Chestnut Growers of America

The Chestnut Grower

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Protecting the Chestnut Crop, Bond Style

by Dusty Walter, University of Missouri Center for Agroforestry

There is a potential problem in paradise! Deer have become so abundant that weed control alone is no longer sufficient to ensure good tree growth and a bountiful nut crop. Foresters have always preached that good weed control will result in better tree growth … and it's true! In agroforestry, we continue to preach this message with an even broader application. While agroforestry practices may involve the harvest of timber, this is often in addition to annual crops such as nuts and fruit. To maximize the vigor of our trees and facilitate harvesting, it is then necessary to manage weeds in these practices. One of the nut trees we believe has real crop potential throughout Missouri (in fact, throughout much of the Eastern U.S.) is the Chinese chestnut. However, should your unprotected chestnut trees produce a heavy crop, you may end up sharing more of the crop with deer than you would like. So, what can you do? After covering several options for controlling nuisance deer, I'd like to share with you a solution used effectively by Sen. "Kit" Bond in 2008 (pictured above with his orchard's guard dogs) to keep deer out of his chestnut orchard.

If you're putting in a tree planting that requires the use of high-dollar planting stock, or an investment of your valuable personal time, then you will want to protect that investment. There are several methods available to limit the likelihood of crop loss to deer. However, none are 100 percent foolproof. Some of the popular methods rely on repellents. There are a variety of commercial repellents available, or you can mix your own. Most repellents rely on two methods of deterrent, smell and taste. However, no matter which repellent you choose, there are drawbacks. For example, (1) if purchased, they can be expensive; **(cont. pg. 6)**

In this issue:

Heading to Ohio?

Are you heading to Ohio for CGA's annual meeting? Remember, the deadline for registration is June 5 and we're making it easy to get yourself on the guest list – a registration form is enclosed in this issue.

Mail the form, with conference fee, to Ray Young, Secretary/Treasurer, PO Box 841, Ridgefield, WA 98642.

The meeting will include orchard tours, presentations, food and fun! The fun kicks off with a get-together at Greg Miller's house Friday night (June 26). The meeting and presentations will be Saturday, June 27, at FFA Camp Muskingum, Carrollton, Ohio, followed by an orchard tour. Another orchard tour will be Sunday, June 28. Miller is the meeting chairman (contact him at empirechestnut@gotsky.com or 330-627-3181). Find more information at http://www.wcga.net/annmtg.htm

(Registering after June 5? That's OK – just remember you'll likely miss out on the sweatshirt.) ***CGA***

A Message from the President

Mike Gold
University of Missouri
Center for Agroforestry

Annual Member Survey/Detailed Production Cost Information Still Needed

In my previous message I began by noting the "rough" winter conditions that were occurring across the USA. I am humbled and shocked by the horrible firestorm that took place in SE Australia in January and February. John Morton, President, Chestnuts Australia Inc., has an update on the events that took place. I am sure I speak for everyone in the CGA in expressing our prayers and support for all who experienced painful losses of loved ones and property during the devastating fire season and its aftermath.

At the outset of the fire season, CGA member Dennis Fulbright was touring Australian chestnut growers and in the first of a two-part travelogue, he shares some wonderful experiences from his visit.

Due to out-of-control deer populations in much of the eastern US, tree planting and survival has become a major concern. To establish orchards of any kind, extensive (expensive) measures must be taken to keep the deer from browsing and "buck rubbing" the trees. In addition, during harvest season, deer must be kept away from crops including chestnuts, prior to harvest. Using dogs, trained to work within "invisible fence" surrounding an orchard is an interesting idea and a potential alternative to the use of both 'hot' electric fencing and 8' high non-electrified fencing.

ATTENTION FELLOW CGA MEMBERS: In the Winter 2009 issue of The Chestnut Grower we enclosed a market survey for CGA members to fill out. To the 17 CGA members who have returned the survey, thank you (reminder: these are anonymous and no individual details will be revealed in our analyses). However, 17 surveys is too small a number for us to provide meaningful feedback to our members regarding the current market and market trends. I am hoping that we can at least double the number of CGA member survey responses after reading this issue of The Chestnut Grower. Without a much stronger response, there will not be much validity in what we are learning, the numbers are simply too small. ***So, please take a few minutes and fill out your surveys.***

Finally, best wishes to all for perfect spring weather. See you in Ohio this coming June and don't forget to register for the annual meeting.

