

Chestnut Mast



Volume 11, Issue 2 The Carolinas Chapter of The American Chestnut Foundation Fall 2009

Spring planting takes fall planning

By Paul Sisco
CC-TACF vice president

The Carolinas Chapter has two programs for breeding chestnut trees for local adaptation to our area.

The High Elevation Program (H), begun in the year 2000, has utilized surviving American trees found in the higher mountains of western North Carolina from 3000' to 5300'.

These Carolina trees were crossed with trees from the Meadowview, Va., Research Farms that were moderately resistant to the blight, and the resulting backcross seed were planted on land of chapter member-cooperators. By 2008, we had planted our goal of 20 orchards for the (H) program.

The Low Elevation Program (L), begun

initially by Joe James of Seneca, S.C., was expanded in 2008, thanks to the efforts of Steve Barilovits of Charlotte, N.C., and Lee Gragg of Morganton, N.C.

The (L) program utilizes surviving American chestnut trees found below 3000' in both North and South Carolina, and the goal is to develop a population of trees that is resistant to both chestnut blight and *Phytophthora cinnamomi* root rot disease, which is common at lower elevations.

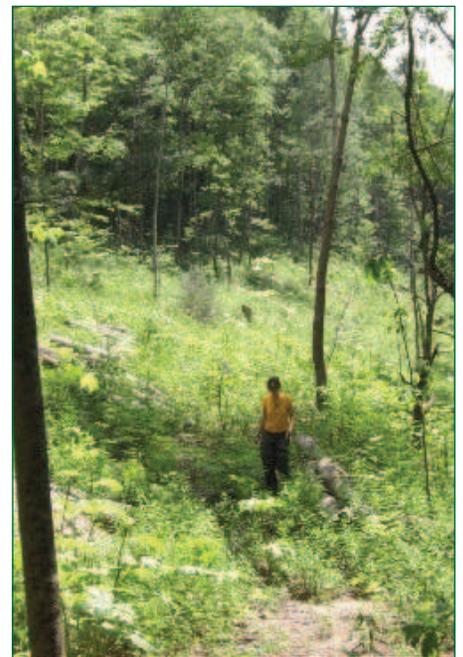
Seed from the (L) program harvested in 2008 were planted on land of three new cooperators this spring – Russell Regnery of Macon County, N.C., Woody Ammons of Madison County, N.C., and Lee Hoffman, also of Madison County.

In addition, Joe James has continued his program of screening seedlings for *Phytophthora* root rot resistance, and then

planting the survivors out on his farm, where they will be screened for blight resistance when they get big enough.



A planting site at Mountain Traditions Development in Madison County, N.C. Woody Ammons (center) was assisted by his long-time friend and chestnut enthusiast E.G. Hill (left) and Carolinas Chapter intern David Flood (right). Photos by Paul Sisco.



Carolinas Chapter intern Margot Wallston walks through a planting site in Macon County, N.C.

In This Issue

President's message	Page 2
Three dead chestnuts	Page 3
B3F2 seed created	Page 4
Orchard tour	Page 5
Blight inoculation	Page 6
Annual meeting	Page 7

Young volunteers catch TACF bug

“What keeps your fire — *your interest in the American chestnut* — burning?”

Who got you interested in the American chestnut? In my case, it was Glen Gillis, my father, who first told me about the American chestnut tree some 50 years ago. As a boy growing up in the Big Ivy Community of Madison County, N.C., he knew the American chestnut as a dominant forest tree. As a teenager, he witnessed its decline as chestnut blight spread through Appalachia. Because of his connection to the tree, I have a passion for helping restore the American chestnut.

Steve Barilovits IV became interested in the American chestnut at age 10 and then enlisted his father Steve III to help him locate trees at South Mountain State Park, N.C. Both now volunteer and work diligently to help restore the American chestnut tree.

Scott and Nancy Pryor's grandson at age 3 got interested when they invited him and his dad to help plant a backcross chestnut orchard where apples used to grow on their family's property near Edneyville, N.C. Chapter member K.O. Summerville, a veteran forester, showed the young boy how to plant the nuts.

As a kindergartner, he entered in his school's science fair a project titled “I can make a difference by bringing back chestnut trees to America.” Scott, Nancy, other family and K.O. ignited a spark in the boy.

