THE BUR

Volume 2, No. 2 Newsletter of the New York State Chapter of the American Chestnut Foundation, Inc. Fall 1992

Research Identifies Spore-Killing Enzyme

Drs. Charles Maynard and William Powell at the Syracuse College of Forestry and Environmental Science (SUNY-CESF) are the two principal scientists spearheading a research program to create a fungus-resistant, American chestnut tree through genetic engineering techniques. This research is funded in part by your memberships and contributions to ACFNY, (The New York State Chapter of the American Chestnut Foundation).

Last October, these two principal scientists announced at the National ACF meeting that they had successfully tested an enzyme that killed spores of the deadly chestnut blight fungus on contact. Their research program is designed to introduce the gene that manufactures this enzyme into every cell in the tree. An attack by the blight on any tissue of the tree would trigger it to produce the enzyme and kill the blight.

Using a method called tissue culture, they gather cells from a wild American Chestnut stem, leaf or bur and later grow each of the cells into a plant. The protective gene is first offered to the cells; a few will accept it. Those which accept such a gene will pass it on to their every new cell as they grow in the lab, and later to their descendants.

Taking advantage of the discovery in this decade or so that segments of DNA, the genetic material, can be snipped out of unrelated organisms and stitched back into the plant under attack, the scientists made a list of likely sources of a protective enzyme. One was the potato, which lives with soil fungi and is rarely hurt by them. Its DNA makes an enzyme, Chitnase, which digests Chitin, from which the blight makes its cell wall. Fungi which attack the potato are thus killed, and the potato has protected itself.

Drs. Maynard and Powell have considered several similar protective enzymes. They selected one which on the first try was successful in the laboratory; it killed spores on contact and under conditions similar to those found inside a chestnut canker. This is the vital first step on the way to a resistant tree.

Dr. Powell is now at work on the next stage. Since an enzyme is a very large assemblage of proteins, he is now analyzing the proteins in the new candidate enzyme, to identify which one attacks blight. Ultimately he hopes to discover which DNA segment makes that protein. The shorter DNA segment that makes the smaller molecule of protein would be easier to get into the cells during the insertion step. Result: more cells converted, more resistant trees produced per batch.

The scientists also believe that it may be possible to have the enzyme expressed just in certain tissues, say in the bark. This would protect the tree with lower energy requirement than having *to* produce enzyme in every tissue, leaving more energy for timber growth and nut crops.

This type of biotechnology has been successful in parallel fields. Monsanto company, for instance, has created an insect-repellant cotton plant by adding genes which make an enzyme toxic to cotton weevils but harmless to animals. As a result, cotton can be produced competitively without insecticidal spraying.

President's Corner

As we go forward in our third year of operation we can be proud of the progress we have made. One thing that is absolutely essential to our continued success is renewal of our memberships.

John Spagnoli has been working very hard as Membership Chairman. All renewal notices have gone out and our return is encouraging, but needs to be better. WE NEED YOU! I know how easy it is to put things off, so please send your check now so we will not have to spend our precious dollars on another renewal notice.

Thank you all for your continued support. The end result we all look forward to is the timber-type American chestnut tree in a blight free condition back in the woods of its original territory very soon. Please renew now to help insure this goal.

Herbert F. Darling, Jr.
President

DISTRICT NEWS

REGION 1:
Long Island, NY - District Director's position unfilled

REGION 2:
NY City, NY - District Director's position unfilled

REGION 3:
District Director, Frank Munzer, held their first preorganizational meeting on April 11, 1992. Eleven people attended and Frank was disappointed at the turn out. However, all who attended turned out to be workers and things really moved from there. A working relationship with the Mary Flagler Cary Arboretum, Millbrook, NY was established to hold meetings and grow American chestnut trees. Shortly after this a second meeting was held on Earth Day at Lasdon Arboretum, Westchester County which, despite the cold rain, was a great success. On June 13, 1992 Philip Gordon, Research Assistant of the Institute of Economic Botany of the New York Botanical Garden, spoke to a gathering at the Cary Aboretum. The meeting was well timed as the subjects were tree identification and pollination and the blooms would soon be on the trees. Phil Gordon's talk was well received.

REGION 4::
Fulton County Historian, Lewis Decker, Director of ACFNY District 4, reported a successful meeting on April 5, 1992. Chestnut seeds were distributed to those in attendance. Plans were made for a field trip to the George Landis Arboretum on June 7, 1992. Thirty people attended a mud packing exhibition on several very sick American chestnut trees. Hopefully, the trees remaining undone will be cared for soon. Viable nuts will be gathered this fall for next years' planting in District 4. Mr. A.W. Rand of Clinton, NY will be spearheading these efforts.

