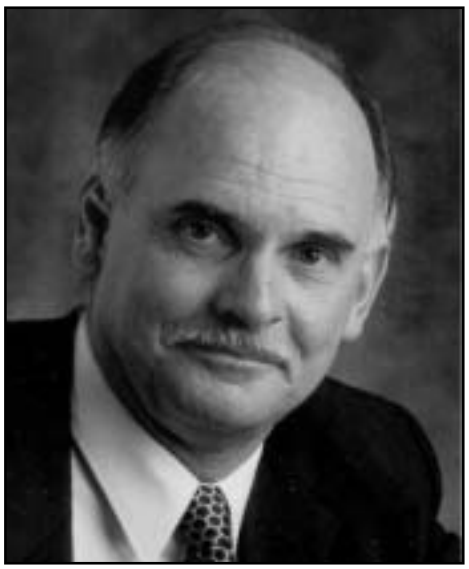
THE ARBORETUM UNIVERSITY OF GUELPH

THE *Green Web*

- NEWSLETTER OF THE ARBORETUM ◆ SPRING 2004 -

- A Message from OAC Dean Craig Pearson -



ANDERSON-COATS PHOTOGRAPHY

Craig Pearson.

I am very pleased that The Arboretum is once again aligned with the Ontario Agricultural College (OAC). OAC's new motto is "Food, Life, Leadership" and The Arboretum will play an important role in achieving our vision. Equally, close reporting linkage between The Arboretum and OAC will encourage our faculty, staff and students to develop initiatives with, and use The Arboretum, a benefit to both The Arboretum and the university as a whole. The Arboretum has played a very important role in the university and city for 30 years. It is a 'classroom' for the entire community. Whether it is students or faculty conducting research, taking a formal course or a member of the public taking a nature walk or children learning about the forest neighbourhood, it is a place for people to expand their knowledge of natural resources and wildlife.

As dean of OAC, I have been pleased to help The Arboretum start on its 2004 Master Plan. This is a much needed process that will assess all aspects of The Arboretum, from infrastructure to public service (see article on pages 6 and 7). The staff are very excited about the new opportunities that will come out of such a detailed review. As well, OAC has shared the financial support for the scoping study of the proposed Suburban Gardens, an expansion of the current Gosling Wildlife Gardens. This innovative design encourages the public to create ecologically sensitive yards; The Arboretum's new Master Plan will set the framework for the completion of this project.

As a reader of the Green Web, you are obviously a supporter of The Arboretum and I would like to take this opportunity to thank you for your continued interest in this University of Guelph gem.

INSIDE THIS EDITION

UNIVERSITY of GUELPH

- Creature Feature - Yellow-Bellied Sapsucker (*Sphyrapicus varius*) -

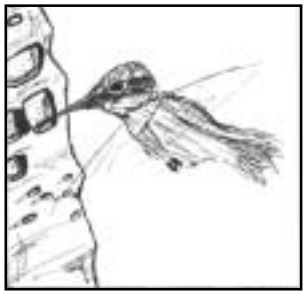
A yellow-bellied sapsucker and several wasps feed at sapsucker wells.

by Chris Earley

If someone called you a "Yellow-bellied Sapsucker," you would likely be shocked and insulted. I, however, would consider this to be a compliment. Let me tell you why.

Early in the spring, yellow-bellied sapsuckers return from their southern haunts in the eastern U.S., though a few do overwinter in southern Ontario (we had one stay in The Arboretum last winter). While not as impressive as a pileated or as flashy as a red-headed woodpecker, the yellow-bellied sapsucker is special in other ways. For example, they are the birds that make those lines of small squarish holes you see along tree trunks. These "wells" collect sap from the trees which in turn is collected by the sapsuckers, who also eat any insects that get stuck in the sap. But this food source isn't only used by the sapsucker; many other wildlife species use it, too. In fact, there is a strong link between the sap wells and the ruby throated hummingbird's ability to survive spring. Very few hummingbird-friendly flowers are blooming in early spring, but the wells provide a tasty, sugar-filled snack for hungry hummers. Other creatures that feed on sap from the wells include orioles, flying squirrels, wasps, other woodpeckers and many species of warblers.

