



LEFT: Over 90 years, rural fields have been transformed to a lushly landscaped campus.
 TOP RIGHT: Virginia creeper added to the ivy-covered campus effect but slowly deteriorated brick walls and has been largely removed from buildings.
 BOTTOM RIGHT: Hugh Knowles examines a bristlecone pine on campus.

CAMPUS CREATOR

Donna Balzer visits former professor Hugh Knowles and takes a second look at the University of Alberta campus where he made such an impact

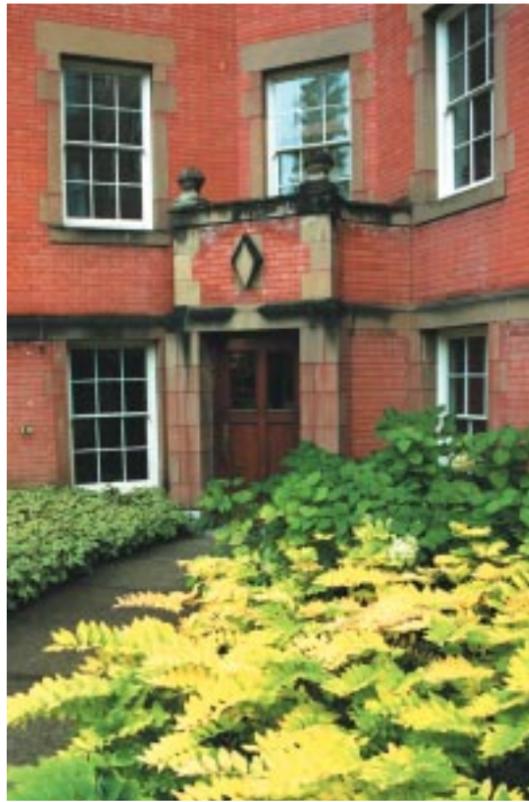
The professor tests his student while walking through the university grounds. It doesn't matter that he is retired or that some of his former students are retired as well. The prof wants to know: Does this particular student—22 years out of the classroom—remember the trees on campus?

He quizzes in the dormant, snow-packed, leafless season and she is sur-

prised by the presence of trees memorized so long ago still standing—white pine near the telephone booth outside the Students' Union building, black pine in the Hugh Knowles courtyard. Both student and teacher laugh at how some things never seem to change, even as they grieve the disappearance of individual favourite plants and areas lost to progress.

The professor, temporarily out of

retirement for the impromptu quiz and interview, is Hugh Knowles, well known to Alberta gardeners for his thorough book, *Woody Ornamentals for the Prairies*. Knowles, the landscape architect and former University of Alberta grounds superintendent, is better known in Alberta for his writing than for his contributions to the campus landscape, which was "a grain field with a row of elms" prior to his arrival



52 years ago. Equipped with a science degree in ornamental horticulture, Knowles joined the University of Alberta staff as grounds superintendent and lecturer in horticulture, but his life's work—the search for plant hardiness knowledge—goes well beyond the 92-hectare campus.

Former students of Hugh Knowles pursued careers as landscape architects, gardeners, instructors in the horticulture program at Olds College, farmers and even garden writers. Through his work and the work of his graduates, Knowles has had a big impact on Alberta landscapes. This man, excited about trees and ground covers and turf, brought to an emerging campus new plants that no one guessed would grow there. Sixteen years after his retirement, many of the trees he planted and promoted are still considered rare or unusual, even though they have a prominent place in his book and have been thriving for up to 50 years on “his” campus.

When Knowles accepted the new position at the university in 1948, he continued his career of “life-long learning” before it became a late 20th-century trend. After receiving his bachelor of science in agriculture in 1944 and his teaching certificate from the University of Toronto in 1945, he obtained an MSc in plant physiology from the U of A in 1957 and a degree in landscape architecture from the

University of Michigan in 1965. Although he retired from the University of Alberta in 1984, he was enrolled in basic drawing classes when we met on campus this winter because he hopes to take up water colour painting “in the future.”

