PLANNING YOUR SPRING GARDEN –
SEED SOURCES & VARIETIES

by Martha Brown

The year’s longest nights will soon be upon us – a perfect time to settle in with the seed catalogues and start fantasizing about next spring’s garden. Sooner or later, the serious gardener will want to expand their options beyond seedlings sold at the nursery and start sampling the incredible range of varieties offered in catalogues from throughout the country. But don't ignore the local offerings – especially when you’re shopping for such material as bulbs and bare root trees and shrubs, it’s often best to get a look at your choices so that you can pick the healthiest products.

Seed Catalogues – A Chance to Experiment

Seed catalogues are a great way to broaden your horticultural horizons. Catalogue shopping can also make financial sense – prices average just over half the price of seeds purchased at retail stores, and for crops that require lots of seed, such as spinach, radishes, beets, and carrots, it’s often cheaper to buy in the bulk quantities that some catalogues offer (although you’ll be paying some shipping costs). Since seeds are stored for shipping, they’ll often keep longer and have a higher germination rate than those that have been sitting on store shelves.

Most catalogues are free, and offer more than just promotions – they also try to educate the reader. “Garden catalogue writers offer a wealth of both technical information and often more subtle insights into how a plant will perform,” says Chadwick Garden Manager Orin Martin. “You come to value the writers whose plants and seeds perform as promised.”

Orin has been using mail order companies for nearly twenty years to add variety to the Chadwick Garden’s plantings. He notes some favorite seed sources that offer consistent quality and a wide range of choices –

Shepherd’s Garden Seeds offers unusual and interesting varieties from Europe and the U.S. “Shepherd’s carries an outstanding quality and quantity of cut flowers to grow your own ingredients for those ‘old timey’ bouquets,” says Orin. The catalogue itself offers well-written, entertaining, and accurate descriptions based on variety trials that the Shepherd’s staff performs at their Felton garden site. According to Orin, Shepherd’s seeds are some of the highest quality available, with excellent germination rates and great looking and tasting products.

Stokes Seed Co. provides “…an amazing varietal selection of annual and perennial flowers and vegetables, combined with some of the best available cultural information and growing tips,” says

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We need pots! Please see note on page 15.
UCSC is gearing up to start a graduate program in engineering (with $2 million already earmarked to launch it); I doubt the Farm & Garden is high on UC Santa’s list for extra funding. Our memberships continue to provide the most reliable source of funds for helping to make Friends meet. The letter accompanying this issue of News & Notes outlines the perks of membership, but the main reason remains our love of what the Farm & Garden mean to all of us who have been nurtured by these under-appreciated "programs" in UCSC’s grove of academia.

Fortunately, nearly 1,000 visitors appreciated the Farm in its fall fashion at the Friends' recent Harvest Festival. Led by CASFS staffs Jim Leap, Ann Lindsey, Melanie Mintz and Martha Brown, our third annual Harvest Festival last month was another squashing success. A harvestful of funds raised, and a large share for an apprentice scholarship via the ever-popular raffle. Special thanks also to the Apprentices for making the site look so festive and for non-stop tractor-driving duties; and to the volunteer Docents, Friends, Board Members, and our kindred spirits from the Monterey Bay Master Gardeners for their many hours of work.

The Friends are looking for someone to do market research on the viability of reintroducing our Farm & Garden herb vinegars. Some compensation is available. Please contact Jeff Arnett, 425-1750, or Senior Editor Martha Brown, 459-3376, if you’re interested.

Christmas Suggestions for the Gardeners on Your List

Perhaps at the top of your list is the Friends' new cookbook featuring master chefs from local restaurants. Guided by Directors Margaret Bonacorsa and Martha Brown, this labor of love will be available at the ID Building (1515 Pacific Avenue, downtown Santa Cruz) during the holidays with all proceeds going to the Friends. Or you can use the enclosed order form to have it delivered to your door.

Recommended by Kathy Krieger in her Sentinel column: Sunset Trees & Shrubs, "thorough, well-written, well-illustrated and at $12.99, reasonably priced. It has a special section on trees for mild-winter areas, plus Sunset's usual helpful lists that make it easier to winnow out the perfect tree for your spot." Available at local bookstores, garden centers or call 1-800-759-0190.

Other books on my wish list include People With Dirty Hands, The Passion for Gardening by Robin Chotzinoff; Gardening for the Heart, Why Gardeners Garden by Carol Olwell; The Herb Gardener by botanist Susan McClure; The Garden Trellis by Ferris Cook; The Potting Shed by Linda Smith; and "Totally Flowers," a series that highlights a different flower – sunflowers, tulips, orchids, and roses – in each book. The top of each 4” X 5” book is cut roughly in the shape of the flower featured. Each is full of flower lore and retails for $5.95. Most of these available locally at Bookshop Santa Cruz, Papervision, Bookworks, Capitola Book Cafe, Bargetto Winery, San Lorenzo Gardening Center, and Echo From The Woods.

Garden Jazz (call 1-800-511-0001 for free catalogue) offers garden sculpture, bird houses and classical amphoras among other pricey gardening gawgs. Speaking of garden sculpture, local artist Peter Hanson (son of longtime Friends' members Ruth & Hardy Hanson) sculpts exquisite granite fountains that could grace a special friend's dream garden. Call the artist at 423-7409 for info.

Former apprentice Britt Galler's "Feel Good Foods" is another local source for a unique gift that caters to the friends on your list who can't always grow what they eat. Call Britt at 429-7579 for the delicious details.

A personal favorite of mine are PooPets made by the Amish in the shape of snails, toads and 'dung bunnies.' "Baked like the dung bricks of antiquity," reads the catalog, "in a process that sanitizes and removes odors." You simply set the little creatures over the root structures of plants. When the animals get wet, their fertilizer sinks into the ground. Under normal conditions, the makers claim, a creature will last for about two years. The pets cost between $12 and $14; more information is available at (800) 762-7325. For your compost-poor friends, the Earth Machine is a backyard boon (no turning, locking lid, & a backyard composting book free). Available from Ecology Action for under $40. They have worm boxes and other supplies for the beginning or continuing composter. Call 423-4327 for more info.

For your greenest friends, the Bio-Dynamic Farming and Gardening Association offers biodegradable compost bags made of recycled craft paper with a cellulose lining. Bags are $8/doz. or 24 for $12. Write to: BDFGA, P.O. Box 550, Kimberton, PA 19442.

