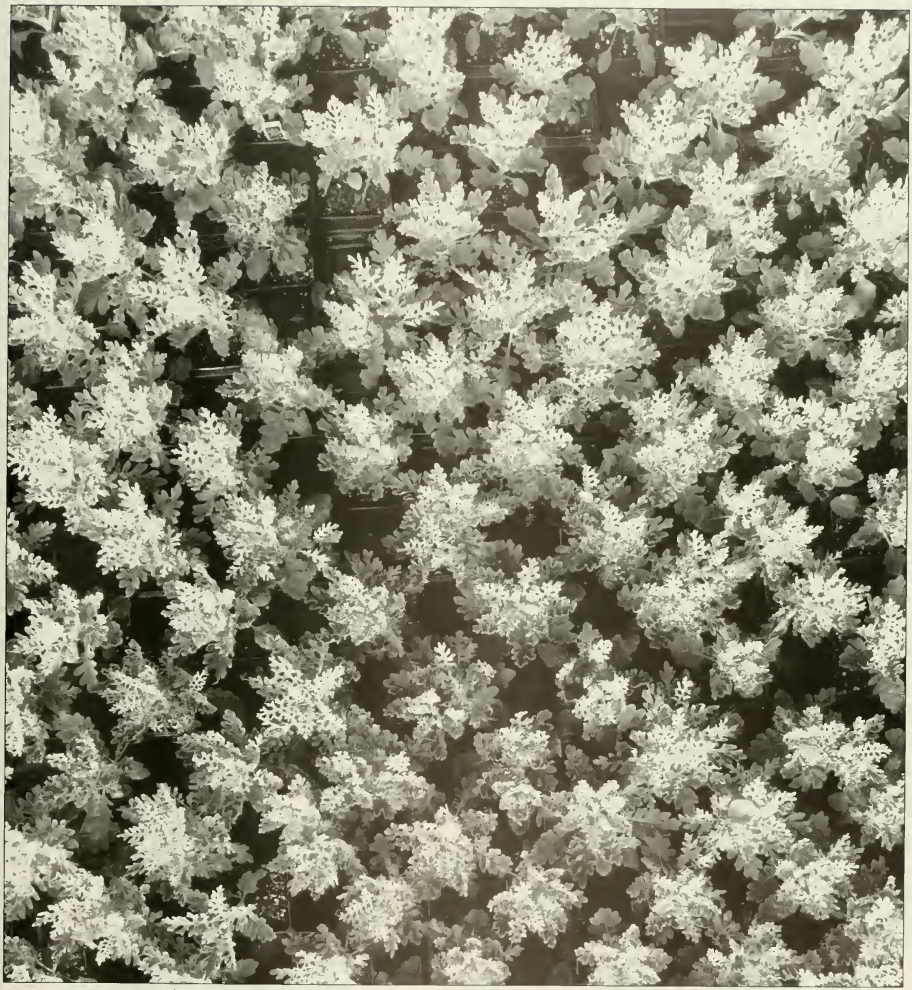


The Plantsman

NEW HAMPSHIRE PLANT GROWERS ASSOCIATION / OCTOBER / NOVEMBER 1998

We have a special name for the trees that come from our farms—ArcticMist.™ When you order ArcticMist,™ you are not just buying a tree, but all of the time, attention, and care—from seedling to shipping— that goes into creating a safe, healthy, and beautiful Christmas tree.

We plant from seed to achieve maximum quality control. All ArcticMist™ trees are heavily needled and have dense conical shapes. Their lovely blue color, rich fragrance, and good needle retention make them ideal Christmas trees. Fraser, balsam, white spruce, and pine (white, scotch, and red) are available. In addition, we are introducing fralsam, a fraser-balsam cross. Wreaths are also available.

Since our farms are in New Hampshire and Vermont, we harvest our trees later in the season than many other growers. We also do everything we can to minimize moisture loss after harvest and during shipping.

You can order the number of trees that is right for you— from 25 to a trailer load. We can arrange shipping or you may pick up the trees yourself. We respect your schedule and guarantee on time delivery. Our trees arrive individually wrapped and ready for sale. All you need to do is remove the wrappers and set the trees out—no broken branches, no last minute trimming.

To place an order, or to receive specific information about this year's trees:
Call us at 800/694-8722 or 603/237-5702.
Send us a fax at 603/237-8439.
Or write to us at 38 Bridge St., Colebrook, NH 03576.
Our internet address is http://www.sibgotree.com

Sibgo Tree Company

We know what you want for Christmas!

ArcticMist™

Remember, you can only buy ArcticMist™ at Sibgo Tree Company.

October

19-21 *New England Greenhouse Conference,* Centrum Centre, Worcester, MA; Henry Huntington at 603-435-8361.

24 *Fall UNH-FFA Interscholastic Career Development Event,* University of New Hampshire, Durham, NH; David Howell at 603-862-1760.

November

4-6 *ERNA's Expo Fall '98,* Atlantic City Convention Center, Atlantic City, NJ; 1-800-376-2463.

17 *MNLA/UMass Business Short Course,* Holiday Inn, Boxboro, MA; 413-369-4731.

18 *CGGA "Evening at the Greenhouse,"* DeVylder Florist, Cheshire, CT; 203-261-9067.

January

6-7 *New England Tree Fruit Meeting and Trade Show,* Sturbridge Host Hotel and Conference Center, Sturbridge, MA; Bill Lord at 603-862-3203

12-13 *Connecticut Nurserymen's Association Annual Meeting and Trade Show,* Radisson Hotel, Cromwell, CT; 203-445-0110

19 *Maine Landscape and Nursery Association (MeLNA) Trade Show;* Sheraton Tara, South Portland, ME; Edith Ellis at 207-225-3998

19-20 *Rhode Island Educational Meeting, Annual Meeting, and Trade Show,* Doubletree Hotel, Goat Island, Newport, RI; 1-800-758-9260

28-30 *New England Grows!* Hynes Convention Center, Boston, MA; 508-653-3009

February

5 *MeLNA Recertification Workshop;* Falmouth Country Club, Falmouth, ME; 207-225-3998

5-6 *Farm and Forest Exposition* ("Celebrate a Century of Agriculture and Forestry Progress"), Center of New Hampshire Holiday Inn and Conference Center; Susan Rice at 603-271-3788

9 *Second Annual Stockbridge School Job Fair,* Campus Center, UMass, Amherst, MA; 413-545-2222

16 *Symposium on Mycorrhizae,* Stockbridge Hall, UMass, Amherst, MA; Kathleen Carroll at 413-545-0895

16 *Vermont Small Fruit and Vegetable Growers Meeting,* Holiday Inn, Rutland, VT; Scott Pfister or Jon Turmel at 802-828-2431

17 *Seminar: "Nutrient Management in the Nursery and Landscape,"* concurrently in Amherst and Bridgewater, MA; Kathleen Carroll at 413-545-0895

17 *Vermont Association of Professional Horticulturaiists Winter Meeting,* Holiday Inn, Rutland, VT; Scott Pfister at 802-828-2431

18-21 *Sixth Annual Rhode Island Spring Flower and Garden Show* ("Gardens of the Future"), Rhode Island Convention Center, Providence, RI; Nancy Syme at 1-800-766-1670

18-21 *Eighteenth Annual Connecticut Flower and Garden Show ("A Garden to Celebrate"),* Connecticut Expo Center, Hartford, CT; 860-529-2123

26 *Fifth Annual Ecological Landscaping Association (ELA) Winter Conference ("Ecology and the Managed landscape"),* co-sponsored by ELA, UMass Extension and the New England Wild Flower Society, Holiday Inn, Boxborough, MA; Nancy Askin at 978-897-7490

March

2-4 *Second Annual New England Regional Turfgrass Conference and Show (NERTCS),* Rhode Island Convention Center, Providence, RI; 401-848-0004

4 *Thompson School Horticulture Curriculum Green Job Fair,* Strafford Room, Memorial Union Building, UNH, Durham, NH; Rene Gingras at 603-862-1097

5-7 *Vermont Flower Show, Sheraton Hotel and Conference Center,* Burlington, VT; 802-244-5327

10-14 *Portland Flower Show, Portland Company Complex,* Portland, ME; 207-225-3998