NOTICE
The Chestnut Grower is published quarterly by the Chestnut Growers of America at 203 ABNR, Columbia, MO 65211.

Web site: www.chestnutgrowers.com

Single membership is $30 per year per person, household membership is $40 and associate membership is $50. Members receive The Chestnut Grower quarterly. For foreign delivery contact the Editor for pricing. Back issues may be obtained by members. Membership applications may be obtained from the Secretary-Treasurer.

POSTMASTER
Send address changes to CGA, c/o
PO Box 841, Ridgefield, WA 98642.

PUBLICATION DEADLINES

Fall issue deadline 9/15 mailed 10/15
Winter issue deadline 12/15 mailed 1/15
Spring issue deadline 3/15 mailed 4/15
Summer issue deadline 6/15 mailed 7/15

Australian Chestnut Industry 2009: Workshop and Wildfires

by Dennis Fulbright, Michigan State University

Dennis' recap of his recent trip to Australia will be featured in two parts; the first in this issue, and the second in the summer '09 newsletter.

My wife Jane and I visited Australia from Jan. 17-Feb. 1. The trip was part work and part vacation. I made a presentation to a chestnut nut rot meeting held by Chestnut Australia, Inc. at Tweenhills Chestnut Farm owned by John and Heather Kane. John and Heather were also our hosts and took us to other farms. Later, I also reported our laboratory findings to researchers at the University of Sydney. This is a report based on that quick visit. First, I want to say how well we were treated by all of the growers, how open and sincere they were when discussing various issues, and how impressed I was with the care they give their trees. Before I get started, I need to say how mournful we were to hear about their countrymen's suffering due to the extreme drought conditions that brought on fires, both natural and set, that have wreaked such havoc on such a wonderful people in a great and bountiful land. The fires were just beginning as we traveled, and we departed just as the fires became horrific.

John and Heather Kane in their orchard, Tweenhills Chestnut Farm.

Overall, the chestnut trees and orchards in Australia were beautiful with all the trees wearing long, dark green leaves. Most trees that I saw were 10 to 20 years old, but younger and older trees were also present. There is very little chlorosis and no obvious insect damage. The trees showed signs of rapid growth and pollen was produced in abundance by some cultivars. Other than root rot and nut rot, there are few diseases and insect pests. My overall impression of the chestnut orchards is that they show great response to the resources put into them and the future of the industry appears bright unless they begin to over-produce nuts. While impressed with the growth of the trees, I cannot help but comment on the large number of trees beginning to grow into each other, shading flower buds. Severe pruning or tree removal will probably need to occur in many of the chestnut orchards I drove past and visited.

We arrived in Canberra and were picked up by Heather Kane and taken to Tweenhills Chestnut Farm for the chestnut rot meeting. We ate lunch and talked to about 40 chestnut growers from all over Australia including Tasmania. They had toured John's dry-land chestnut farm that morning while waiting for us. The meeting started with Stephen Morris speaking about CALM storage units.

The CALM, pictured at right, is a modified atmosphere unit that keeps carbon dioxide (CO_2) at higher than ambient concentrations, but not so high as to induce foul odors and flavors. The idea is that the chestnuts are placed in a sealed plastic bag and they respire, releasing CO_2 into the sealed environment. Normal atmosphere, that is, before the bag is sealed, consists of oxygen at 21 percent and CO_2 at less than 1 percent. Once the bag is sealed and the CO_2 is produced from the respiration of the chestnut, the CO_2 concentration rises to about 16-17 percent, which will stop fungal growth and insect development. When CO_2 rises, the concentration of oxygen is reduced to less than 4 percent. The oxygen sensor will let in atmospheric gases (where oxygen is at 21 percent) if the CO_2 concentration goes too high. The CALM unit is built to hold bins of chestnuts and they are sealed at the bottom with duct tape. This sealing has been problematic. The system works best when the nuts are slightly dry and the room is cooled. The proper CALM atmosphere is achieved in two to three days. The oxygen sensor and pumps, the only mechanical parts of the CALM unit, are powered by a 5 volt (or 12 volt) DC power source. For more information, go to http://www.postharvest.com.au/CALM.htm. It is thought the unit should be good for at least two seasons. A single CALM unit should be able to handle two to four bins on a pallet.