So, how does the yellow-bellied sapsucker do it? The beaks of these birds have flat sides, making them very chisel-like. They peck with their beak to cut the edges of the square well, then they chisel off the center. Sapsuckers may do this a couple of times before the well is deep enough to collect sap. They also use their beak as an instrument. Early in the spring, you may hear the "Morse code" of staccato knocks that this species uses to proclaim its territory and attract a mate. And once a mate is found, the beak is used for another purpose: nest building. Sapsuckers drill a cavity into a tree trunk or branch, often choosing living wood that has a decaying centre. This is where they lay their eggs and raise their nestlings. When its brood is all grown up and gone, the sapsucker provides for other wildlife species again by abandoning its cavity nest. These empty holes are used for many years by other cavity nesters such as chickadees and nuthatches.



A ruby-throated hummingbird feeds at a sapsucker well.

The web of life goes beyond the regular food chains that most of us think of. If sapsuckers were removed from the picture, not only would it break the sap/insects to sapsucker to predator chain, it would rob other forest inhabitants of a food source (sap wells) and nesting sites (tree cavities). So, if anyone ever calls you a "yellow-bellied sapsucker", you can rightly assume that they think you are valued member of the community.

The illustrations in this article were created by Kye Schuett, a former co-op student from Guelph Collegiate Vocational Institute (GCVI).

- Valuable Volunteers go Virtual -

by Rob Guthrie

There seems to be a new trend developing in volunteer groups throughout the country. The term "Virtual Volunteer" has recently been coined to describe an emerging type of volunteer opportunities, a type that some members of The Arboretum Auxiliary have been participating in for many years. At the most basic level, according to the folks at serviceleader.org, the term refers to volunteer activities completed in whole or in part via the Internet and a home computer. In effect, something as relatively common as sending an e-mail reminder to a group of volunteers about an upcoming event could be interpreted as engaging the group as Virtual Volunteers.

To the 75% of Arboretum Auxiliary members who receive occasional e-mail "pleas for help" from me, congratulations on joining the world of Virtual Volunteering!

Continued on page 3

Now, you may not think that The Arboretum (a place where many volunteers come to get their hands dirty and to spend time growing, digging, and weeding) would have much to offer in this from of volunteering. But, in fact, off-site volunteers have helped The Arboretum maintain our website for many years, more than one database has been developed and kept up-to-date using volunteer efforts, and countless communications have been sent via e-mail. All this has taken place for some time, even before the true "computer-geekness" of the volunteer co-ordinator began to fully develop!

There have been some excellent publications produced about the Virtual Volunteering phenomenon, including "Virtual Volunteering: Current Status and Future Prospects" by Murray and Harrison of the University of Victoria. Their work indicates that although Virtual Volunteering is far less common than more traditional "face-to-face" forms, there are a large number of potential volunteers who would be willing to take on these types of positions. This suggests that new training and technological requirements may have to be put in place in order to make full use of this potential resource.

In my mind, there are many benefits to having at least a part of the overall volunteer program dedicated to Virtual Volunteering. It allows for more volunteer participation, especially during off hours or when volunteer and staff schedules don't align. It also makes communication between volunteers and staff much easier, and prevents the never ending games of phone tag that makes co-ordination so much fun. In additional, it allows people to contribute to the success of The Arboretum, even though they may not always be able to physically travel to Guelph.

All that being said, it also evident to me that technology will never completely replace more traditional means of volunteer recruitment, participation, and communication. It is, after all, very difficult to dig, weed, plant and prune over the Internet. This, in my mind, is also a very good thing.

- Nature Centre Notes -

by Zoe Fitzgerald

In the months since the temperature has dropped, I have been approached by many people who are surprised to find out that the Sunday Afternoon Walk programs continue throughout the winter months. I can understand that during the bleak brown days of November and early December, when the fall colours are long gone and the snow has yet to arrive, the idea of venturing outdoors may appear somewhat less than inspiring to some, even with the balmy weather that last December brought us. However, when the snow appears, winter programs become some of the most fun and rewarding ones to run and attend!

JENNIFER DAGG

Zoe leads walk participants on a search for winter insects.

ZOE FITZGERALD

Volunteer Emily Kerton prepares for a winter program.

Some highlights of our winter programming include the Christmas Hike 'n' Craft and the Snowshoe Hike. Although it was a freezing blustery day, we had a number of families attending our Christmas program this year, and volunteers Gord Graham and Anna Petraki were happy to help out. Another Arboretum volunteer, Emily Kerton, led the snowshoe hike this year, which attracted about 50 people, as well as the attention of the Guelph Tribune!

