



The Garlic Press

FILE #10

THE REGULAR, AND NOT SO REGULAR, NEWSLETTER OF THE GARLIC SEED FOUNDATION OF NYS

SPRING 1991

SPRING FLING '91

APRIL 27, 1991

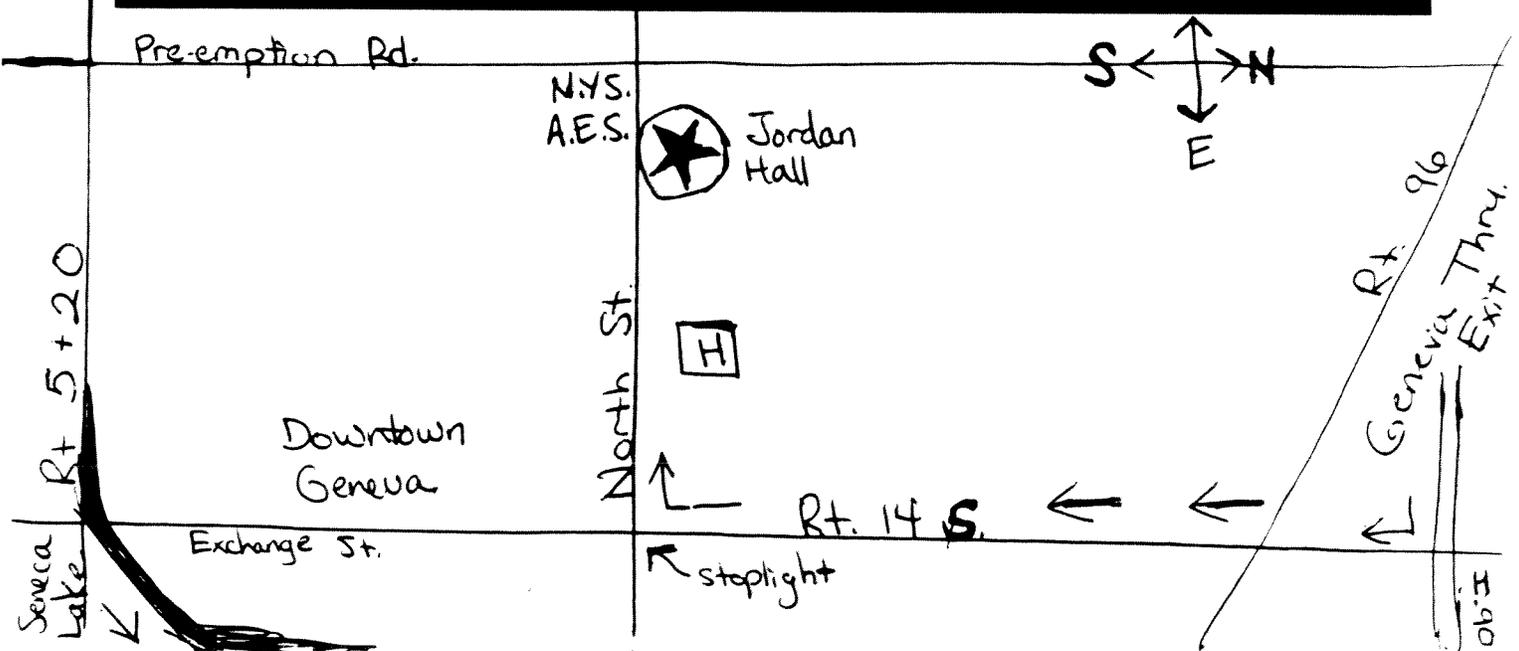
JOHNSON HALL, NYS-AG EXPERIMENTAL STATION, NORTH ST., GENEVA, NY

\$2.00 Members

\$5.00 Others

- 8:00 AM Registration and Coffee
 - 8:30 **HOWARD MARKS**, graduate student and researcher looking at sulphur compounds
 - 9:15 Cornell Discussion: Field Sampling procedures and work-study proposal
 - 9:45 **STEVE HELLER**, Amherst, Massachusetts; Farmer: Presentation on raising Elephants
 - 10:45 Break
 - 11-12:30 GSF Business: Chapters - Bob
Committees - Doug
Legalities - David
 - 1:00 PM Lunch at Moretti's (reservations required and enclosed)
Keynote Address: **JOHN SWENSON**: "The Origins of Garlic"
- Following John's presentation, Jim McPherson has invited us to return to the Station and tour his work and facilities.

