection of ferns – touch the different textures etc. TOUCH LISTEN AND FEEL THE PATHS**

***Dennstaedtia davallioides* (R.Br.) T.Moore**

**Common name: Lacy Ground Fern**

**Description:** Rhizome long-creeping, 3–5 mm diam., densely covered with short, red-brown hairs.

Fronds erect but drooping near tips, to 1.5 m high and to 0.5 m wide; stipe long, reddish brown, shiny, a few hairs at base, smaller rachis hairy, especially in grooves; lamina 3–



4-pinnate, very broad-triangular, dark green, soft and membranous, lacy, ultimate segments asymmetric with narrow lobes.

Sori 0.5–1 mm diam., borne at tip of a lobe or in the fork between lobes of a segment; indusium very thin with a lobed or entire margin.

Widespread, occurs on rainforest margins or moist sites in tall open forest.

### ***Phoenix sylvestris* TOUCH FEEL**

(*sylvestris* - Latin, of the forest) also known as **Silver Date Palm** or **Sugar Date Palm**, is a palm native to southern Pakistan, most of India and Bangladesh.

Growing in plains and scrub land it is used to make wine and jelly. The sap is tapped and drunk fresh or fermented into toddy. The fresh sap is boiled to make palm jaggery in West Bengal state of India and Bangladesh.

### **FRAGRANT GARDEN**

*Lemon, bay etc*

### ***Heliotropium arborescens* TOUCH SMELL LISTEN**

The **Garden Heliotrope** (*Heliotropium arborescens*) is a highly fragrant perennial plant, originally from Peru. It is especially notable for its intense, rather vanilla-like fragrance. Common names include **cherry pie** and "common heliotrope"

During the Victorian era in England this plant gained great recognition, often appearing in gardens and the herbaceous borders of parks. Its popularity may have become less in more modern times, but hardy and colourful varieties, such as 'Princess Marina', have ensured that this plant still regularly appears in seed catalogues and garden centres. Other popular varieties include, 'Mary Fox', the highly scented 'White Lady' or 'White Queen' and a taller variety 'Florence Nightingale'

### **Bay Laurel (*Laurus nobilis*) TOUCH SMELL LISTEN**

Bay Laurel is the source of the bay leaves, which are used for their flavour in cooking.

It was also the source of the laurel wreath of ancient Greece, and therefore the expression of "resting on one's laurels". A wreath of bay laurels was given as the prize at the Pythian Games because the games were in honour of Apollo, and the laurel was one of his symbols ever since his unsuccessful pursuit of Daphne.

In the Bible, the sweet-bay is often an emblem of prosperity and fame. In Christianity, it symbolizes the Resurrection of Christ and the triumph of Humanity thereby. It is also the source of the word *baccalaureate* (laurel berry), and of *poet laureate*.

Several other plants use the term "bay leaf," but do not refer to the leaves of the Bay Laurel. They include: California bay leaf , "Indian bay leaf" , "Indonesian bay leaf" or "Indonesian laurel"

The bay laurel tree has been cultivated since the beginning of recorded history. The bay leaf originated in Asia Minor, and spread to the Mediterranean and other countries with suitable climates.

## **Scented Geranium (Pelargonium)**

**SMELL** (red garden)

Scented geranium is the perfect plant for the kitchen window because it's useful as well as attractive. Outdoors, they are half-hardy perennials that can't tolerate frost. The plant, which originated in Africa, was first "discovered" by Tradescant, the gardener of Charles I of England. He grew a number of varieties in the royal greenhouses.

The foliage of the different varieties of scented geraniums have unique and striking aromas. You can choose between lemon scented, *P. crispum minor*; apple scented, *P. odoratissimum*; oak-leaf scented, *P. quercifolium*; rose scented, *P. graveolens*; Nutmeg scented, *P. fragrans*; peppermint scented, *P. tomentosum*, and many others. The flowers may be white, pink, purple, red or variegated and usually have no fragrance.

