

Far-Flung Relatives: Plants with a Disjunct Distribution

Closely related plant species often grow alongside one another or in overlapping geographical ranges, but not always. “Disjunct” refers to the wide separation of closely related organisms. Since plants put down roots and cannot migrate easily, populations of related species may be separated when continents split apart, mountain ranges rise, or glaciations occur. Sometimes a single remnant or “relict” population survives in a *refugium* after its close relatives have all been wiped out.

On a continental scale, the best-known plant disjunction is the Eastern Asia - Eastern North America disjunction, first recorded in 1716 by Father Joseph Lafitau, a French Jesuit. He found a species of American ginseng (*Panax*) near Montreal and connected it with a related ginseng from China. By the mid-1800s the concept was widely recognized, mainly through the work of American botanist Asa Gray. Fossil records and genetic research have continued to add to our understanding of plant disjunctions.

This walk highlights examples of plants growing at VanDusen that have disjunct distributions in the wild. **Please follow the black and white number and arrow signs.**

From the entrance, go down the walkway to the right and turn left towards Cypress Pond. On your left note the fuzzy buds of 1- ***Magnolia* ‘lolanthe’**, a deciduous magnolia developed from Asian species in 1974. Beside it is the **southern magnolia, *Magnolia grandiflora* ‘Victoria’**, a cultivar of the evergreen magnolia of southeastern USA selected in Victoria, BC in 1930. Turn left onto the mulched path through the Woodland Garden to see more magnolias from both of these continents.

Proceed right and stop to admire the peeling bark and spent flower heads of 2- ***Hydrangea aspera* subsp. *sargentiana***, a tall hydrangea from Hubei, China. The shrubby deciduous hydrangeas have a disjunct distribution with a few species in eastern North America and the majority in east Asia.

Turn right onto the gravel path to pass the new planting of 3- **Virginia sweetspire (*Itea virginica* ‘Little Henry’)** selected from the only species of *Itea* native to eastern North America. There are several other species in Asia.

Notice on your left 4- **oakleaf hydrangea, *Hydrangea quercifolia* Snowflake ‘Brido’**. This is a cultivar of a deciduous *Hydrangea* native to southeastern USA. The cultivars are generally smaller than the wild species and prized for their fall colour, creamy white flower spikes and oak-shaped leaves. The botanical name “*quercifolia*” refers to this hydrangea’s foliage, which is shaped like that of an oak (*Quercus*).

Turn left at the intersection and look up to see the bean-like seedpods on 5- **southern catalpa (*Catalpa bignonioides*)** native from Georgia to Florida and Mississippi. It is one of only two North American *Catalpa* species, with the remaining species native to east Asia and one in the West Indies. The name “*Catalpa*” is derived from *catawba* the native American word for this tree.

On the right, before the floating bridge is 6- **red buckeye (*Aesculus pavia* ‘Atrosanguinea’)**. This is a cultivar of an eastern North American relative of the horse-chestnut or conker tree that is native to Greece and Albania, and widely planted as a street and park tree in Vancouver. *Aesculus* has several species in the Northern Hemisphere, including eastern Asia and North America. Also notice the large **oakleaf hydrangeas** just before the floating bridge.

Cross the bridge and look to your right for 7- **American sweet gum (*Liquidambar styraciflua*)**, native to eastern USA with relatives in Asia. It has maple-like leaves but, unlike maple, it has alternating twigs and buds.



Cross the lawn to see 8- **London plane (*Platanus* × *hispanica*)**. It is a hybrid of *Platanus orientalis* of SE Europe and Asia Minor and *Platanus occidentalis* of eastern North America, from which it inherits its mottled peeling bark. In North America the native species are called sycamore or buttonwood. A few steps to the south you will

see *Platanus orientalis*. Its bristly round seed pods may still be hanging on the tree. *Platanus* species have palmate, maple-like leaves.



Continue south along the paved path to **9- blue Atlas cedar (*Cedrus atlantica* Glauca Group)**. *Cedrus* has an interesting disjunct distribution with three species from the Mediterranean and one from the Himalayas.

Go on to **10- western red cedar (*Thuja plicata*)** on the right, native to our West Coast. *Thuja occidentalis* of eastern North America is the cedar most commonly used for hedging, including VanDusen's maze. Three species of *Thuja* are native to Asia.

Cross the zigzag bridge and either turn left and head back along the lake to return to the entrance or continue this tour by walking through the Grotto just ahead to explore the Heather Garden. Leave the Heather Garden by crossing the bridge next to the Scottish Shelter, bear left and stop to admire the evergreen foliage and winter buds of **11- lily-of-the-valley shrub (*Pieris japonica*)**. There are several eastern Asian *Pieris* species but only one is native to eastern North America.

Head through the Perennial Garden and past the Lathhouse. Just before turning right onto the Rhododendron Walk, pause to look at **12- handkerchief or dove tree (*Davidia involucrata*)** on your right. Now found in the wild only in western China, millions of years ago this species was widespread and its fossils have been found in western North America. Enjoy the beautiful shape of the tree, its rough bark and hanging seedpods. In May large, snowy white bracts dangle from tight clusters of flowers along the branches, fluttering in the breeze like handkerchiefs.

Continue up the Rhododendron Walk and stop to admire the peeling bark of **13- sawtooth stewartia (*Stewartia serrata*)** from Japan. Of the 15-20 species of *Stewartia*, only two are from eastern North America with the remainder native to Asia. You will see other stewartias on your way up the Rhododendron walk. Also, about halfway up the Rhododendron Walk, look to the right for the collection of Magnolias and Hydrangeas with examples from both Asia and North America.

Further along is **14- Chinese witch hazel (*Hamamelis mollis*)** from China, which flowers by late December. Look closely at the delicate flowers and enjoy its fragrance. Asian witch hazels bloom in winter on leafless branches while eastern North American species bloom in fall while still in leaf. Turn right onto the lawn to pass **15- deodar cedar (*Cedrus deodora*)**, the Himalayan relative of the *Cedrus* we saw earlier.



Continue to the Evergreen Azalea bed and admire the striped bark of **16- snake bark maple (*Acer capillipes*)**, native to Japan. There are several snake bark maples (*Acer* section *Macrantha*) in Asia but just one in eastern North America. The common name refers to the prominently striped bark. They grow as small understory trees and the green bark can photosynthesize. The leaves are unlike common maple leaves.

Continue uphill past the Korean Pavilion to **17- Formosan sweet gum (*Liquidambar formosana*)** just east of the entrance to the Meditation Garden. This is an Asian relative of the *Liquidambar* seen earlier by Cypress Pond. Continue up the paved path and turn right into the Fern Dell to see **18- Chinese sassafras (*Sassafras tzumu*)** native to Hubei, China, with relatives in Taiwan and eastern North America. In the 19th Century a popular cure-all was derived from the North American species.

Further along the path on the left is a newly planted **snakebark maple (*Acer rubescens*)** from the mountains of Taiwan. Behind it is the conifer **19- Chinese nutmeg yew (*Torreya grandis*)** from China, one of four species native to Asia. Two relict species of *Torreya* remain in North America, with one in California and one in Florida. Not a true nutmeg or yew, its seeds have been used for medicinal purposes.

Beside *Torreya* is **20- maidenhair tree (*Ginkgo biloba*)**, now native only to China but once widespread with fossils even found here in BC.



We hope you have enjoyed this winter walk. For more information on plants around the world, visit the VanDusen Library. To return to the Visitor Centre, follow the main paved path.