Contents

Departments

3 FORUM

6 NEW HAMPSHIRE NEWS

7 ELSEWHERE IN THE NEWS

25 DIAGNOSTIC UPDATE
Dr. Cheryl Smith

27 HOW ABOUT HERBS
Tanya Jackson

Features

15 PRACTICAL WORK EXPERIENCE
Art Cady

17 ROTH IRAS
Stephen Lawlor, CPA

18 MEMBER PROFILE
Deerfield Gardens

21 THE NATIVES ARE HERE TO STAY
Bruce Behan

Columns

4 Z NOTES
Jim Zablocki

12 THE GREEN SPOT
Mike Cherim

15 PIONEER POINTERS

Cover

Dusty miller, Deerfield Gardens, photograph by Rick Raymond and Rachel Raymond of Blue Heron Images. 33mm camera, 24mm lens, T-Max film

The Plantsman **is published in early February, April, June, August, October, and December with copy deadlines being the first of each prior month. While camera-ready ads are preferred, set-up assistance is available at a nominal fee. Free classified advertising is offered as a member service. We will carry a short message (no artwork or logos) for one or two issues of *The Plantsman*.**

AD SIZE		6x	1x
3 3/8"w	x 2 1/4"h	$150	$30
3 3/8"w	x 4 3/4"h	$200	$40
7"w	x 2 1/4"h	$200	$40
7"w	x 4 5/8"h	$300	$75
7"w	x 9 1/2"h	$500	$100

For further information, please contact the editor: Robert Parker at the UNH Research Greenhouses, Durham, NH 03824, 603-862-2061; or PO Box 5, Newfields, NH 03856, 603-778-8353.

Welcome, New Members!

Deborah Carpenter
118 East Deering Road
Deering, NH 03244

GCS Sales & Marketing
572 Gibbons Highway
Wilton, NH 03086

Susan Gere
17 Severance Street, #2
Claremont, NH 03743

Greenside Up
PO Box 447
Greenland, NH 03840

Judith Reeve Landscape Design
14 North Balch Street
Hanover, NH 03755

Lawrence Greenhouse
200 Richmond Street
Winchester, NH 03470

Perennial Design Landscape
425 Tibbetts Hill Road
Goffstown, NH 03045

Smith Farm
3 Gibson Road
Hudson, NH 03051

Sullivan Greenhouse
RFD 2, Box 661, Route 135
Lancaster, NH 03584

Yankee Kingdom Orchard
2769 Lake Street
West Addison, VT 05491

Endowment Update

Peter van Berkum

People who got to the Summer Meeting saw the second act of "The Airplane Skit." Yes, we're still trying to land, but getting closer all the time, with over $85,000 pledged. The donations are coming in fast now. We're excited to announce that we will make our first grant in November, 1999. We've worked out a schedule: universities and research institutions will be notified by next June about the availability of funds; grant applications will be received by September.

We've been asked by people who've pledged if they will be reminded of when the next installment of their contribution is due. We will be sending out reminders next month. Starting next year, reminders will be sent in June.

So keep watching. The research will be starting and the rewards of our labor will soon be visible.

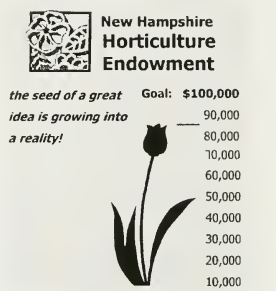
(For those wishing to contribute, checks made out to New Hampshire Horticultural Endowment can be sent to New Hampshire Horticultural Endowment, 7316 Pleasant Street, Loudon, NH 03301. For more information, contact Peter van Berkum at 603-463-7663 or Henry Huntington at 603-435-8361).

Activities for Customers—and You

It's useful to promote garden-related programs and activities. These can create interests that increase sales. But promotion doesn't always need to be cold-blooded. Sometimes learning is enough. Sometimes you might be interested in learning too.

Tower Hill Botanic Garden, PO Box 598, Boylston, Massachusetts 01505-0598, offers programs year-round—usually on evenings or Saturdays. Late October activities include a field trip to the Arnold Arboretum and Mount Auburn Cemetery, two hours of trail-blazing, a seminar on "putting the garden to bed," and an evening of "beer tasting and evaluation" ("fifteen different styles, along with foods that are complimented by each, plus appropriate vessels and serving temperatures"). Douglas Williams, Program Coordinator, can be reached at 508-869-6111, extension 21 or 24.

The Urban Forestry Center, 45 Elwyn Road, Portsmouth, New Hampshire, is—after a brief silence—once again offering talks—usually on Thursday evenings—and field trips throughout the year. Topics usually concern (not surprisingly) forests and trees. November's talks include Mary Tebo, community forest coordinator with UNH Cooperative Extension, speaking on caring for community trees (November 12) and, a week later, Kevin Smith, a plant physiologist with the US Forest Service, discussing causes of decay. For more, the center's phone number is 603-431-6774.



Thank You, Tammy

After several years of service, Tammy Hathaway has decided to leave the NHPGA Board. Besides helping in other, more general, areas, Tammy was in charge of publicity, sending news releases about our activities to other publications. Her good sense and consistency will be missed and we hope she will continue to participate (maybe even volunteering occasionally) in the various events she once wrote about.

For Repeated Viewings...

Thanks to Faye Cragin, computer specialist, and Nancy Adams, Cooperative Extension, selections from *The Plantsman* are on a NHPGA page on the UNH Cooperative Extension WEB site. The address of the Ornamental Horticulture Publications section of this site is <http://ceinfo.unh.edu/hortpubs.htm>.

Summer Meeting—Celebrating Renewal

A gala introduction to the new—and ongoing—renovations at the UNH Research Greenhouses was a highlight of this year's Summer Meeting. But there were other highlights—the traditional tailgate trade show, exhibits of current research, tours of the university and its research facilities.

Mid-morning, on the lawn in front of the greenhouses, UNH president Joan Leitzel welcomed NHPGA members and expressed hope for more connection between the university and the state's Green Industry. Plaques and life memberships were given to Bob Bergevin, John Carpenter, and Read Parmenter, long-time NHPGA supporters. Robert Demers, outgoing president, was recognized for his services.

Later in the day, the annual auction gained the scholarship fund $1400.00. The day ended with the drawing for the door prizes. Hardy's Greenhouse won the Ball Red Book; Bruce Marriott, a radio; and Jeff Huntington, a color television.

Many people were involved in organizing this day. Dr. Paul Fisher planned and coordinated the event. David Goudreault, assistant manager of the greenhouses, and other members of the university community—people in plant biology, Cooperative Extension, the Thompson School horticulture curriculum—all played a part. Vendors, NHPGA members, and our fine auctioneer Peter Callioris contributed. All deserve our thanks and appreciation.

We thank the vendors who participated:

Acorn Ridge Nursery
Ball Seed Company
B.E. Supply
BioTherm
Bobcat of New Hampshire
Bramen Company
Cannon Equipment
Cavicchio Greenhouses
Charter Oak Landscape
Chestnut Hill Marketing
The Conard-Pyle Company

Davis Brook Farm
The Don Ward Company
D.S. Cole Growers
Ednie Flower Bulbs
Fafard
First Pioneer Farm Credit
Fletcher Granite Company
Florists Mutual Insurance
Four Seasons Marketing
Fuller Systems

GCS Sales
Gold Star Sod Farm and Nursery
Griffin Greenhouse and Nursery Supplies
Harry Stoller and Company
Hop River Nursery
Imperial Nurseries
Jolly Farmer
Jolly Gardener Products
K&S Associates Greenhouse Supply
Laughton's Nursery
Les Serres Rosaire Pion et Fils
Liberty International Truck
Millane Nurseries
Millican Nurseries
NE Nursery Sales
Northeast Nursery
Northern Nurseries
OESCO
Pleasant View Gardens
Preforma Sales
Pot Specialists
Prides Corner Farms

Retail Service Company
Rimol Greenhouse Systems
The Robert Barker Company
Rough Brothers
Tuckahoe Turf Farms
Van Berkum Nursery
Vermont Natural Ag Products
Western Maine Nurseries
W.H. Milikowski
Winding Brook Nursery
Yoder Brothers

NOTES

Within the last few years, many biological products have been introduced in the horticulture industry. I applaud the efforts of everyone in getting these to the marketplace. Any new product that can make our work more efficient and safer for our workers and environment should be researched.