I think it is essential to remark that many of the fun and exciting things that go on at the Nature Centre would be almost impossible without the generous help of volunteers. I am continually amazed and delighted at the willingness of these enthusiastic individuals to contribute their time, energy, and knowledge.

I hope you've all had a fun winter, and had the opportunity to spend some time outdoors doing things that you enjoy, whether it be trekking on snowshoes, practicing your winter botany, feeding chickadees, or simply reveling in the snow. I look forward to seeing you at the Nature Centre this spring!

- Tree to See - European Mountain Ash (*Sorbus aucuparia)* -

by Henry Kock

Common names will often cause confusion but only because we like making associations. “It looks like... an ash...well at least the leaves do...sort of!” The Mountain Ash is not a true ash tree of the genus *Fraxinus*, which is in the Olive Family (Oleaceae) with lilac and forsythia. Mountain Ash trees are in the Rose Family (Rosaceae), a very large family that includes hawthorn, serviceberry, crab apple, cotoneaster, quince, cherry, plum, peach, potentilla and of course, roses and many others with five-part symmetrical flowers.

Mountain Ash are so named for the compound leaf and affinity to slopes, cliffs and rocky mountain tops - places where deer or moose can’t easily browse the young plants to oblivion. I see many seedlings in the wild (especially in the disturbed soils along portage trails) but few ever survive even for more than a few years, due to the heavy browsing.

HENRY KOCK

Fruit clusters on the European Mountain Ash.

There are some 80 species of Mountain Ash in the northern hemisphere, primarily in Asia. Three species are found in North America and two (European Mountain Ash and White Beam) in Europe. One of the main reasons that more species are found in Asia is that China, Japan, Korea and southeastern Russia were not subjected to the species extinctions associated with several glaciation periods that occurred in Europe and eastern North America.

European Mountain Ash is the only Mountain Ash to be seen in the wilds of southern Ontario since the two native species (Showy and American Mountain Ash) only fare well naturally north of Owen Sound and Barrie, midway through their range from Newfoundland to B.C. (also south through the high elevations of the Allegheny Mountains deep into the US). For those interested in a rather unique journey in Ontario’s Lady Evelyn-Smoothwater wilderness area, take the two day paddle on the Montreal River south from Beauty Lake Road (off Highway. 560 west out of Elk Lake) through Smoothwater Lake and portage across the great divide into the Sturgeon River watershed, to Scarecrow Lake (great campsite on an island there) and hike the trail up to the old fire lookout situated on the highest point of land in Ontario, the Ishpatina Ridge. Along the trail, I walked past huge, old, white pines under which grew Showy Mountain Ash trees as large as I have seen, some with trunks almost 30 cm diameter. Ask me for maps if interested.

European Mountain Ash or Rowan Tree as it is known in England has been planted in gardens since early settlement, mostly by those who are afraid of the ancient healers. It had the reputation of being able to keep witches away from your house if planted near the entrance. You will notice Rowan Trees when they are in full bloom in June or with the heavy clusters of orangish berries ripening in October and persisting into winter when robins and cedar waxwings feed on them. The Rowan Tree has thus naturalized extensively, along fence lines and woodland edges throughout our area - the seeds dispersed by birds which have adapted to thrive on many of the exotic fruits.

The relatively smooth trunks of European Mountain Ash are sometimes pocked with rows of sap wells that are excavated by the Yellow-Bellied Sapsucker (see page 2). Like sap collecting from maples, the sapsucker drilling does not seriously affect the health of the tree. Mountain Ash are not long-lived trees and so the decline of an old tree is sometimes but incorrectly attributed to the drilling of sapsuckers.

You can find at least one Rowan Tree along almost any residential street. Either some people are still afraid of witches or they love the bright orange fruit display and the birds that feed on them. In the World of Trees collection you can find European Mountain Ash with some of its close relatives, including the native Showy Mountain Ash and some of the single-leaved species from Asia as well as other members of the Rose Family surrounding the Mountain Ash section.

- Jane Goodall visits The Arboretum-


OWEN SLATER

Henry Kock leads the peace garden workshop.

by Michele Martin

Roots & Shoots is the Jane Goodall Institute's international environmental and humanitarian program for youth, and its mission is to inspire people to take action to make the world a better place for animals, the environment and the human community. Founded by Jane Goodall in 1991, there are now about 5000 Roots & Shoots groups in 80 countries worldwide, with about 100 of these in Canada. What does this have to do with the Arboretum?