Another speaker was Lucas Shuttleworth. Lucas is a first-year graduate student at the University of Sydney working for Prof. David Guest. He has found that up to 70 percent of the chestnuts on some farms have internal nut rot. They know that rainfall at flower time makes it worse. The disease of the kernel **(cont. pg. 10)**

Green-on-Green Grafting Guide

by Bernie Hilgart, Washington Chestnut Company

Editor's Note: *If attempting the grafting method Bernie details, please take into consideration the possible differences in season, temperature and supply needs (white vs. clear grating tape, for example) you might encounter in your part of the country.*

Ever run out of scion wood when grafting chestnut trees? Scion wood is normally obtained in the middle of the winter, January or February in the Northern Hemisphere. The scion wood is then refrigerated until needed in mid to late spring. Once your stash of scion wood is used up, that's the end of the grafting season. Presented here is a method of grafting chestnut trees using new scion wood with current year's growth (green growth on root stock). So far, the green-on-green grafting method has only been tested using the saddle grafting method (Dirr and Heuser 2009). What makes the green-on-green grafting technique different is the selection of the scion wood and the root stock or understock. The green understock refers to current year's growth on the understock. This new growth will have a bright green branch color.

Figure 1

Figure 1 is a Colossal understock with the green wood from this year's growth. The size and location of the point where the graft will be attempted is important. The understock size needs to be near the same size as the scion wood. The material at the top of the understock is Parafilm. Parafilm is used to seal the wood so moisture loss is minimized, giving the graft a better chance to take. Above the Parafilm is plain old masking tape. The purpose of the masking tape is to prevent the sun from scorching the scion wood portion of the graft.

Figure 2

The mother tree of the scion wood to be grafted to the root stock must be prepared about two weeks before grafting is attempted. Select a branch of new growth (green) of the right size. Pinch off the terminal growth. In about two weeks the branch will have developed new buds just below where the terminal growth was removed (Figure 2). In Figure 2 the bud is between the leaf growth on the right and the main stem on the left. The health of the mother tree is important when selecting scion wood. The mother tree in this figure is growing vigorously, providing excellent material for a green wood graft. When the buds are at least half the diameter of the wood the bud is growing from, the scion wood is ready for harvest.

Figure 3

Cut the prepared branch of scion wood from the mother tree at least two inches below the third bud, making sure your cut is within the green growth (current year growth). Protect the scion wood from the sun by covering with moist paper towel. Take the scion wood to the tree where the graft will be performed (root stock). Find an upright branch of new growth (green) on the root stock near the main trunk. Cut the branch where the diameter of the branch closely matches the diameter of the scion wood. With a grafting knife, make a two-inch cut down the center of the root stock branch, starting at the top of the cut and extending down the center two inches. The branch should be split in two, down the center (Figure 3 - bottom section). Refer to Figure #3. Remove the scion wood from the paper towel. At the base of the scion wood, using the grafting knife, cut the scion wood on two opposing sides to create a thin two-inch long 1/16" thick flat section. Now slip this flattened section of the scion wood into the slit in the root stock branch.

Figure 4

The entire graft must now be wrapped tightly with Parafilm, from about one inch below the cut in the root stock branch to the top of the scion wood (Figure 4). This covering is to help reduce moisture loss from the scion wood. The entire graft must now be covered with masking tape with the exception of the buds on the scion wood. The masking tape provides protection from overheating and burning the graft/scion wood.

In a few weeks the graft should take and the buds should break out. At the end of the growing season the graft should look like Figure 5. The picture was taken Oct. 1, 2007 at the end of the growing season. The growing season in 2007 was colder than normal, **(cont. pg. 5)**

What I *Wouldn't* Do Again

"A couple of things I wouldn't do again would be to aggressively prune bottom limbs off grafted trees and use bamboo stakes.

"I tried to save money using eight-foot bamboo stakes. They were, at best, good only for one growing season and were more just a security blanket by the second year, because the stakes were mostly rotted below ground.

"Since I had the 'security' of the bamboo stakes, I also pruned off too aggressively the lower limbs of the young grafted chestnut trees. Then, in the second year we had a windstorm and we ended up with 22 trees with the main trunk snapped in the wind.