The continued success of the Carolinas Chapter of The American Chestnut Foundation (CC-TACF) depends greatly on current members being involved in and being excited about the restoration of the American chestnut tree. Members need to be recruited continuously, especially young members, since the work of CC-TACF will continue for many decades and generations to come.

Steve Barilovits IV, now a sophomore at UNC-Chapel Hill, is talking to his peers and is developing ideas to attract young people to join the effort to restore the American chestnut. He will report his ideas to the CC-TACF board.



A planting site at Bailey Mountain Preserve in Madison County, N.C — the same county in which Doug's father, Glen, developed a passion for the American chestnut. David Flood (left) looks over the proposed site with Lee Hoffman (right). Photo by Paul Sisco.

The Carolinas Chapter has six standing committees where you can help. The committees are known as Mother Tree, Research, Membership, Publications, Fundraising and Education, Media, and Public Awareness. If you are not already involved, you can contact me to learn how you can help. I plan to develop a fact sheet for chapter members. It will explain where to search for information to learn more about the American chestnut and who to contact to learn about and to get involved with ongoing work.

The fact sheet also will identify where people in the Carolinas can see exhibits about the American chestnut and where they can see examples of the use of American chestnut wood in building construction. The fact sheet will be made available to all members and updated periodically. Members will be able to hand out the sheet to family members, friends and people they meet. They can use it as a tool to keep their own fires burning and



THE AMERICAN CHESTNUT FOUNDATION

Carolinas Chapter

The American Chestnut Foundation

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Photos by or courtesy of Paul Sisco, Steve Barilovits III and Doug Gillis.

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to light fires in others about the American chestnut.

Our next event for members, Nov. 7, 2009, is an orchard tour and picnic lunch at Louis Acker and Allie Funk's farm near Creston, N.C. An announcement of the event appears in this newsletter. I invite you to attend and to learn more about chapter activities.

Doug Gillis
Fall 2009

Requiem for three chestnuts

By Steve Barilovits III
Charlotte, N.C.

This spring, I visited three long-term surviving American chestnuts in lower elevation sites in the Piedmont of North Carolina — all of which were dead by the time we saw them.

On May 10, I met Dr. Bill MacDonald of West Virginia University in Sandy Ridge, N.C., so that he could observe what we call the “Sandy Ridge Tree” and take samples of blight from its bark. Last year, we collected pollen from this 70’ tree, and produced about 100 hybrid (BC4F1) nuts using this pollen.

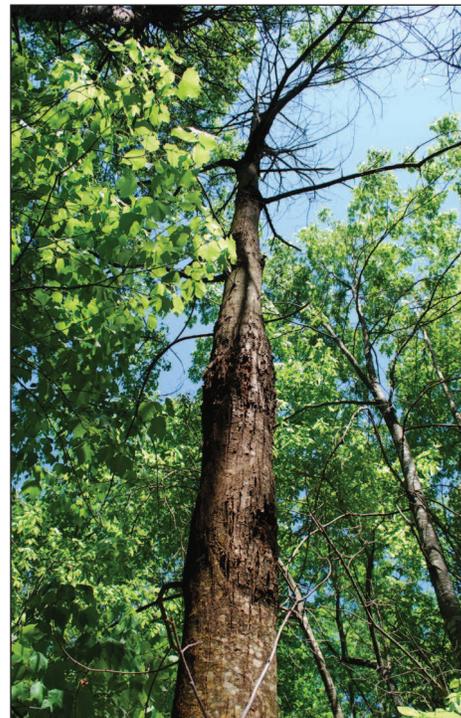
The nuts were planted in new Carolinas Chapter orchards this spring. We were saddened when we arrived at the tree to find that it had died from a combination of blight and drought stress last fall or late summer. No root sprouts were observed growing from this tree, though there is a group of highly blighted root sprouts from another tree growing about 20 yards from the now defunct large tree.

Several years ago, park rangers at Hanging Rock State Park found a large surviving American chestnut growing on a remote steep slope on the south side of the park. We had hoped to harvest pollen from this tree this year, but when we visited it on June 13 after hiking off-trail for about a mile, we found that it had died last winter or early this spring. It produced burs last fall, but did not leaf out this spring. The tree was about 70’ high with a diameter of almost 12 inches.