Unfortunately, because biologicals do not need to go through the rigorous testing of conventional pesticides, growers are not receiving the full information on these products. Very little university testing has occurred. In many cases, because EPA is not involved in labeling these products, there is no university testing to support their claims. Universities have the capability of inoculating various pests in a controlled environment—something a grower in a production range is not capable of doing.

Growers have the idea that when they purchase these products, they are receiving controls. But unless the pest is present, there is no way of knowing if the product is actually controlling any of the pests claimed on the label. Recent data I received from Michigan State and the University of Connecticut show that some of these products are no better than the control. It is important to request data from an independent source that compares the new product to industry standards.

Most conventional pesticides today are far safer than most things that are involved in our daily lives. Gasoline, aspirin, and salt are far more toxic than most products in your pesticide locker. I don't condone the indiscriminate use of pesticides any more than that of gasoline or table salt.

Jim Zablocki, technical manager of the Northern Horticultural Group, Scotts Company, welcomes comments. he can be reached at 603-224-5583.

A State-of-the-Art Expansion

On a recently purchased twenty-four acres on North Pembroke Road, off 106 in Pembroke, a 65,000-square-foot (seven 42'x216' bays) Nexus Big Sky greenhouse is being constructed by Pleasant View Gardens. Six-by-eight-foot tempered glass panels maximize light.

The operation is automated. From potting and sticking until loading for delivery, material "is not touched by human hands." The entire floor is ebb-and-flood.

Why is this being built? "At Loudon," Henry Huntington explains, "we have over 30 unconnected buildings on a hilly site. We were getting tight on water. We wanted to automate. When we looked at the figures, we saw it made more sense to start over on level ground with a good water supply."

The greenhouse will be in operation in November. Separate from the Loudon operation, with its own production crew, its product, however, will be "more of the same."

A New Name

In May of this year, Jolly Farmer Products announced the sale of their bark mulch and soils division, located in Poland Spring, Maine. In the future, Jolly Farmer Products will be focusing all of their resources on their greenhouse division in New Brunswick and will no longer be active in the bark and soils industry.

The new company, renamed Jolly Gardener Products, Inc., is continuing the manufacture of softwood bark mulches and soil products at the Poland Spring facility. Jolly Gardener will continue to service lawn and garden centers, hardware stores, and nurseries throughout the Northeast with the "Jolly Farmer" line of bagged mulches and soils, as well as supplying bulk mulch for commercial and residential use.

The new owners, Sid Malone and Rusty Morrison, along with an investment group led by former Maine Governor John McKernan, have hired a new management team to work with them in expanding the company's market.

Turfgrass, 1999

The second annual New England Regional Turfgrass Conference and Show (NERTCS) will take place March 2-4, 1999, at the Rhode Island Convention Center in Providence.

The three-day trade show will feature over 300 exhibitors; seminars will include sessions on golf course management, lawn and landscape care, sports turf, and machinery and shop maintenance.

Presented by the New England Regional Turfgrass Foundation in cooperation with the University of Rhode Island and the University of Massachusetts, NERTCS welcomes additional exhibitors and all interested attendees. Proceeds go to support turf research and education.

For information, contact the show office at 401-848-0004.

New President at BPI

Henry Huntington, Pleasant View Gardens, recently became president of Bedding Plants International (BPI), a national growers organization (at one time, known as the Professional Plant Growers Association) that recently has been through some turbulent path-finding and redirection.

With a new executive director, Dick Goodson of Diversified Management Services, Des Moines, and an upbeat ("Mile High with BPI") convention in Denver, the foundations for focus ("membership participation is key") and growth seem in place. We wish Henry a successful term.

While on Other Boards...

Greenhouse Grower,
September, 1998

The Ohio Florists' Association (OFA) has elected Lisa Graf, Douglas Cole, Deborah Sweeton, Dave Cuthbert, and Kathy Benken to three-year terms on its board of directors.

Another Factor Codified

Most people are familiar with the USDA Plant Hardiness Zone Maps. Using these maps—first published in 1960 and updated in 1990, a serious gardener can determine what plants will winter over in his or her part of the country and choose appropriately. Today, most reference books, nursery catalogs, and gardening magazines refer to these zones.

Now, the American Horticultural Society (AHS) has categorized and mapped another zone. This is the Heat Zone. The effects of heat are more subtle than those of cold—cold will kill instantly, while heat damage can occur in many ways: buds wither; leaves droop or become more attractive to insects; chlorophyll disappears; roots stop growing.

The AHS heat zone maps are used in the same way as the hardiness maps. The map's twelve zones indicate the average number of "heat days" that a given region experiences. A heat day is a day with temperatures of at least 86 F (30 C)—the point at which most plants begin suffering physiologically. The zones range from Zone 12 (210 heat days) to Zone 1 (no heat days).

In coming months, heat zone designations will be joining plant hardiness zone designations in reference books and catalogs. Designations will be indicated by four numbers. The first two show the hardiness range; the second, the range of heat that can be tolerated. The hardiness numbers give the coolest zone—the lowest number first; the heat zone, the hotest. A tulip may have "3-8, 8-1" beside it and if you live in USDA Zone 5 and AHS Zone 4, you will know that you can leave tulips in your garden year-round. You will know that ageratum (10-11, 12-1) can withstand summer heat throughout the United States, but can overwinter only in the warmest spots.

Gardeners often categorize, using terms such as "annual," "perennial," and "tropical," but many of what we consider annuals are capable of living for years in a frost-free environment. The heat map will begin to clarify this misnomer.

The data used to create the map were obtained from the archives of the National Climatic Data Center. From these archives, Meteorological Evaluation Services Company, Inc., in Amityville, New York—which was also involved in the creation of the hardiness map—compiled and analyzed National Weather Service (NWS) daily high temperatures recorded between 1975 and 1995. Within the contiguous 48 states, only data from NWS stations recording maximum daily temperatures for at least twelve years was included. (Due to the amount of missing data in Alaska and Hawaii, the 12-year requirement was reduced to seven.) Information from a total of 7,831 weather stations was processed; information from 4,745 was used.

It will take several years for the majority of garden plants to be coded (after almost 40 years, the zone ratings of the hardiness map are still being perfected). In this age of information, more information than ever is at a gardener's disposal.

(This information was taken from an AHS Resource Bulletin compiled by Marc Cathey. To order a full-color poster of the AHS Heat Map—at $14.95 each—call 1-800-777-7931.)

Plasticulture

Greenhouse Grower, September, 1998

Increased use of plastic in agriculture has convinced scientists from Penn State's colleges of agricultural sciences and earth and mineral sciences to collaborate with researchers from three other universities to create The Center for Plasticulture. The center will fund and initiate research on plastic products.

Researchers from Penn State, McGill, Rutgers, and the University of New Hampshire will develop technology and production guides.

Books Reviewed

Most garden centers offer a selection of books. Often they are basic—perennial identification, landscape design.

These books were recently received for review—all are specialized, but do what they set out to do well. They may be of interest.

What seems most useful to the largest number of customers would be *Garden Manager* from Marlor Press (112 pages; retail price: $15.95), a planner/journal for gardeners. The book's divided into four sections—preparation, planting, harvest, clean up—and each offers space to plan and record for five years.

There's space for addresses, pages for lists, grids on which to design, boxes in which to put check marks when a task is completed...all this and more, and lots of upbeat tips.

It's light, yes—maybe simplistic, but the questions answered are often the ones heard at any busy garden center on a Saturday afternoon. The real plus comes in using it (you may want your lists and ideas already somewhat organized before committing them to these pages); its usefulness is as a record—five years of well-organized gardening notes is not to be sneered at—especially when within a cheerful format and all in one place.

Marlor Press is at 4304 Brigadoon Drive, St. Paul, MN 55126; the phone number is 612-484-4600. The people there are very helpful.

I thought *The Worm Book* (150 pages; $11.95) from Ten Speed Press would be fun when I saw that the publicity included a recipe for Oatmeal Earthworm Raisin Muffins. Well, it is—and comprehensive as well. The authors, Loren Nancarrow and Janet Hogan Taylor, have taken a topic—worm growing and composting—that I must admit I don't often think about and written a guide that is practical (I know exactly how to build a worm bin), scientific (there are diagrams of such things as outer worm anatomy), and entertaining. There may be other books out there, but I can't imagine many giving more information in a more reader-friendly style.

