Please scroll down for page one of the Summer 2004 "Garden Companion" (BfR's newsletter)!



The Garden Companion

(Biointensive for Russia's newsletter)

Vol. 8, No. 1 Summer 2004

BI BEDS FLOURISH IN DESERTS: CHIHUAHUA, S. NEW MEXICO & KYZYLKUM, KARAKALPAKSTAN

During February of this year, Vladimir Loginov, GROW BIOINTENSIVE teacher visiting from Kurganinsk Russia, and yours truly (BfR Director Carol Vesecky) traveled to New Mexico for 10 days. (See the Director's Message for the itinerary.) We spent three days as guests of writers Celinda and Larry Miller in Columbus, a village very near the Mexican border.

Larry and Celinda are longtime Biointensive gardeners who have lived in this Chihuahua desert setting for the eight years since their move from Oregon, where the growing conditions were far more benign. (In a previous life, Celinda supported herself and her children partly from a mini-farm in Kauai.) We were deeply impressed both by the challenges Larry and Celinda face (temperature extremes, high winds, poor soils), and their steadfastness in overcoming them.

Before our visit, Celinda requested advice on desert gardening. We thought it best to refer her to Dr. Bakhtiyar Jollibekov, who can be seen in the photo above, and who also grows Biointensively in severe desert conditions. His advice can be read on page 4, and the Millers' story, as set down by Celinda, follows. If you like what you read, write back – the Millers have interesting columns on many health-related topics to send! -cbv

COAXING A GARDEN FROM THE DESERT

by Celinda Miller <celindamiller@yahoo.com>

We live in Columbus, New Mexico (elevation 4050), about 60 miles due west of El Paso, Texas and three miles north of the Mexican border. We are in the northernmost part of the Chihuahuan high desert, the harshest desert in Northern America, with extremes of both cold and heat.

Columbus's record low is -12 F, and its high 112 F, but a local couple here in Columbus recorded 115 F one summer within the last 10 years. We've had drought since we came here in 1995. The last eight years have seen an average of 8.07 inches of rain per year, with three years of about five inches or less. According to Soil Conservation Service records, this area can receive anywhere from 2 to 20 inches of precipitation per year. We try to use as little water as possible. We're still learning which plants are hardiest for our conditions. We continually search for simple, "third world" ways to reduce our gardening water use further. Our property is classified as one of the worst continued on page 6

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FROM THE DIRECTOR

Winter 2004 brought another very welcome visit from Vladimir "Volodya" Loginov, our friend and colleague since 1996 when he first came to the US for the Ecology Action 3-Day Workshop in Willits. As during his other visits, Volodya provided much-needed handyman help in return for his keep, as well as for our organizing his participation in various conferences and meetings. These included the Eco-Farm Conference at Asilomar, sessions with local Boy Scout and their leaders, sojourns with old friends in the Santa Cruz area, a tour of Ken Foster's Permaculture garden and the UC Santa Cruz Agroecology Program (see article page 2), and a trip to Santa Fe (for my niece's wedding ceremony and celebration) and to southern New Mexico for BfR events.

The highlight for Volodya, of course, was the New Mexico trip. The wedding festivities included many of my niece's folk musician friends playing for the celebration, with line, square, and ballroom dancing, which Volodya and I both enjoyed. After some northern NM sightseeing, we proceeded south to Las Cruces to visit Daniel and Amber Vallotton, the couple that traveled with me to Uzbekistan to give GROW BIOINTENSIVE workshops in 2000. We enjoyed the Vallottons' warm hospitality and especially meeting their 16-year-old son Jeremiah, a fine violinist and the only school-age member of the Las Cruces Symphony. After attending a GROW BIOINTENSIVE 3-day workshop taught by John Jeavons and Steve Moore in Pennsylvania, Jeremiah has become an avid GB researcher, testing varieties of lentils, chickpeas, and oats on the family's mini-farm.

During our tour of their desert garden, we saw beds the Vallottons had double-dug below ground level and encircled by borders of clay soil raised several inches, so that wind and high temperatures would be less likely to dry out the soil. At New continued on page 8

NEW RUSSIAN FAR EAST FUNDING SOUGHT

Some readers may remember that last year, BfR/Ecology Action, the NGO Viola in Bryansk, and the Taiga Rangers in Komsomolsk-on-Amur applied to the Seattle-based, USAID-funded Foundation for Russian-American Economic Cooperation (FRAEC) for major funding for GROW BIOINTENSIVE and small-scale agribusiness workshops, support centers, demonstration

gardens, and other followup support in the Russian Far East (RFE). The grant was not awarded due to our project not being sufficiently business developmentoriented. Fortunately, another round of the grant program has recently been announced, and we are now



renewing our contacts, revising our proposal, and planning to resubmit with the same main partners by the August 31 deadline.

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BfR'S SPRING 2004 MINI-FUNDRAISER:

GARDENING AS A REVOLUTIONARY ACT: How Learning about Strawberries Improved my Life

by Amanda Kovattana, a personal organizer <akovattana@aol.com>

First, I'd like to share with you what I learned recently about strawberries.

Methyl bromide, a Category 1 acute toxin (a nerve gas), is used to fumigate the soil in strawberry beds. It is the largest single contributor to ozone depletion. And if that's not bad enough, strawberries have the most pesticide residue of any food. Thirty different kinds of pesticides are used on strawberries, at least two of them known carcinogens already banned on 42 different types of fruits and vegetables. The carcinogens are still used on berry crops.