It’s likely that this tree also succumbed to a combination of several years of severe drought and blight. This was a more severe blow than the death of the Sandy Ridge Tree because we didn’t get a chance to bring this tree’s genetics into our low elevation breeding program.

One of my old favorites, a tree on the north edge of Kings Pinnacle in Crowders Mountain State Park was a group of highly blighted root sprouts growing to a height of 20 feet before succumbing to blight. Ten years or so ago, this tree produced a small number of burs and catkins, but it hasn’t bloomed in several years. We found it dead of the blight this spring with no surviving sprouts.

As time passes, more of these outlying chestnut survivors will fail. The most important thing we can do is to locate them and preserve their unique genetics by bringing them into our breeding program before they go.



Above, the Hanging Rock Tree, now defunct. At right, the Sandy Ridge Tree in Sandy Ridge, N.C., also defunct from blight. Below, Bill MacDonald takes blight samples from the bark of the Sandy Ridge Tree. Photos by Steve Barilovits III.



Chapter first: B3F2 seed made

By Paul Sisco
CC-TACF vice president

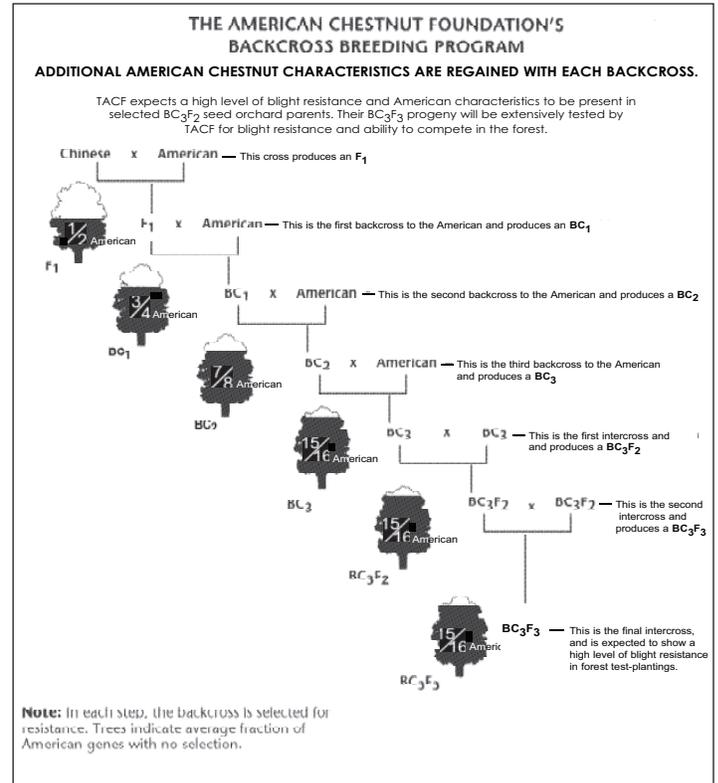
Those of you who have studied the breeding chart of The American Chestnut Foundation (TACF) know that there are two basic steps to creating blight-resistant American chestnut trees.

In step one, which takes at least four generations, we cross Chinese to American chestnut and then backcross to American at least three more times, selecting for blight resistance and American characteristics each generation. The purpose of the backcrossing is to make the trees as American as possible, while bringing along the Chinese genes for blight resistance.

In step two, we intercross distant backcross cousins to increase the level of blight resistance, while maintaining the same percentage of American chestnut. We do this because blight resistance is not completely dominant. We need to have moderate blight resistance coming from both parents in the cross to have progeny that have strong resistance to the blight.

This summer was the first time we had Carolinas backcross trees selected for blight resistance that were flowering, so that we could make the first intercross seed. Pollen from a tall, moderately resistant backcross tree at one of our orchards in Haywood County, N.C., was used to pollinate other moderately resistant trees at an orchard in Ashe County, N.C.

[See B3F2 / Page 6](#)



Louis Acker, Allie Funk and their family members are pictured in front of one of the moderately resistant trees in Ashe County that was the female parent of the intercross. Louis and Allie will host our chapter picnic on their farm on Saturday, Nov. 7. Photo by Paul Sisco.