Well, in September, 2002, the Arboretum generously opened its doors to the Jane Goodall Institute of Canada, providing office space for the NGO's first regional Roots & Shoots Coordinator, Michèle Martin. The role of the Roots & Shoots Regional Office is to provide support for and facilitate networking between groups in Ontario, as well as to provide outreach programs to encourage more schools and other community groups in the region to join the program.

On November 5th, 2003, The Arboretum hosted a Roots & Shoots festival with Jane Goodall as the guest of honour. Over 200 Roots & Shoots members from all over Ontario gathered at the Arboretum Centre to participate in workshops, meet Jane Goodall, and share their projects and ideas with one another.

Arboretum staff facilitated a number of workshops, including a Nature Scavenger Hunt, a Schoolyard Naturalization workshop, and a special workshop involving planting shrubs and perennials in a newly designated Roots & Shoots Peace Garden behind the Arboretum Centre on the Ivey Trail. This garden commemorates the Roots & Shoots festival as well as Dr. Goodall's appointment as a UN Messenger of Peace.


OWEN SLATER

Henry poses with Jane Goodall.

For more information about the Jane Goodall Institute or the Roots & Shoots program, please contact:

Michèle Martin,
Roots & Shoots Regional Coordinator (Ontario),
519-824-4120, ext. 58736
michele@janegoodall.ca.


NICOLA MARTIN

Zoe Fitzgerald helps with a Schoolyard Naturalization workshop in the Gosling Wildlife Gardens.

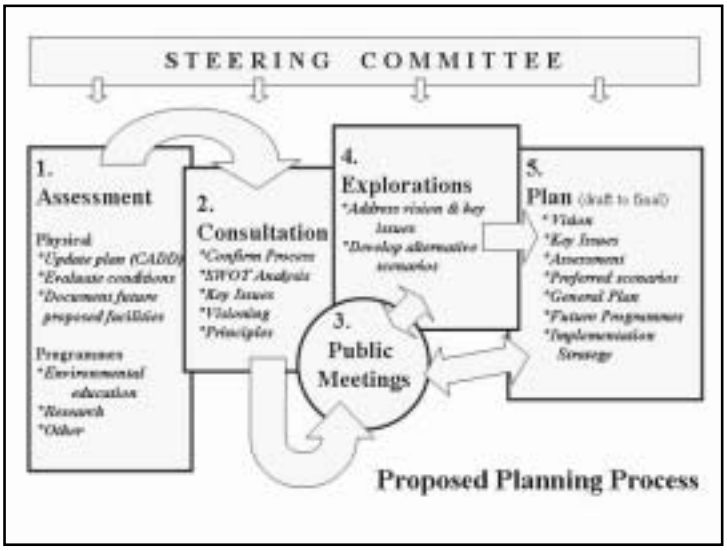

NICOLA MARTIN

Chris and Nathan Earley present their Roots and Shoots display to Dr. Jane.

- A New Master Plan for The Arboretum -

by Professor Alan Watson

The Arboretum had its 33rd Anniversary in November 2003 and during those past 33 years, the development of the site, programs and activities have been directed by two master plans. The first master plan was developed under the leadership of Professor Bill Coates. This plan served The Arboretum until 1985 when OAC Dean Freeman McEwen appointed a steering committee, chaired by Professor James Taylor, to update the 1970 Arboretum Master Plan. That master plan was finished in June 1986. Now, 18 years later, the 1986 plan is out of date and requires re-examination in view of changing needs, and the requirement to reflect the new Campus Master Plan (2002). The Board of Governors, along with the Dean of OAC, Professor Craig Pearson, launched the process for updating The Arboretum Master Plan in the fall of 2003. An 18 member steering committee was formed, chaired by Ms. Robin-Lee Norris of the University of Guelph Board of Governors. Professor James Taylor, Landscape Architecture, is heading the planning team which will oversee and produce the new master plan. Jim's key role in the new master plan is, I believe, strengthened by his leadership in the 1986 plan. We are fortunate to have his expertise being applied to our new master plan.



A new master plan for The Arboretum! This is indeed an exciting development as it offers an opportunity for members of the university and larger community to think about and comment on the direction of The Arboretum over the next 15 to 20 years. The new master plan will address the following:

- Assessment of physical resources
- Assessment of current outreach, research, teaching, educational programming and entrepreneurial activities
- The identification of key issues
- Development of a Vision and Guiding Principles
- Exploration of Physical Plan scenarios
- A new Physical Plan
- Framework for future programming/activities in enterprise, research, education and outreach.