When I learned such facts about this little fruit that's supposed to be good for us, I resolved to educate myself about organic versus chemical farming. Take synthetic fertilizers, for example. If they helped plants grow, what was the harm in that? That's how it's done with large-scale farming, and how else were we to feed the growing population?

Nitrogen in the natural world is added to the soil by plants, allowing it then to be used by other plants. Synthetic nitrogen overwhelms the soil with this plant food, creating a population boom in nitrogen feeders. And while these feeders gorge themselves on nitrogen, the organic content of the soil — the humus — is used up and the soil begins to collapse. The soil needs more water, which then washes away more nutrients and what's left of the beneficial microbial life clinging to the soil structure. The plant becomes more susceptible to pests and disease and begins to crave even more nitrogen. Another irony of commercial farming is that, in its attempt to increase yields with chemicals, it poisons the natural agents (such as bees) that insure the highest productivity of plants.

Nitrogen also affects humans. Once nitrate is in the water supply and is ingested into our bodies, it combines with our blood, changing its structure and reducing its ability to hold oxygen. So our bodies break down just like the soil.

A Tour of Organic Gardens

During this intensive study, I met Carol Vesecky, who told me about the tour she was planning of organic gardens in Santa Cruz. I jumped at the chance to sign up. A few weeks later [Saturday, April 3], we were on our way....

The first garden was at the home of Permaculture landscape designer Ken Foster and his wife Joan Tannheimer. Ken had just won the Sunset Magazine award for his work in a garden exhibit. I had imagined he owned a palatial garden, so I was quite surprised when we pulled up to a neighborhood of tract homes on modest lots. Ken's plot was spilling over with all kinds of plants, bordered at the sidewalk with a living fence of espaliered dwarf apple trees. One of the trees sported six varieties of apples grafted to the trunk.

Then I spotted the mulch. Mulch is a lifesaver in California, holding moisture in the soil so you don't have to water as much. I was bowled over by the potpourri of scents and the visual feast of seeds, herbs and woody bits. Ken explained that he collected this gourmet mulch free from a local tea company.

The rest of his garden was a wonderland of the Permaculture systems I had been studying, including rainwater harvesting, graywater re-use, egg-laying chickens, exotic berry trees, worm bins and water fountains, all in a space smaller than my own. And there was a wild space in the corner to encourage the plant divas. No humans are allowed in this space. This was a symbolic gesture, Ken explained, of the intention to work with nature.

We then traveled up the hill to the campus of my youth, the University of California at Santa Cruz (UCSC). Alan Chadwick, a Shakespearean actor turned gardener, had created a garden here that is as large (25 acres) as Ken's garden was small.

Here at UCSC, visitors can see organically grown pest-free strawberries. This system demonstrates scientifically gathered information with measured yields and sophisticated techniques of plant husbandry and pest management, all grown on a scale large enough to attract the attention of commercial farmers. Bankers come here to learn how to cash in on the organic farm trend that is growing 20-30% every year; see how powerful we consumers can be!

The tour ended with a children's garden. This delightful playground of colorful displays, mosaic stepping stones and heirloom chickens teaches kids where the ingredients for pizza come



from. The pizza is baked in a cob oven shaped like a frog.

If you'd caree to visit this farm, please get in touch. Docent Ingrid Mednis has kindly invited me to bring my own group!

Information for this article was gleaned from the book *Fatal Harvest: The Tragedy of Industrial Agriculture*. This full-color coffee table book is well worth a look. These pictures won't be seen on TV. (*The San Jose Mercury News* also provided info.)

FRAEC grant, continued from page 1

According to the Rural Development Institute, agricultural productivity in the RFE is poor, due to reduced fertility of farmland, ongoing soil erosion, low efficiency of agricultural enterprises, and low availability of both organic and chemical soil amendments. Privatization has not helped – in fact, large-scale production has *declined* 50 percent since 1991. Small-scale producers, as in the rest of Russia, can help. Overall, 50 percent of the vegetables and 90 percent of the potatoes in Russia are grown on small private plots!

Jennie Brook, a new BfR volunteer, is working with Carol Vesecky and the Russian partners to revise the proposal. We can budget for \$70,000 of funding, plus \$17,500 in matching grants and in-kind contributions. The funding will be for the year 2005. With the long-term goal of stimulating the RFE's private, commercial agricultural sector, while at the same time demonstrating the environmental advantages of GB, the GB/passive solar greenhouse and small-scale agribusiness workshops will likely be taught by Steve Moore and Michael Olson, respectively, during the winter months.

Our partners will set up a support center for new farmers and plan their GB demonstration gardens, then begin publishing their activities on BfR's new Web site and in the media. If it is feasible, we'll plan an "Eco-Ag Tour" during the 2005 summer, to enable you to have a closer look at these activities, while enjoying Russian hospitality and some of the natural wonders and cultural treasures. Please write if you're interested!