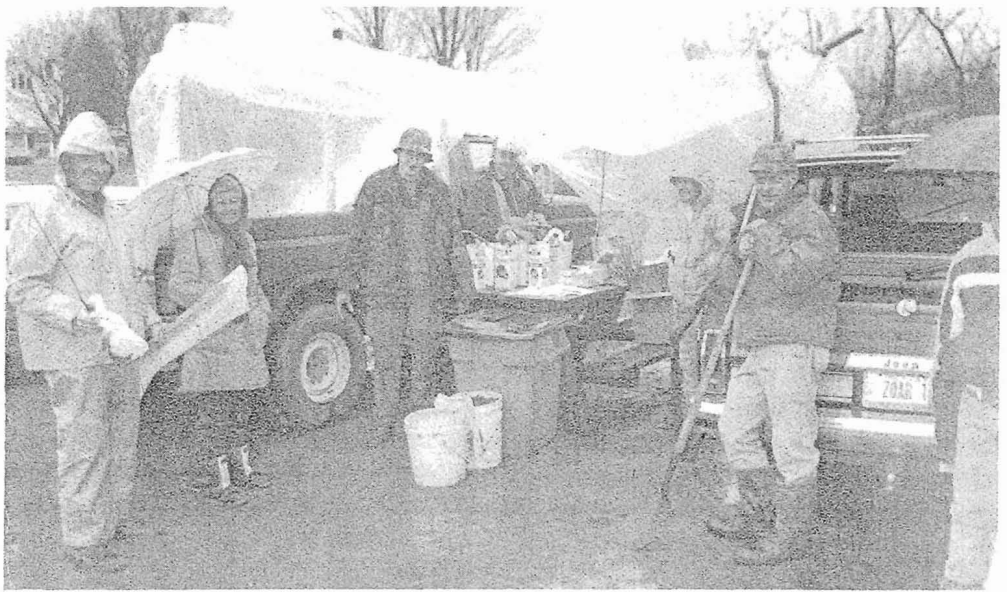
REGION 5:
On April 28, 1992, District Director, Richard Nelson, held their organizational meeting. Eleven people attended and a program was set up to locate trees and begin registering nut bearing trees to get a planting started next Spring.

REGION 6:
District Director, David Vercolen had to cancel the organizational meeting as he was hospitalized and is now recovering from the ordeal. Another meeting will be set up soon to get the program off the ground.

REGION 7:
District Director, Roy Hopke reported an organizational meeting was held on March 26, 1992. Fourteen people auended and a program was set up. He is working on a grafting project for quicker seed production on existing trec.

REGION 8:
District Director, Daniel Rippeteau is working on setting up a membership meeting. He has a successful planting program already under way at Lowville, NY with Bernard Davies overseeing the project.

REGION 9:
District Director, William Snyder led a dedicated group of 55 people for the American Chestnut Day planting on April 25. Despite the rain and cold weather over 175 young trees and milk cartons containing sprouted nuts were planted. (Last year 215 were planted). However, because of the inclimate weather all of the seminars were canceled and everyone took off for their dry, warm homes. On June 24, Snyder held a meeting at the Buffalo Museum of Science. Planning for National Annual meeting was continued. All major arrangements have been made and the details remain. A good program has been set up with the approval of John Herrington, the National Executive Director. All hands are looking forward to the Annual Meeting October 10-11, 1992



Despite cold and rain, District 9's Planting Day was a success. Jury-rigged tarps kept the distribution center somewhat dry as others of the 55 brave souls planted 175 young trees and seedlings.

Nomination from the Board of Directors

New York State is divided into nine Regions. A director from each Region will be sought, as well as general board members. Their duties will include:

- Attendance at the annual meeting to participate in the business sessions.
- Help in the development of membership in their Region.
- Seek out interested leaders and assist in forming local groups.

Please send any nominations with a brief resume to:

Nominating Committee
New York State Chapter ACF
c/o Buffalo Museum of Science
1020 Humboldt Parkway
Buffalo, New York 14211

Nominations must be received by September 15, 1992.

We're Looking far Rosemary

Rosemary, the herb, that is. (If you are a female Rosemary, we're looking for you too if you are not a member yet).

At the dinner at the French Castle, we are intending to use recipes used during the time the Castle was first built and occupied. One of the items found in an old cook book was Rosemary Tea and we are hoping to serve this at dinner along with some chestnut dishes.