→ to Canandaigua



Director's Notes

This will be the 2nd *Press* in 6 weeks! A new record; but you probably won't hear from us again until Fall! This newsletter needs you to write some, send something, clip out an article or cartoon that will interest others. Bob and I spend too much time contributing and writing. Please share your ideas.

Garlic Seed Catalog 1991: Filaree Farm, Route 1, P.O. Box 162, Okanogan, WA 98840. Ron Engeland educates and describes for you the cultivars he's producing, before he sells you some. Order early (NOW). I'm checking some other seed sources I ran across and will report on these for the next *Press*.

The GSF has been contacted by a mail order seed company to supply 5000 pounds of seed. Can we supply a clean and uniform quantity? The Foundation needs to talk about this as a coordinated project. Bob Dunkel will help coordinate this project (see article in this *Press*).

Garlic Day '91 — Western New York — Saturday, September 14th.

Included in this newsletter, Dave LoParco from Plant Pathology has outlined the sampling procedures you are to follow when sending him material. If you suspect a soil pathogen, and want a soil assay done, contact:

Diane Karasweicz
Extension Associate
Diagnostic Lab/Plant Pathology
321 Plant Science Building
Cornell University
Ithaca, New York 14853 Tel: 607-255-7850

Please contact Diane for sampling procedures, tests and procedures, and fees before sending soil sample.

I continue to look for more slides for GSF slide show. Bob Yerina just sent me some great ones of his place — Garlic Delite Farm. Get out your camera and record how you are growing this stuff — anything special? Share these at Garlic Day and the rest of the Foundation.

If anybody has any ramps (*Allium tricoccum*) growing in their woods, please bring them to the Spring Fling — Thanks.

A point on housekeeping: Please include the *Garlic Press* on your "change of address" list when you move.

I was sent a copy of DE WALM (The Smell), a Dutch quarterly magazine of the VRIENDEN VAN DE STINKENDE ROOS — several hundred garlic growers who have a shop go to festivals and organize garlic feasts! I'll be sending them copies of our newsletter.

One very important part of the SPRING FLING '91 will be discussions on the structure of this Foundation. We have the interest and membership to justify incorporation and the benefits thereof. The concept of CHAPTERS (Long Island, Western, ...) by geographic regions makes sense, but what would they do and what relationship to the State? Bob Dunkel will explore this idea. Doug Bowne has promoted WORK COMMITTEES as a way to get things done. Members could work on a specific area of interest (marketing, experiments, newsletter, ...). The third discussion will look at incorporation and By Laws, the LEGALITIES, and I'll facilitate this discussion.

This is business we all need to take part in. Those who aren't able to attend, please send your comments. How can we be the most efficient? Satisfying? Constructive? How can we spread the work out and get more done? Please spend some time thinking about this before the meeting and come prepared!

Well, Happy Spring to all. May your bulbs divide and grow large. It's great to get cards and notes from you all in reaction to the pieces that we write. It never feels good to learn you've insulted somebody who now feels angry. As a U.S. citizen and taxpayer, I get angry also. As a world citizen, I don't need to wave any flags. Working for peace in this world is patriotic.

See you all in Geneva. In closing, my condolences to Jim and Diane Muscareil for the loss in their family. Congratulations to Dominic and Denise Antignano, and welcome to your new son.

Happy Trails (D.S.)

A LITTLE STORY

This is a story about four people named Everybody, Somebody, Anybody and Nobody. There was an important job to be done and Everybody was sure that Somebody would do it. Anybody could have done it, but Nobody did it. Somebody got angry about that, because it was Everybody's job. Everybody thought Anybody could do it, but Nobody realized that Everybody wouldn't do it. It ended up that Everybody blamed Somebody when Nobody did what Anybody could have done!

NOTE ON A MAILBOX

Dear [Landlord]:

Will you please cut back on your use of garlic. Every night, just about the time we are going to bed, you start cooking that garlic and the smell is so strong that we can't sleep. It is winter and so cold that there is nowhere to go and we can't even open the window comfortably. The smell is so strong it makes me sick! Is there anything you can do like not cook so much at once, we are going crazy

Mrs. [Tenant]

I recently received a call from Mike Stewart of Empire Farms in Empire, Nevada; he really had a rough winter. Due to two weeks of temperatures at -20 degrees, he suffered a loss of 3 million pounds of garlic. This is more than we grow statewide, and is a terrible situation. He was calling us through the foundation to see if he could fly back on a buying trip to pick up 10-20 thousand pounds to hold off some of his customers. He did not suffer total loss, but he grows seed for many California growers and is certainly in a tough position. I told him that our growers are small-scale and it would not be easy coming up with quantities like that. I sent him some addresses of our friends in Canada to contact.