For Friends who want to support us while giving to others, the Louise Cain Gatehouse now features a complete selection of our merchandise, thanks to CASFS Public Education Coordinator Melanie Mintz and Senior Editor Martha Brown. Call 459-3248 or 459-3376 if you'd like to make a shopping trip to the Farm. Or why not give a gift that keeps on giving all continued on page 4
Winter 1996–1997 Calendar of Events

Cookbook Kickoff & Holiday Gathering
Monday, December 2 and Monday, December 9
5 pm to 7 pm    ID Building, 1515 Pacific Ave.

Gather with Friends at the ID Building in downtown Santa Cruz to celebrate the long-awaited arrival of our new cookbook, Recipes from the Great Chefs of Santa Cruz County. We’ve enticed some of the featured chefs to provide goodies and talk about their craft. Books will be available for purchase, as well as Farm & Garden aprons and holiday wreaths. Please join us for one of these two Monday evening get-togethers – or come to both!

Fruit Tree Workshop for the Home Gardener
with an Emphasis on Apples and Pears

Friday, February 7, 7 pm to 9 pm & Saturday, February 8, 9 am to 3 pm

Orin Martin, manager of the Alan Chadwick Garden, offers this special workshop for the beginning and intermediate home orchardist. Orin will cover a wide variety of topics, including: rootstock and variety selection, tree sources, pre-plant ground preparation and planting, pruning, training, harvesting, soil fertility, and basic fruit tree care throughout the calendar year.

The workshop begins at the UCSC Arboretum’s Horticulture Building on Friday evening from 7 pm to 9 pm, with a slide show, lecture, and question-and-answer period. On Saturday participants will move into the Alan Chadwick Garden to watch planting, pruning, and training demonstrations, then practice under the supervision of Orin and his staff. We hope to provide each participant with a tree to take home.

Cost of the workshop is $40.00 for Friends of the Farm & Garden members, and $50.00 for non-members, payable in advance. Enrollment limited. Registration deadline: Friday, January 31. Call 408/459-3240 for more information or to register.

If you need more information about these events, would like directions, or have questions about access, call 408/459-3240.
Book Review

The Humanure Handbook
by Joe Jenkins

Reviewed by Eric Johnson ('89 Apprentice)

I have to admit it. When author Joe Jenkins first contacted me about his book, The Humanure Handbook, I was less than enthusiastic. He had just finished ‘surfing’ my home composting site on the World Wide Web, and offered the criticism that I really oughtn’t recommend against composting human feces and urine. He further suggested his own book as a good place for me to get set straight on the subject.

I emailed right back, countering that the average suburbanite surfing the web neither knew enough about composting nor was careful enough to compost ‘humanure’ correctly. However, I grudgingly offered to take a look at the book.

A hundred and ninety-eight pages later, I was convinced.

Since my apprentice days, when there was still a composting toilet at the Farm Center, I’ve thought that recycling human bodily wastes into a valuable resource was a good idea, but the question of transmitting human diseases always stood in the way of actual practice. Jenkins’s book gets hip-deep in the subject, addressing the pathogen question head-on and making an excellent case for safe composting of feces and urine on a home scale. Despite the technical subject matter (and thoroughly-cited references), the book is an easy and enjoyable read for any compost afficionado.

In order to be safe, the bottom line is that feces and urine need to undergo a strongly thermophilic heating cycle, combined with plenty of time afterwards to mature into finished compost. Experienced, careful composters regularly achieve thermophilic temperatures in their home piles, and those willing to take responsibility for composting bodily wastes correctly should be able to safely kill off the pathogens.

I still believe that one should be knowledgeable, conscientious, and willing to take 100% responsibility for the results of commodal composting. Fortunately, Jenkins’s book fills a much-needed niche by providing interested folks with the information they need to do the job right.

In addition to thorough whys and how-tos, The Humanure Handbook digs into the history of the use of humanure in agriculture. It also takes a look at the issue of ‘fecophobia’ in our society today, a problem that keeps us flushing and sending valuable resources to ‘the great away’ rather than making the best use of them in our yards and gardens. Jenkins is very direct in his writing – be forewarned that this book is about exactly what you think.

The world would sure be a better place, though, if everyone would embrace this subject rather than avoiding it. Take a look at The Humanure Handbook for yourself, and decide if humanure composting is for you. You might not find it in a local bookstore, since it is an independently-published work. It can be special ordered using the ISBN (0-9644258-4-X), or order from Chelsea Green Publishers, P.O. Box 428, White River, VT 05001, which sells the book for $19 plus $4 for shipping and handling.

Noteworthy News

from page 2

year: A membership in the Friends of the Farm & Garden? An extra membership envelope is included in this mailing to renewing members, making it easy for you to give and thus gain us a new Friend.

And don’t forget Norrie’s Gifts at the UCSC Arboretum. Our neighbors have a wide selection of books and other treasures for plant lovers. Call 423-4977 for more info.

CALL FOR WORDS: NEWS & NOTES continues to solicit articles, poems, recipes, illustrations, and other contributions from CASFS staff, Friends and other gardening enthusiasts. Deadline for the spring News & Notes is February 4. Send contributions to Jeff Arnett, Porter College (jeff_arnett@macmail.ucsc.edu). Or send to News & Notes, c/o Friends of the UCSC Farm & Garden, University of California, Santa Cruz, CA 95064. Call Jeff Arnett (425-1750) or Martha Brown (459-3376) for more information.
Fruit Trees for Your Garden

— by Melanie Mintz

As Fall gives way to Winter, I often find myself thinking of fruit trees. It might be the apple pies and pear crisps; the sunset-orange orbs dangling from persimmon branches; the crisp, sweet-tart Pippins currently available in the markets; the availability of bare root trees, or even the thought of winter pruning – whatever the reason, I’ve got fruit trees on the brain. Growing fruit trees can seem intimidating – which trees to select, where to plant them, how to train them.

While it’s true that with patience and planning almost any home gardener can grow a bountiful backyard orchard, there are many fruit trees which are underproductive and probably underappreciated languishing in backyards, awaiting revival or renewal. I hope that this article helps the aspiring fruit grower identify some of the requirements of a successful tree planting. Much of the information presented here is especially appropriate to apple and pear trees.

Selecting a Site

Before you choose the type of fruit you want to grow and the growing site, you’ll need to evaluate your gardening conditions.