"Now trees are allowed to build thicker trunk caliper by keeping the lower limbs on the trees a couple of extra years to provide better wind resistance and we spend the money on stronger 10-foot steel conduit stakes." ***CGA***

Thanks to the grower who contributed this issue's "What I Wouldn't *Do Again." We encourage everyone to pass along their stories to Michelle Hall at hallmich@missouri.edu or mail to 203 ABNR, Columbia, MO 65211. Contributions are anonymous.*

Green-on-Green (cont. from page 4)

causing the new growth to be stunted. The graft would have grown much more if the growing season were warmer. When evaluating the quality of the resulting graft, look at the size of the buds and the color of the leaves. The leaves should be a deep green with color and size nearly the same as the mother tree. Before the start of the next growing season, some or most of the branches below the graft must be removed. This is to make sure the tree remains true to the new graft cultivar. Chestnut trees love to send out shoots from the root stock. Make sure suckers are removed as soon as they form. ***CGA***

Figure 5

Reference: *Dirr, Michael A., and Charles W. Heuser. 2009. The Reference Manual of Woody Plant Propagation: From Seed to Tissue Culture. Timber Press, Inc.*

Legislation Alert You might want to note some proposed federal legislation that might affect all of the growers in our organization. Find the bill by going to the link below and typing in "Food Safety Modernization Act": http://thomas.loc.gov/home/c111query.html

The house bill addresses inspections, recordkeeping, sanitation, labeling and other areas that could affect chestnut growers. ***CGA***

CGA Slate of Officers 2009-10

The Nominating Committee will present the following slate of officers for next year at the Annual Meeting in June:

President: Mike Gold
Vice President: Bill Nash
Secretary/Treasurer: Ray Young
Directors: Sandy Bole
Dennis Fulbright
Lee Williams
Bob Wallace

Any member in good standing of the CGA is eligible to serve on the Board. Please contact the Secretary, according to the By-Laws, if you would like to nominate another member for any of the positions. Thank you.

Mike Gold, Greg Miller, Charlie Novogradac ***CGA***

Chestnut Flour Makes this Dish

The New York Times has discovered chestnut flour! See their Jan. 29th recipe for Chestnut Polenta With Ragù alla Napoletana, Eggs, Ricotta Salata and Lardo, at http://www.nytimes.com/2009/02/01/magazine/01food-t-001.html?_r=1&ref=dining ***CGA***

MU Center for Agroforestry '09 Chestnut Research

Weevils

There are relatively few scientific publications reporting on the basic biology and ecology of chestnut weevils. Consequently, there are no effective means of monitoring the weevils' dispersal and orientation behaviors. MU and UMCA researchers aim to establish a pest management strategy for chestnut.

MU and UMCA researchers (Professors Bruce Barrett, Chung-Ho Lin and doctoral student Ian Keesey) are looking to identify the major components of chestnut volatiles and evaluate weevil behavioral and physiological response to the volatiles. This will provide a comprehensive view of the chestnut weevil's relationship to its host tree. So far, weevils have responded positively to odors in catkins, burs and nuts, but not leaves.

Up next for the researchers is studying the complicated volatile profile of catkins, burs and nuts to determine to which ones weevils are attracted.

Graft failure

Chestnuts are known to have delayed graft union failures, which is a concern for nurseries selling grafted trees, in addition to orchardists establishing these trees.

UMCA researchers found late chip budding dates in September produced the greatest percentage of marketable Chinese chestnut trees. These results will make chestnut propagation more profitable for nurserymen and ensure a supply of trees for producers.

Anatomical studies are in progress to examine tissues of successful graft unions and those that failed to produce new scion growth. Low tissue moisture content at the time of grafting may contribute to successful propagation. Seedling rootstocks are currently being grown to investigate this relationship.

Dwarfing rootstocks

Mature Chinese chestnut trees can grow to 45 feet, raising the costs of pest control, pruning and harvesting. Thus, the use of dwarfing rootstocks might be a way to reduce production costs and thereby increase profitability. However, dwarfing rootstocks, in addition to tree size, also affect anchorage, disease susceptibility, precocity, and soil and climatic adaptability. Recently, MU researchers identified various chestnut cultivars as a potential source of genetic dwarfing. Studies are looking at the compatibility of graft unions and vegetative growth and productivity of trees to determine if dwarf rootstocks are feasible for chestnut.