Another guide from the same press, *The Savage Garden* ($19.95) by Peter D'Amato, deals with carnivorous plants—families, growing them outdoors, terrariums....

There's lots of information here (lots of color photographs)—far more than most gardeners—parents whose child's Venus fly trap seems listless—could ever use. But there are collectors; there are enthusiasts—and for them—and for a garden center that sells carnivorous plants and needs to deal with customers' questions, this book is ideal.

Ten Speed Press is at PO Box 7123, Berkeley, CA 94707; the phone number is 510-559-1600.

Blooming Biotech

The Economist, September 5-11

Many commercial flower varieties are now so highly bred for their appearance that they have lost their scent. Rodney Croteau, at Washington State University, and collaborators at Novaflora in

Philadelphia are working to put the smell back into modern, scentless flowers—courtesy of genetic engineering.

Dr. Croteau studies the genetics of terpenoids—one of three groups of molecules that give flowers their smell—and he has identified the gene for an enzyme called limonene synthase, which plays a critical role in terpenoid production. Novaflora's researchers have managed to introduce this gene into the cells of petunias, which normally lack it. Now they await the blossoming of the first flowers grown from those cells, to see if the gene will work in its new home. if it does, the petunias will smell of lemons—and the way will be open to alter the scents of other flowers by fitting them out with new terpenoids.

Whether gardeners want unfamiliar scents remains to be seen, but they've always seemed to have been attracted to new and unusual color. Researchers at Florigene, a company based in Melbourne, Australia, now have a blue carnation. They created it by introducing the gene for an enzyme called flavonoid-3'-5'-hydrodoxylase, which they took from petunias. This enzyme converts the pigments of carnations—which turn the petals of those flowers pink, red, yellow, or white—into the blue and mauve found in violets.

At the New Zealand Institute for Crop and Food Research, Kevin Davies and colleagues have been trying a different approach. They are using "antisense" technology (which blocks the activity of particular genes by gumming up the translation of their messages into useful proteins) to produce stripes and swirls in lisianthus. No one knows just how this produces these patterns, but Joseph Mol and his colleagues at the Free University, Amsterdam, are looking into the biology behind it.

Although technically demanding, genetic engineering can produce new flower varieties much faster than traditional selective breeding. And it can be lucrative. Florigene's blue carnations sell for up to twice the price of their "natural" counterparts. They could sell for even more if they smelled like lemon.

1999 Florida Plants of the Year

Increasing demand for underused (but proven) Florida plants is the goal as the Florida Nurserymen and Growers Association (FNGA) announces its 1999 plants of the year.

There are nine: *Aglaonemia* 'B.J. Freeman;' *Bignonia capreolata* (cross vine), *Cocculus laurifolius* (snailseed); *Ipomoea batatas* 'Blackie' (black sweet potato); *Ipomoea batatas* 'Margarita' (yellow sweet potato); *Ligustrum japonicum* 'Lake Tresca;' *Odontonema strictum* (firespike); *Senna polyphylla* (desert cassia); and *Ulmus alata* (winged elm).

Promotional materials—brochures, plant tags, care cards, posters—are available for purchase. For information, contact Rhona Hunsinger at the FNGA at 1-800-375-3642.

The Green Spot

Dealing with Mites

You've probably heard the saying, "It must be something in the water." Well, when it comes to mite control, the water itself is the villain (at least to the mites).

The two-spotted mite (*Tetranychus urticae*) is an eight-legged web-forming pest of a huge assortment of economically important plants. They can overwhelm many of these, even those of great size, in a wide variety of conditions. They'll do the most damage, though, when the conditions are hot and dry.

Logically speaking, one might assume, based on the information above, that the two-spotted mite might be suppressed if the growing conditions were less than ideal—cool and humid. Well, you know what they say about assuming.... but in this case, one would fare well.

The two-spotted mite can be suppressed by frequent misting of the plant material. This action lowers the leaf temperatures and raises the leaf's microclimate humidity. Moreover, the new conditions will better support predatory mites, which should be par for the pesticide control course. In fact, the successes far outnumber the failures when it comes to the biological control of mites—the results are largely predictable.

Want more? Try being a Web Wiper (just before you inoculate with predatory mites). As the name implies, grab a sponge and start wiping heavily webbed areas. Under a microscope, it is clear the two-spotted mite's webbing is Mite Central Station: expecting females, newborn mites, unhatched eggs—a real nursery situation—which can be wiped out with a sponge, in a snap. Wipe out one web; rinse the sponge thoroughly; wipe out another.

Just can't trust the water—for fear of spreading the pests? Put a little insectical soap or other biofriendly product on the sponge between swipes.

Don't like mites? Rain on their parade, then blot them up and send in the dogs to finish the job. And remember-these mites hold no affection for you either, so don't feel too badly about mopping up their community center.

Mike Cherim, president of The Green Spot Ltd., Department of Bio-Ingenuity, 93 Priest Road, Nottingham, NH 03290-6204, can be reached by phone (603-942-8925) or fax (603-942-8932).

Practical Work Experience: A Key Component

ART CADY

Here at UNH, Dr. Paul Fisher (along with others) is working to promote opportunities for students in the plant biology department, particularly the environmental horticulture program, to gain practical work experience in the Green Industry as part of our university education. The student here at the keyboard is most fortunate in having been nudged into an opportunity this summer at Pleasant View in Loudon. While this fellow is committed to a future working in the field of floriculture, he is beginning as a complete novice. So along with the chance to become familiar with aspects of growing and marketing floricultural plants, gaining experience with basic plant care, especially watering, was an important part of the experience.

Beginning by giving me a smaller greenhouse area to tend to and observe the response of plants to timing of watering and other practices, the growers gradually increased the area I would be asked to tend to whenever I was needed on the watering crew. The expert instruction and patience received from the growers—Rob Farquhar, Stuart Mills, Mike Goyoute, and others—enabled me to make much progress in understanding how to efficiently evaluate the requirements of a group of plants and go at it.

An additional and very special aspect of the summer work was assisting with the planting and care of display and trial gardens, whereby I developed quite a liking for the ornamental bedding plants offered by the Huntingtons. I found using these plants to be much like painting with brilliant colors and living textures. As Jeff Huntington laid out the garden with great sweeping gestures, we simply fit the plants into place where they quickly filled the beds with a lovely sight for the eyes. Being such a novice and yet so taken by the use of ornamental plants in the landscape, I have a heightened interest in observing plantings of all kinds wherever I go. On a brief recent trip to New York City (my first), we criscrossed our way down Fifth Avenue and ended up at a formal garden at the upper end of Central Park. It was satisfying to recognize some of the plants in the flower beds. In fact, a couple that had been a bit of a curiosity sitting on a greenhouse bench were very nice to see growing in the gardens.

Having had this summer of practical work experience at Pleasant View, I feel much better poised to make full use of the two years of schooling ahead of me at UNH and am grateful for the oppourtunity.

Art Cady is a junior in the Environmental Horticulture Program at UNH.

Pioneer Pointers

Savvy Billing

Alas, the peak of your season has passed and the majority of the plant material has been shipped successfully to the customer. Now you have the arduous task of sending an invoice to the customer and collecting the bill (account receivable) on all those quality plants you grew. After all, collection of payment is the cash flow that pays your operating expenses and provides the return of your investment (profit).

Have you ever considered the effectiveness of your billing system? Ask yourself the following:

Is it easy and concise to follow (due date, minimum payment due, finance charge clearly stated, etc.)? Before you say, "Yes, of course," have an employee from outside the billing department provide a second opinion.

Is the bill itemized and does it reconcile with the last invoice sent?

Does the invoice provide the customer with a phone number to call if there are questions?

Do you offer incentives to pay early or by a certain date?

Do you use your bills/invoices as marketing opportunities for your business a k a marketing flashes—for example, "Don't forget to order your fall mums—we have a size to suit every customer's needs. Place your order today!"

Lastly, do you send your invoices promptly? They should be sent within five days of shipment.It is unfair to expect swift payment from customers if bills are not sent in a timely manner.