### Culinary use

- The fresh leaves may be infused in milk, cream, and syrups for desserts, sherbets, custards and ices.
- Chop the leaves into softened butter for sandwiches and cake fillings. Makes an excellent garnish.
- Rose scented varieties are used to flavor stewed apples and pears and apple jelly.

## **Armillary Sphere Sundial FEEL**

Designed by Peter Kundycki installed in 1992 to commemorate a century of management of the Garden by the Wellington City Council. The Royal Society and the Historical and Early Settlers Association donated it.

*The armillary sundial was developed by a Greek astronomer and philosopher Ptolemy.*

## ***Cinnamomum camphora* SMELL**

(commonly known as **Camphor tree**, **Camphorwood** or **camphor laurel**)

Camphor is a white crystalline substance, obtained from the tree *Cinnamomum camphora*. used for many centuries as a culinary spice, a component of incense, and as a medicine. Camphor is also a insect repellent and a flea-killing substance.

Native to Taiwan, southern Japan, southeast China and Indochina, where it is also cultivated for camphor and timber production.

It was used medicinally and was also an important ingredient in the production of smokeless gunpowder and celluloid.

In the ancient and medieval Middle East and Europe, Camphor was used as ingredient for sweets. It used as a flavoring in confections resembling ice cream in China during the Tang dynasty (A.D. 618–907). An Anonymous Andalusian Cookbook of the 13th century contains a recipe for Meat with Apples which is flavored with Camphor and Musk. A 13th century recipe for "Honeyed Dates" is also flavoured with Camphor. By the time of the Renaissance, Camphor as a culinary ingredient had fallen into disuse in Europe.

Today, Camphor is widely used in cooking (mainly for dessert dishes) in India It is widely

available at Indian grocery stores and is labeled as "Edible Camphor". In Hindu ceremonies, camphor is burned in a ceremonial spoon. This type of camphor is also sold at Indian grocery stores but it is not suitable for cooking.

*Cinnamomum camphora* was introduced to Australia in 1822 as an ornamental tree for use in gardens and public parks, and is commonly called Camphor laurel there. It has become a weed throughout Queensland and central to northern New South Wales where it is suited to the wet, subtropical climate. Its massive and spreading root systems disrupt urban drainage and sewerage systems and degrade river banks. Its leaves have a very high carbon content, which damages water quality and freshwater fish habitats when they fall into streams and rivers. The camphor content of the leaf litter helps prevent other plants from germinating successfully, helping to ensure the camphor's success against any potentially competing vegetation, and the seeds are attractive to birds and pass intact through the digestive system, ensuring rapid distribution. Camphor laurel invades pastures, and also competes against eucalyptus trees which are the sole food source of koalas, which are endangered in many parts of eastern Australia.

***Buxus microphylla* TOUCH**

Littleleaf boxwood, small-leaved boxwood, boxwood

The boxwoods are profusely branched evergreen shrubs widely used in landscaping, especially for hedges and foundation plantings. There are some 70 species but only two are commonly found in cultivation: this one and common boxwood (*Buxus sempervirens*). But those two species have given us hundreds of botanical varieties, horticultural cultivars and hybrids of garden origin to choose from

Littleleaf boxwood has not been found in the wild. It has been in cultivation in Japan since at least the 1400's, but no one knows where it originally came from - China, Korea, Japan? Perhaps it was created by gardeners by hybridizing and/or selecting other species, or perhaps it has simply gone extinct in the wild

***Scleranthus* TOUCH**

*Scleranthus*, are a genus of herbaceous plants in the carnation family. Aa genus of about 12 species of herbaceous flowering plants or small shrubs with a disjunct Eurasian/Australasian distribution

Introduced; temperate Europe (including Mediterranean region), Asia, Africa, Australia; widely naturalized elsewhere.

In spite of their small size, most *Scleranthus* flowers secrete nectar and are visited by insects, including small flies and ants.