1) Climate. What are the minimum and maximum temperatures? How long is your growing season? How many winter chilling hours (when the temperature is between 32°F and 40°F) does your area get? How warm is the summer? Is your area prone to humid conditions? Much of this information is available from your local Cooperative Extension office or Master Gardeners Hotline (you can reach the Monterey Bay Master Gardeners at 408/763-8007).

Knowing these climate factors will help you choose – or rule out – fruit trees for your garden. Many evergreen fruit trees such as avocado, citrus, and figs have tropical or subtropical origins and do not do well in areas with frosts. Pome fruits (apples and pears) need a certain amount of winter chill hours for optimal production. Some stone fruits (peaches, nectarines and apricots) need some winter chill but also require a long growing season, as they start to leaf out early and cannot bear any frost after that time. And many fruits (oranges, peaches and pomegranates) require lots of warm, sunny days in summer to produce sweet fruit. High humidity fosters many plant diseases – peach leaf curl, fireblight, etc. Choosing resistant varieties or fruit not susceptible to these diseases is important in such conditions.

2) Sunlight. Most fruit trees need 6 to 8 hours of direct sunlight daily to grow, blossom and fruit.

3) Soil. Evaluate your soil conditions. Sandy soils drain quickly, do not contain much organic matter, and are less productive than loamy soils. They will require lots of amending. Clay soils tend to become waterlogged and get very hard when they dry – a less-than-desirable situation for fruit trees. Loamy soils are a combination of sand, silt and clay and are often high in organic matter. Loamy soils are the most desirable for growing trees as they provide good drainage without getting waterlogged and tend to have fairly high nutrient exchange capacities. If you aren’t blessed with loamy soil on your site, both clay and sandy soils can be improved with covercropping and additions of decomposed organic matter (compost).

continued on next page
Most fruit trees grow best in a slightly acidic soil with a pH between 6.0 and 7.0. Be sure to modify your pH (by adding dolomitic lime to raise pH or sulfur to lower it) prior to planting if necessary, as soil pH affects availability of nutrients to plants. (Note: It is very easy to overapply both lime and sulfur! You should know your pH and add only the specified amount.)

4) Moisture. Tree roots grow best when they have constant contact with moist soil but do not do well in constantly soggy soil. Do not choose a site where there is often standing water.

5) Landscape. You may want to grow a tree for shade, beauty or erosion control. This should be taken into consideration when selecting both a site and a tree.

Selecting a Tree

Once you have selected the perfect site, it's time to select what type and variety of tree to plant.

First, decide if you want to grow a full-size, semi-dwarf or dwarf fruit tree. "By growing smaller fruit trees," writes Orin Martin, Chadwick Garden Manager, "home gardeners can get more out of a limited space. Gardeners can pay more attention to seasonality as well – by having five 8-foot tall trees in a space previously occupied by one 20-foot tall tree, the home orchardist can select varieties that will produce apples for nearly year-round use." Dwarf and semi-dwarf trees also make jobs like pruning and thinning easier by eliminating the need to use a ladder. Dwarf trees can even be grown in a planter or half barrel on a deck or patio. On the other hand, if you have a lot of space, or want a large shade tree, you might opt to grow a standard size tree.

Pay attention to limiting factors when selecting your tree – i.e., winter chill requirement or summer heat needs. When possible, select trees which have been grown near your region. And be sure to choose a variety that will produce fruit with the characteristics you're looking for – good flavor for fresh eating, late-season producer for winter storage, excellent for making pies or sauce, etc.

Most importantly, purchase trees from a reputable nursery catalogue or garden center, and choose carefully. "It's important to purchase vigorous, well-grown nursery trees," writes Orin. "The two basic options are whips (single branch) and cut, or branched, trees. The more branches – and thus leaf surface area – a tree has, the more quickly it will grow and come into bearing. Bigger trees perform better – both early and in the long run." On the other hand, Stella Otto writes in The Backyard Orchardist, "overly large trees have difficulty adjusting to transplanting."

Soil Preparation and Timing

A general rule of thumb is to prepare a planting hole that is about twice as big as the root ball of the tree by removing the soil and fracturing or opening up the hole walls. Trees do best in their native soils – do not put fertilizers in the hole, but mound a soil/compost mixture (80%/20%) around the planted tree, above the soil line but beneath the grafting union. (If your soil is very high in clay or sand, it's okay to mix the soil with 20%-30% compost before returning it to the hole.) For best results, loosen the soil outside the tree's drip line as well. (A tree's drip line is the circumference beneath where the tree's branches reach.) Remember to select a site with adequate drainage!

Deciduous fruit trees should be planted during their dormant season, between leaf fall and the swelling of new buds. In our region, the months of January and February are the best times to plant bare-root deciduous trees. The goal is to establish root systems before top growth begins in spring.

Pruning and Training

Pruning often seems mysterious to the novice fruit tree grower. According to experts, it needn't be so. Once one understands why to prune and learns how a tree responds to pruning cuts, it becomes more of an art than a mystery. "With young trees, the goal of pruning is to shape and establish tree form and structure," writes Orin. "As trees mature, the goals of pruning are to control tree height, allow sunlight and air to circulate into the center of the canopy, remove poorly placed branches and renew older branches."

Pruning allows easy access to the tree for thinning, picking and pest-control; encourages good air circulation (which is good for disease control); allows sunlight to be evenly distributed
(which is important for fruiting and fruit color); and stimulates new fruiting wood.

The pruning system you choose will depend on two factors: the tree’s natural growth habit and how you want it to develop.

For free-standing trees, the common choices for a pruning system are central leader, modified central leader (primarily chosen for apples); and open-center or vase-shaped. To fit trees into small spaces there are two-dimensional pruning systems such as espaliers, cordons, and Belgian-fences.

Optimally, establishing the tree’s growing form happens during the tree’s young, non-fruit-bearing years. Later, the tree is pruned solely to maintain shape and size; to allow sunlight and air to penetrate; and to remove dead branches. (Whole chapters in books are dedicated to pruning and the topic is too broad to treat in detail in this article. For more information, consult the resources listed below.)

**Fertility and Water**

Photosynthesis is of course the main way that a tree cares for its nutritional needs. Thus, healthy leaves and sunlight’s access to the maximum amount of leaf surface is the first strategy in tree health. A healthy tree will also grow best in a well-balanced soil. Just as in the garden, a covercrop of legumes and grasses can be grown during the dormant season and compost should be applied around the base of the tree each spring to replenish nutrients (when applying compost, leave a space of a foot or so around the tree trunk to allow air to circulate). Before applying any amendments beyond compost, it would be wise to have a soil test to know what nutrients are naturally present in your soil.