Louis Acker and Allie Funk's farm in Creston, N.C., where the Carolinas Chapter orchard tour and picnic will be held. The 500-acre farm and woodland is situated in a broad valley at the foot of "The Peak," Ashe County's highest mountain at 5,100 feet elevation. The backcross chestnut orchard that Louis and Allie maintain is shown mid-picture. Photo by Doug Gillis.

Orchard tour slated for Nov. 7

Louis Acker and Allie Funk will host the Carolinas Chapter-TACF fall orchard Tour and picnic on Nov. 7, 2009, at their farm in Ashe County, near Creston, N.C.

Registration will start at 11 a.m. and orientation to the day's activities at 11:30 a.m. Lunch will be served starting at noon. Louis and Allie have arranged for local musicians Amy and Alfred Michaels to play old time mountain music on banjo and fiddle during lunch.

Activities after lunch include a tour of Louis and Allie's home, which started as a one-room cabin constructed about 1870 mostly of chestnut logs. Allie and Louis acquired the house in 1988. It was expanded over the next 20 years in different stages, adding five bedrooms, a kitchen, a dining room, a parlor, and an attached spring house and root cellar.

Tongue and grove chestnut paneling was used to cover walls and ceilings in the additions.

Early afternoon, a tour of the backcross chestnut orchard that Louis and Allie tend on their farm will be led by Dr. Paul Sisco. In 2008, trees in the orchard were inoculated with chestnut blight fungus. The tour will include a discussion of the degree of resistance different trees in the orchard currently display, and you will see the resistant trees that have been selected.

A picture album of the orchard being inoculated and initial results being evaluated can be viewed at www.carolinas-tacf.org/album.php?id=85.

A seasonal Appalachian meal will be served for lunch for \$10 per person with children under the age of 12 eating free. Please advise if you have special dietary needs.

Check the weather report for the northwestern mountains of North Carolina the day before the event and wear appropriately warm clothing and footgear for walking in a grassy field. If inclement weather appears to be a factor, you can confirm that the event will be held by calling Doug Gillis, and if unable to reach him, by calling Louis Acker.

See TOUR / Page 7

Quick tips to register for the fall orchard tour:

- Confirm your attendance, number of guests and lunch plans by calling 704-542-0627 or e-mailing Doug Gillis at dgillis001@carolina.rr.com by Oct. 30.
- Registration will begin at 11 a.m. on Nov. 7.
- In case of inclement weather, confirm the tour Friday afternoon by calling Doug Gillis at 704-604-0921 or Louis Acker at 336-385-9031.
- For a sneak peek at the host home, visit www.carolinas-tacf.org and click on "photos."

Blight inoculation

By Paul Sisco
CC-TACF vice president

Some of the first trees in the Carolinas Chapter High Elevation Program (H) are getting large enough to inoculate with the blight fungus to determine which have moderate blight resistance.

Moderately resistant trees from different lineages will then be intercrossed to produce what we hope will be trees that are highly resistant to the blight. Only highly resistant trees will be kept in our final chapter seed orchard.

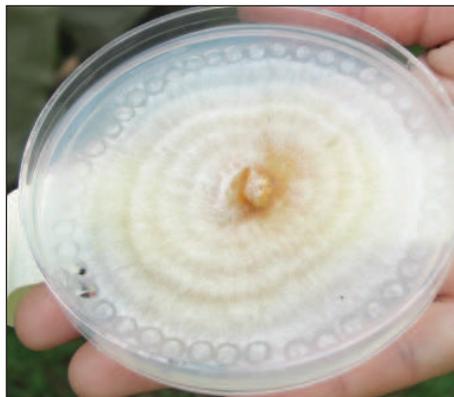
In 2006, we inoculated about 80 trees in our first chapter orchard on Newfound Mountain in Haywood County, N.C. In 2008, we inoculated 100 trees in our second chapter orchard on the farm of Louis Acker and Allie Funk in western Ashe County, N.C.

This year, we were able to inoculate five chapter orchards: (1) a second

orchard on Newfound Mountain; (2) the orchard of Steve and Jane Motsinger in Surry County, N.C.; (3) the orchard of Paul Vonk in Macon County, N.C.; (4) the orchard of Susan Wilson and Don Myers in Buncombe County, N.C., and (5) the “Long Orchard” of Joe James in Seneca, S.C. Our expectation is that about one in eight of the backcross trees in these orchards will have moderate blight resistance. The other 7/8ths of the trees will be susceptible to blight and removed from the orchard after screening.