Partner News from Uzbekistan and Russia

LETTER FROM BAKHTIYAR JOLLIBEKOV IN NUKUS

Dr. Bakhtiyar Jollibekov chairs the Agrochemistry and Agricultural Soil Science Department at the Nukus, Karakalpakstan, Uzbekistan Branch of the Tashkent Agrarian University. With his son Berdiyar (see right), staff agronomist at CAFE-Nukus, he has been experimenting with and teaching GROW BIOINTENSIVE since our workshop taught by Amber and Daniel Vallotton in Nukus in 2000. Here he responds to our request for advice for the Millers in their Chihuahua desert garden (southern NM. see pp. 1 and 6).

Greetings, Dear Carol!

Thank you for the English translation of my written report and for making it available to others. Please greet Volodya Loginov, Daniel and Amber Vallotton, John Jeavons, Steve Moore, and the rest of our acquaintances for me.

Thank you also for the information on the climate of Columbus, in the Chihuahua desert. Here are some answers to your request for my recommendations regarding the water-saving GROW BIOINTENSIVE technology as we have developed and applied it in the desert conditions of Aralkum and Kyzylkum.

First, some general points: 1) My own garden survives because I use my water-saving techniques and Jeavons' GB method, developed further by us via tests under Aralkum and Kyzylkum desert conditions. 2) I use perennial and annual grasses as green manures. 3) I mulch BI vegetable beds with alfalfa straw. 4) I garden during spring, summer, and fall every year, transplanting seedlings of tomatoes, eggplant, Bulgarian peppers, and other vegetables.

To be able to offer good advice, I would need more information about Celinda's topsoil, her soil's mechanical and chemical composition and hydrophysical properties, and the wild plants that grow in it (height, period of vegetation, biomass). Also, about groundwater levels, extent of soil salinity, and mineralization of surface and ground water in the Chihuahua desert.

I could give more reliable recommendations after seeing Celinda's experiments with my own eyes. If it were possible, we could test the methods I have developed under the Chihuahua conditions. Our Aralkum and Kyzylkum deserts are quite different from yours, both in elevation and wind velocities.

However, I can give the following preliminary suggestions:

- Windbreaks should be established of local materials (droughtresistant, interdependent living and dead plants).
- 2. Irrigation systems that carry the water underground should be created from household and hospital waste products: plastic bottles and medical tubing.
- 3. Drought- and salt-tolerant annual and perennial grasses and legume crops should be sown directly.
- 4. Wheat and vetch should be sown as green manure in the fall, and they should be dug into the soil in the spring.
- 5. Double-digging should be done.

Based on the extensive experiments we have conducted in Biointensive methods and water-saving technniques under the conditions of the Aral environmental crisis, we have created a curriculum and written a textbook for students at agricultural institutes. The fundamentals of increasing the biological fertility of the soil are included, and it has been adopted for the year 2003-2004. I am now teaching more than 100 students at

the Nukus branch of Tashkent Agrarian University. My son Berdiyar and I have organized demonstration test plots in three *rayons* of the Karakalpak Republic:Muinak, Takhtakupyr, and



Hodzheili, as well as in the city of Nukus. Training in GB and water-conserving methods is being conducted currently among village residents and high school and agricultural college students, supported by the Swedish

GROWING HERBS FOR CHERNOBYL-AFFECTED SCHOOLCHILDREN IN THE BRYANSK OBLAST'

by Igor Prokofiev, NGO Viola, Bryansk, Russia

Our region (the Bryansk *oblast*', or large county) is the most heavily contaminated area of Russia affected by the Chernobyl nuclear accident. The highly toxic element cesium was spread over 11,442 sq. km., yet a population of 484,509 continue to live there. Since the 1990s, many international organizations, including the World Health Organization, have participated in efforts to reduce the health impact of Chernobyl. But today, 17 years later, the medical community still doesn't know the full range of health effects of the radiation exposure, nor how to ameliorate them.

Russia's Atomic Energy Ministry (Minatom) has as its chief focus the securing of lucrative contracts. Commissions studying the consequences of the Chernobyl accident always include representatives of Minatom, and their reports invariably reflect its influence. The commission's recommendations include leaving affected residents where they are instead of relocating them, and reducing their compensation.

The Russian government said it would resettle about 100,000 people between 1990 and 1995 from the two zones with contamination above 15 Ci/km2. Today, only 44,000 have actually left. Immigration is heavy from Kazakhstan, Azerbaijan, Armenia, and other former Soviet republics. Many have come to the Bryansk area and are occupying abandoned homes in highly contaminated areas because they are free for the taking.

The population living in the contaminated territory has been exposed to many different sources of radiation. Buildings and land are suffused with iodine-131, cesium-137, strontium-90, and plutonium. Dust, gases, water, and food deliver other pollutants.

In the first years after the accident, iodine-131 caused the greatest health damage, due to its effects on the thyroid gland. This led to numerous cases of thyroid disease and an increase in the incidence of continued on page 4

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thyroid cancer. Children especially suffer from exposure to doses of internal radiation, which affects their development. Fetuses are affected by exposure to radiation while still in the mother's body.

Although cesium contamination of agricultural land is over 60 times pre-accident levels, local farmers continue to grow crops in contaminated fields, run cattle, and collect radioactive berries and mushrooms from the forests. The reasons are economic: insufficient government grants and low incomes. Yet, little government data on Chernobyl contamination exists. Scientists say this is due to a severe lack of radiation detection equipment in hospitals, and a lack of commitment on the part of the government.