Invest the time in revamping your billing system now. Savvy billing may mean quicker and easier collection of payment. It's worth it. (SW)

First Pioneer Farm Credit is a farmer-owned cooperative providing financial services to the Green Industry. These include lending, leasing, business consulting, appraisal, payroll, recordkeeping/ accounting solutions, and tax preparation. For more information, contact the Bedford office at 1-800-825-3252.

Roth IRAs: Just the Facts

STEPHEN F. LAWLOR, CPA

The new Roth IRAs created by the Taxpayer Relief Act of 1997 have created quite a stir in the investment and personal finance world. You cannot watch a business report or read a personal finance publication without being bombarded by advertisements for "Roth IRAs." The way facts, figures, and information are thrown around in these ads, you would think the Roth IRA can do everything but cure cancer. This article will hopefully separate the facts from the hype and give you a better understanding of this new savings vehicle.

The Roth IRA is an individual retirement account and, except for certain notable exceptions, is the same legal structure as traditional IRAs. Beginning in 1998, you will have a choice of where to put your annual $2,000 IRA contribution: either into a traditional IRA or a Roth IRA (assuming you qualify for the traditional IRA: i.e., you are not involved in a qualified plan at work). You get only one $2,000 limit, so if you choose traditional IRAs, you cannot contribute to a Roth or vice versa. You can, however, split your limit ($1,000 Roth, $1,000 traditional for example) as long as it's not over $2,000. If your spouse works or if your income is over $4,000, you can make an additional $2,000 contribution for your spouse. You receive no deductions on your tax return for a contribution to a Roth IRA as you do with traditional IRAs. However, while the money is held in a Roth IRA account, you pay no taxes on its earnings and, if you qualify, pay no tax when you take money out. There are two rules to satisfy in order to make a distribution qualified. First, it has to have been at least five tax years since you put your first dollar into your Roth account and second, one or more of the following must apply:

1. You are over 59 1/2
2. The distribution is instigated by your death or disability
3. The distribution is to pay qualified "first-time homebuyer expense" (up to $10,000 and can not have owned a home in the last two years)

However, even if you take a distribution and you don't qualify under these rules, you still won't be taxed as long as you don't withdraw more than you have contributed to the Roth IRA. Once you withdraw more than you have contributed, the earnings withdrawn will be subject to tax and penalty.

In addition, there is no age at which you must start withdrawing money from your Roth IRA and you can keep contributing to the Roth IRA even after age 70 1/2. (There are certain income levels which preclude taxpayers from contributing to a Roth IRA. These levels start at $95,000 for single people and $150,000 for married filing jointly.)

Traditional IRAs may be converted to Roth IRAs beginning in 1998. In order to qualify, your adjusted gross income must be $100,000 or less; however, when calculating this $100,000 limit, you do not need to include the amount you intend to convert. In the year of the conversion, you must pay tax on the amount you convert to a Roth IRA (no penalty) and then, going forward, all Roth IRA rules will apply to that money (i.e., tax-free qualifying withdrawal). In addition, if you make the conversion in 1998, you can spread the tax you pay on the conversion over four years. This rule, however, only applies to 1998 conversions and to no other years.

After learning the facts, the obvious questions are, "Should I contribute to a Roth IRA or a traditional IRA?" and "Should I convert to a Roth IRA?" The answers to these questions are not simple and they involve many assumptions, such as tax rates when you retire, assumed earnings returns, and how long the money will be held in the Roth IRA. Many investment companies provide on-line Roth analyzers to monitor particular situations. But remember, before you take the plunge, talk to your tax professional and make sure you don't get caught in the hype.

Stephen F. Lawlor, CPA, is a shareholder of Nathan Wechsler & Company, 33 Pleasant Street, Concord, NH 03301-4004 (phone: 603-224-5357). The firm has Roth vs. regular IRA analyzer software at its disposal.

This article was furnished by the Business Forum Office (BFO) located at UNH in Room 216 of McConnell Hall. The BFO oversees a number of programs addressing the needs of businesses. The Center for Family Business offers several membership programs: the Penley and Shapiro programs provide seminars and newsletters on leadership, ownership, and psychological issues that can arise in family-owned businesses.

For information, contact Peter Parady at 603-862-1107.

DEERFIELD GARDENS
Your Basic Wholesale Greenhouse

Since 1994, a wholesale greenhouse operation, Deerfield Gardens, has quietly been in the process of being built. There's no sign out—"more important things have needed to get done"—but there is 25,000 square feet of greenhouse production space. And more being created.

There's part-time help in spring, but keeping to basics and using mechanization whenever reasonable has kept this pretty much a two-person enterprise.

The two people are co-owners Karin and Eric Schmitt, sister and brother. Their family runs J. Shannon and Son, the large greenhouse operation in Woburn, Massachusetts, which evolved from a farm begun by an ancestor in the 1880s.

Both Eric and Karin worked there and both planned careers in other fields—Eric studied business at Bryant College; Karin, history at Grove City in western Pennsylvania.

But the business world and teaching seemed confining. After graduation, Eric returned to work at J. Shannon. When Karin graduated a year later, they began looking for land on which to build their own greenhouse operation.

They wanted to be within an hour's drive from Boston. They looked at many sites—to the south and the west as well. The Deerfield, New Hampshire, site offered a small livable house (some had none or houses in extreme disrepair) and an appropriate amount (ten acres) of reasonably level land. All this on an accessible road (Route 43, not far from the fairgrounds).

THEIR FIST CROP—mums—was produced in the summer of 1994 for sale that fall. That summer was a busy one. The site was prepared ("land that looks level isn't necessarily flat")—ledge was removed and a six-foot grade leveled and two 30'x145' houses put up side-by-side, twelve feet apart. And a new well was dug (the old one was steady, but at one gallon per minute).

The houses are Harnois Ovaltech. Eric sees the oval pipe frame as "stronger; the wider spacing (on five-foot centers, rather than four) allows in more light and the straight sides give more production space." Heat is oil-fired forced hot air. Rollup sides are used in spring.

1995 saw a spring crop of bedding plants and hangers. That summer, another 30'x145' house was put up; another was added in 1996, creating a row of four.

In 1997—two 30'x70' houses began a second row parallel to the first. A 30'x34' was put up outside this configuration.

THE OPERATION IS SIMPLE, straight forward. All material is planted in Scotts Bedding Plant Mix. A fork lift is rented ("It would be nice to own this—you could use it for other things—but it's cheaper to rent") to set pallets of mix near the appropriate houses. They do own a Bouldin and Lawson pot filler which is moved from house to house.

There are no benches: material is grown on weed mat. A Netafim overhead irrigation system is used in all the houses for floor-grown material. Drip irrigation is used on hangers and field-grown crops. A centrally located Dosatron is used to fertilize.

Watering is automatic. In each house, hanger lines are connected to one solenoid which connects to a Nelsen controller, but individual lines can be turned on or off manually. The Netafim system in each house is also connected to the controller—again, each line (each house has two) can be manually operated. "The time saved is enormous," Karin says. "Each house used to take two hours. Now it's just turning a valve."

Each house has its own monorail system—a three-tiered carrier that moves down the center on an overhead track. The carrier can hold twenty flats. These separate systems will be joined (the track will go outside the houses), allowing material to move from house to house.

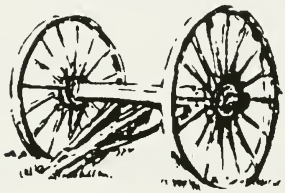
There are two trucks—a twelve- and a fourteen-footer. Delivery is done when needed—usually weekly—to thirty or so businesses on their list.

Eric does the delivering—"It takes time from other things, but it's important to talk directly to customers."

THE CYCLE BEGINS in January. Plastic curtains are hung in some of the houses and plants begun in the heated sections. Pansies are grown in four-inch pots, twelve-inch ovals, and eight-inch hangers; osteospermum (seven varieties), in five- and eight-inch pots.

Their first spring crop—in 1995—was of four-inch annuals and hanging baskets. There were no packs—"we wanted to be different—to find our own niche." At first, they sold to J. Shannon customers—J. Shannon wasn't growing four-inch material at the time. Now they, as well as many wholesalers, have begun to do so, but "there seems to be enough business to go around."

In a time of niches and clever marketing, it seems surprising to see a straightforward wholesale operation begun and do well without fanfare or fuss.