Chinkapin grafting

Ozark chinkapin *(Castanea pumila* var. *ozarkensis)* is a threatened species with a native range that extends into southwest Missouri. Ozark chinkapin is quite susceptible to chestnut blight. The species once had commercial value for lumber and nuts, and was important to wildlife, livestock and humans. In 2008, researchers grafted several Ozark chinkapin sources onto Chinese chestnut and Alleghany chinkapin rootstocks (no Ozark chinkapin seedlings were available) to better understand the compatibility and suitability of these understocks for Ozark chinkapin. ***CGA***

Protecting the Chestnut Crop (cont. from front page)

(2) many are water soluble and must be reapplied following rain events; (3) most will need to be periodically switched as deer become familiar with a product's (or formula's) odor; and most important (4) repellents should not be applied to fruit (or chestnuts) destined for consumption by humans (there are a few compounds labeled for use on edible crops – be sure to read labels carefully).

A second option is to use scare devices. However, most scare devices, such as a propane gas canon, use noise to scare animals and also might annoy neighbors. Scare devices also have been shown to be only temporarily effective. Animals tend to grow accustomed to the sights and sounds, and are no longer frightened away.

Fencing is a third option. Should you consider fencing? Deer are high jumpers, and a fence must normally be at least 8 feet tall and extend to the ground to exclude them. There are numerous designs available, including both electric and nonelectric, with a wide range of costs (see side box, below). At the University of Missouri's Horticulture and Agroforestry Research Center, the chestnut fence is 8 ft. tall overall. The bottom half is **(cont. pg. 9)**

CGA By-Law Revisions

At the board meeting last summer, the board agreed to some minor changes in the by-laws. Please take a look at the by-laws below for voting at the upcoming annual meeting.

ARTICLE III – MEMBERSHIP

1. ELIGIBILITY - Any person(s) interested in the cultivation and use of the chestnut and who shall pay the annual dues.
   The membership of this association shall consist of the following classes: (a) Single, (b) Household, ~~(c) Honorary, and (d) Complimentary.~~ ***(c) Associate, (d) Honorary and (e) Complimentary.***
   (a) Single membership is any interested adult.
   (b) Household membership includes any two adult persons living in the same household. Each person would have one vote in Association matters. A Household membership will receive only single copies of Association mailings.
   (c) Associate membership includes cooperatives as well as other commercial or non-profit entities wishing to be supportive of the purposes of Chestnut Growers of America, Inc. An Associate Membership has no vote and will receive single copies of CGA mailings.
   (d) Honorary members are those persons who, in the opinion of the Association, have made a significant contribution to the chestnut industry. They shall have all privileges of membership but will not be required to pay dues. Nominations of Honorary members will be made in the form of a letter outlining the potential nominee's contributions and must be submitted to the Secretary with the signatures of five members who are presenting the nomination. The letter will be read to all present at the next annual meeting and voted on by ballot. A two-thirds affirmative vote is required for approval.
   (e) Complimentary members are those persons designated by the Board of Directors each year and will have all privileges of membership but will not be required to pay dues and shall not be entitled to vote on Association business. They will generally consist of extension agents or other non-growers helpful to the Association or interested in the industry.
2. ELECTION TO MEMBERSHIP - Each applicant for ~~Single or Household~~ membership in the Association shall apply on a form as provided by the Secretary and submit the form along with the required dues payment for the current year.
3. DUES - The dues shall be set by the Board of Directors. Dues are payable on or before January 1, each year. No member may vote whose dues are not paid for the current year.

ARTICLE V – BOARD OF DIRECTORS

1. COMPOSITION - The governing body of this Association shall be a board of seven (7) Directors who shall exercise the powers of the Association and conduct and control its business and property. Such Board of Directors shall consist of three officers: President, Vice President, Secretary/Treasurer, and four Directors at large. These officers shall perform the duties prescribed by these bylaws and by the parliamentary authority adopted by the Association. No member shall hold more than one office at a time. ***Board membership shall be open to any Single or Household member.*** The Directors shall serve for a term of one year or until their successors are elected and qualify, and their term of office shall begin at the close of the annual meeting at which they are elected.
2. QUORUM - Four (4) Directors shall constitute a quorum for the transaction of business.
3. VACANCY - Vacancies on the Board of Directors, other than by expiration of term, shall be filled by vote of the remaining Directors.
4. COMPENSATION - No Director shall be compensated or receive a salary from the Association.
5. POWERS AND DUTIES
   (a) The board of Directors shall set the dues, manage the business and conduct the affairs of the Association and shall carry out such policies and instructions as may be approved at any meeting of the members. The Board of Directors may establish committees for any of the objectives of the Association. All committees serve at the pleasure of the Board.
   (b) The Board of Directors shall have the power to make and enter into any contract or agreement for the furtherance of any of the purposes of the Association.
   (c) The Board of Directors shall have the power to represent the Association on the various **(cont. pg. 8)**

CGA By-Law Revisions (cont. from page 7)

boards or congresses of the horticultural industry.