Depending on your soil texture, you may need to irrigate your tree once a week in the dry season. Heavy soils, which retain water, may need less irrigation, and light sandy soils may need more. Leaves should never reach wilting point. Generally, a deep soak once a week is better than light waterings more often. Remember, fruit tree roots are generally shallow and extend beyond the tree’s branches; therefore, maintaining moisture in this zone is important. Watering is most critical during fruit growth and when the trees are young.

**Disease Control**

Although fruit trees are susceptible to a variety of disease and pest problems, there are a number of steps you can take to prevent problems from occurring. The most important preventive maintenance steps include choosing varieties which are appropriate to your climate; picking up ground fall fruit and removing “mummies” (fruit left on the tree after harvest); encouraging beneficial insects in your garden with diverse plantings; pruning for good light penetration and air circulation; and maintaining adequate fertility and moisture. Look for an article on specific pests and diseases in the next News and Notes.

These are some very basic guidelines in fruit tree growing. Just as a tree is a perennial which will live many years, learning to grow them is a perennial project. Talk to local fruit tree growers, attend meetings of Rare Fruit Tree Grower’s associations, seek out the resources mentioned below, and above all, plant a tree!

**RESOURCES**


CASFS Information Sheets*

“Citrus Offers Year-Round Options”

“Apple Trees for Every Garden” (includes details on different pruning systems)

“Apple Trees of the UCSC Farm Orchard”

*Available free from the Center for Agroecology & Sustainable Food Systems. Write or call — CASFS, University of California, Santa Cruz, CA 95064; 408/459-3240.
A Study in Contrasts – Butchart Gardens and The University of British Columbia's Botanical Garden
- by Amy Stewart

I took my beloved to Vancouver, B.C. this year, and before we went I told everybody that he would probably spend all his time in bookstores, and I would spend all mine in gardens, so in a way our vacation together would be no different than our weekends at home. Sure enough, Scott found every out-of-the-way rare book dealer in town, and I hit two of the best-known gardens in Vancouver: the Butchart Gardens on Vancouver Island, and the Botanical Garden at the University of British Columbia.

I tried to love the Butchart Gardens, I really did. I was sure that there was something elegant and highbrow about the manicured lawns and washes of bright annuals, planted in perfect symmetry just that spring and waiting to be yanked out and replaced come winter. I tried to be impressed by the complete lack of weeds, but felt instead a mixture of jealousy and contempt: as my favorite writer Anne Lamott would say, people with such perfect gardens probably don’t have rich inner lives.

I spent an hour trudging through the marked paths with my patient yet very weary mate, attempting to look interested in the rows of pansies, impatiens, and dwarf dahlias that carpeted the gardens. After all, we had travelled over three hours by bus, ferry, and bus again to reach this very popular tourist destination. Finally, though, I had to admit that I longed for the diversity and disarray of the wild; or at least the earthy, dirt-under-your-fingernails feel of a working farm, complete with rotting piles of hay and aging manure. The Butchart gardens didn’t make me feel any closer to nature; instead, I felt like I had spent the last two hours strolling through a very sterile, well-landscaped theme park or shopping mall. I kept expecting some staff member with that clean-cut “Disney Look” to rush up in a starched pinstriped shirt and sweep away any seed pods or leaves that had fallen into the path. Even the gift shop was too upscale for me, featuring overpriced jewelry and china with floral themes. Like a visit to the false, glittering Great Mall of America, we left the Butchart Gardens feeling exhausted and unsatisfied. I resolved to hit only one more public garden on the trip: the University of British Columbia’s Botanical Garden.

We arrived at UBC after yet another long bus ride and trudged through campus. This time, though, I knew we had found the right place: the entrance to the Botanical Garden was flanked by a rich and varied perennial garden, full of native and hard-to-find species, and marked with labels that included not only scientific names, but the seed company source for each plant. I scribbled notes and snapped photographs as we paid our admission into the garden.

The UBC garden began in 1912 under the direction of Scottish botanist John Davidson. He spent years collecting 25,000 plants representing 9,000 species. When he retired in 1951, the entire campus was declared a botanical garden. The pressures of modern campus life, including the need for such minor accessories as buildings and parking lots, eventually infringed on the garden’s objectives. Thirty-one acres were set aside for the present-day Botanical Garden.

I was so excited about the vegetable and the native plant gardens that I rushed past the largest segment of the garden, the David C. Lam Asian Garden. Still, a less impatient visitor would enjoy a lingering stroll through the cool, shady garden populated by a wide variety of Asian trees, shrubs, perennials, and ground covers. It is worth noting that the UBC Botanical Garden has a long-standing relationship with the Nanjing Botanical Garden, providing plant and seed exchanges between the two gardens.

Just beyond the Asian garden lies the expansive Perennial Border, as lush and overgrown and filled with west coast favorites as anything I might find in Santa Cruz. I’m sure I broke all the rules of the garden by jumping right into the beds, parting flowering shrubs and herbs in search of plant labels. The border curves around one end of the wide, open garden, and leads to what was for me the high spot of the trip: the Food Garden. An incredible amount of food grows in this compact, ornamental space: squash, lettuce, and corn grew in raised beds,
along with a highly decorative demonstration of effective companion planting, featuring herbs and vegetables planted densely together in long, wide beds. There is even a small composting demonstration occupying one corner of the garden ("Rotting garbage!" I thought. "I'm HOME!"). Perhaps the most innovative aspect of the Food Garden was the variety of fruit trees planted in cordons and espaliers. This garden proves that a small amount of space can yield a bountiful harvest, and all produce is donated to the Salvation Army.

Other high spots of the UBC Garden included the Winter Garden, planted with heather, bulbs, and winter-blooming shrubs and vines. Altogether unimpressive in August, this garden must be a real delight in the depths of a dark, cold winter. The Alpine Garden features mountain-growing plants from around the world, grouped by continent; and the Native Garden spans ten acres with trees, ferns, shrubs, flowers, and ground covers native to the region. A bog running through the center of the garden shows off native swamp plants. At the end of the trip, I visited the gift shop, which sells plants and seeds cultivated on-site, and schemed about ways to smuggle some rare specimens across the border.