Hangers are major: eight lines of ten-inch and, above these, four of twelve, are in each of the houses. Material reflects today's trends: ten-inch material includes antirrimum, argranthemum, and felicia; ivy geranium is in twelve-inch "specialty baskets." These baskets are varied and include 10-inch "Wonder Gardens" (impatiens), 12-inch Combinations, 14-inch Moss Combinations (a variety of hanging material), and 12-inch Geranium Combinations (geraniums, draecena, vinca). Color Bowls use both grown-from-seed and larger annuals; some are mixed to order.

These were offered from the start and have always been strong sellers—"we can't keep up."

Summer offerings include 7.5-inch fiber annuals and ten-inch terra cotta pots.

There is kale and pansies, but mums is the major fall crop. Five thousand five-inch are grown in trays inside; outside, ten thousand 7.5-inch and 3,000 oval (four plants in a sixteen-inch oval planter) are grown (pinched twice) on black plastic in three separate areas totalling 3000 square feet.

Ten-inch mum hangers are being grown ("just to see what happens"). Belgian mums—with their later, prolific bloom—offer another variation. Fiber pots of fall perennials (rudbeckia, coreopsis) are offered and Fall Color Bowls mixing fall-blooming material with mums do well. Sales are from March through October.

INVESTMENT goes into basics. A Sensaphone monitors the temperature of each house. There's also a 30,000 kilowatt (enough power to run ten greenhouses) generator that runs on natural gas. Before this year, one portable generator had to be moved from house to house.

Production space continues to be expanded. The number of 30'x70' houses will increase to four. One of these will have BioTherm hot water heating system buried in a sand floor and be used for propagation.

A row of five quonset-style houses (two 14'x100', three 17'x150') are currently being put up in an adjacent area slightly below the first houses. These will be used in late spring primarily for colder crops (pansies, snaps, dusty miller, dianthus), allowing production to grow.

Right now, a three-car garage and a 20'x80' barn are used as storage. ("We park our cars outside.") Plans include a central headhouse between the two rows of houses: a central spine connecting them into one unit. And, out back, an acre is being clearcut. The use of the land has not been decided. Another major change has occurred with Eric's marriage this month. Annlouise's arrival adds a new personality and another helping hand.

In a time of niches and clever marketing, it seems surprising to see a straightforward wholesale operation begun and do well without fanfare or fuss. Maybe hard work and practical choices still have value. (BP)

(Deerfield Gardens is at 37 South Road, Route 43, Deerfield, New Hampshire. The phone number there is 603-463-5685.)

The Natives Are Here to Stay

BRUCE BEHAN

Perhaps the greatest controversy to shake the horticultural world in recent times is the use of native plantings in our landscapes. The debate, which is inextricably enmeshed in the sticky webs of "sustainability," land ethic-versus-property rights, and conforming to time-honored rules, revolves less around the actual use of native material, but rather around which plants are appropriate for inclusion, how they should be worked into new and established schemes, and indeed, what actually constitutes a "native" plant. These are questions without hard and fast answers. Suffice it to say, there are as many opinions on these subjects as there are people who take the time to ponder them.

To the casual eye, it would appear that the topic of "going native" has thoroughly polarized the gardening community. On the one side are the ultra-traditionalists—the folks who must have impeccably manicured lawns and well-defined borders filled with exotic, often gaudily colored species. They are the ones who make a drive through suburban America feel like a trip through Munchkin Land. They view the trend towards native gardening as nothing less than a threat to what they consider the traditional American landscape and advocates of "natural" landscaping as lunatics and fanatics. Armed with outdated and often times difficult-to-defend "weed laws," the ultra-traditionalists keep a vigilant watch over their communities, ready to pounce if they see any planting that departs from the "norm."

On the other side are the ultra-purists: "native" gardeners who, among themselves even, are surer of what constitutes "non-native" than of what the term "native plant" actually defines. The most ardent among them advocate not only a strict adherence to native material, but insist on landscape designs that mimic nature's ostensibly haphazard hand. They have become more and more organized in recent years, and increasingly adept at successfully challenging local "weed laws." As a result of their growing influence, many communities have been forced to scrap such laws or modify them to accommodate this new style of gardening. In some instances, communities have reversed their weed ordinances to favor—or even require—the use of native plant material and naturalistic landscape designs.

Admittedly, this is an over-simplified view. But the purpose of this article is not to dissect the two extremes. Rather, it is intended to explore that vast no-man's-land that exists between these two armed camps. It is a land inhabited by people living in the shadow of the "great horticultural debate," people who are unwilling to continue to pollute the environment with misused pesticides and fertilizers that traditional gardening implies, yet not quite convinced that they must uproot their lilacs and dig up their tulips. They range from the guy on the corner who works butterfly weed and coneflower into a bed of exotics to the woman next door who uses natives almost exclusively (but in formal plantings) to the couple up the block who, faced with a large area to landscape, opt for a "naturalistic" look, using natives and non-natives in an attempt to imitate Mother Nature in one of her gentler moods. These people, the "great compromisers," are obviously not ready to buy into either of the extreme factions. And so, we may ask, what motivates them to use native plant material? There are a number of answers. However, based on my conversations with folks over the years, I think they can be summed up as follows:

ENVIRONMENTAL CONCERNS: There are many facets to this answer, but generally they fall along the lines of adopting a kinder attitude towards the earth. To adherents of the philosophy of sustainability, a concept that requires conducting our horticultural endeavors without relying on chemicals and copious amounts of water, natives fill the bill quite handily. They have evolved to deal with local conditions and, once established, often perform well by making do with available nutrients and moisture. Generally speaking, they tend to be free of diseases and pests that can wreck a bed of exotic species un-

less it's bombarded with pesticides that kill beneficial organisms along with those that create the problems.

Another strong motivation for planting natives is that they attract the birds and insects that have evolved with them and have come to depend on them for food, and shelter, thereby reestablishing natural relationships in the landscape.

There is also a growing concern that as more and more of our natural areas are bulldozed to make way for development, populations of native plants already threatened will disappear altogether and those still common will begin to decline. Worse, soils disturbed by agriculture and development are quickly overtaken by alien weeds that out-compete natives for nutrients and moisture, so that there is little chance of a disturbed area healing itself with time. Many people who use native plants feel somewhat comforted by the fact that they are helping to halt the decline of valuable species by giving them a place in their yard.

AESTHETICS: the bald truth is that many natives, under-used as they are, have genuine landscape value and, cultivated away from the competition they encounter in their native habitats, assume an elegance that is quite unexpected. It is surprising the number of folks who choose a plant for its ornamental qualities, only to find out later that it is a native. And, among some gardeners at least, there is a sense that our landscapes have become homogenized and boring—endless permutations of the same dozen-or-so species that make up the backbone of our garden center trade. Almost desperate to find something truly distinctive from the endless petunias, daylilies and taxus that clutter most nurseries, they turn to natives. And there are a growing number of businesses ready to supply them with the plants they want.

ECONOMIC CONSIDERATIONS: Amending soils to make them suitable for the vast majority of non-native species can entail a considerable outlay of cash, time, and labor. And the results are often only temporary, requiring constant intensive maintenance. But through a little investigation, the gardener will find natives suitable to almost any extremes of soil or exposure. No longer a question of changing conditions to suit the plants you choose, but of choosing plants that your conditions will support, the task of gardening becomes much cheaper and simpler. Native plants require little or no use of expensive herbicides, insecticides, or fertilizer and, except during periods of extreme drought, can get by on whatever moisture nature provides. They're good at it: that's how they have survived through thousands of years of changing climatic conditions.

We live in a hectic age where there is much to do and little time in which to do it. This low-input form of gardening appeals to those people who want an attractive yard, but are hard-pressed to find the time or resources to maintain it.

HISTORICAL CONSIDERATIONS: Folks who incorporate native plants in their landscape plans are following a tradition that goes back at least three centuries. Our colonial ancestors used indigenous plant material with total abandon. Indeed, for the very earliest settlers, as well as the pioneers who pushed back the frontiers in succeeding decades, gardening for pleasure was rarely an option. Building a nation was back-breaking and time-consuming and horticultural pursuits were necessarily restricted to field crops, the "kitchen" garden, and herbs. (It is interesting to note that the front lawn, as we know it, did not exist in that era and the herb and vegetable gardens were often located, especially in isolated communities, in the front of the house so that gardening chores would not further isolate the family from the occasional passing stranger or neighbor.)