The moderately resistant trees that remain will then be parents of the F2 generation.

At left, volunteer Russell Regnery tapes over the inoculation site to keep it moist. At right, an inoculation plate with blight fungus growing on it. At bottom, intern Alisha Goodman inserts a plug with blight fungus into the bark. Photos by Paul Sisco.



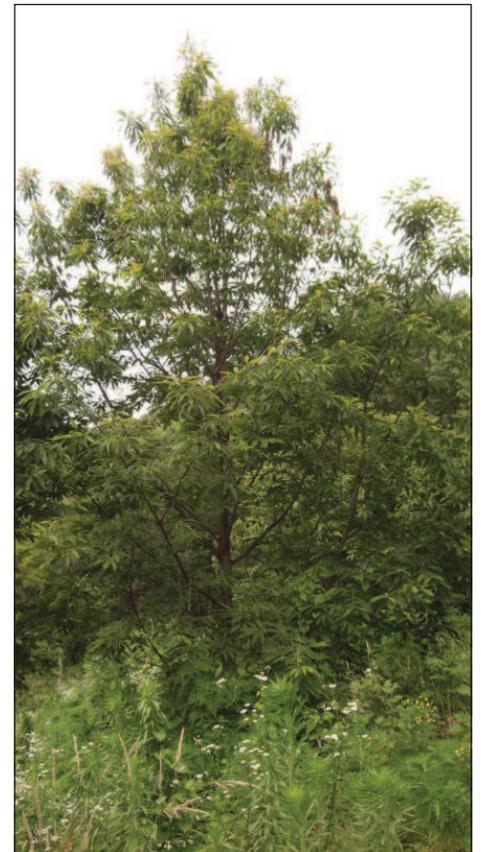
B3F2 continued from Page 4

You can see the Ashe County orchard if you come to our chapter picnic on Nov. 7 (see accompanying article by Doug Gillis). The BCF2 seed resulting from this cross will be planted in our chapter seed orchard.

We expect only one out of every 64 seedlings in this orchard will have a high level of blight resistance, so we'll need to plant a lot of seed and do a lot of culling to get the small percentage of trees that will be highly resistant to the blight.

But only these highly resistant trees will remain in the orchard to produce the F3 seed that can be used for reforestation.

Thus, our first Carolinas seed for reforestation will be available in 7 years or so. The first Virginia seed are already being produced in at our Meadowview Research Farms, so we are one generation behind.



A tall, moderately resistant backcross chestnut tree in Haywood County was the pollen parent of our first intercross. The process takes at least four generations, but CC-TACF is now on its way to having a seed orchard for locally adapted Carolinas chestnuts. Photo by Paul Sisco.

Annual meeting '09

By Carol Namkoong
CC-TACF secretary

The Carolina Chapter's annual meeting was held in Lipinsky Hall at Clemson University on Saturday, Aug. 15. It was hosted by Dr. Patricia Layton of the university's Department of Forestry and Natural Resources and attended by 31 persons. Dr. Layton and her staff provided refreshments and a delicious lunch with burgers grilled by her husband.

President Steve Bariliovits III presided over the meeting and welcomed everyone.

The main speaker was Dr. Scott Merkle, professor at the Warnell School of Forestry and Natural Resources at the University of Georgia. Scott spoke about his research on the propagation of the American chestnut using somatic embryogenesis, a type of cloning. He extracts embryos from early stage chestnut burrs, then cultures them to form somatic seedlings. Although there are many challenges in the procedure, this will hopefully make large numbers of resistant trees available in the future.

Paul Sisco announced a chapter milestone this summer with the first BC3F2 pollinations of Carolina-bred chestnut trees. It is expected that some of these will be highly resistant to the blight and will form part of the chapter seed orchard. He also spoke on current research initiatives, including research being done in Oregon on the hazelnut, which is a relative of the chestnut, and which may prove valuable in the chestnut research. He also noted research being done by Dr. Robert Leffel in Pennsylvania, whose hybrids are not controlled by TACF, and therefore may be available to people hoping to plant a more resistant chestnut.