Medicinal Herbs

Our NGO Viola proposed a number of inexpensive and effective programs for improving the health of the population. One of them was the use of medicinal herbs to improve child health. Biologists and doctors analyzed over 1000 scientific articles and compiled a list of safe medicinal herbs. Armed with that information, Viola established an organic demonstration garden. Our other outreach activities have included a series of workshops for schoolteachers in growing these herbs organically, distributing free seeds, and many other community-based activities.

Our program aroused much interest among Bryansk residents, because it was the first effort to grow organic medicinal herbs in our region. We received approximately 250 letters from people interested in growing their own herbs. But there are still many schools and day-care services that need our help. Viola is deeply grateful to Abby Youngblood for her donations of \$500 and \$200 that supported our program in 2003-2004. We need financial sup-port to continue our program — please contact Carol Vesecky, or me directly <igor_prokofev@bk.ru> for more details. In our next Companion, we'll include an article on Viola's Biointensive experiment in the radiation zone. -cbv

REPORT FROM UZBEKISTAN ... & KAZAKHSTAN!

Irina Kim has been traveling to Nuratau Nature Reserve to teach GROW BIOINTENSIVE since 1998, and now visits eight villages in the mountain and desert region (see our last and previous newsletters and travelogues for more info, and a full page of photos, all posted on our Web site). This year Irina added three more locations, over the border in Kazakhstan! Here's her report -cbv

We visited the Uhum and Hayat villages on May 20 and 21. The mini-greenhouse built by Mordoboy Dehkonov, the village physics teacher, was a big success. Seedlings of tomato, eggplant, and sweet pepper were being grown there, 2,500 in all. Of these, 500 were transplanted in BI beds at Uhum's school, and 2000 were sold to residents of the village. The proceeds were used for school maintenance. Dill and cilantro were also grown in the greenhouse. There is no cafeteria at the Uhum school, so the herbs grown in the greenhouse were distributed to the students and teachers who had participated in the work.

In Hayat, we visited the fine BI garden of the nature reserve's biologist, Pardoboy Musaev, with which he and his wife are very satisfied. They reported saving seeds from the crops they grew, and passing the extra ones on to their neighbors. We visited Asraf, Mihiy, and Kulbay on May 22, where progress is also being made. Thus far, the seedlings grown in the mini-greenhouse are used only for the gardeners' families; marketing is not yet happening, although it is planned for the future.

On May 23, we visited the desert village of Ottakurgan, where Norgul Bekmuratov continues to teach GROW BIOINTENSIVE (GB). She had an especially good carrot harvest this year in her garden.

We visited the "Master Ecologist" department of Yangikishlak's agricultural college on May 24. We heard the final bell for the term, marking the end of the academic year. After the ceremonial hour, we gathered in the office and discussed plans for continued teaching of the GB method. They plan to create a BI plot.

Invited by Farish Forestry Farm Director Dilshod Islamov, we visited a new plot in Uchma in the foothills on May 25. These villagers are chiefly orchardists. They want to rent land from the forestry farm and grow a BI orchard there. There were 25 people at the Oybek village school #28. I lectured on GB mini-farming, then on mountain orchards. People were very interested in methods of creating GB orchards: plot location, preparation of planting pits, correct selection of saplings, care for the fruiting trees. The participants were enthusiastic and want to create their orchards this fall.

On May 26, I visited Orishli village, where there's a small one-room school, so that teaching must continue in the summer. Ordinarily, children must attend in two shifts. Grades 1 and 2 attend during the first shift, grades 3 and 4 during the second. The population here are also occupied in orchard culture. We gathered in the school's courtyard, 27 participants and myself. I gave the same talk about creating a GB garden as the one I gave in Uchma. After that, eight people agreed to rent land from the forestry farm and create a GB fruit and nut orchard. They are Hatitbiy Rahimov, Abdualim Mamarasulov, Komil Raimkulov, Dilshod Formonov, Ali Islamov, Zakir Aymatov, Murot Kurolov, and Yodash Nurolov.

The last place visited was the town of Sariagash in the Uzhnaya oblast' in Kazakhstan, 170 km from Tashkent. I had long heard about the orchards and gardens tended by Kazakhs there, evidently because this region is very close to Uzbekistan. [Kazakhs are chiefly herders, not farmers. -cbv] I visited the education administration in Sarigash, and met with Ismat Amangaev, director of the pedagogical department. I told him about the GB method and about my future plans. He showed much interest, and suggested we stay in contact.

ALBINA SOWS THE SEEDS; TANYA CONDUCTS AN EXPERIMENT by Jill Clay

Spreading the word on Biointensive to St. Petersburg's children and adults, based on Albina Kochegina's letters including the experimental results of her student Tanya Semakina

Albina Kochegina has brought GROW BIOINTENSIVE growing methods to thousands of Russians, from schoolchildren to adults. With her young students, she has planted demonstration gardens and conducted experiments with Biointensive yields twice those of traditional methods. She has published articles in science journals, and reached thousands of people through radio and TV programs.

Albina, with her broad network of agricultural contacts, has been BfR's most active partner in St. Petersburg. She has a *kandidat* degree in pharmaceutical herbology, but researched and taught gardening for many years while keeping up her medicinal interests.