(d) The Board of Directors may conduct its business by mail, internet, or fax and such voting requires each board member's vote be recorded in the Board minutes.

(e) All rights to publication of "The Chestnut Grower" reside with the CGA and under the control of its Board of Directors.

ARTICLE VIII – NOMINATIONS

1. A Nominating Committee of three (3) members, no more than one (1) of which may be a member of the board shall be appointed at least 90 days prior to the annual meeting each year to prepare a slate of officers with one candidate for each office. Nominees for officers/directors will be limited to those members in good standing who have been members as of July 1 of the year prior to their election. ***The nominating committee shall seek to reflect diversification of member geographic location, talents and objectives.*** The Nominating Committee's report and the proposed slate of officers will be made available to the newsletter editor in time for regular publication prior to the election. Ballots, if required, will be mailed at least ten (10) days prior to the annual meeting along with the newsletter or mailed separately by the Secretary.
2. Members may nominate their own candidate(s) by submitting a written petition to the Secretary at his regular address, prior to the election and including the following:
   a) A written acceptance by each nominee to serve the association for the next year.
   b) A request to place the proposed candidate(s) on the ballot with a clear description of the office being challenged, signed by at least 10 per cent of the eligible voting members listed in the most recent membership directory.
3. Nominations may not be made at the annual meeting or in any manner other than as provided in this Section.
4. If no valid written petitions are received by the Secretary prior to March 1st, the Nominating Committee's slate shall be considered to have been elected unanimously and no balloting shall be necessary.

STANDING RULES OF THE CHESTNUT GROWERS OF AMERICA, INC.

~~1. The annual dues are set at $25.00 per year for Single members and $35.00 per year for a Household membership.~~

1. Annual dues are as follows: Single membership, $30.00, Household membership $40.00, Associate membership $50.00. A $5.00 discount applies if payment is postmarked by Feb. 15. Foreign mailings may include a surcharge to cover the cost of additional postage.

Transitions at ACF

The American Chestnut Foundation has relocated its national headquarters to Asheville, N.C., from Bennington, Vt., and appointed a new president and chief executive officer, according to press releases from the Foundation.

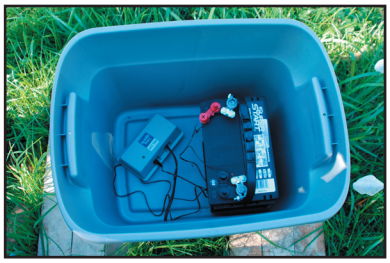
Asheville is the "heart of the natural range of the American chestnut tree," and has been the site of the Southern Appalachian Regional Office for the last several years. ACF has moved into the United States Forest Service building located near the University of North Carolina-Asheville. Asheville is also less than two hours away from the Foundation's research farms. New headquarters address: 160 Zillicoa St., Suite D, Asheville, NC 28801.

In addition, ACF announced Bryan Burhans as President and CEO, replacing Marshal Case, who will serve as president emeritus and as an adviser to the Foundation. Burhans previously served as director of land management programs for the National Wild Turkey Federation, working nationally on programs to help private landowners better manage their land for wildlife. In July, ACF announced Case's intention to transition into a different position.

The American Chestnut Foundation is a non-profit organization dedicated to restoring the American chestnut tree to its native forests in the eastern United States. See their Web site at http://www.acf.org/ *CGA*

Protecting the Chestnut Crop (cont. from page 6)

12 1/2-gauge woven wire that keeps deer from going under, or inadvertently walking/falling through. The upper half consists of six strands of 12-gauge tensile wire evenly spaced 8 in. apart to make the 8 ft. overall height. The posts are set on 9 ft. centers, and are a mix of steel and wood posts, while all corner and brace posts are wood.



One of the biggest challenges with fences is maintenance. This is especially true when using electric fences. When deer begin penetrating electric fences it is often due to a lack of maintenance. This can be the result of breaks in the fence structure, or vegetation lying across the electric fence, grounding it, which essentially turns portions of it off. Many times deer will not see a fence, and as a result of running into it, will break through. When using electric fencing, a popular method of alerting deer to the presence of the fence is by baiting them. By placing peanut butter on aluminum foil and wrapping it on the electric fence wire, deer are attracted and, when their curious nose and tongue receive an unwelcomed shock, quickly learn the area is to be avoided. Aside from the fact that some people don't like the appearance of a large fence, fences, when maintained, can be a relatively effective deterrent to deer.