As wealth became concentrated in the colonies, there arose a class of people with the means to garden for aesthetic reasons. Cuttings and seeds of favorite ornamentals from Europe were passed from friend to friend, but such material was limited and gardeners turned to the woods and fields around them to augment their landscapes. This was especially true on the great plantations of the South, where the approaches were often lined with native live oak and magnolia and whose grounds took the form of parkland where grasses and wildflowers were allowed to grow in profusion among widely spaced trees. The formal gardens, complete with boxwood *allees* and located behind the great house, took the more formal lines of European estate gardens of the era. But even here, among the exotics, one could find indigenous trees and shrubs such as flowering dogwood, mountain laurel, *franklinia*, and juniper. The herbaceous beds often contained native mallows, coneflower, cardinal flower, obedient plant and dozens of other species that could be acquired simply by making an excursion into the surrounding countryside. Coincidentally, many of these plants were also beginning to appear in European gardens of the

time—one of the many gifts of the New World to the Old.

By the middle of the 19th century, several innovations, inventions, and improvements appeared that would radically alter the tone of American horticulture. Perhaps the greatest of these was the opening up of the Far East to trade and the African continent to exploration, flooding the horticultural world with hundreds of new, garden-worthy species quite unlike anything ever seen before. Advances in the horticultural sciences and the development of facilities for raising plants on a huge scale followed. Carried to the far corners of the globe by increasingly faster and more efficient means of transportation, these new introductions stormed the gardening world. Americans, who perhaps felt, and rightfully so, a greater sense of isolation from the world community at large, welcomed these new varieties with open arms. Compared with them, many of the old natives seemed less colorful, less exotic. At about this same era, advances in farm machinery made possible the destruction of native habitats for agricultural purposes on an unprecedented scale. Native plants were not only disappearing from our gardens, but from the wild as well.

The invention that did more to reshape American yards than perhaps any other was the mechanical lawn mower. Invented in the 1830s, it was modeled after a machine used to trim the nap from woolen cloth. In the hands of Victorian society, with its penchant for orderliness, the new invention allowed people of even modest means to present to common view a well manicured lawn. In many respects, the front lawn of the era was the outdoor reflection of that other great Victorian symbol of affluence: the front parlor, with its carpet of green and shrubs and borders tastefully arranged around the periphery like fine furniture. By the end of the century, the groomed lawn with exotic plantings had become so common that it came to be viewed as the traditional form of landscaping.

In the ensuing decades, interest in native plants continued to ebb, but never quite disappeared. In the 1820s, George Aiken, plantsman and future U.S. senator from Vermont, was propagating and shipping native plants around the world. So great was the response and so many the questions he received, that in the early 1930s, he published his landmark book *Pioneering with Wildflowers*. Aiken was a pioneer in a very important respect: he demonstrated that native plants, far from being shy, recalcitrant wildlings that often failed to settle into our gardens, were actually relatively easy to propagate and introduce. Still, the interest in natives continued to remain on the fringes of horticulture for several more decades.

The turning-point came in the mid-sixties, when society begin to question, then reject, the technology-based industrial complex that had seemed to deceive with false promises of a better life, pollute natural resources almost beyond reclamation, and bring humanity to the brink of nuclear war. Worries in the past few decades over the continued despoiling of our soils, air and water beyond nature's ability to cope have galvanized concerned individuals into organizations dedicated to countering these threats. Indeed, benign "wildflower societies" have existed for decades, but many of these new groups are more vocal and more militant than those of the past.

Slowly government and the Green Industry are responding. Ongoing research, along with more stringent laws regulating the use of chemicals in the landscape, has provided us with cleaner, safer pesticides and improved practices that make their use more a matter of choice than of necessity. Specialty nurseries dealing exclusively with natives have sprung up over the past two decades, and while they are not yet the street-corner fixtures that many more traditional garden centers seem to be, their numbers, as well as the variety of plant material they have to offer is on the rise. Gardening magazines, formerly the bastions of the "mow and spray" set, are devoting more and more pages to naturalistic gardening and designing with indigenous material. Even a few periodicals devoted entirely to these subjects have appeared.

Will native gardening ever supplant the traditional forms we have been used to for all these years? Probably not. There will always be the individual for whom the perfect tea rose is the highest of horticultural goals; there will always be the person for whom the exotic *Pachysandra terminalis* is for some reason horticulturally superior to the native *P. procumbens;* and there will always be the wisest gardener of all—the one who chooses his material not by its provenance, but by its merits in the landscape. But these individuals will have to get used to having in their midst a new breed of gardener and, above all, a new style of gardening—one that doesn't necessarily play by established rules and doesn't always delight the eye, but is here to stay.

Bruce Behan is a senior in the horticulture curriculum at the Thompson School of Applied Science, UNH, Durham.

The unusual weather patterns that began in March continued through the summer. Rain in early May set us up for lots of rots and foliar diseases. Although the last half of May was somewhat "normal", the month of June was wet, cloudy, and cool. Needless to say the start of the growing season was slow and filled with disease and environmental problems. Mid-July brought a relatively sudden jump to summer temperatures and near drought-conditions. It was interesting, to say the least.

WOODY ORNAMENTALS

The sudden shift in temperatures and moisture availability has resulted in early leaf color and premature leaf drop on many trees. Widespread symptoms have been noted on European birch and linden. The sudden moisture shift has also caused a condition known as "SEMI-MATURE NEEDLE BLIGHT" in eastern white pines. The symptoms resemble acute ozone damage (the tips of the needles turn reddish). Shade tree ANTHRACNOSE is still taking its toll, particularly on sugar maples, which have also been hard-hit by pear thrips throughout much of New England. Sycamore anthracnose was very severe this year in many areas. Oaks have been diagnosed with anthracnose and oak leaf blister, and there was one unusual case of anthracnose on hornbeam. Dogwood anthracnose has been widespread with severe blighting on many trees throughout most of the northeast. Even Kousa dogwood (usually highly tolerant of anthracnose) succumbed to minor leaf spots caused by discula, the anthracnose fungus. POWDERY MILDEW has also been common on dogwoods this year.

LEAF SPOTS were also common, thanks to the prolonged wet weather. SCAB was severe on susceptible crabapple cultivars, causing significant defoliation by early August. Lilacs were attacked by several pathogens this year, resulting in numerous 'panic' calls to the UNH-PDL and county Cooperative Extension offices. ASCOCHYTA LEAF BLIGHT was problem on lilacs. The disease has two phases, a shoot blight in the spring (which resembles bacterial shoot blight), and a foliar phase during the summer and fall that causes olive-green, water-soaked lesions.

American elms are showing an increase in symptoms of DUTCH ELM DISEASE due to the lack of moisture. As in the past, KABATINA DIEBACK appears to be the most prevalent problem on junipers, but the disease has also been causing problems on chamaecyparis. There has been lots of RHIZOSPHAERA NEEDLECAST on spruce, and in one case, rhizosphaera killed all the new growth on a young blue spruce. Once again, MONILINIA SHOOT BLIGHT was widespread on most ornamental *Prunus* species. This disease seems to be one we can count on each spring (or at least it has been for the last several years), so protective sprays may be warranted on valuable landscape specimens. Fungicides should be first applied when the blossoms open with a second ten days later. RUSTS have been unbelievable this year, particularly on cedar and serviceberry (amelanchier).

So what should be done about all these diseases and stress problems before next year? First, as I've suggested in the past, sanitation should be your primary focus this fall and winter. Where foliar diseases have been a problem, rake and remove as much of the foliage as possible after leaf drop, or use a mulching mower to reduce the particle size and speed degradation. Dead branches on trees and shrubs should be pruned and destroyed.

HERBACEOUS ORNAMENTALS

BOTRYTIS remained a big problem during June and early July, particularly for bedding plants and herbaceous perennials. Asiatic lilies were devastated by botrytis blight (oriental lilies developed only the 'typical' oval leaf spots). The oriental lilies died from the bottom up with the shriveled leaves remaining hanging on the stems. Unlike tulips with 'tulip fire' lily bulbs are usually not infected so the plants should be healthy next year (unless we have a repeat of this year's wet weather). A STEM CANKER caused by the fungus colletotrichum was diagnosed on osteospermum (cv 'wildside') and another BASAL CANKER caused by fusarium was the culprit killing phlox.

