



A Woody Ornamentals Trial Comes of Age



Caragana (*Caragana aurantiaca*)
flower soldiers

Story and photos by **Alan Weninger**

Tucked in behind the busy intersection of College Drive and Preston Avenue in Saskatoon is a place that has been called the city's best kept secret. A shady retreat of mature trees between grassy rows, this is the University of Saskatchewan's arboretum, a botanical collection of woody plants. A horticultural experiment begun in 1966, Patterson Garden has now passed the 40-year mark, and the long-term answers to the questions posed at that time are now ready for interpretation. What's more, the trees are mature enough to have a significant presence, and let's face it: with trees, size does matter.

Patterson Garden began life as a test site for the adaptability and hardiness of various species and cultivars of tree, shrub and vine to the prairie climate. As part of the Prairie Regional Trials for Woody Ornamentals, it was one of seven such sites across Manitoba, Saskatchewan and Alberta. In the late 1950s, the Morden Research Station (Agriculture and Agri-Food Canada) in southern Manitoba began to propagate plant material from its arboretum collection to

distribute to co-operating institutions for testing. Successes and failures at the test sites were recorded over several years, with trials officially coming to an end in 2001. Unfortunately, many of these original test sites are now in a state of decline, perhaps because of changing priorities. Patterson Garden however has persevered, with some ups and downs, and it is now in a good state of health.

Dr. Cecil Patterson, for whom the Garden is named, was the first Head of the Department of Horticulture at the University of Saskatchewan. From 1922 until his retirement in 1960, he served the University and the public through his teaching, writing, extension and research. From 1922 until 1942, Dr. Patterson was responsible for all landscaping on campus. A generous and passionate man, he worked to produce better plant varieties for prairie horticulture (especially lilies, vegetables and fruit trees), and to bring gardening knowledge to people living on the prairies. It is fitting that this prairie garden, an important link between the University and the public, is dedicated to him.

With close to seven hundred individual accessions, Patterson Garden is one of the largest collections of woody plants on the prairies. Many of the collection's species and cultivars are fairly rare in cultivation, although the more common trees, shrubs and vines are also included. Present are maturing specimens of Amur cork tree (*Phellodendron amurense*), scarlet maple (*Acer rubrum*), Japanese elm (*Ulmus japonica*), Manchurian ash (*Fraxinus mandshurica*) and Swiss stone pine (*Pinus cembra*); several specimens in the collection are rarely seen in cultivation, such as the Tian Shan mountain-ash (*Sorbus tianshanica*). In some cases, such as with Korean arborvitae (*Thuja koraiensis*) and scarlet oak (*Quercus coccinea*), they are the only surviving trial specimens other than the original plants at the Morden Research Station.

The collection also includes many heritage cultivars of roses, crabapples and other flowering plants that were the result of early plant breeding on the prairies. Also, a large number of native species are present, including silverberry (*Elaeagnus commutata*), black spruce (*Picea mariana*), Canada buffaloberry (*Shepherdia canadensis*), narrow-leaved meadowsweet (*Spiraea alba*) and nannyberry (*Viburnum lentago*). Patterson Garden is essentially a library of hardy woody plants, labelled and filed into rows, always changing and growing.

Of course, Patterson Garden is more than just a botanical treasure: it declares itself a garden by name, a place for people. Gardeners, nursery growers, picnickers, walkers, tree nuts, kids' camps, visitors to Saskatoon, students and researchers enjoy the garden. For a research area, it has a very park-like feel to it: there are grassy rows to wander down, regardless of weather; the trees have mulched rows to protect and nurture roots. Robins and other birds nest here, and a nesting pair of Swainson's hawks return to a nearby tree year after year. Patterson Garden is not kept within a research station as are some of the other trial sites; it is open to the public and fairly accessible, if perhaps a bit hard to find.

My own introduction to Patterson Garden came from a University co-worker some years ago. Standing under the scarlet oak, my first thought, "This oak can grow here?" was followed by "Why aren't there more of these?" I still don't really know the answer to the second, but it has something to do with familiarity and economics. I repeated the first question under the canopy of the Amur cork tree, while marvelling at its exotic bark and interesting leaves.

Now, fifteen years later, my own scarlet oaks and Amur cork trees are big enough to stand under: not only did the Patterson Garden collection stir my imagination, it also led to a tree-growing hobby that takes up more of my time and my thoughts than I care to admit.

If you do find your way to Patterson Garden, look for the arborvitae, or white cedar (*Thuja occidentalis*) row near the centre, behind the memorial plaque to Dr. Cecil Patterson. Normally assigned roles in foundation plantings and uniform hedges, here these plants are given some space and individuality. Some of these trees have a 'deep, dark forest' mood to them, similar to their rainforest cousins, the western red cedar (*T. plicata*). At the far end of the arborvitae row, look for the silver maple that has spread out in all directions to create a huge sheltering canopy. The poplar (*Populus* spp.) row is not far beyond, with enormous specimens of Berlin poplar and cottonwood hybrids.

Tian Shan mountain-ash
(*Sorbus tianshanica*)



Swiss stone pine cone
(*Pinus cembra*)



Mockorange
(*Philadelphus* spp.) flowers

Moth-sized *Cotoneaster* leaf



Lichens



Flower petals, crabapple row



Silver maple (*Acer saccharinum*) canopy



Patterson Garden is an important teaching tool for all ages

When you tire of being dwarfed by tall trees, consider the potentilla, or shrubby cinquefoil (*Dasiphora fruticosa*) row beside the silver maple: even though they are two feet in height, many of them are as old as the maple. Then consider the lichens on the plant labels: a few centimetres in diameter, they may

be as old as the potentilla. But if this kind of deep thinking is not on your list of how to enjoy yourself, visit in the spring when there are flowers everywhere. In May and June there are endless varieties of lilac, crabapple, cherries, spirea, caragana, currant and viburnum in full bloom.