The bottom line on this whole thing is that he has realized that he needs a more cold-tolerant variety and wanted to see what was available in the northeast. This should make all of us realize the value of the type of work the foundation has been doing in promoting the trials of many local and foreign stocks. We must appreciate the hardiness of our local strains and realize as the greater fluctuations in climate seem to be more common, we may very well be a source of seed that is more reliable than what is used in other areas of the country.

Perhaps I can get Mike to write a future article for the *Press* about his operation. A few things he told me were pretty amazing. They have a cracker for their seed and a pretty extensive operation. For weed control he mentioned that instead of paraquat they had been using sulfuric acid at the rate of 30 gal/acre during the preemergent stage and saw no detrimental effects. He does produce virus-free seed. I asked him if mulch was a possible alternative and he said he was considering it if he could burn it off before it began to sprout. His operation also has their own geothermal power plant.

Anyone who would have any contacts, suggestions or might like to talk with Mike about seed can contact him through this address: Mike Stewart, Empire Farms, Box 40, Empire, NV 89405.

I have a few ideas of ways that we can work together this year to create a broader base for Foundation projects. First, we need to develop a group of growers who specifically would like to set aside a certain percentage of their crop for sale as seed. Perhaps it could work something like a 10% Club. Those people could use this figure in their marketing plan to realize a certain amount of their sales and, as a group, we can set a fair price for seed sales. Another way to do this may be to set an amount like 50 or 100 pounds and work it the same way. Part of the reason that we need to work up a strategy is that we do regularly receive requests for seed, both from within the state and elsewhere and it becomes difficult to know how many of the orders we can fill. Certain guidelines must be set to assure the quality of seed and to make sure we aren't passing on any diseased seed. It seems that this will only continue to be a growing market for the foundation and can work to our advantage to develop a group of suppliers.

Another ramification of this is in the area of research. There are certain projects that we would like to have various growers in different regions of the state take on, as well as certain GSF strains that need continued replanting and testing. I personally have quite a variety of seed that I save and replant for this purpose, and with limited space, this is a constraint for me in terms of how much I can sell to a consumer market. Our primary purpose, in my mind, is to actually function in some manner as a seed bank of winter-hardy varieties and expand this into various research areas. The reason I think this should be done now is two-fold. One is that it allows for us to plan now for setting aside a portion of our harvest and consider bartering among ourselves to even trial one or two strains for the foundation. The other is the Spring Fling. This is an ideal time for us to organize something like this and to begin to look ahead. I would like to set some time aside, perhaps even after the day, for a group to sit down and line out some guidelines on how we can do this.

To facilitate this process, I am asking any of you that want to participate in this project to correspond with me directly. David has his hands full with too much other foundation business, and so I am taking this on for now until some other members jump onto the bandwagon. As we will be addressing some of the serious needs of development and involvement in work by more of you at the Spring gathering, we all need to look ahead and decide what level of participation we can have. There is just too much work to be done to let a couple of us take on responsibility for organizing and educating and make progress. So, for now, please take some serious time to make a commitment to the Foundation and be ready to offer what you can at the gathering. For those who may be unable to attend and still want to participate, again please correspond with me and I will try to organize some specifics in terms of projects we need work on. My address is: Bob Dunkel, 2079 Washburn Road, Stanley, NY 14561.