With Natasha Krestiankina and Zoya Akulova, Albina attended the 3-Day Workshop in Willits in 1995. She has lectured, broadcasted on radio and TV, and taught GB ever since, mostly in the Young Naturalist program based at the Alive Earth Center near Smolny Cathedral in central St. Petersburg. The program succeeds a local Young Pioneer activity program of Soviet times (see our Spring 2002 *Companion* for history).

Albina hosted our 3-day seminar taught by Patrick Williams in Pushkin, Pavlovsk, and Shushary in 1998, as well as a day of BI basics and a day of ecodesign taught by Aleksandr Avrorin in 2001 at the Alive Earth Center, along with a day of BI test reports by local adults and young teens. Since then, she has sent us research reports, some published in the BfR and Ecology Action newsletters.

Educating Schoolchildren

In her Young Naturalist middle-school after-school programs, Albina taught GB to over 600 children since 1996. She ensured that her programs remained free of charge, so that any interested child could participate, while the post-Soviet trend has been for more and more fees to be charged.

From fall through spring, children came to the two-hour afterschool classes taught by Albina and her teaching partner, retired Prof. Yury Soskov, spending between four and 200 hours in a particular course of study. Curricula for the many



classes include such topics as harmony between man and nature, soil, watering methods and equipment installation, agrochemical testing of soils and vegetables, indoor cultivation, therapeutic herbs from the garden, and vegetable and fruit canning. To help motivate the children, she and Yury held biology olympiads and "victorinas," as well as excursions, conferences, and celebrations.

Educating Adults

Albina distributed over 200 copies of the Russian edition of *How to Grow More Vegetables*, and helped with the editing of our translation of *The Sustainable Vegetable Garden*. Besides lecturing to other teachers and professors, she has been interviewed for newspapers, radio and TV; her radio shows alone had a potential audience of 200,000.

She also established GB demonstration gardens and noted that the yield was one and a half times to double the yield compared with traditional gardening methods in the same area. She has also given lectures and seminars for gardeners and scientists, teaching well over 1000 people over the past several years.

Soros Grant Award and the Alive Earth Center's Move

Albina's Center was awarded a three-year grant from the Open Society Foundation in Russia. The report on its GB mini-farming studies was recommended for publication by the foundation's Research Support Scheme Committee.

Alas, the Alive Earth Center is being moved this summer to another location in St. Petersburg, and Albina is changing careers – to medical diagnostics and therapies, and will work in a medical center near her home, as well as with an herb company that conducts sophisticated organ diagnostics using computers. She heads a section of the group Lukomorye Plyus, which will create a GB demonstration garden in the Rzhev Forest Park, and plans to teach GB in a postgraduate institute. If you would like to learn more, feel free to write to Albina akochegina@rambler.ru, or via Carol. Write also if you'll be visiting St. Petersburg, as English-speaking Albina and/or others in BfR's "circle" would enjoy meeting you and would help you arrange sightseeing, garden or hospital visits, and meetings with members of the gardening community!

Strawberries and Garlic Companion planting yields delicious surprises

Most people wouldn't think of using strawberries and garlic in the same recipe. But when it comes to natural, non-toxic pest control, that recipe yields tasty berries, bigger than those grown with other methods — without feeding insect pests!

In a village in the south of Russia (Voskresenovka), Albina Kochegina's student Tanya Semakina conducted an experiment with her strawberry crop. She created two plots of 60 plants each, identical in every way except that one plot was interplanted with garlic bulbs.

The experiment's results are intriguing. The table below compares some details of the two crops.

	Garlic group	Control group
Number planted	60	60
Number of plants that died	3	8
Start of bloom	May 20	June 2
Start of ripening fruit	June 8	June 17
Average weight of fruit	0.9 kg/sq.m	0.5 kg/sq.m

No insects, and almost no disease or fungus, were observed on the experimental (garlic) strawberries, compared with their counterparts in the control group planting.

While this experiment was done on a very small scale, these results are encouraging enough to inspire gardeners everywhere!

VOLODYA'S OUTREACH TO BOY SCOUTS

Of all our partners in Russia and Uzbekistan, Volodya Loginov is the most regular in sending reports. He maintains a strict discipline of "planning and doing" – see his plans for spring and summer below in **straight-up type**; his achievements in *italics*:

APRIL Planting and other garden work *Many of the seeds I* brought from the US, which germinated well, are already in the bed, with 2 leaves on a shoot. My mother planted cabbage.

MAY Finishing the outside of the house. Garden work Work on the house is 10 days behind schedule, but the garden work is finished. I planted the popcorn from the US, and will plant peppermint for sale. I spent three days in the Caucasus with other environmentalists, demonstrating with the local residents against logging. I have been corresponding with leaders to teach GRPW BIOINTENSIVE at a Jamboree in mid-July in Vetluga near Nizhniy Novgorod, and an All-Russia Assembly for older Scouts in August in Volgograd.

JUNE Preparation of materials for yurt. Trip to Adlyer, Southern Culture State Farm I began preparing the materials for the Mongolian yurt; this work took 25 days — I myself worked for eight days. Much unscheduled time was lost getting local authority permits for the house we built last year. I did expect to spend more than 20 days dealing with various bureaucrats regarding the design, fire safety, electrical wiring, etc. We're planning to build the yurt in late fall. I'll take snapshots. I'm planning to include popcorn in the diet of the apprentices. Now I have one regular helper, Ivan, from the orphanage. He works here every weekend for three days. Another person from the commune in Maikop will also live here. My mother is doing painstaking work in the garden, watering and weeding. She spends four times as much time there as I do.