IMPATIENS NECROTIC SPOT VIRUS (INSV) was fairly common (as usual) on impatiens and coleus. The new 'seashell' impatiens seemed to be particularly susceptible, showing great ringspot symptoms (don't forget, I do have a different viewpoint than most of you do). Other diseases on herbaceous ornamentals included POWDERY MILDEW on cascade petunias and severe powdery mildew on begonia. The mildew on the begonias was so severe that it caused the entire plant to collapse, resembling bacterial blight. If the plants had been treated at the first sign of the disease, the progression and subsequent loss would have been minimal. (I'm trying to emphasize the importance of scouting).

During the next few months we can expect to see the typical problems in greenhouse crops (ROOT ROTS, BOTRYTIS BLIGHT and CANKER, and INSV). Root rots are a common problem occurring on a wide range of plant material including poinsettias and geraniums. Plants showing symptoms of nutrient deficiency, marginal browning of the leaves, stunting, or wilt should be considered suspect. Remove the plants from the containers and check the roots for brown or black lesions or water-soaked, mushy roots. Severely infected plants should be discarded. Poinsettias should be scouted for powdery mildew. Check the lower leaves for chlorotic (yellow) spots on the upper surface with powdery colonies on the lower surface, below the chlorotic areas. Infected leaves should be removed immediately (put them in a plastic bag) and a spray program begun. The remaining plants should be treated with a fungicide drench. Remember that sanitation and good air circulation are the best preventative measures for preventing diseases in greenhouse crops.

TURF

Because the month of June remained cool and wet through the third week, spring diseases such as FUSARIUM PATCH, ANTHRACNOSE (mostly in the crown rot stage), and RED THREAD predominated. In early July we moved almost overnight into hot, humid weather with its typical diseases: BROWN PATCH, ANTHRACNOSE, and SUMMER PATCH. NECROTIC RING SPOT and CROWN ROTS resulting from leaf spot fungi appeared quickly on lawns (especially sodded lawns), causing considerable damage. With a return to cooler, moist fall weather, we can expect to see the reappearance of red thread and leaf spots. Now is the time to be thinking about renovation with species and cultivars of turfgrasses that are less susceptible to diseases. Mid-October through November is also the time that preventative fungicides should be applied for snow molds.

If you wish to submit plant material to the UNH-PDL for diagnosis, send samples (with a check for $12.00) to: The UNH Plant Diagnostic Lab, C/O Dr. Cheryl Smith, Plant Biology Department, 241 Spaulding Hall - UNH, Durham, NH 03824. Samples should be accompanied by an identification form (available from your county Cooperative Extension office or by calling 862-3200). Cheryl Smith is the UNH Cooperative Extension Specialist in Plant Health, and can be reached at (603) 862-3841, e-mail: cheryl.smith @unh.edu.

Creating a Topsy

TANYA JACKSON

Starting a small herb business is an exciting experience—and a lot of hard work. And maybe it won't be such a small business—such enterprises have a way of growing like Topsy.

There are many things to take into account before finally deciding what areas of the herb industry are best for you. Whatever your circumstances, you can be sure there are herbs you can grow and at least one market—perhaps more—you can supply.

Consider whatever land you have available—your objective will be to make the most profitable use of it. If you want to retail potted plants, dried herbs, or herbal crafts, an easy-to-find location is important, but not totally necessary. One of my first experiences shopping for herbs was traveling way, way out in Deerfield, New Hampshire, on winding gravel roads to find a small herbal business run by Theresa Reynolds. She was in business for a good many years before others discovered the joy and profits of growing herbs. But a visible location will make a retail business much easier. Visibility is not as necessary if you plan to sell wholesale. The public will go to your customers, not to you.

You also must be willing to meet and serve the public when you are busiest—for that's the time when people will be buying.

If you enjoy field work more than dealing with the public, the culinary or medicinal herb market might be better for you. The market for culinary herbs for restaurants is growing as more people realize the taste differences and advantages of cooking with and eating fresh herbs. You would need to produce several harvests of cuttings each season and irrigation would be a true asset. This type of business would need to be near an area with a number of good—preferably up-scale—restaurants willing to pay good prices for fresh herbs. A town that attracts tourists at the time of year you are growing your largest crop is ideal.

If you are not a gardener, but a craftsperson, making and mar-

continued on next page

continued from page 27

keting wreaths, dried arrangements, catnip mice, and other gift and novelty items can be a profitable enterprise.

If your skills are culinary, a line of herbal vinegars, jellies, or other condiments, such as dips and salad dressings, is a good idea. Stonewall Kitchens is an excellent example of how such an idea can take off. The proprietors of this highly successful business began by selling some vinegars, mustards, and jellies at the Portsmouth Farmers' Market about six or eight years ago. Their packaging was unique; the products, imaginative and delicious. What began as a love for cooking and a few herbs grown in a backyard garden is now a multi-million dollar business with a large retail center (and another planned) and a mail order business that ships around the world.

There are a number of well-established small herb businesses that have been around New Hampshire and southern Maine for quite some time. Here are just a few:

In Concord, at Heritage Herbs (on Hannah Dustin Road, just off 193 on the banks of the Contoocook River), you'll find Peg Mastey hard at work among her well-kept field-grown herbs, in her greenhouse, or in her tiny shop. A wealth of information, she also teaches basket-making and incorporates baskets into her herbal displays.

In York, Maine, Wild Iris Herb Farm, on a small dirt road off the beaten track, is where Lucy Clarke has been renting land and operating her herbal business for about 18 years. I first met her when I was designing and planting the gardens at the Urban Forestry Center and I purchased many field-grown plants from her for an instant garden. She has, over the years, had a number of display gardens and a very small greenhouse and has built a loyal following of customers. At one time, she grew culinary herbs and supplied local restaurants; in winter, she made wreaths that she shipped wholesale and sold at farmers' markets.

Pickety Place in Mason is perhaps one of the best-known and largest herb businesses in New Hampshire. It has grown so large that owners Judy and Dave Walter eventually moved from the farmhouse where the business is based to another home in a nearby town. At Pickety Place, there are extensive display gardens, a large greenhouse, a book store, and a gift shop, as well as a thriving restaurant that serves an herbal luncheon seven days a week. Where Wild Iris and Heritage Herbs are pretty much worked by their owners singlehandedly, Pickety Place has a fair number of employees.

In Durham, on Wednesday Hill Road, Wendy Fogg's Misty Meadows Herb Farm is one of the newer businesses—and very successful. Within the past year, they've replaced the tiny shop with a larger shop and a roomy new center for herbal classes. Wendy specializes in "mystical, magical herbs" and teaches about the use of medicinal herbs, aromatherapy, and other herbal interests that are growing in popularity.

My own herb business has included designing gardens, growing herbs, crafting a number of herb-related products, lecturing and teaching, and writing about herbs for several newspapers as well as for this publication. And I'd like to write a book! All this is part of the business of herbs.

This brief list indicates some of the variety possible within that broad area called "Herbs." But all of the people mentioned say that hard work and a great love for herbs and for what you are doing are keys to success. If you're inclined to agree, think about giving it a try—you might have Topsy on your hands too. The love and use of herbs has done nothing but spiral upwards for twenty years now. I do not see an end to it—only the potential for greater growth.

Tanya Jackson, well-known area herbalist, can be reached at 603-431-8011.

Green Job Fair

Two of the articles in this issue of *The Plantsman* were written by UNH students. Among other things, these pieces show their authors to be articulate and committed to finding a place for themselves in the Green Industry.

To help make this happen, the horticulture curriculum of the Thompson School of Applied Science will be holding its second annual Green Job Fair on Thursday, March 4, 1999. It will be held in conjunction with the UNH Summer & Intern Job Fair at the Memorial Union Building. The summer-and-intern fair is in the Granite State Room; the Green Job Fair is directly across the hall in Strafford Room. So there should be plenty of students looking for opportunities.

Tables are limited, so reserve early. Contact Rene Gingras by phone at 603-862-1097 or e-mail at <rgingras@cisunix.unh.edu>.

NH PLANT GROWERS ASSOCIATION
The Plantsman Editor
UNH Research Greenhouses
Durham, NH 03824

NON-PROFIT
ORGANIZATION
U.S. POSTAGE PAID
PERMIT NO. 43