**DWARF CONIFER COLLECTION**

**TOUCH SMELL**

***Melaleuca viridiflora* TOUCH BARK**

*Melaleuca viridiflora*, broad-leaved paperbark, is native to woodlands, swamps and streams of monsoonal northern Australia and Papua New Guinea.

The leaves are aromatic and the bark is papery.

*M. viridiflora* is used by Aborigines, The bark peeled off in layers and is used for shelter, bedding, containers, storing and cooking food, fire tinder, water craft, fish traps and wrapping corpses.

An infusion from leaves is drunk, inhaled or used for bathing to treat coughs, colds, congestion, headache, fever and influenza. [1]

Niaouli oil is extracted from *Melaleuca viridiflora* of the Myrtaceae family.

This essential oil has excellent antiseptic and stimulating qualities. It is extensively used to clear infections such as bronchitis, catarrh and sinus, as well as acne, boils, burns, ulcers and cuts.

Because the falling leaves covering the ground act as a strong disinfectant, it makes for a healthy environment, and it also purifies water. It was assigned its botanical name in 1788 during Captain Cook's voyage and was historically used in French hospital obstetric wards because of its antiseptic properties. It is still a popular ingredient for toothpaste and mouth sprays.

As a disinfectant, niaouli oil is valuable for washing wounds to clear up ulcers, acne, blemishes, boils, burns, cuts, insect bites, as well as acting as a decongestant on oily skin.

## **PINUS bark cones - radiata, muricata TOUCH**

### ***Parsonsia heterophylla***

### **SMELL**

*New Zealand* jasmine, *native jasmine*, *Parsonsia heterophylla* - a native climbing vine with longish leaves and white lightly fragrant small cream flowers (spring-summer).

This is the larger of the two common species of *Parsonsia*, and is also distinguished by small differences in the flower (which is generally larger than the flower of *P. capsularis*). Its specific name ('*heterophylla*'), refers to one of the most unusual features of this plant - the wide variety of leaf forms exhibited by this species in its juvenile stages

*P. heterophylla* has a very wide distribution in New Zealand, occurring from the Three Kings Islands in the Far North to Stewart Island, and growing from the coast up to lower montane forest. It is most commonly found in somewhat open habitats, such as bush margins and coastal forest; although it can tolerate considerable amounts of shade. Whilst it can grow to 10m within nature, it attains smaller dimensions within gardens, and can be kept very compact through appropriate pruning (due to the inclination of the plant to maintain fairly dense foliage).

## **GIANT REDWOOD bark**

## **TOUCH**

### ***Eucalyptus pulchella* ( White Peppermint ) SMELL**

**Peppermint Gum, White Peppermint, Narrow-leaved Peppermint** is found primarily in central and southeastern Tasmania, preferring moist, well-drained sites, but it is adaptable. Poor soils with low fertility suit it best. It is a good species for colder climates. It will grow to about 20-30m (up to 100 feet) tall, with an open habit.

It is **extensively cultivated**, and is used as a street tree. It has smooth bark throughout the tree, which is yellow to white to grey in colour. The bark is thin and finely fibrous, not stringy or furrowed. It peels off in fibrous sheets. . Unlike many of the other eucalypts, the juvenile leaves are linear and green. The adult leaves are narrow and green, and can be white.

The leaves are peppermint-scented when crushed. It has white flowers in the summer and autumn. It has both epicormic shoots, and lignotubers, to aid its recovery after fire. It tends to grow in a grassy, shrubby dry forest complex with Tasmanian Blue Gum (*E. globulus*) and Manna Gum (*E. viminalis*).

## **Scented Geranium (Pelargonium)**

**SMELL** (behind wall)

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### Culinary use

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- Chop the leaves into softened butter for sandwiches and cake fillings. Makes an excellent garnish.
- Rose scented varieties are used to flavor stewed apples and pears and apple jelly.
- When making cakes and pies, line the pans with the leaves. To make them lie flat, dip into hot water and shake dry.
- Add a leaf to an herbal tea.