JULY Trip to Norway. Advanced University in Sustainable Development, Tromso. En route we'll visit the Obruch family, the local arboretum in Sortavala, and the wooden architecture museum and monastery on Valaam Island; then continue on via Finland. On the way back I'll go to Nizhnyi Novgorod for the Jamboree, to network and plan joint projects with the environmentalists and Scouts. The Norway trip won't happen, but we trust the trainings for Boy Scouts are taking place. -cbv

AUGUST Trip to Tuva with Shoshana. Currently, the plans are for Shoshana Billik and Volodya to travel to Vladivostok, Birobidzhan, and Tuva. Write me if you'd like to join our free email Armchair Traveler list, which receives Shoshana's enjoyable travelogues! -cbv

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soils in the entire county, with a very poor water capacity rating. We discovered this after buying our lot, and find ourselves using much more water than we think we should.

Being high in arsenic, calcium, and fluoride, our water is not drinkable. The EPA mandates our village use a reverse osmsis unit for village drinking water, due to the high fluoride and arsenic content. We're on a city water meter and are concerned that the village may have to limit water use more in the future. Our monthly base has already been reduced from 6500 to 3500 gallons since we moved here.

Our soil has a pH of 8-8.5 and consists of adobe, sand, "desert cement" (rocks packed so tightly they act like cement) and caliche (calcium carbonate crust), depending on where we dig. We must completely create soil from scratch — no small task as we hand-dig our beds. I dig my beds two feet deep, three feet wide, and three feet long, with a digging bar. It takes me a full day to dig a new bed. The removed dirt is often half rock.

Since our gardening styles and work paces are different and can create friction if we work together, we have "his and hers" gardens. Thus we create our own gardens as we like, see what works in each other's gardens, and modify as desired. We don't use raised beds, as the raised sides allow them to dry out too quickly. We like level or slightly sunken beds best. We hoop

our beds and cover them with clear plastic in winter and early spring, and use doubled Reemay for light frost and shade protection in late spring and early summer. Reed matting works better for shading our beds in the heat of summer.

We're also learning to garden by the moon and zodiac signs and hope to add traditional desert gardening methods to our system and green manure crops for more on-site biomass. We sheet-compost [write us for details -cbv], interplant, and mulch our beds. Sheet-composting works

better for us than a compost pile. We had no earthworms when we moved here and began gardening in our "desert cement." After eight years of horse manure, kitchen and garden waste, sheet-composting and watering, we now have earthworms in our beds! I've read that earthworms are everywhere on the face of the earth, even the Sahara Desert, but they go down as deep as they need to, until it's warm or cool and wet enough for them to survive.

We've learned that overstory-understory planting is essential for sun, heat and wind protection, as well as for water conservation purposes. Even desert trees and shrubs have a hard time becoming established, unless they can somehow access sufficient water and survive long enough to send their roots down deep into the subsoil.

We'd like to create overstory-understory relationships of desert trees and shrubs for the third of an acre around our home. We're still working at getting most of our baby trees started, as we have a high mortality rate with young plants. The remaining two-thirds acre is pretty much as it was when we came: creosote, mesquite, cholla, prickly pear, fishhook cactus and some desert wildflowers. Due to fear of snakes, most local owners "skin" their lots, destroying the desert ground cover and causing health problems from the blowing dirt.

It has been scientifically verified that many trees in a large enough area can create conditions more conducive to rain. We suspect this applies to desert trees, as well. But we don't know whether or not small lot plantings positively help their microclimates to increase air moisture.

Trees help reduce runoff; beautify communities; increase property values; provide protection from sun, heat, and wind; and soothe human emotions. Trees also act as water reservoirs, holding a volume of water in their roots similar to the volume of their canopies. Desert trees, shrubs and other plants can be used for food, forage, fuel, herbal medicine and other economic activities. Treeing even a tiny part of the desert is a step toward self-reliance and environmental restoration.

Gardening is a health, social, economic and political issue for us. We have a very limited income and try to live as frugally as possible. Seventy-five percent of the Columbus community live below the poverty line and/or on welfare. Our focus is to create a simple, sustainable, low-cost gardening microclimate, using low water-use trees and shrubs to provide needed wind and sun protection, and to share what we learn with our neighbors.

Most arid trees have light canopies and very little biomass, providing only light or dappled shade and inadequate wind protection. We're looking for high-biomass arid and semi-arid plants, which can withstand our climate and high salt water.

Larry's winter and spring garden provided us with lettuce,

Swiss chard, kale, broccoli, radishes, spinach and beets all winter and most of the spring. My spring garden yielded spinach, kale, beet tops (I planted too closely!), lettuce, cilantro, chicory, orach, parsley and dill until June 1. The late spring winds and early summer heat pretty much shut down our spring gardens. We plan to let our gardens rest until the monsoons come, except for the perennials, volunteer tomato and squash plants, sunchokes (Jerusalem artichokes) and whatever else refuses to die.