The planning process for the master plan development is illustrated below. The process will be guided by a steering committee with wide representation from the University and broader community who use and support The Arboretum (see member list on next page). The steering committee will guide and monitor the progress of the process. In due course, the steering committee will report to the Physical Resources and Properties Committee (PRPC) of the Board of

Schedule For Proposed Planning Process

1.	**Assessment**	December 15, 2003 to January 31, 2004
2.	**Consultation**	January to February 27
	2.1 Key Issues & SWOT with Arboretum staff	January 15
	2.2 Visioning with steering committee	January 22
	2.3 Key Issues & SWOT with steering committee working group.	January 26
	2.4 Stakeholders meetings	throughout February
3.	**Public Meeting #1**	January 29
4.	**Public Meeting #2**	April (TBA)
5.	**Explorations**	February 15 to March 15
6.	**Draft Plan Update**	March 15 to April 15
7.	**Final Plan**	April 28 to May 31

ZOE FITZGERALD

Robin-Lee Norris speaks at the first public master plan meeting.

Governors. The planning team, headed by Professor Jim Taylor, will include two graduate student assistants. Along with the support of Arboretum staff, the planning committee will produce the master plan. I am very pleased with the close involvement of Arboretum staff with the planning process. Early in January, for example, the Arboretum staff carried out an assessment of strengths, weaknesses opportunities and threats. This assessment was used by the planning committee to develop eight Key Issues which were then presented to the steering committee during their first meeting.

These Key Issues (in alphabetical order) were:

- Ageing and/or inadequate infrastructure
- Awareness of resources (by others)
- Capacity (teaching, research, outreach - facilities and staffing)
- Role within the University and community
- Stature both locally and globally
- Stronger partnerships
- Sustainable funding
- Urban integration.

As you read this article, the development of the new master plan is in its early stages. It is proposed that we will have a final Arboretum Master Plan by May 31, 2004. (See previous page for a proposed planning schedule.)

Following consideration of the final Arboretum Master Plan by the University's Board of Governors it is expected that the master plan would be adopted and become part of the University's long-term vision, along with the Campus Master Plan which was adopted in 2002.

It is anticipated that once the Arboretum Master Plan is accepted by the Board of Governors it will form the template upon which we will develop a Business Plan to create a medium-term financial framework for our operations, i.e., implementing the Arboretum Master Plan.

The strength of the planning process, outlined above, is the diverse backgrounds of those who are providing input and who are overseeing the process. In addition to this, there are opportunities for you to offer insights, ask questions and direct investigation. You can contact the planning team in the following ways:

E-mail arboplan@uoguelph.ca
Telephone 519-824-4120, ext. 58719
Mail The Arboretum,
University of Guelph,
Guelph, ON
N1G 2W1
ATTENTION: Master Plan

You can also visit The Arboretum's "new" website for more information and updates on the master plan: htttp://www.uoguelph.ca/arboretum

ZOE FITZGERALD

Attendees present questions at the first public master plan meeting.

The Arboretum Master Plan Steering Committee

Brian Allen	(Faculty; Math and Stats.)
Ann Arrell	(Canada Blooms)
Stephen Bodsworth	(Director; Humber Arboretum)
Pam Healey	(Administration; Acting V.P. Development and Alumni Affairs)
Melanie Howarth	(Staff; Human Resources)
Lori Bona Hunt	(Staff; Communications and Public Affairs)
Jill McCutcheon	(Faculty; Assoc. V.P. Academic)
Amanda Mikelson	(Student; Fine Arts)
Steve Newmaster	(Faculty; Botany)
Robin-Lee Norris	(Commitee Chair; Member of the Board of Governors)
Craig Pearson	(Faculty; Dean of OAC)
Larry Peterson	(Professor Emeritus; Botany)
Chris Pickard	(Administration; Director, Planning, Engineering, and Construction, Physical Resources)
Roberta Porter	(Arboretum Auxiliary member; Arboretum Donor)
Jill Roberston	(Graduate student; Landscape Architecture)
Jim Taylor	(Faculty; Landscape Architecture)
Alan Watson	(Faculty; Environmental Biology/Director of The Arboretum)
Alan Wildeman	(Faculty; VP Research)

- Of Plant Diversity and The Evolution of The Arboretum -

by Henry Kock

Seventy five million years ago, the mountain ranges of today were absent and great inland seas maintained a more moderate climate. A vast warm temperate forest covered most of the earth, including the north polar lands. Ginkgo, Dawn Redwood and many other "Asian species" are found as fossil remnants in northern Canada. Thirty five million years ago the great super continent was shifting apart and the Rockies, Alps and Himalayas were being pushed up. The inland seas, now in a rain shadow, began to dry up and the moderating effect of a large body of water was lost.