A compromise between conventional fencing and scare devices is to use dogs. However, one of the short comings of this method is keeping the dog in the designated area. And, if you tie the dog, this will limit its ability to chase the deer away. This past fall I had the chance to visit an orchard owned by Missouri chestnut grower Sen. "Kit" Bond and saw a very nice nut crop being guarded by two of the friendliest dogs you'd ever hope to meet – unless of course you're a deer. For a number of years, Sen. Bond has shared his chestnut crop with a local Boy Scout Troop and cadets of the Missouri Military Academy who helped him harvest, and of course his resident deer herd. From what I saw this fall, in the future more of his crop will be going to local causes and less to the fattening of the local deer herd.

Powered by a 12-volt, rechargeable, deep-cycle marine battery, an invisible dog fence has been placed around the 3-acre Bond chestnut orchard. The fence is composed of a buried electrically charged wire that transmits a radio signal to special dog collars which warn the dogs as they approach the orchard boundary. The dogs, rescued from a local humane society and specifically trained to stay within the orchard boundary, wore collars which, as the dogs approached the perimeter fence, emitted a warning sound only a dog could hear, and then administered a static shock if the dogs proceeded and got too close to the perimeter fence boundary. Prior to being turned loose in the orchard, the dogs underwent extensive professional training to recognize the warnings associated with the buried electric fence. The dogs had a doghouse and were fed and watered on a daily basis by a local caretaker.

The result: very few deer ventured into the Bond Chestnut Orchard, and those that did, didn't stay long! An additional benefit was no fence interrupted the visual appearance of the orchard. The only sign of a "fence" was one plastic container which kept the battery and transmitter out of the weather (see photo above).

Is this solution for everyone? Perhaps not. However, when high value crops need protecting, this is one solution that is effective, aesthetically pleasing, and reasonably priced. All of this and the dogs are nice company too. ***CGA***

NUTS and BOLTS

Invisible electric dog fence:
Prices and options vary, but average $200-$300 for a do-it-yourself kit with one receiver collar and wire for .5-1.5 acres (although additional wiring can be purchased, typically up to 25 acres (avg. $40/.5 acre), as well as additional receiver collars (avg. $100)). Kits typically come with a dog training video. *Professionally installed fences and dog training is also available from various companies -- custom estimates are needed for each property.*

Conventional fencing:
Putting a fence (the type used and recommended by the MU Horticulture and Agroforestry Research Center) around one acre runs about $1,992 (about $2.40/ft). (Of course costs go down per acre when more than one acre is considered.) Materials include 24-7ft. steel fence posts; 40-10ft. steel fence posts; 24-5"x 8' round treated wood and brace posts; 12-8"x 8' round treated wood corner posts; 2 1/2 rolls of 12 1/2 gauge woven fence wire; 1-16ft. steel tube gate; 5,000 ft. 12 gauge tensile wire; fastening hardware.

Australian Chestnut Industry (cont. from page 3)

is caused by a fungus known by several names, but Phomopsis nut rot is the most commonly recognized name.

Between Sunday, Jan. 18, and Tuesday, Jan. 20, John and Heather Kane took us to five chestnut farms including their own farm, Tweenhills. Most of these farms were about halfway between Canberra and Melbourne. It is a really lovely area and a place frequented by Australian tourists. Four of these farms were more typical of an average grower in that they had somewhere between 1,000-3,000 trees with production values of 8-10 tons of chestnuts. The fifth farm was a very large apple farm and packinghouse that also grew and packed chestnuts. They had an extremely large apple business as they serviced the major cities of Australia. Their chestnut production was also the largest in the country with approximately 200 tons of chestnuts produced each year.

After touring these five farms and listening to the growers, I have been left with some impressions of the chestnut industry in Australia. Coming in the next issue are my interpretations, and my summary should be appreciated for what it is – a superficial picture of a new industry based on my short tour. ***CGA***

Read the second part of Dennis' description of his trip to Australia in the summer 2009 issue of the Chestnut Grower.

Australian 2009 Summer Bushfire Report

by John Morton, President, Chestnuts Australia Inc.