I planted my largest fall-harvested sunchokes in one straight line, north to south, on the west and east sides of my garden. My hope is that in the summer heat they'll provide shade and wind protection for the garden beds in between. A friend gave me two halves of a 50-gallon drum, with the top and bottom cut out, to use as planters. Larry liked the idea, so he did the same to two similar drums, planting wild flowers, flowers and herbs in three of them. He gave me his fourth half-barrel (what a sweetie!), and now all three of mine are experimental potato beds. Yukon golds are supposed to be drought and heat tolerant, and ready to harvest in 60 days.

All in all, we're pleased with this year's gardening efforts, and just need to learn patience as we grapple with lowering our water use in this severe desert climate. May we have plentiful and very wet monsoons for our summer gardens!

Note: The Millers' friends Shu Chan and Dwayne Madsen began operating their beautiful new **Living Foods Learning Center** in the desert near Columbus in Spring 2004. Its program is based on the Ann Wigmore raw foods program practiced formerly at the Hippocrates Institute in Boston, but includes enhancements such as herbs, Effective Microorga-nisms (EM), and bokashi. In the 3 week program, up to 18 students will learn in a hands-on environment. Dorm living arrangements include 1-, 2-, and 3-person rooms. A "raw fooder" full time gardener is currently being sought, for room and board and stipend. Call Shu or Dwayne at 505 531-2456.

Thanks to the hard work of Igor Prokofiev and Andrei Petrushin, we now have a Russian-language Web site!!! Please visit www.biointen sive.newmail.ru for a visual treat, even if your Russian reading ability is rusty!

OUR US-BASED VOLUNTEERS AND COLLABORATORS HAVE DONATED MANY HOURS OF TIME AND ENERGY! (Partial tally of those helping a few hours or more for 1993-2004 — if your name has been omitted, let us know!!)

Fran Adams • Marilyn Barker • Bruce Benedict • Lois Benedict • Danielle Berman • Shoshana Billik • Vladimir Bolotnikov • Bountiful Gardens staff • Marlene Broemer • Pat Broemser • Jennie & Jack Brook • Barbara Brown • Jane Chai • Jill Clay • Common Ground staff • Ken Dickerson • Darina Drapkin • Ecology Action staff • Rita Fisher • Judy Fo • Rod & Maryann Frenz • Sheri Furman • Elizabeth Hamilton & Mick McCarthy • Ken Hargesheimer • Peter Heffron • Virginia Herbert • Deborah Honig • Jacky Hood • Jolene Hsu • Lawnae Hunter • Larissa Keet • Svetlana Khasanova • Tamara Kowalski • Jury Lewizky • Liza Loop • Julie Lovins • Natalya Lukomskaya • Ingrid Mednis • Albie Miles • Larry & Celinda Miller • Steve Moore • Virginia Moseley • Valo Motalygo • Debbie Mytels • Berta Pires • Shereen Rahman • Deborah Rose • Jan Secor • Luda Shuster • Judy Sisk • Ariadna Solovyova • Joan Spannagel • Susan Stansbury • Daniel & Amber Vallotton • David Vick • Connie Vilhauer • Hans Von der Pfordten • Patrick Williams • Erin Wood • Trudy Wood

How You Can Help!

Network with foundations and major donors to help us find funding:

- to supplement (match fund) the RFE grant, e.g., for expenses for additional workshop participants
- to support the translation and publication in another language
 — e.g. Tajik, or Uzbek, Ukrainian, or Belarusian, of *How to Grow More Vegetables....* or *The Sustainable Vegetable Garden* \$5,000
- to support the translation of *Test Your Soil With Plants* \$3,000
- the larger-ticket items below

Carol will be happy to present a program, to anyone!

Contribute financially to help sponsor:

- printing and paper to publish Ekologicheskii Ogorod
 (Russian translation of The Sustainable Vegetable Garden)
 \$4000 will pay for 5000 copies, smaller amounts for a smaller edition, or could go into a fund
- maintenance and further development of new Russianlanguage Web site, www. biointensive.newmail.ru by Igor Prokofiev and others in Bryansk — \$500 for one year
- Workshop tours by Igor Prokofiev or Ludmila Zhirina
 of Viola in Russia (e.g., Smolensk) or Ukraine, by Aleksandr Avrorin or Vladimir Loginov in Russia including
 Siberia, or by Irina Kim or Bakhtiyar Jollibekov in Central
 Asia: \$500-\$2000 per tour (call to discuss possibilities)
- New or used iBook or Powerbook computer for BfR, \$500 or more
- One month of BfR's current **Internet costs** \$45

Volunteer your time:

- office organization, database, and filing help in three-hour stints
- newsletter writing and translating assistance
- hosting, organizing, and/or publicizing events
- co-developing an Eco-Ag tour for 2005 or later to the region of your interest: the Russian Far East? the Black Sea and Caucasus region of Western Russia? Central Asia? St. Petersburg and Karelia? help research tourist attractions: nature, celebrations, museums and galleries, local sights

Back in April, we conducted a survey via email, requesting our partners to send back their estimates of the numbers they have reached with their teaching, and other indicators of our effectiveness since 1993. Here's a summary:

Books (Kak Vyraschivat'):	Uzbekistan & Russia Total
Estimated number of books owned:	10,000
Information Transfer:	
Hours taught:	6071
People who attended classes:	6688
People taught in 2003:	1130
People now teaching others	40
Hours broadcast on radio:	11
Number of potential listeners:	60,000
Hours broadcast on TV:	13
Number of potential viewers:	4,520,000
Articles published:	62
Potential readership:	100,000
Experiments:	
BI beds dug & planted:	365
Increases in vield:	1.3-10X
Here's my tax-deductible contrib Action for a membership in Biointensi	
□ \$1000 Workshop Sponsor*	
□ \$250 Supporter* □ \$100 Contribu	utor*
□ \$50 Donor □ \$20 Regular Member	er 🖵 Other
*May receive the 2nd Russian 🖵 or	· 6th English 🖵 edition of
How to Grow More Vegetab	les (Check box)
Name:	

E-mail

Be sure to write your check to "Ecology Action"

for tax deductibility!