I left the UBC Botanical Garden a better educated, and certainly more homesick, gardener. I returned to our bed and breakfast that evening in some sort of primordial gardening frenzy, ready to roll up my sleeves and start dividing irises right there in the front yard. Scott wisely pointed out to me that the innkeeper might frown upon guests digging through the flower beds late at night, so I managed to restrain myself and keep my hands out of the dirt until I returned home. Still, if you get a chance to visit Vancouver, skip the regimented, manicured public gardens and head up to campus for a garden that, like our local Farm & Garden, will educate and delight you with its diversity and creativity.

**Docent News**

The docent-led tour season winds to a close at the end of November. As the Farm and the Alan Chadwick Garden enter their dormant period, hard-working docents will get a winter respite. Guided tours will start again as spring takes hold at the end of March. In the meantime, the Farm & Garden in winter offer a cool, quiet place to explore on your own, with cover crops greened the beds and fresh-made compost piles molding their way toward finished humus.

Our volunteer docent team enriched the lives of more than 2,500 visitors this year. Pre-schoolers, K-12 kids, high schoolers, college students, and many adult groups took advantage of our tour program to learn more about organic farming and gardening, the environment, and the food system. Some kids ate their first fresh-picked carrots; some adults had their first look at the potential for growing food and ornamental crops organically. "You do this all without pesticides?" was a common refrain. All our visitors came away with a better sense of how farming and gardening affect natural resources and the environment. Docents make it possible to offer visitors a high-quality experience during their time at the Farm & Garden, and we're eternally grateful for their efforts.

Now the tour program is becoming a victim of its own success. As more and more people learn about Farm & Garden tours, we're getting more calls—especially from teachers—than we can accommodate. If you're interested in helping with the docent program next year, we'll be offering a training program in March. For more information call Melanie Mintz at 408/459-3248. We'd love to say "Yes!" to everyone who requests a guided tour next year!
ALUMNI UPDATES

Alumni Help the Homeless Garden Project Grow
– by Melanie Mintz

“Sustainable agriculture is about art and community. A long time ago agriculture created community. Now, a resurgent community can recreate agriculture and calm the spirit.”
– Mark Burnett in a Bay Area Action newsletter

The Farm and Garden apprenticeship scatters seeds which grow in farm and gardens around the world. Those seeds are the people who come each year to learn to grow food ecologically and go on to create farms, gardens and communities that “calm the spirit.” One such project, where the seeds have landed and taken root is the Homeless Garden Project (HGP) here in Santa Cruz. The HGP is a community garden which provides job training and transitional employment within the context of a healing organic garden. It has been cultivated by many hands – homeless employees and volunteers, community volunteers and neighbors, UCSC interns and former apprentices. The Farm & Garden has been important in the HGP’s formation. According to Lynne Basehore, co-founder and former HGP director, “The techniques used at the Farm & Garden to grow food intensively inspired the project. We always wanted people who were trained at the Farm & Garden to bring their knowledge here to share it with other members in our community.”

Three former apprentices went on to become staff at the HGP. The training received in the apprenticeship provided Jane Freeman (’90-91), Steve Scheuerell (’93) and myself (’91) with the practical horticultural skills which have been important components of the HGP’s success as an urban garden which produces such fruits as community economic development, horticultural therapy and job training for homeless workers, public education, open spaces, hot lunches and many heads, leaves and pounds of organically grown flowers and produce.

Jane, who was the Garden Director from 1992 to 1994 and is now farming on her own, was hired after she had come to the Garden in 1991 with a gift of compost bins and a willingness to volunteer. “Jane’s friendly attitude and openness put people at ease and built a spirit of community. Her pioneer spirit and horticultural skills helped us begin our Community Supported Agriculture (CSA) and job training programs,” recounts Lynne fondly.

When the HGP grew from one garden site to three, Steve was hired as Greenhouse Technical Assistant. “Putting my experiences to work in a grassroots community project such as the HGP was a natural next step for me,” says Steve. “Before the apprenticeship, I worked with homeless people and other street folks at the Che Cafe in San Diego, where volunteers could work in the garden in exchange for restaurant food credit.”

Steve studied ecology at UC San Diego and was attracted to the Farm and Garden’s hands-on training program and practical application of ecological concepts. His goals at the HGP were to create a training program which would include all aspects of gardening – from crop planning to harvest, much like the training he had received as an apprentice. Specifically, Steve taught workers at the HGP how to propagate plants ecologically with local materials. “I wanted people to know that they could go anywhere, anytime and grow food. I wanted them to know about compost-based propagation so that they could scavenge any region for materials – sand, leaf mold, compostables – instead of relying on expensive, mined and unnecessary inputs – peat, vermiculite and perlite.”

This concept of resourcefulness and self-reliance is what drew me into gardening. While working at an orphanage in Guatemala, awaiting donated food supplies weekly, it dawned on me that to truly be independent a community would have to preserve its knowledge of growing food. Having grown up in a city, surrounded by pavement and tall trees growing out of small openings in sidewalks, I had never grown anything! Determined to learn to grow food, I became an apprentice and became turned on to a whole new world – I discovered a new way of eating, thinking and being in the world. As an apprentice, my desire to connect people with the source of their food was nurtured.

As CSA coordinator at the HGP since 1994, I have had an opportunity to witness how powerful a garden can be. An urban garden motivates people politically, spiritually, nutritionally, compassionately and economically. It is inspiring, though not surprising, to find that people are eager to be connected to a garden where their food is grown, where beauty is everyone’s and where people are loved.

The HGP employs 15 homeless workers, grows food for 100 CSA members (representing over 300 people), donates food to local agencies and low-income families, and provides people with a place to come into contact with organic gardening. The apprenticeship offers the type of training that will help these projects take root and flourish. With hundreds of visitors and volunteers to the HGP and similar projects, and with a new crop of Farm &
1996 Apprenticeship Graduates Off to Greener Pastures

This year’s 39 apprentices have packed up their spades and forks and are already digging into new projects as close as Gilroy and as far away as Kenya. Here are some examples of people’s current endeavors and near-future plans.

David Anderson and Helen Matzger are bound for Sweden where they plan to set up an organic market garden with a Community Supported Agriculture (CSA) project on David’s brother’s land.

Jon Carr is headed for Ireland where he’ll farm on 10 acres serving Dublin area restaurants and farmers markets.

Jennifer Charles is starting a market garden on a half acre in Las Lomas where she plans to grow dry-farmed tomatoes and Asian herbs.