Twenty five million years ago, a polar ice cap begins to enlarge and divides the great forest in half. Plant families are separated for the first time. A series of ice ages advanced and retreated, pushing the vegetation and wildlife south. In Asia and America the vegetation could retreat to the south and rebound north in relatively full diversity after the last glacial period ended about 10,000 years ago. A very different situation in Europe reduced plant diversity to a mere handful of what used to exist. The Alps blocked the southward migration of plants; most of the diversity was lost.

The landscaped gardens of Europe had very little to work with until plant explorers began to arrive back from Asia, and later North America. It is little wonder that the plants of China in particular (which virtually escaped glaciation) are so coveted in the landscape, they were so different and so diverse.

An Arboretum, and to a lesser extent the garden, is a place where long separated species are reunited, side by side we can see relationships and variation within genera and between species. We can also see how closely all plants are related, no mater where in the world they came from. They, like animals, all have common origin, and common destiny.

The Arboretum at Guelph

In April of 1970 a new arboretum took shape, an area of 1.5 acres was fenced off from the Harrison Farm, in Guelph, for initial nursery plantings. Professor Robert Hilton was appointed as the first director. Hilton took office in a converted poultry house, part of which remains today as the header house for two small decaying greenhouses. By November of 1970 the master plan was approved in detail. This action set aside in perpetuity the University of Guelph Arboretum site of 331.6 acres on the east boundary of the campus.

The Arboretum at the University of Guelph is 34 years old now. It is one of many arboreta (specializing in arboricultural study of woody or arborescent plants) in the world and is distinguished from a botanical garden in that a botanical garden is usually associated with a medical science university which attempts to grow in cultivation, representatives from the entire plant kingdom for pharmaceutical research. Some arboreta started out as the passionate dream of plant collectors. When the estate was in its prime, with aged specimens of plants from all over the world, it was often passed on to the public domain and funded from endowments or sponsors.

As with most Arboreta the history of Guelph's Arboretum goes back in time. Since the establishment of the Ontario Agricultural College, in 1874, a collection of woody plants was thought to be needed for instructional purposes. The original plantings of the Guelph campus in the 1880s was planned to support teaching and research. While these first plantings fulfilled some of the functions of an arboretum, change and expansion of the university created a need for more arboretum space.

There is little doubt that interest in plants was heightened by the activities taking place at the Arnold Arboretum, with its prominent plant collection program. In 1939, Professor Leslie Hancock proposed a plan for a small arboretum in the north end of the campus. This was followed by a series of proposals, put forward by Dr. R. J. Hilton, Prof. V. Chanasyk and Prof. F. H. Montgomery, concerning the need for an arboretum. An arboretum study committee was formed in April of 1964, and two years later the Board of Governors approved in principle the concept of establishing an arboretum as a "living laboratory", and the master plan was approved in 1970.

Guelph is located in a climate area just north of the major population centres making it an ideal site to select plants for gardens. Dr. Hilton believed that starting a new arboretum would create the opportunity to study plants in greater diversity than earlier plant collections.

ARBORETUM ARCHIVES

Young maples planted near the O.A.C. Centennial Arboretum Centre in 1975.

HENRY KOCK

A recent photograph of The Arboretum Centre, taken from a similar angle.

One of the most significant features at The Arboretum is that it was to establish more than one specimen of a given species, and preferably from different seed sources.

The Harrison Farm was a windswept tract of eroding farm land when it was set aside by the University for the purpose of establishing an arboretum. Hilton set about purchasing plants from nurseries in order to get something established as soon as possible. An education trip to the Arnold Arboretum in 1984 gave the staff here the opportunity to learn a great deal from previous experiences.

Plant propagation by seed did not take a strong form until 1982. At that time up to 1200 seed lots were handled each year. Seed was acquired through the international seed exchange, a cooperative venture of the international association of arboreta and botanic gardens. Plant acquisition is based on the general principle that the seed should have documentation of its original wild source, and preferably not collected in an arboretum setting where hybridization is possible.