If you have any Rosemary would you send us some for that occasion? Please mail to:

ACFNY - Arlene Wirsig
3747 River Road
'Youngstown, NY 14174
or call Arlene 716-745-7722

...and-thanks. See you there.

Seedlings Becoming Available Across State

By harvest time this year there may be as many as six nurseries ready to begin small batches of American chestnut seedlings. This year the new ones will be testing their methods.

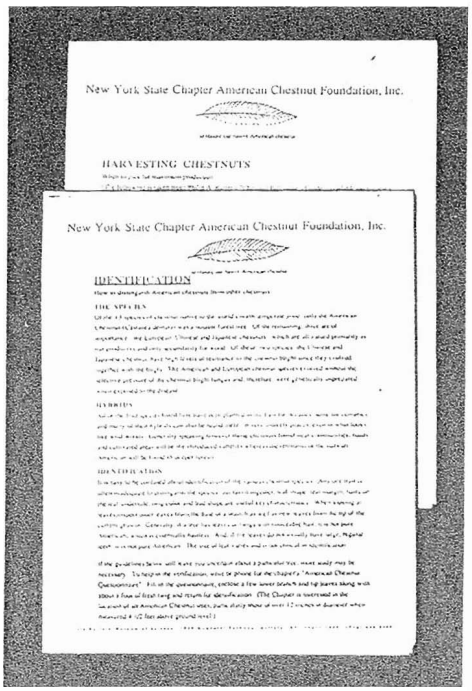
In District 3, Frank Munzer has started a program at the Cary Botanical Center, a branch of the New York botanical Society. In Districts 4 and 5, Lew Decker and Richard Nelson are organizing their programs and in District 6, Bill MacKentley is up and running. In district 8, Monette Goodridge, owner of the Meadowview Nurseries in Byron, NY is ready. In District 9, John Gordon has been providing seedlings for the Arbor Day Outing and Planting Day. In addition,. Herb Darling (our veteran chestnut grower), has been raising seedlings for three years at his home and giving them to his friends and to ACFNY members for their use. Herb cautions, however, that the cold weather and heavy rains in District 9 may severely curtail local pollination and seed production this year.

New Information Bulletins Available

Since the last issue of the "BUR", four new informational Bulletins have been published by ACFNY. The first "Pollination....Understanding Chestnut Reproduction and How to Artificially Pollinate". Another treats the subject of "Harvesting... When to Pick for Maximum Production".

The third and fourth bulletins address organizational topics. One is "Guidelines for organizing Groups within ACFNY Districts" and the other is "Group Programs... Suggestions to help you form and run your Group".

The other four Bulletins previously publishes are Identification, Planting, Nut Storage and Mud Packing. Any of these are available by writing the Chapter headquarters or through your local District Director.


New York State Chapter American Chestnut Foundation, Inc.

HARVESTING CHESTNUTS

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IDENTIFICATION

American Chestnut Tree Fort Niagara Park Planting

In recognition of the American Chestnut Foundation national Annual Meeting being held in Western New York, American chestnut trees (Castanea dentata) will be officially planted at Fort Niagara State Park on Saturday, October 10, 1992 at 3:30 p.m. This will serve to keep the public aware of the status of the American chestnut and the work being done to preserve this historic tree.

An official from the New York State Department of Parks will attend the ceremony and accept the gift of the trees.

The 1992 N.Y. Chapter's Program Includes:

- Locating, identifying and cataloging existing large American chestnut trees (Castanea dentata).
- Establishing a harvesting program to collect nuts for a re-plant program
- Carrying out a planting program
- Supporting research to develop a blight-resistant American chestnut tree

The Chapter Steering Committee will welcome suggestions and questions. Will you help?

ACF Annual Meeting
and
New York State Chapter
Annual Business Meeting

October 10-11 1992
Niagara Falls, MY

See special insert to this issue of The Bur

Chestnut Soup

Origin: England; Serves 5

- 1 cup chestnut flour or 2 cups puree
- 4 cups poultry stock
- 1 cup water
- 1/2 tsp. nutmeg
- 1/2 tsp. cayenne
- 1 cup cream
- salt to taste

Mix chestnut flour and 3/4 cups of water in a large sauce pan, (or 2 cups of puree). Add stock and cook for 30 minutes. Add seasoning and cream and stir. Do not let boil once the cream has been added. Serve in mugs. Garnish with paprika and a fresh parsley sprig. This is a welcome soup on, winter nights.

– *From "The Chestnut Cookbook" by Anne Clark-Bhagwandin*

NY State Chapter, ACF
c/o Buffalo Museum of Science
1020 Humboldt Parkway,
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