### Other Uses

- The fresh leaves can be infused in bath water or rinsing water for hair.
- Dried leaves are a fragrant addition to potpourri and sachets to scent clothes and linens.

## ***Rosmarinus officinalis***

**SMELL**

A woody, perennial herb with fragrant evergreen needle-like leaves. It is native to the Mediterranean region. It is a member of the mint family, which also includes many other herbs.

The name *rosemary* has nothing to do with the rose or the name Mary, but derives from the [Latin](#) name *rosmarinus*, which is from "dew" (*ros*) and "sea" (*marinus*), or "dew of the sea" — apparently because it is frequently found growing near the sea

The fresh and dried leaves are used frequently in traditional Mediterranean cuisine; they have a bitter, astringent taste, which complements a wide variety of foods. A [tisane](#) can also be made from them. When burned they give off a distinct mustard smell, as well as a smell similar to that of burning which can be used to flavor foods while barbecuing.

Rosemary is extremely high in iron, calcium, and Vitamin B6

Rosemary has a very old reputation for improving memory, and has been used as a symbol for remembrance (during weddings, war commemorations and funerals) in Europe and Australia.

## **Lavender**

## **SMELL**

39 species, including some hybrids:

The lavenders (*Lavandula*) are a genus of 39 species of flowering plants in the mint family, native to the Mediterranean region south to tropical Africa and to the southeast regions of India. The genus includes annuals, herbaceous plants, and small shrubs.

The most common "true" species in cultivation is the common lavender [\*Lavandula angustifolia\*](#) (formerly *L. officinalis*). A wide range of cultivars can be found.

*Lavandula x intermedia* or "Lavandin" is the most cultivated species for commercial use, since its flowers are bigger and the plants are easier to harvest, but Lavandin oil is regarded to be of a lower quality

Flowers also yield abundant nectar from which bees make a high-quality honey. Lavender flavors baked goods and desserts (it pairs especially well with chocolate), as well as used to make "lavender sugar". Lavender flowers are occasionally blended with black, green, or [herbal tea](#), adding a fresh, relaxing scent and flavour.

Though it has many other traditional uses in southern France, lavender is not used in traditional southern French cooking. In the 1970s, an herb blend called *herbes de Provence* and usually including lavender was invented by spice wholesalers and lavender has more recently become popular in cookery.

Lavender lends a floral and slightly sweet flavor to most dishes, and is sometimes paired with sheep's-milk and goat's-milk cheeses. For most cooking applications the dried buds (also referred to as flowers) are used, though some chefs experiment with the leaves as well. Only the buds contain the essential oil of lavender, which is where the scent and flavour of lavender are best derived.

The French are also known for their lavender syrup, most commonly made from an extract of lavender. In the United States, both French lavender syrup and dried lavender buds make lavender scones and marshmallows.

The ancient Greeks called the lavender herb *nardus*, after the [Syrian](#) city of [Naarda](#). It was also commonly called *nard*.

Lavender was one of the holy herbs used in the biblical Temple to prepare the holy essence, and *nard* is mentioned in the Song of Solomon

During [Roman](#) times, flowers were sold for 100 *denarii per* pound, which was about the same as a month's wages for a farm laborer, or fifty haircuts from the local barber. Lavender was commonly used in Roman baths to scent the water, and it was thought to restore the skin. When the Roman Empire conquered southern Britain, the Romans introduced lavender.

The Greeks discovered early on that lavender if crushed and treated correctly would release a relaxing fume when burned. This is the basis for the lavenderine (purple sniff) drug used for medical purposes today.

## **Rosa 'Fragrant Cloud**

## **SMELL**

Color: Coral-red to purplish red; fades quickly

Flower: Pointed buds; large double, high centered blooms all season; large petals; 30 petals;



one bloom per stem

Type: Hybrid tea    Fragrance: Intense citrus

Comments: Upright, bushy habit; good disease resistance; deep green leathery leaves; best color in cool climates