The number of collections made of a particular species depends on the size of its natural distribution or its natural variability. For example, an unusual species of very limited distribution in the Himalayas, *Betula utilis*, most likely has very little genetic variability, and we consider it sufficient to grow one or two specimens from one seed source. A species with noticeable variation over a wide habitat range in North America, like *Betula papyrifera*, would be represented by dozens of seed sources that represent the diversity, and give us an opportunity to understand more about its adaptive range. A very rare species in Ontario, *Betula lenta*, will have propagules grown from every individual tree that has been found.

The Arboretum is a biological centre that incorporates horticultural and botanical family collections with existing natural wooded areas. The plantings amount to 1200 species and about 700 hybrids and selected cultivars among the more than 6700 living plant records, a record refers to one to many individual plants installed in a particular area.

The collections range from a central World of Trees collection which is an overview of the diversity of the woody plants of the northern hemisphere, to a collection of Rhododendrons that include many species that have never been grown in Ontario. There are 31 botanical family collections, a native woody plant collection, the Gosling Wildlife Gardens and gene bank orchards for the rarest plants native to Ontario.

The Arboretum is not completed by any means, and has established an active friends program and a series of workshops and short courses to generate some of the revenue to continue the development.

The Arboretum has been directed to use University support only for education and maintenance of the existing plant collections. All future plant acquisition and collection development now will rely entirely on sponsorship or endowment. Much of the planting and maintenance work is carried by the tremendous support of a team of volunteers.

Future Arboreta and Botanic Gardens

I have personally visited more than 30 arboreta and botanic gardens in Holland, England and North America. Each one is distinct in their own way, but they mostly have one thing in common, that they are collections of specimens.

The strange thing about most arboreta and botanic gardens is that the plants have been taken out of a natural plant community and established as an isolated specimen often in a managed turf area. We can appreciate and be inspired by the beauty and magnificence of many species this way, their form and texture and color is unobstructed by the forest or meadow from where they came.

The unfortunate thing is that our knowledge of plants is not very broad from this form of study. We tend to work with individual specimens and not with plant communities. The starkness of the landscape is the legacy brought about by such a limited view of the plant world.

The master plan of The Arboretum at the University of Guelph is partly unique in focusing on wild species genetic diversity and having enough space to show it. Its strength lies in the interpretive programs and workshops on biodiversity of plant communities.

Present day concerns for integrity with a healthy environment give arboreta and botanic gardens a new focus; a better understanding of diverse plant communities is more important than just being able to grow a great number of species, as in the past.

ARBORETUM ARCHIVES

Early plantings in the Maple Collection, showing Harrison Dairy Barn before conversion to the R.J. Hilton Centre in 1972.

- The Arboretum Gratefully Acknowledges -

LIFE TIME FRIENDS
Life time FRIENDS will be listed in the next issue of the Green Web.
(+ deceased)

The following donations were made in the time period of **August 1 - December 31, 2003.**

ANNUAL FRIENDS

POPLAR
Alvin & Margarete Gillies

LOCUST
Sarah Abell
Ken & Betty Aitken
David Alexander
Donald & Carole Bates
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Marleigh Demelis
John & Susan Devaney
Peter Dunkerley
Ardale Ellis
Tim & Rosemary France
Ruth Geddes
Leland Gosselin

Donations may be made payable to The Arboretum, University of Guelph. Donors will receive a tax receipt, and donations will apply toward membership in the giving clubs of the university. These are as follows:

Governors' Council	($10,000 or more)
Chancellor's Circle	($5,000 to $9,999)
President's Council	($1,000 to $4,999)
Dean's Circle	($500 to $999)
Century Club	($100 to $499)

For more information on named gifts and memorials, please contact Prof. Alan Watson at 519-824-4120, ext. 52356 or awatson@uoguelph.ca .

W. Gordon Graham
Bernard & Barbara Gutsell
Robert & Nancy Haig
Robert & Helen Hansen
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Alexandra Hurst
M. Burton Keffer
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Gerald & Mary Ann Lapensee
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- Bringing the Garden Indoors (And Then Taking it Back Outside) -

by Lenore Ross

Late winter can be bleak, particularly so for gardeners. Although the days are lengthening and the sun is getting stronger, the reality of puttering in our gardens is *several* weeks away yet. How *do* we cope with garden withdrawal? Most grocery stores and general nurseries conveniently have just the solution: potted bulbs and plants that have been forced into bloom.