Joe James discussed his work screening chestnut seedlings for resistance to root rot (also known as ink disease), which is prevalent in the southeast, especially at lower elevations. He hopes to find trees resistant to this disease and use them to breed resistance into blight-resistant trees.

Meg Stanton, who works with the National Science Foundation Fagaceae Genomics Project, described the work that they are doing. Four universities are cooperating to develop genetic tools to study the chestnut tree and genes for resistance to both blight and root rot. They hope to identify resistance and American vs. Chinese form characteristics at the seedling stage in the future.

More information on this work can be found at www.fagaceae.genomics.org.

*“(Joe James’) tubs of chestnut seedlings, injected with *Phytophthora cinnamomi* (root rot) are amazing – and mostly dead. We have a long way to go to have chestnut forest regeneration in the southeast.”*

A brief business meeting was held. Don Surrette, the treasurer, announced that we currently have \$25,340.22 in cash on hand, mostly in a certificate of deposit.

Board members were also elected. Members re-elected for two-year terms included Steve Bariliovits III, Lee Gragg, Joe James and Don Surrette. New members elected for two-year terms were Russell Regnery and Judy B. Sutton.

Russell Regnery is a retired microbiologist with the U.S. Centers for Disease Control and Prevention. He and his wife own 35 acres of mountain land in the Highlands-Cashiers area. He has found many chestnut sprouts on that land and recently planted a chestnut orchard with BC4F1 nuts. One of his primary interests is cultivation of native trees, including the American chestnut. Russell is involved with the land trusts in his area and with other nature organizations.

Judy B. Sutton is an active owner of the Cataloochee Ranch in Maggie Valley. The ranch has an outstanding TACF hybrid chestnut orchard. She is very involved in the preservation of the American chestnut, as is her mother and predecessor on the board, Judy Coker. Judy B. studied biology at Appalachian State University and uses that background in sharing knowledge of native plants and wildlife with the guests at the ranch.

Following the meeting, the group enjoyed a tour of Joe James' Chestnut Return Farm, as well as a description of the research he is doing. His tubs of chestnut seedlings, injected with *Phytophthora cinnamomi* (root rot) are amazing – and mostly dead. We have a long way to go to have chestnut forest regeneration in the southeast. Contact Paul Sisco at phsisco@gmail.com to find what you can do to help in this effort.

Following the tour, the Board of Directors held a brief business meeting to elect new officers.

TOUR continued from Page 5

A map showing the location of Louis and Allie's farm with driving directions accompanies this announcement.

If you go to www.mapblast.com, put your address in as “start” and Louis and Allie's address, 460 Ballou Road, Creston, N.C. 28615, as “end,” you will get driving directions and a map that you can print out. The map has a zoom feature you can use to see more detail.



Above, a map to Louis and Allie's home in Ashe County. Directions can also be found online through www.mapblast.com.

Below, doors in their upstairs hallway. The dark staining on the doors and casing is unusual and highlights differences in the styles and rails of individual doors. The surface of the chestnut wood on the doors, unlike the paneling on the walls, has a peculiar beaded texture, which possibly may be caused by a reaction between the shellac and moisture in the wood. Photo by Doug Gillis.





Carolinas Chapter Endowment Fund

Donations can be made at any time.
Make checks payable to "CC-TACF"
and note on check: "For CC-TACF
Endowment Fund."

Mail to: CC-TACF Endowment
Fund, c/o Steve Barilovits
2009 Belvedere Ave.
Charlotte, NC 28205

Louis Acker and Allie Funk will host this year's orchard tour at their home in Ashe County. At left, a wall hanging in one of their bedrooms is a gift that artist Martha Tree made for Allie. It's a batik depicting a dead chestnut stump with human roots straining to push up a new shoot. At right, the home started as a one-room log cabin built around 1870. By about 1890, the house included the original log cabin room, two stories with five bedrooms, a kitchen, dining room, servant's room, parlour with a bay window, and an attached spring house and root cellar. Though known to some people as the Maxwell House, local folks know it as the Ballou Place, after the Maxwell's only daughter, who married a Ballou and lived in the house with her husband in the 1930s and 1940s. Allie and Louis acquired the house in 1988, and in 2001, expanded the kitchen and added a small sunroom in the back. Photos by Doug Gillis.



THE AMERICAN CHESTNUT FOUNDATION

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