We have now completed our 2008/09 Summer and have experienced our worst bushfire season of all time. On 7th February alone we lost 173 citizens in fire storms the likes of which we have never experienced before.

The Summer looked fairly benign when we had coolish conditions in November and December along with great rainfall. The whole state of Victoria was fantastically green by the end of 2008 with really no hint of what was to happen less than six weeks later.

The first theatre of disaster was in the Gippsland region, 1 ½ hours southeast of Melbourne, centred around the Boolarra/Mirboo North area. A deliberately lit fire wrought havoc for over a week, with eight people dying. One of the members of Chestnuts Australia, Kerri and Steve Cleaver, were right in the action. They run an orchard of 900 trees, approximately half around 12 years old and producing a reasonable crop, the balance are under 5 years and were struggling a little. Kerri had mulched the younger trees in January due to a dry and hot spell, the fire damaged these trees by igniting the mulch and consequently ringbarking them, killing them. The older trees will survive but the crop is non-existent this year. Their big loss was their sheds, which contained their chestnut equipment. Only their tractor was saved, as well as their house, thankfully. The sheds were threatened by the fire and so a sky crane (affectionately known as Elvis) came along to water bomb an adjoining stand of trees, missed and wiped out their sheds, OOPS!

We were warned by the State Government and the Fire Authority, as well as the Weather Bureau, that Saturday 7th February (now known as Black Saturday) had the potential to be our worst fire risk day ever – they were spot on! The temperature reached 115 degrees F in Melbourne but as much as 120 degrees in country Victoria. It was like being in a fan-forced oven. In the mid afternoon all hell broke loose, and by nightfall there had been over 1,000 houses destroyed and countless fences and sheds wiped out. Many Australians in our rural areas establish plans to stay and defend their properties from fire; this has now been found to be quite flawed in the face of fire storms such as existed on "Black Saturday." Many poor souls had no chance against the rampaging flames and super intense heat, yet in all fire areas there were amazing stories of survival and houses standing despite total destruction surrounding them. A member of Chestnuts Australia, Tony Parisi and his family of Narbethong, a beautiful **(cont. pg. 11)**

Bushfire Report (cont. from page 10)

area 50 miles east of Melbourne, lost everything. Tony and his family are growers of chestnuts and walnuts and have carried on an agency business at the Melbourne Wholesale Market for over 30 years. Apparently they will re-build and Tony's children will hopefully re-establish the orchard.

Some of our American friends have visited Victoria and would be familiar with our 'Chestnut Axis' in the North-East, covering the towns of Beechworth, Myrtleford and Stanley. On Black Saturday and for a week afterwards, fire rampaged through this area, amazingly not damaging any chestnut orchards. The fires here licked the boundaries of many of our members' farms from the burning forest but thankfully no houses, sheds or trees were affected. It was a giant relief for all concerned.

Lessons will be learned from all this mayhem, hopefully authorities will provide complete mobile phone coverage in all of the state, all roads must be improved for escape access, roadside trees must be allowed to be removed and forest undergrowth has to be contained much better than at present. There will be much vitriol at the Royal Commission that has been called by our State Government, being held for the next six months to set up better essential services and 'living in the bush' principles! *CGA*

Italian Chestnut Beer Comes Ashore

Posted on "The Gourmet Retailer" Web site
Jan. 21 – Excitement was brewing at the French Pavilion [Fancy Food Show, San Francisco] earlier this week, where Brasserie Pietra featured two beers recently made available for purchase in North America: Its namesake amber lager Pietra and its white beer Colomba.

Pietra, the first beer brewed by Brasserie Pietra, is a bottom-fermenting amber ale that is made by adding chestnut flour to the malt during mashing. Company founders Dominique and Armelle Sialelle chose chestnut flour, as chestnuts are a symbol of Corsica.

For more information, visit http://www.brasseriepietra.com/ *CGA*

Survey "Mike" Says...

It's not too late to send in your grower surveys, enclosed in the last issue of The Chestnut Grower (Winter 2009)! Remember, those surveys are to help all of us learn more about the industry. We need everyone's insight for a comprehensive view.

If you no longer have your survey, print one off at http://www.wcga.net/survey.htm

Mail completed surveys to Mike Gold, 203 ABNR, Columbia, MO 65211. *CGA*

Add These Folks to Your CGA Directory

These registrations were received after the 2009 directory was sent. Please add them to complete the listings:

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