Knowles' new position paid \$3,000 per year—just slightly more than he had made as a teacher in rural Ontario. Upon his arrival, the campus landscape included the row of elms along the river planted “sometime after WWI as a memorial to the soldiers lost in the war,” but much of the campus was little more than grain fields. “I had a pretty good staff but they were all amateurs,” says Knowles, remembering the task he had ahead of him when he first came to campus. He quickly designed a new machine to move larger trees and began rearranging the original elms, which he felt were planted too close together; he lifted every second tree and found it a better home somewhere else on campus. “We built our own equipment to move these big trees—it was possibly the first movement of trees this big anywhere.”

Knowles began stocking the developing campus with trees, shrubs and ground covers, working initially from a 1920s masterplan that had been largely ignored—probably due to a lack of money during the depression and the war. Plants arrived from other universities and government test programs across the country. If plants couldn't be found

through exchange, Knowles soon found they could be begged or borrowed from nearby city residences and moved with his new equipment.

The only black walnut on campus is now a mature ornamental just outside the faculty club, but it came from the backyard of a nearby home. “We found it growing in Garneau in the backyard of the old tuck shop. We convinced the people who lived there to give it to us,” smiles Knowles. We look at the tree and wonder why it came to a northern city like Edmonton in the first place and how much longer it will remain in its position without label or fanfare. Like so many other plants on a campus that is sure to continue to change as buildings are built and budgets are strained, the long-term survival of these old trees is in question.

Over 90 years ago, when the campus started, it was very rural. Now it is very urban. Open green space is limited. The task for current staff is completely different from landscape efforts in the 1950s and '60s. Knowles created sweeping shrub beds on campus, large areas filled with ground covers, and special pockets for specimen trees. When the head of horticulture at the University of Saskatoon, Dr. Patterson, began hybridizing edible pears for the prairies, Knowles was in line to get the new plants. The four cultivars of edible pear—Matthew, Mark, Luke and John—were brought to campus and while many mature pear trees still exist on campus, the actual names of each tree have been lost and only “John” seems to be available now commercially.

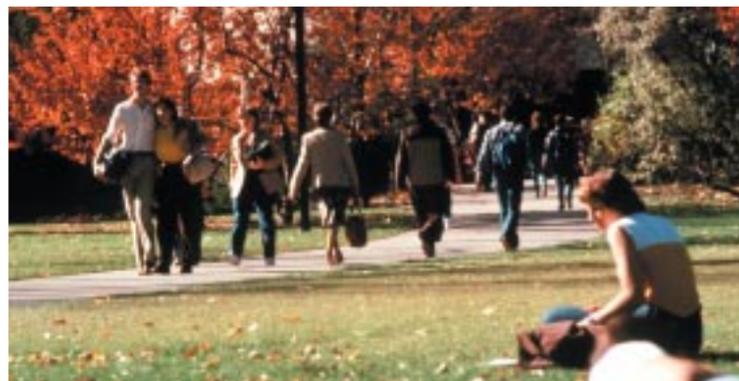
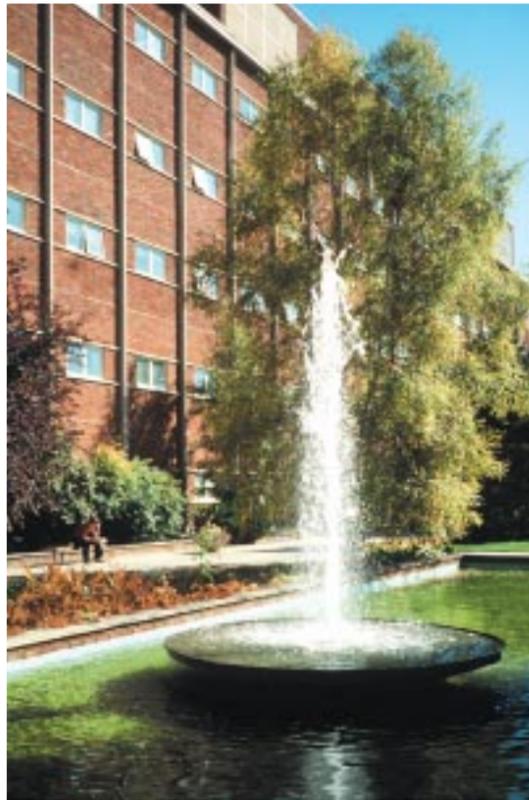
Because so little work had been done in testing of plant