The First World Garlic Congress

Part II: Nothing But the Truth

Clearly, the constituents of *A. Sativum* have an effect on our bodies, and for 5000 years it has been medicinally used and even worshipped. Yesterday's healers, our medicine men and women, only understood the cause-and-effect relationships of illness/disease and the folk/herbal remedies. Today, our scientists and medical researchers certainly know more, but there are still great gaps in the puzzle. We sat there for 2½ days, listened to report after report on this experiment and that, with this disease or that ailment. The broad spectrum of the work was as impressive as the findings, but the conclusions are hard to come by in this work of exact science. The active constituents in garlic are the *thioallyl* compounds, which comprise about ½ of 1% by weight. The compound *Alliin* is ½ of that ½ of 1%! However, when crushed, *Allicin* is formed, and from there another 200 compounds, maybe more. Which one is the key to the lock? Or is it a combination, or one we don't even know yet? And there are other problems: many of these compounds are very unstable, lasting only a short period of time and hard to work with. Garlic itself has variables, and depending on the climate, soils, and cultivars, samples are rarely uniform (and the reason the AGE-Aged Garlic Extract is used). In this article, I'll attempt to highlight some of this Congress by dividing the research: heart/blood related, cancer related, and other. The Congress's program and abstracts are available from the GSF (48 pages/\$8) which includes information on where to get more information.

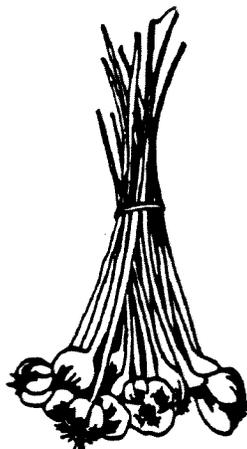
Heart/Blood Related

Cardiovascular disease is a killer worldwide. In India, Dr. Bordia conducted a study of 430 patients—all with heart disease—by giving one group 6-10 cloves daily (crushed into milk!), the other group got sugar pills. Of the group that ate the garlic, 32% had fewer heart problems and 45% fewer deaths. This group also reported decreased blood pressure, lower cholesterol, increased energy and appetite, and decreased joint pain than the sugar-pill group. Dr. Bordia is now planning a study with 3000 patients. It was also reported that *A. Sativum*'s components somehow suppressed cholesterol synthesis by the liver, lowered total serum cholesterol by removing the harmful lipoproteins (by 50%) and leaving the good guys. Other constituents reduce the clotting functions of the blood and may actually help dissolve existing clots. Another study looked at triglycerides (blood fat linked to heart disease) and found garlic able to lower these levels, promote the regression of these fatty deposits in the blood vessels, and maybe reverse arterial blockages. (Note: 1 of 2 Americans dies of heart disease.)

Cancer Related

Dr. Blut, from the National Cancer Institute (USA), has worked on population studies in China and Italy, where specific reduced levels of stomach cancer were found. Those that ate twice the amount of garlic in their diets had ½ the incidence of cancer. More and larger studies are being designed. John Milner, from Penn State, has found that dietary garlic supplement decreased the incidence of induced mammary tumors (in some cases 70%) in rats, reported that fewer tumors developed, or there was a delay in the onset of tumor formation. (I've invited John Milner to join us at Garlic Day '91.)

Garlic, this mysterious stuff—is able to block the action of carcinogens identified with cancers of the breast, esophagus, colon, and rectum. It also obstructs the formation of nitrosamines, modulates cell division, inhibits early growth of some cancers, and somehow, might be able to protect the body from radiation related to contamination or x-ray. This radiation creates free-radicals (unattached special molecules), some of which the body uses; however, some accidentally enter unprotected body tissues causing mutation, premature aging, and degenerative diseases. The constituents of garlic are effective in protecting the body from free radicals.



There's also evidence to show that it can actually trigger the body's immunological (protection) factors that may help block the ability of certain chemicals that make normal cells go crazy as cancer. Dr. Nishino, from Kyoto, Japan is studying *allixin*, a new purified component of garlic, and reported the protective activity of this substance (4 times greater than garlic extract) on skin cancer of mice. *Allixin* is also being studied for reducing stress-related disorders and body chemicals in rats.

Additional Findings

There were many other reports on a wide variety of investigations:

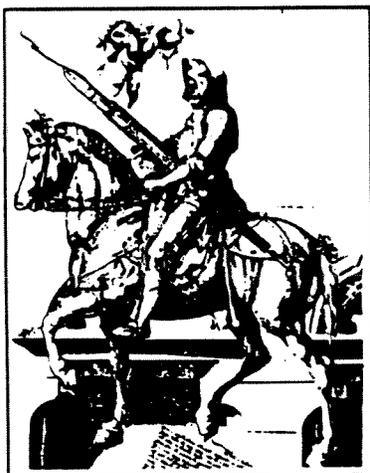
- In China, intravenous (IV) doses are used to treat systemic fungal infections.
- Also in China (and NJ), garlic extract is being given to cryptococcal meningitis patients, resulting in reported cures and improvements.
- *Candida*, a yeast infection, is being controlled and inhibited in mice using garlic extracts.