Gareth Engler has gone to Baja to help set up a permaculture garden and nursery at a retreat center with two 1992 alumni, Melissa Wheelock and Kate Tieman.

Heidi Fosner is working as a garden teacher with The Garden Project in San Francisco, a program employing former prisoners as gardeners and landscapers which was started by 1987 graduate Cathrine Sneed.

Jeff Frey is working for New Natives, a sprout growing company in Corralitos.

Sharon Hobart has been hired as the Farm Operations Manager at Hoey Ranch, an organic vegetable farm with a CSA and direct market stand in Gilroy.

Terry Hooker is farming for Pomponio Creek Produce north of Davenport.

Dan Katz will be starting and managing a garden at a Bed & Breakfast in Kauai.

Sharon Korpi has been hired as the CSA coordinator of the Summer Youth Gardening Program in Berkeley, a job training program for urban teenagers started by 1994 graduate Patrick Archie.

Craig Metz is working with Spiral Gardens in Berkeley and Oakland, an organization of volunteer gardeners that works to build community gardens on vacant lots and other available land.

Anne Wanjia Murangiri has returned to her village of Embu in Kenya to work with the Nguruka Women’s Agriculture Group. There she will be teaching organic gardening to the community members using a demonstration plot that they have set aside for her.

Karen Nordstrom is teaching fourth grade in a bilingual Watsonville school with a Life Lab garden program.

Jessica Silverman is teaching gardening to students at Mission High School in San Francisco on a rooftop garden with planter boxes, compost bins and a small greenhouse. The program includes a mentorship through which the high school students teach elementary kids about gardening.

Apprentices on 1996-97 Staff at the Farm & Garden

Four 1996 graduates will be staying on as second-year apprentices at the Farm & Garden, providing the invaluable service of assistant managers and helping to train the next crop of apprentices. Working in the Farm garden with John Farrell are R.J. Singer and Eatherly Hood, and in the Chadwick garden with Orin Martin are Eli Bernstein and Jenny Sioux Hopkins.

In addition, we have two 1995 graduates and a 1994 graduate continuing on with us. Kathi Coelen and Cindy Richter will be running our sixty member CSA next year and coordinating the field production with Farm Manager Jim Leap. Christof Bernau will be managing propagation at the Farm’s greenhouses, instructing apprentices, and coordinating plant sales.

Garden apprentices graduating each year, it is conceivable that every neighborhood will someday have a jewel like the Homeless Garden Project in its backyard.

More Farm and Garden/Homeless Garden Project Connections!

Kate Stafford’s (*68) beautiful photos document and support the project’s work. Jered Lawson (*94) was instrumental in beginning the HGP’s CSA program. Patrick Williams, the current Horticultural Director at the Garden, studied with Alan Chadwick in Covelio. Paul Lee, who helped found the Chadwick Garden in 1967 cofounded the HGP with Lynne Basehore two decades later. Olivia Boyce-Abel (*79) helped to begin the project’s wreath-making enterprise. Kimberly Carter has been an important community liaison. Jim Moran and Guama Matthei (*94) have also been gardening with the project.

The Homeless Garden Project earns approximately $90,000/year, representing about 1/3 of its budget, through agricultural and product income. It relies on contributions to be able to provide the job training, social service and educational components of its programs. To make financial, material or social service contributions please contact the HGP at 408-426-3609.
Two Food Project Jobs Available

Grower and Assistant Grower positions available at The Food Project, a nationally recognized youth development and farming program in Lincoln, MA. Each year, over 500 youth from greater Boston work with us to grow and distribute 30,000 pounds of fresh vegetables to soup kitchens, shelters and farmer’s markets.

Grower and Assistant will plan, implement and supervise organic crop production on 8 acres of farm land in Lincoln and 1/2 acre production food lot in inner-city Boston. Responsible for developing and maintaining crop rotation, cover crop, primary tillage, cultivation, harvesting and distribution on both sites. Critical that candidates for either position have a strong interest in young people and education. Important that the Grower have experience in supervision.

Past experience in organic crop production, education, and or service work important to both positions. Grower position is full time April-November with negotiable winter hours. Assistant Grower position is seasonal, with full time employment April-November.

To apply, send cover letter, resume and references to Greg Gale, Co-Director, The Food Project, P.O. Box 705, Lincoln, MA 01773.

Seeds & Varieties (continued from page 1)

Orin. Founded in 1881, Stokes is based in Buffalo, New York, and many of its varieties are featured in full color photos in the catalogue. Besides a great selection, Stokes also offers good packet and bulk prices.

Johnny’s Selected Seeds focuses on vegetable seeds, though it does carry some flowers. Based in Albion, Maine, Johnny’s does much of its own breeding and varietal testing, which make for informative, honest, and realistic catalogue descriptions. Orin notes that Johnny’s offers an especially strong choice of carrot, lettuce, leek, oriental vegetables, tomato, and winter squash varieties.

The Cook’s Garden of Londonderry, Vermont offers a good assortment of specialty vegetables and herbs with an emphasis on regional European varieties, as well as a broad spectrum of annual cut flowers with a “cottage garden” feel. “By far the strongest asset of this seed company is their amazing collection of leaf crops, to be used separately or combined into the European specialty salad mix known as mesclun,” says Orin. Cooks offers pre-packed mesclun mixes based on traditional recipes from the Piedmont region of Italy and neighboring Provence in France, as well as five pre-packaged American-style salad mixes.

Does it make sense to buy seeds from a company located in New York or New England if you’re gardening in coastal California? Orin points out that even though climatic conditions are different in the northeast, total heat units (measured in degree-days) are similar to those found in our region, where the growing season is long but the weather relatively cool. (Degree-days equal the number of degrees above a certain minimum temperature – usually 50°F – multiplied by the number of days that the temperature topped that minimum. For instance, if temperatures average 60°F for 4 days, you accumulate 40 degree-day units [10°F above the minimum times 4 days = 40, using a 50°F minimum]. Each crop needs a certain minimum number of degree-days to mature).

Narrowing Down Your List

Here are some popular early spring crops that you may want on your shopping list, along with recommended varieties that perform well at the Farm & Garden. Initials refer to seed sources.
C = The Cook's Garden, J = Johnny's, Sh = Shepherd's, St = Stokes, T = Territorial, A = all sources.

These varieties should be available in the 1997 catalogues. Happy browsing!