Such a quick hit for the garden-deprived does not come entirely without guilt. I have always felt that throwing away these plants was wasteful. Surely, they could be reused in the garden and not just recycled into compost. In fact, many forced bulbs and plants can be replanted and, although they are weakened, most do have potential - gardeners are optimistic souls. While there are dozens of different potted and flowering plants available for sale at this time of year the plants with the greatest potential for continued use are those that are winter hardy in our climate: tulips (*Tulipa sp.*), daffodils (*Narcissus sp.*), crocus (*Crocus sp.*), hyacinths (*Hyacinth sp.*) and primulas (*Primula sp.*). The paperwhites (*Narcissus sp.*), cyclamen (*Cyclamen sp.*), gloxinias (*Sinningia speciosa*), oxalis (*Oxalis sp.*), gerberas (*Gerbera jamesonii*) and cinerarias (*Senecio x hybridus*) although effective in banishing winter gloom will not last outdoors past the first frost next autumn.

These bulbs and plants are very easy to care for after purchase and until flowering has finished. They simply need even water and reasonably bright sunlight. For bulbs such as tulips, daffodils, crocus and hyacinths, once the blooms have faded, the foliage still requires good bright light to replenish the nutrient reserves in the bulbs. An application of domestic fertilizer with a higher phosphorous rating (the middle number in the fertilizer rating i.e. 10-52-10) will encourage the rejuvenation of the bulbs. Once the leaves have faded and the danger of all spring frost has passed, the potted bulbs can be planted outdoors. All potting mix should be removed and the bulbs set at the standard depth for the particular bulbs (approximately three times the height of the bulb below grade). Because the bulbs have been drained of much of their resources, you may get only foliage next spring. Treat the foliage as you would other bulbs and allow it to ripen naturally and completely. The bulbs will recover.

Garden plants such as primulas require a slightly different approach. Many primulas are quite weakened after being pushed to such a lush bloom display that even the leaves begin to die back. I have found that repotting and dividing primulas as soon as the bloom display begins to decline is an effective way of prolonging their life. The new soil and a light (half strength) application of high phosphorus fertilizer will bring the plant back to regular growth and flowering rate. Primulas can be planted out in the garden in a semi-shaded position in late spring once the chance of frost has past.

These late winter blooms are easy to prepare yourself rather than purchasing commercially forced bulbs. Next autumn, buy a few dozen extra bulbs and pot them up in regular potting mix in October or November. They will need approximately 6 weeks of cool moist treatment in an extra fridge, unheated garage or cold cellar. Following the cold treatment the bulbs then require several weeks of cool house temperatures and good sunlight and to reach bloom. Excessively warm temperatures and low light levels will cause the stems and leaves to become long, weak and eventually tip over. Or…you can stop at the grocery store or a garden centre.

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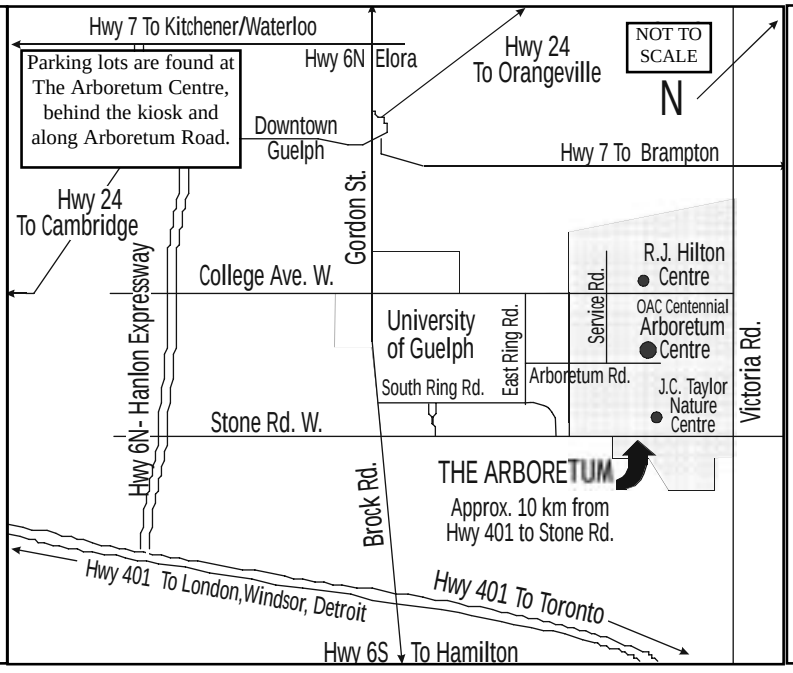

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