The First World Garlic Congress (continued)

- Blood toxicity levels from heavy metals (mercury, lead, cadmium) can be lowered with garlic. Our ingestion of these toxins is 1000 times those of our ancestors.
- Free radicals are also generated from pesticides, industrial solvents, and other pollutants. Garlic is a free radical protectant.
- Garlic appears to increase our immune cell activity, helping the body defend itself.
- However, in a comprehensive worldwide review of garlic research by the Dutch Ministry of Welfare, Dr. Kleijnen raised serious questions in regard to garlic research. Specifically, sample size, proper procedures, and misleading analysis were noted as areas where better work must be done by the scientific community.

Where does all this go? There will be many more population studies, more lab experiments and dietary analyses, more chemical breakdowns to look at the interrelated parts of this stinky little bulb that we grow. There will be more chemists working with medical researchers and with doctors in the treatment and prevention of disease, trying each key, looking under each stone—clue by clue, piece by piece. After 5000 years, maybe we'll figure it out. Maybe we won't.

We garlic farmers can also play an important role in this work by supporting the efforts of Dr. Block in Albany and Dr. Ip in Buffalo, and many others in this field. We too must continue to experiment and learn new and better techniques, trial new cultivars, and educate our neighbors, farmers and gardeners alike in the production of *A. Sativum*. Ten years ago, when I started growing garlic, I bore the brunt of many jokes, as I'm sure many of you did also. That's changed recently as customers are becoming better educated in the importance of their diet and food's role in preventive medicine. If there was any doubt before I went to Washington, it was quickly laid to rest: **Garlic's Good For You!**



(D.S.)

Controlling Diseases in Garlic

This past year, Bob Yerina of Little Falls, NY observed that an occasional garlic in its April through May growth would appear "less vigorous." These plants might be pale green, stunted, and/or twisted in comparison to the majority of plants. As one became aware of the subtle differences in these plants, it was possible to pull them out and find that, under further field examination, 75% or more would show signs of disease or insect damage. Specifically, bulbs ranged from rotten to almost "slimy." Roots, might appear shorter, chewed off, or mottled and brownish red in color. A "rotten onion" odor was an additional indicator of a problem. These observations evolved over the growing season, and it became possible to detect increasingly obscure problems.

As the season progressed, and with each hand weeding, questionable plants were removed, placed in a plastic bag, and treated like "toxic farm waste." Interestingly, it seemed some plants left undisturbed would recover. These could then find their way back into the seed stock bag, or might be the occasional soft bulb found in September.

Clearly, the identification of a pathogen was not scientifically documented. That is a project for this year. The reason for sharing this information is that you can look for similar problems and hopefully you will find none, but if you should, recording and sharing your findings would be helpful.

— Doug Bowne

Membership Role

Although our name implies, New York, and our work and experiments are most selective to the Northeast environment, strains, climate, and soils, our membership reflects interest in *A. Sativum* from all parts.

Here are the states/Canada and numbers: VT-16; PA-12; MA-9; CT-8; Canada-7; MD & VT-6; FL-5; NH, CO & IL-3; WA, OR, MS, IA, WI, ME, WV, OH-2; and KY, LA, NC, TX, NV, DE, KS, VA, DC, AR, IN, ID, MN, NC, NM each with one!

The GSF is filling the information gap as the landgrant colleges moved away from localized, regionalized, and small farm production. We've had several AG Extension Agents join up this past year to increase their knowledge to better work with farmers.

(D.S.)