Beets

'Chigoga' – Italian home garden variety with striking concentric white and red rings, mild taste. (C, J, Sh)
'Detroit Dark Red' – A favorite for greens, with extra tall tops. (J, St)
'Early Wonder' – Grows well in chilly soil – a good early spring choice. A good variety for general table use. (C, J, T)
'Golden' – Golden organge throughout. Good-tasting, mild greens. (A)
'Kleine Bol', 'Little Ball' – Quick maturing (5-10 days earlier than most beets), tender sweet baby beets with deep red coloring. (Sh, St, T)
'MacGreggor's Favorite' – An old Scottish heirloom grown primarily for its spear-shaped, metallic purple foliage (good in salad mixes). The slow-developing root (90 days) is long and tapered like a carrot. Poor germinator. (C)
'Red Ace' – Full globe shape, smooth skin, deep red interior. Red Ace will maintain its honey sweet flavor as it gets larger and older. (J, St, T)

Beets can be sown virtually all year round, from mid January through November. They are not as finicky about heat as carrots.

Carrots

'Amsador' – A short, sweet variety with deep orange flesh. (Sh)
'Artist' – An Imperator/Nantes cross. High in Vitamin A and sweet for an Imperator. (J)
'Napoli' – One of the earliest full-sized varieties, maturing one to two weeks before main-season Nantes types. Cylindrical and blunt-ended, reaching 7” to 9” in length. (J)
'Royal Chantenay' – Good for shallow soils. (Sh, T)
'Scarlet Nantes' – A home garden favorite with sweet, crisp flavor. (J)

You can plant carrots in Santa Cruz from March 1 – November 1. Carrot beds should be double dug and well worked, without any rocks or clods. They require lots of water, a little bit of nitrogen, and moderate amounts of phosphorous and potassium.

Lettuce

Butter lettuces

'Capitane' – Distinct, buttery smooth flavor and texture, perfect for salads. (Sh)
'Mantilia' – Bred to resist disease and perform well in hot weather. Wonderful, delicate flavor. (Sh)
'Juliet' – A fancy, tender red butter type – delicate, buttery green leaves tinged with burgundy. (Sh)
'Nancy' – An outstanding big green butter type that has 3-1/2 season versatility (spring, summer, fall, and early winter). Taste great, holds well, and features a firm head. (J)
'Pirat' – One of the best-tasting red butter lettuces. Good heat tolerance. (C, J)

Loose leaf lettuces

'Fire Mountain' – Deep burgundy oak leaf shape with a sweet, juicy taste. Impressive yield, good bolt resistance. (T)
'Red Cocarde' and 'Bronze Guard' – Giant red oakleaf types that look unique, taste good, and resist heat. ('Red Cocarde'-J; 'Bronze Guard' -Sh)
'Redina' – A full, intense red head. Beautiful for salad mix. (J)
'Two Star' – Dark green with a sweet flavor. Slow to bolt. (J)

Romaine lettuces

'Jericho' – Heavy heads of sweet, sword-shaped leaves that hold well in hot weather. (Sh)
'Little Gem' – Miniature green romaines with top-notch taste. (Sh, T)
'Romance' – Smooth, tender leaves. Easy to grow. (Sh)
'Rouge d'Hiver' – An old French variety that has been reintroduced. Good cut-and-come-again character for mesclun (salad mix). (C, J, Sh)
'Winter Density' – Dark green with densely packed leaves. Good eating, resists bolting. (C, J, T)

March is a good month to plant lettuce, an emphatically cool-weather crop (daytime temperatures 60°-70°, nights, 40°-50°). The beds do not have to be double dug, as the crop has shallow roots. Plants require frequent, relatively shallow irrigation (every 2-3 days).

Peas

Shell Peas

'Bounty' (67 days) – A tender medium-sized pod pea that is high yielding on a compact (2-3') plant. A good variety to follow Knight and extend the
continuous supply of peas to the kitchen (if they make it that far!). (J, Sh)

'Knight' (60 days) – Earliest large-podded peas, producing two pods at every node. The large pods make shelling easier. The dwarf (2'–2 1/2') nature of the plant makes staking easy. Good taste raw or cooked (J, Sh, St)

'Multistar' (70 days) – A well-behaved climbing pea 4'–5' tall. Arguably the best late-season home garden pea, Multistar is heat resistant (for a pea) and produces high quantity and high quality 3" pods with medium-sized sweet-tasting peas to cap off the pea season. (J)

Snow Peas

'Oregon Giant' (60 days) – A relatively new variety (1992), this sweetest of all snow peas features large (1" x 5") pods on dwarf plants (2 1/2'–3'). Resistant to powdery mildew, a fungal disease that is the bane of pea growers in cool, coastal locations. (J, Sh, St)

'Oregon Sugar Pod II' – Non-climbing, dwarf vines produce prolific crop of broad pods. Highly disease resistant. (T)

Sugar Snap Peas

'Sugarsnap' (62 days) – The original standard climbing variety (6'–10') of the sugar snap clan. Both pods and peas are sweet, making it the “eat-the-whole-thing” pea. (C, J, T)

'Super Sugar Mel' (60 days) – Outstanding flavor and productivity are the features of this heavy-bearing, tasty sugar snap. It features dwarf plant (3'–3 1/2') that need warmer soils than most peas. Don’t plant early in cold, wet soils. The best of the bush varieties. (Sh)

Most pea varieties don’t like warm weather. In the Santa Cruz area, plant them as early as the ground can be worked (January – March) and again in August – September. Sow peas thickly (every 2-3 inches) directly where you want them to grow and don’t thin them out.

Potatoes
(all available from Ronaigers, and some available from local garden supply stores; see address at end of article)

'Bison' and 'Buffalo' – Wonderful white-fleshed, red-skinned variety. Great for baking, mashing, boiling, and frying.

'Carola' – Smooth skinned with deep yellow flesh. One of the best late-maturing varieties.

'German Butterball' – Deep yellow flesh and a golden skin, with “taste beyond your imagination.” Order early!

'Red Lasoda' – Standard mid season, good-performing and good-tasting red.

'Yellow Finn' – Creamiest flavor, though only moderate production.

'Yukon Gold' – Almost as tasty as 'Yellow Finn'. Prodigious yields, perfectly round, large tubers.