It's true that big trees are a big deal, but there is also an interesting new crop emerging in Patterson Garden. As old specimens die off, new spaces are created that are now being filled up. The arboretum is climatically different than it was 40 years ago: the trees

have created their own shelter from the winds, the city has grown and with it, its radiant heat. This new environment allows for some new species for trial, and more than one hundred plants have been added in the last few years. The planting emphasis has been on species plants, for maximum diversity in the limited space available, but some new cultivars are also being squeezed in.

Patterson Garden, more than anything else, demonstrates diversity: unexpected botanical variety for the northern plains. This variety gives us choices and ideas for our landscapes, be it flowering trees and shrubs, evergreens, drought tolerant species or native plants. This genetic diversity also increases the odds that there will be some species or individual trees surviving if a severe pest or disease outbreak should ravage our urban forest. So far we have been relatively fortunate in this regard, but we have already seen the effects of the bronzed birch borer on our population of drought-stressed European birch (*Betula pendula*).

The garden also provides many opportunities for education and research. For the University of Saskatchewan, Patterson Garden is useful as an aid to teaching courses in horticulture and for the Master Gardener program. The diversity of plant species makes it an excellent place for teaching woody plant identification, for collecting plant propagation

and study material, and even for pruning workshops. Researchers at the Horticulture Field Lab also use Patterson Garden for a source of plant material for breeding purposes.

Many schools manage to use the arboretum for science programs or for a first-hand botanical experience. Meewasin Valley Authority (MVA), which uses adjacent land for a plant nursery, conducts a stewardship program for grade 4 students and uses Patterson Garden to teach tree and shrub identification. Garden tours often take place in the summer for interested groups, organised by the Plant Sciences Department and the Horticulture Field Lab.

Although 42 years is a relatively long time to run an experiment, Patterson Garden is just coming into its prime. The fastest growing of the large trees, the hybrid poplar, have mostly reached their peak and passed on. For the trees with longer life expectancies, it is difficult to say how long they could last. It is possible for oak, ash, elm, linden and many conifers to last a few hundred years. Saskatoon is still a relatively young city; we really don't know the life expectancy for many of these species under our urban conditions. We can only hope the trees will still be there a hundred years from now, perhaps having survived road expansions, climate change, disease and pest outbreaks, and the number one killer of tree collections: neglect, due to changing priorities, funding cuts and perceived lack of economic importance.

Remember Patterson Garden the next time you are heading out for some fresh air, or wanting to identify the leaf that you found the other day, or trying to decide what to plant in your landscape. You don't have to be a botanist to enjoy the garden, but it might steer you a little in that direction.

Patterson Garden is maintained by the Plant Sciences Department of the U of S, as part of the Horticulture Field Lab research grounds, with assistance from MVA. The arboretum is always open. Patterson Garden is located at the SE corner of College Drive and Preston Avenue: travelling northbound on Preston Avenue, just before you reach College Drive, you will find the access on the right.

Alan Weninger is a gardener and arbourist with the Horticulture Field Lab at the University of Saskatchewan, and the caretaker of Patterson Garden.

A sample of what's growing in Patterson Garden:

THE OLD

Blackfruit hawthorn, *Crataegus chlorosarca* – planted 1966; beautiful small tree native to Manchuria

Hardy aralia, *Eleutherococcus sessiliflorus* – densely clumping shrub with palmate leaves; planted 1968

Plains cottonwood, *Populus deltoides* – huge; native in the Saskatchewan River valley; planted 1968

Ponderosa pine, *Pinus ponderosa* – a large and stately tree; planted 1966

THE NEW

American bladdernut, *Staphylea trifolia*

Chinese catalpa, *Catalpa ovata*

Manchurian walnut, *Juglans mandshurica*

Pearlbush, *Exochorda serratifolia*

VINES

Thicket creeper, *Parthenocissus inserta* – little known shiny-leaved relative of the Virginia creeper; native in Manitoba

Rosa maximowicziana – a climbing rose; native to Korea and China; recently planted

NATIVE PLANTS

Balsam fir, *Abies balsamea* – native to northern Saskatchewan; planted 1966

Canada buffaloberry, *Shepherdia canadensis*

Skunkbrush, *Rhus trilobata* – native to dry areas in southern Saskatchewan; aromatic leaves; Sumac family

HERITAGE

'Dropmore' linden, *Tilia x flavescens* 'Dropmore' – planted 1969 and now a large tree at the front of the garden; developed by Manitoba horticulturist Frank Skinner

'Thunderchild' rosybloom crabapple, *Malus x adstringens* 'Thunderchild' – developed by Percy Wright of Saskatoon; colourful; high resistance to fireblight

THE BIZARRE

Devil's walking-stick, *Aralia spinosa* – spiny clumping shrub that can develop huge doubly compound leaves; recently planted

Shagspine caragana, *Caragana jubata* – stem covered with hair and spines; recently planted

Wartybark euonymus, *Euonymus verrucosa* – odd bark and pink autumn leaves; planted 1973

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