From *About Garlic* by G.F. Binding

No doubt the most famous features about Egypt are the renowned Pyramids and Sphinx, being classed as one of the seven wonders of the world. Not so many people may be aware of the fact that the Egyptians cultivate and consume large amounts of garlic, leeks, onions and shallots and have done so for centuries. Garlic has a long history in the Middle East and is prominent in the *Materia Medica* of the ancient Egyptians and Hebrews. Shallots were first found being cultivated in the nearby country of Syria. Is there any connection between the colossal building project of the Pyramids and the even more ancient little garlic herb? In the Holy Bible, Herodotus (11.125) tells of an inscription on the Great Pyramid Cheops which listed garlic as one of the vegetables supplied in large quantities to the workers, and he also said they had lots of radishes. Ancient history shows that the first strike ever known occurred during the building of these massive tombs. It was by the thousands of Egyptian slaves constructing the pyramid Cheops. They downed tools, not over a tea break, but because their daily supply of garlic had been withheld. This herb they felt was vital and necessary for strength, stamina and endurance to carry out their gigantic task. So nearly 5,000 years ago, without garlic, they felt incapable of building the Pyramids. There is then some relationship between garlic and this inspiring building project, even if it can only be attributed to bringing about the first industrial dispute on record. Had these ancient Egyptians been permanently deprived of their smelly herb, perhaps the pyramids would not be with us to ponder over in the 20th century. Even today building and engineering experts are still baffled as to the means employed in constructing these remarkable tombs, which they consider are almost a miracle. So take advice from these ancient Egyptians and let garlic work wonders for you, not in constructing massive tombs, but in helping to build a strong healthy body, free from so many complaints prevalent in our society today.



GARLIC SOUP

Peel 3 bulbs garlic, remove green sprout from larger cloves, blanch 3 minutes and throw water away.

Add cooked and peeled potatoes to chicken stock, salt and water; simmer ½ hour.

Puree potato-garlic mix in blender, adding only enough water in blender to allow puree to "flow" in blender. Result will be very thick, white, creamy.

Ladle hot into soup bowl.

Add swirl of basil oil mix on top of soup; sprinkle with shredded cheese (optional).

Basil Oil Mix: In blender place olive oil, basil, and finely chopped parsley (used as garnish).

Bud Campbell

The 'Stinking Rose'

Preliminary studies suggest garlic may offer a wide range of health benefits.

CANCER

Lowered stomach cancer risk. The growth of mammary cancers in rats has been inhibited and melanoma cell growth has been slowed in culture.

HEART DISEASE

Reduced harmful LDL cholesterol and triglycerides. The herb may lower blood pressure and promote regression of artery-clogging plaques.

BLOOD CLOTS

Reduced blood clotting. Garlic seems to prevent clumping of blood platelets better than aspirin.



The New York Times, Illustration by Horacio Cardo



Cooks' garden

By William Aldrich

A love affair with garlic has made this amateur a world scholar on allium plants

Chicago boosters may not be thrilled with John Swenson's conclusion that the name of our fair city comes from a plant with a stunk-like smell. The musty scent is given off in spring by a wild garlic, *Allium tricoccum*, which the native Illinois tribes called *chicagoua*.

Swenson's brush with etymology is only part of his scholarship on the plant genus allium, the home of such things as garlic, onions, shallots and chives. Although his modesty would prevent it, he probably is the most scholarly amateur allium expert in the world.

So specialized is Swenson's knowledge that he was invited to collect native alliums in the Soviet Union last summer with two American scientists, a Polish botanist, a Soviet plant expert and a translator. Their collecting mission took them 8,000 miles across the Central Asian region.

"I took a lot of science courses, but I'm a lawyer by trade," says Swenson at his home in Glenview. "I've had a life-long intellectual quest for authenticity. Gardening is the latest of my intensive avoca-

in an inch of chicken broth. You put the lid on and bake in a 325-degree oven for an hour, depending on the size of the garlic and the oven.

"You save the chicken broth for another use, that's the real 'penicillin.' Then you place the bulbs in a serving dish. When they have cooled enough to handle, take an individual clove and squeeze out the pulp, throwing the skin away. It is the most marvelous custardy consistency and flavor.

"The heat has broken down the sulfur compounds, so the flavor is very mellow. You can put it on vegetables or meat.

"Almost any garlic will be outstanding. The best I ever found was a purple garlic from central Mexico. It hasn't been allowed over the border the last two years but when I was there I brought a case of it back. On a scale of one to 10, this is a 20. If cooked the flavor complexity is great. I plant ed a whole lot but very little survived. The taste was nothing special so it has to be the growing conditions in the Celaya region east of Mexico City.

Swenson got hooked on the allium family through a garden mag-



Tribune photos by Val Mazzenga
John Swenson examines an allium giganteum blossom, one form of garlic-like plant.



Rocambolo, sometimes called snake garlic, grows in a long spiralling spike.



An amateur scholar on garlic plants, John Swenson also grows podded peas.

there. I also grow vegetables, herbs and ornamentals." He is also president of the New Trier Men's Garden Club.