'St. Charles' – Large, sweet, and prolific. (Sh)

'St. Clarens' – Excellent for drying. (Sh)

'St. Clarens' – Excellent for drying. (Sh)

Potatoes can be planted in the spring, after the heavy rains have passed. Work lots of organic matter into the soil before planting. Keep soil evenly moist from the time the plants emerge until they blossom; after this, the plants can get by on less water. Control weeds early in the season until the plants are large enough to shade them out.

Spinach

Savoy (wrinkled leaf types)

'Indian Summer' and 'Italian Summer' – Thought to be the same variety, the upright habit of these plants protects the underside of leaves from mud and makes harvest easier. Extremely bolt resistant and great tasting. (C, J, Sh)

'Longstanding Bloomsdale Savoy' – A sweet variety with thick, dark green leaves. Good for early spring planting. (St)

'Tyee' – Purportedly more bolt resistant than 'Italian Summer,' but not as upright. Succulent, attractive leaves. (A)

Smooth, flat-leaved types

'Wolder' – A Dutch hybrid with a truly delicate-tasting flat leaf (many American flat-leaf types are bred for processing and have a leathery texture). (Sh)

'Nordic IV' – A season-extending, heat-tolerant variety. Dark green leaves are smooth, crisp and tasty. Grows quickly in both cool and warm weather. (Sh)

Spinach is a cool-weather crop – its seeds will germinate at close to freezing. It bolts to seed in warm weather and when there are 14 hours or more of
daylight. Spinach is also pH sensitive; at a soil pH of less than 6, the plants will be stunted and chlorotic.

**Other varietal recommendations for the Monterey Bay region**

Broccoli – ‘De Cicio’ (J); ‘Green Goliath’ (St); ‘Green Valiant’ (J, St, T); ‘Mercedes’ (Sh); ‘Premium Crop’ (J, Sh, St); ‘Super Dome’ (C).

Cabbage – ‘Des Vertus’ (Savoy) (Sh); ‘Julius’ (early Savoy type) (J); ‘Scarlet O’Hara’ (red) (Sh).

Cauliflower – ‘Alverda’ (green head) (J); ‘Montano’ (Sh); ‘Violet Queen’ (purple head) (C, J); ‘White Rock’ (T).

**Chinese Cabbage**

*Napa Types* – ‘China Pride’, ‘Kasumi’, ‘Summertime’ (St).

*Michihli Types* – ‘Jade Pagoda’ (St).


Leeks

*Summer Types* – ‘King Richard’, ‘C, J, T’; ‘Titan’ (St)

**Onions**

*Bulb types* – ‘Buffalo’ (a large white, sweet variety) (J, T); ‘Stockton Early Red/Yellow’ (T); ‘White Bermuda’, ‘Yellow Bermuda’, ‘Granex/Grano’ hybrids (Walla Wall/Vidaliea types adapted for this latitude): only available on seed rack at garden supply stores. Note: need short-day types.

*Scallions* – ‘Evergreen Hardy White’ (J); ‘Red Beard’ (St); ‘White Lisbon’ (St, T); ‘White Spear’ (J)

**Featured Seed Companies**

Johnny’s Selected Seeds  
Foss Hill Rd.  
Albion, Maine 04910-9731  
(207) 437-4301

Ronniger’s Seed Potatoes  
Star Route  
Moyie Springs, ID 83845

Shepherd’s Garden Seeds  
(Shipping Office)  
30 Irene St.  
Torrington, CT 06790  
(203) 482-3638  
(Retail Store)  
6116 Highway 9  
Felton, CA 95018  
(408) 335-5311

Stokes Seed Co.  
PO Box 548  
Buffalo, NY 14240-0548  
(716) 695-6980 Free catalogue

Territorial Seed Company  
20 Palmer Ave.  
Cottage Grove, OR 97424

The Cooks Garden  
PO Box 535  
Londonderry, VT 05148  
(802) 824-3400 Free catalogue

**Other Recommended Seed Companies**

Garden City Seeds  
1342 Red Crow Rd  
Victor, MT 59875-9713  
(406) 961-4837

Ornamental Edibles  
3622 Weedon Ct.  
San Jose, CA 95132  
(408) 946-7333

The Center for Agroecology & Sustainable Food Systems has a free information sheet listing 28 seed sources used by Farm & Garden staff. Write or call CASFS, University of California, Santa Cruz, CA 95064, 408/459-3240 to request a copy of “Seed Sources”.

**Attention All Gardeners!**

The Farm & Garden staff needs pots! Specifically, 1-gallon and 4-inch plastic pots for transplanting.

If you can help out our propagation efforts, bring your empty pots to the back gate of the Farm and leave them by the White Barn. We also need the plastic trays that nurseries use under transplants. If you have any questions or need directions, call 459-3240.

Thanks!
**Kid’s Stuff**

Here are some activities to do with children during the winter months –

**Grow Sprouts!**

A fun and nutritious activity – sprouted seeds are tasty in salads, or sprinkled over cream cheese on crackers or sandwiches, and they are high in protein. Some types of seeds to use are alfalfa, wheat, barley, garden cress (spicy), lentils or soy. (Organic seeds can often be found at health food stores in the bulk or herb sections.)

1. Place about one tablespoon of seeds in a clean glass jar and fill with water to cover the seeds. Cover the top with a clean nylon stocking or several layers of cheesecloth and secure with a rubber band.
2. Soak the seeds in warm water overnight.
3. Drain and rinse them (without taking off the net covering). Keep the jar on its side in a warm place.
4. Every morning and evening, run fresh water on the seeds and drain them.
5. Sprouts should appear within five days. Place them in indirect sunlight until the tiny leaves turn green (about a day). They will keep in the refrigerator for several days or you can enjoy them right away!

(from Earth Child. Games, Stories, Activities, Experiments and Ideas About Living Lightly on Planet Earth, by Sheehan and Waidner, Council Oaks Books)

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**Grow an Indoor Bulb Garden!**

You will need:
- flower bulbs such as narcissus, crocus or hyacinth
- a pan or a glass jar
- pebbles

What to do:
1. Cover the bottom of the pan with pebbles.
2. Put the bulbs on the pebbles with pointy ends up.
3. Add more pebbles to keep bulbs upright.
4. Fill the pan with enough water to cover the base of the bulbs.
5. Put the pan in a cool, dark place until the roots begin to grow. Keep the water level the same.
6. After the roots have developed, put the pan in a sunny, warm place and wait for the flowers to bloom.

(from Life Lab’s Gardening Log)