Mail to: BfR, 831 Marshall Drive

Palo Alto, CA 94303-3614

Address:

Upcoming Events:

Saturday morning classes at Common Ground:
Sat. Aug. 7, 10:30 a.m., \$15. Glorious Garden Tour of
Common Ground customers' garden in Midtown (near
BfR!). Permaculture, kids' garden, greywater recycling,
mulching, seed propagation, composting on display.

Sat., Sept 11, 10:30 a.m.-12:00 Noon, \$19. Introduction to GROW BIOINTENSIVE by David Basile. How to get sustainably high yields while building the fertility of your soil. Principles of double-digging raised beds, composting and soil-building, intensive planting, companion planting, carbon farming (the use of compost crops), calorie farming, and the use of open-pollinated seeds. GB is a whole-system approach that builds soil fertility.

To reserve space, call Patricia Becker, 650 493-6072 http://www.commongroundinpaloalto.org

Sunday, Oct. 3 or 10, to be arranged: Silk Road in the Garden, to raise funds for BfR's work in Uzbekistan and Kazakhstan. Central Asian food, crafts, music, lore. Call or write Carol (see below, right) if you can help plan, along with Silk Road Foundation members!

Sept. 15, Oct. 29, etc. (third Wed. of every month), 7-9 p.m. Regular Russian-language practice session at 831 Marshall Drive in Palo Alto. Contact Carol Vesecky for details.

Gardening is a health, social, economic, and political issue for us. Our focus is to create a simple, sustainable, low-cost gardening microclimate...and to share what we learn with our neighbors. Celinda and Larry Miller, Columbus, NM

Ecology Action's GROW BIOINTENSIVE Mini-Farming is a program for producing a sufficient global food supply with available local resources and potentially maintaining 100% sustainable soil fertility. Its yields are 2 to 6 times those of commercial agriculture, while using 67% -88% LESS water, 99% LESS energy, and 50-100% LESS purchased organic fertilizer per unit of yield than commercial agriculture. It is easily learned and affordable for anyone, anywhere.

continued from page 1

Mexico State University, where Amber is a lab director, we presented our work to a class on Community Supported Agriculture, and paid a visit to the CSA farm and experimental desert-friendly GB beds established by Daniel.

Reaching Columbus the same afternoon, we toured the Miller gardens (see article page 1) and the comfortable strawbale home Larry built. Staying over two nights, we gave two presentations to appreciative audiences in Columbus and Deming. We described the GB method, BfR's work coordinating publications and workshops in Russia and Uzbekistan, Volodya's work training orphaned youth in southern Russia in GB and sustainable homebuilding, and the Russian gardening year. The Vallottons joined us at one of these meetings, to present GB in some depth.

Another highlight was our visit to a very attractive new raw foods institute built of "papercrete" and straw bales, the Living Foods Center being launched by Dwayne Madsen and Shu Chan. See page 6 for details and contact information.

En route to and back from New Mexico we visited the Grand Canyon, Painted Desert, and Joshua Tree National Parks. We would enjoy sharing some of our digital photos (as JPGs) with you (if you are current members!), also of the desert gardens we visited. Volodya has long since returned to Kurganinsk where he has been building a Mongolian yurt this summer with the aid of his apprentices, and training Russian Boy Scouts (yes, they do exist, nowadays!) in GB: see page 5 for more on his summer.

This spring we've also been collaborating via email with Igor Prokofiev and his Web-savvy friend Andrei in Bryansk, to support his efforts to put up a Russian-language Web site for BfR. The result is there for all to see at www.biointensive. newmail.ru. Do let us know if you like it! And also if you have criticisms, corrections, and ideas for new material.

As this newsletter is being prepared, we are working with Jennie Brook to revise the Russian Far East grant, and with Irina Kim, hoping for funding from the CS Fund for a Living Soils project for Central Asia. We trust you wish us luck, and will consider sending in your donation! Peace, Carol

To get in touch quickly, contact:

Carol Vesecky, Director, Biointensive for Russia 650 856-9751 • cvesecky@igc.org

For info, visit: http://biointensiveforrussia.igc.org or (po-russki) http://www.biointensive.newmail.ru

Biointensive for Russia is a non-profit project, informationally and organizationally supported by Ecology Action, a California 501(c)(3) organization. Founded in 1993 with assistance from the LO*OP Center to help promote GROW BIOINTENSIVER mini-farming in the former Soviet Union, its goals include a two-way sharing of information on environmentally sound lifestyles. Carol Vesecky is director; our Web/IT team includes Berta Pires and Tamara Kowalski. The mailing of this issue of the Garden Companion was made possible by member contributions. It was edited by Carol Vesecky and Jill Clay; Svetlana Khasanova provided translation help. Please visit our Web site for more information.

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