"One project I'm starting to concentrate on is to get true seed from garlic, which you might say is the only thing scarier than hen's teeth," he says. "The wild garlic we saw in the Soviet Union even had bulbils."

Instead of flowering and setting seed, garlic will form small bulbils in a cluster at the top of its stalk. Those bulbils are genetically identical to the parent plant. To introduce genetic diversity, flowers of different species need to be cross-pollinated to discover if a superior or different offspring can be produced.

"When you get true seed, it generally rates a paper in a scientific journal," Swenson said. "I put a notice in the Seed Savers journal seeking garlic seeds and a guy in New Jersey sent me 100, which I passed along to my friends and tried to grow some myself. I have a few out there but you have to be very careful in growing them. I think they are going to flower this year."

That type of work was what spurred the collecting expedition last summer, the culmination of three years of planning. The group spent a month in central Asia near the Iranian border looking for alliums in their native range.

"The hospitality was wonderful, they were terrific people," he said. Much of the time they were camping in the mountains far from the beaten trail.

"I'm sure we were the first westerner some of these people had ever encountered.

We were looking mainly for culinary alliums for breeding programs, but we also collected a lot of ornamental alliums, some of which are not known in the West," he says.

"Who knows what genetic diversity there is? There's been virtually no research done on garlic."

A pamphlet detailing Swenson's research on Chicago's name will be available later this summer at the Newberry Library and at select retail outlets. ●

Swenson said he "made a quantum leap in the intensity of my research when I joined Seed Savers," a clearing house for vegetable varieties not available from commercial sources. "I started acquiring alliums and reoffering them."

He made contacts within the U.S. Department of Agriculture and with scholars and collectors nationally and internationally.

"My phone bills were astronomical but people would send me onions and garlics and papers they'd written. The last six years the collection has really taken off. I've had 500 accessions pass through my hands, most of which I've sent on to my other contacts. Seed Savers is computerizing my data now.

(The Seed Savers Exchange, Route 3, Box 239, Decorah, Iowa 52101, is a nonprofit organization dedicated to saving old-time food crops from extinction. Send a self-addressed, stamped envelope for a free brochure.)

"If someone was going to label me, I guess it would have to be plant collector. I have been doing it for years, that and trial gardening. I've got a lot of stuff out

of an ad. He was intrigued by the shallot, which "is like an onion but produces its own sets" for the following year, and found a Vermont company that offered them. In the catalogue was a vegetable he was unfamiliar with, rocambolo. So was the company, which admitted they didn't know what it was they were offering. Swenson smelled a mystery and began growing it.

"I got little plants the first year," he said. "Then the second year, they came up with large spikes that started to curve. I thought they'd gotten a disease. Finally they made about a circle and a half. That's why they are called serpent garlic because they look like a snake. Then they uncoiled and got huge.

"I've had garlic plants 67 inches tall. People would be lost out there in the garden among all the foliage. I've had leaves three feet long.

There wasn't a whole lot of mystery to the plant, Swenson says, if he had only looked up the term in a dictionary. It turned out to be a garlic that produces large cloves without the little ones in the center as in common garlic.

Information From Cornell Research

Mr. David Stern
Rose Valley Farm
Rose, NY 14542-0149

Dear David:

I am writing to you in response to your request for a list of research objectives that might be incorporated into a proposal for securing a grant from the Garlic Seed Foundation of New York State. Dr. Ellerbrock, Dr. Lorbeer and I met to discuss and identify some of the present problems facing New York garlic growers and to set goals for experiments to aid in solving these problems. We all agreed that a test plot of garlic planted close to campus (East Ithaca) would maximize our ability to control experimental parameters as well as observe and collect data needed to achieve these goals.

A test planting of garlic could begin this fall (some of the planting material provided by the N.Y.S. Garlic Seed Foundation?) and provide a base for experiments to study the following:

1. Index cultivars in a comparative study of horticultural characteristics such as; earliness of harvest, yield, bulb quality and storage ability.
2. Index disease differences among cultivars and identify "seed"-borne disease problems.
3. Observe and characterize disease development and the effect of other pests throughout the growing season.
4. Attempt to produce cleaner planting stock of top-set and soft neck garlic.
5. Garlic produced in this study will be used in storage experiments as well as other studies.

We discussed the costs on a per semester basis and developed the following budget:

Work study undergraduate student (12 weeks at 10 hrs/week)	\$312.00
Materials and supplies	300.00
Land rental for plot	50.00

I hope this information is useful and aids you in the decision making process. Please feel free to call upon me for additional information.