hardiness and suitability for the prairies, Knowles worked as part of the Western Canadian Society for Horticulture (WCSH) to bring in and demonstrate new plant materials on campus as they became available. “Morden (Manitoba) was our main source of new materials” says Knowles. “They would give us a list and we would choose what we wanted and then observe it over 10 years.”

Although he retired from the University of Alberta in 1984, Knowles' biggest regret seems to be the loss of support and funding which resulted with the demise of the WCSH. “It's gone now and that's a shame.” But he believes the early work with plant introductions has benefited others who garden in Alberta. “Our involvement in plant testing rubbed off on the nurseries” says Knowles, who has seen many trees become known on the prairies once they were shown to be hardy at the University of Alberta. He points to the silver maple, as tall as the Dentistry–Pharmacy building; the mature pines: Austrian, Swiss, Eastern white and bristlecone; the amur cork, ginkgo and Dropmore lindens, all seen at least occasionally in catalogues and sometimes available from Alberta nurseries and garden centres. Other woody plants are in his book, even though no one in Alberta (or perhaps anywhere in Canada) is offering them for sale.

The dahurian birch is one example of a beautiful hardy ornamental possibly only growing at the University of Alberta, even though Knowles has been trying to encourage nurseries to grow these trees for years. The two original trees are located at the south end of the University's Quad (the

LEFT: Buildings are enhanced with woody plants or ground covers, which add to the “garden” feel on campus. TOP RIGHT: The 1920s' masterplan showing the central quad area still in place today. BOTTOM RIGHT: New equipment was designed in the early '50s to move large existing elms. OPPOSITE: Although older parts of campus look centuries old, most of the now mature trees were planted after Knowles' arrival in 1948.



large open space in the centre of campus) and are 40 to 50 years old at this point, brimming with their annual supply of seed. “Isn’t it amazing that somebody hasn’t picked that up?” asks Knowles. We look at the two trees and the great quantity of seed these *Betula davurica* from Northeast Asia are producing again this year, even though the trees are obviously in a dry, trampled site in the middle of campus. Perhaps students and nurseries are not seeing the rareness and obvious beauty in these trees with the large ornamental curls of bark that prompted Knowles’ common name for the tree—shagbark birch. It will be a shame if a sudden change of management or design means these trees are removed or damaged, eliminating the Alberta hardy seed source forever.

Knowles wasn’t interested only in trees and ground covers in his career. He also had an interest in turf grass, which brought money into the campus when he followed a hunch and a rumour. In the late fifties, when most golf courses in Alberta were using sand greens, the Banff Springs had started seeding annual bluegrass every spring to provide grass greens. Rumour spread that a grass at the golf course kept coming back every year instead of dying off with the rest of the annual grass greens, even though it was being mowed at the very low “greens height” of just 3/16 of an inch. Knowles

visited the Banff Springs with a group of turf professionals and took samples of the original low-mow, Banff hardy perennial—which turned out to be a hardy strain of Kentucky bluegrass. He was able to grow the grass at the University of Alberta, collect seed and sell the rights to commercial seed companies. Profits from “Banff” bluegrass still provide annual scholarships to University of Alberta students 30 years later.