Sincerely,
David LoParco, Research Technician

Procedure for collecting and sending soil samples and diseased plants.

1. Observe and record location in field of affected plants.
2. Carefully remove and entire plant with roots and some soil.
3. Place in plastic bag and fold the top over and just tape to hold.
4. Collect several plants (or soil) in this manner.
5. If samples are dry, lightly moisten before storing or mailing.
6. Store in cool or cold area in darkness (do not freeze).
7. Mail early in the week, not Thursday or Friday.
8. Samples in bags should be placed in a box for shipment.
9. Please provide the following information:
 - a. Grower name and address
 - b. Date samples collected
 - c. Location in field where each sample was collected
 - d. Each bag should be appropriately labelled
 - e. Description of symptoms as observed in field
 - f. Information on cultural practices and pesticides applied
 - g. Recent cropping history of field
10. Mail to: Dave LoParco, Department of Plant Pathology, Cornell University, Ithaca, NY 14853-0331

SKIPPY PREMIUM

Chunky Beef & Chicken Dinner

SKIPPY PREMIUM MEETS OR EXCEEDS THE MINIMUM NUTRITIONAL LEVELS ESTABLISHED BY THE NATIONAL RESEARCH COUNCIL FOR ALL STAGES OF A DOG'S LIFE.

INGREDIENTS: WATER SUFFICIENT FOR PROCESSING, SOY FLOUR, WHEAT FLOUR, BEEF, CHICKEN, LIVER, ANIMAL FAT, MEAT BY-PRODUCTS, IODIZED SALT, GUAR GUM, DEFLUORINATED PHOSPHATE, VEGETABLE OIL, CARAMEL COLOR, ONION POWDER, ARTIFICIAL COLOR, GARLIC POWDER, IRON OXIDE, MAGNESIUM OXIDE, CHOLINE CHLORIDE, VITAMIN E SUPPLEMENT, POTASSIUM CHLORIDE, IRON SULFATE, VITAMIN A SUPPLEMENT, THIAMIN MONONITRATE, ZINC OXIDE, COPPER OXIDE, RIBOFLAVIN SUPPLEMENT, FOLIC ACID, CALCIUM PANTOTHENATE, NIACIN, BIOTIN, PYRIDOXINE HYDROCHLORIDE, ETHYLENEDIAMINE DIHYDRIODIDE, SODIUM SELENITE, VITAMIN D₃ SUPPLEMENT.



GUARANTEED ANALYSIS:

CRUDE PROTEIN ... MIN. 8.0%
CRUDE FAT ... MIN. 3.0%
CRUDE FIBER ... MAX. 1.5%
MOISTURE ... MAX. 78.0%

PLEASE INCLUDE CODE NUMBER ON CAN LID WITH ANY CORRESPONDENCE.

Heinz Pet Products Company,
an affiliate of H.J. Heinz Company,
Long Beach, CA 90802

Made in U.S.A.

556/OA

PRE-REGISTRATION FORM FOR SPRING FLING DINNER

NAME _____ # OF PEOPLE _____

I would like to attend dinner and Keynote Address at Moretti's Restaurant, Geneva, NY

Please indicate choice and number of orders of Entree:

- | | | |
|--|---|--|
| <input type="checkbox"/> Spaghetti #7 ____ | <input type="checkbox"/> Eggplant #8 ____ | <input type="checkbox"/> French Chicken #10 ____ |
| <input type="checkbox"/> Vegetarian ____ | <input type="checkbox"/> Lasagne ____ | <input type="checkbox"/> French Veal ____ |

All meals include soup or salad, bread,
bulb of garlic baked with cheese, and ice cream

Please include check or money order for total amount, made payable to **GARLIC SEED FOUNDATION**

Return this form **NO LATER THAN APRIL 18** to assure seat for dinner.

Please return form to Bob Dunkel, 2079 Washburn Road, Stanley, NY 14561

Overwinter OK? Heaving? Uniform?

How does your garlic cook?

Important Dated Material Enclosed

OPEN THIS AT ONCE

**GARLIC SEED FOUNDATION
ROSE VALLEY FARM
ROSE, NY 14542-0149**

SPRING '91

**SPRING FLING
WORLD CONGRESS II
NEWS CLIPS
JOHN SWENSON**