As the former student, invigorated by the professor’s pop quiz, I would love to see continued ingenious ways of bringing money to the university, especially money to help preserve the now-historic trees, mapping them for posterity and making the campus a living classroom for gardeners across the prairies. When I remembered the distinctive monkey-faced leaf scars on the black walnut and recognized immediately the beautiful silver maples and Eastern white pines, I knew the trees were worth more to us in Alberta than their simple landscape value of screening or seasonal colour. These plants—some found only on Alberta’s oldest campus—are both our history and our future.

Donna Balzer, a former student of Knowles and graduate of the Ornamental Horticulture program at the University of Alberta, is—of course—a lover of trees.

LEFT: Many of the shrubs in the Hugh Knowles courtyard have now been removed and replaced with turf. TOP RIGHT: Sweeping lawns and unusual trees are maintained where there were “little more than grain fields” half a century ago. BOTTOM RIGHT: Plants on campus provide interest year-round, but every season has its highlights. In autumn, the brilliant red mountain ash trees are most noticeable.

Scavenger Hunt for Rare Trees on the U of A Campus

Former U of A students and keen gardeners may have a head start recognizing some of these unusual shrubs and trees on campus, but everyone who ventures through the University of Alberta can try their hand at finding these rare and unusual trees.



AMUR CORKTREE
(*Phellodendron amurense*)
Named for their thick, corky bark, which has been pressed and prodded by thousands of students. In summer, the large compound green leaves add to the ornamental look of this 10-m tall tree; there are only two specimens on campus.



DROPMORE LINDEN
(*Tilia x flavescens*)
From a Canadian breeder’s work, these original Skinner crosses, made in Dropmore, Manitoba, are so rich in beauty and well-adapted to western conditions it’s a surprise they aren’t more commonly seen.



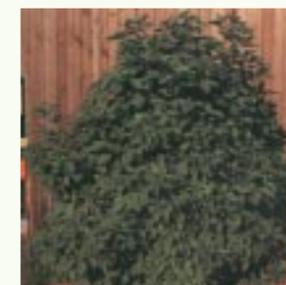
AUSTRIAN PINE
(*Pinus nigra*)
Sometimes called a black pine because of the intensely dark colour of its needles, this pine has retained a very uniform, upright shape in the Hugh Knowles courtyard between the Chemistry and Central Academic buildings on campus.



EASTERN WHITE PINE
(*Pinus strobus*)
A soft, feathery pine from eastern Canada, this tree probably reminded Knowles of his home province, Ontario. Several excellent mature trees with cones (seed) are on campus.



BLACK WALNUT (one only)
(*Juglans nigra*)
This tree is very unusual in Alberta and its beauty as an ornamental is best admired in the summer when the large compound leaves give the plant its dramatic appearance. Look for it on the northwest corner of the entrance to the faculty club.



PRICKLY SPINE
(*Acanthopanax sessiliflorus*)
Originally from the Himalayas, this large shrub with edible fruit has no special ornamental characteristics, which is probably why it is not seen widely.



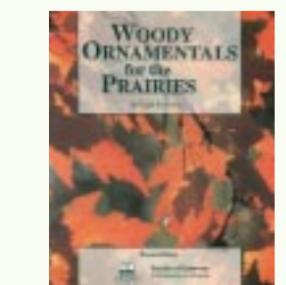
BRISTLE CONE PINE
(*Pinus aristata*)
This shrubby tree with arm-like limbs is excellent for rock gardens or landscapes where a plant with a weathered look is called for. Native only to a small zone in the American Rocky Mountains, it is now quite common in Alberta’s cities.



SWISS STONE PINE
(*Pinus cembra*)
The word is out about this majestic, soft evergreen, and several have been planted in residential areas in all exposures in both Edmonton and Calgary. It is now frequently available in nurseries.



DAHURIAN BIRCH
(*Betula davurica*)
The two trees originally planted are still at the south end of the central Quad—for now. Their bark is richly peeling and very ornamental. Seeds are available free.



WOODY ORNAMENTALS OF THE PRAIRIES
Published by the Faculty of Extension, University of Alberta, this book by Hugh Knowles, now the classic reference for prairie gardeners, began as a mimeographed handout for his students.