

# THE HOT IRON SPARKLE

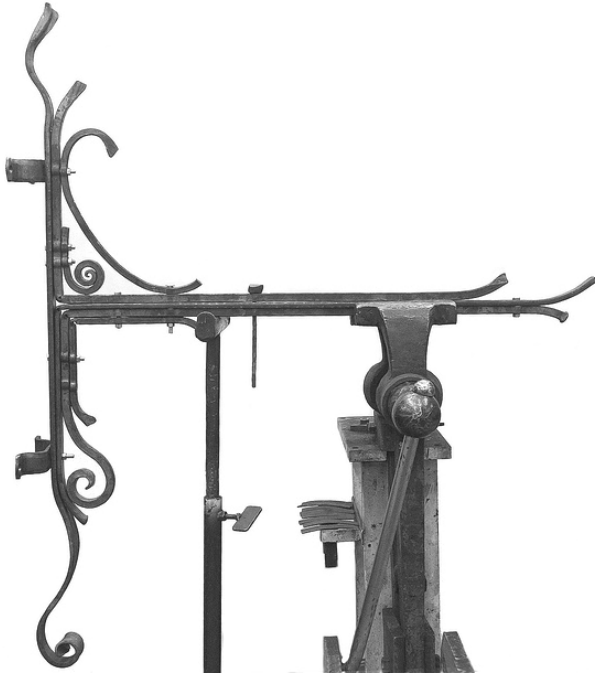
\* Newsletter of the North Carolina ABANA \*

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2nd Quarter 2011 – Apr/May/Jun



The Two Andys of Oak Hill Iron Works and Their Sign Bracket - Demonstration Project at the First Quarter Chapter Meeting -

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## A Message from Our President



**Cindy Alexander**

### PRESIDENT'S LETTER

The chapter held our 1<sup>st</sup> quarter meeting at Dean Curfman's shop (the 8<sup>th</sup> (WOW) annual) in Morganton on March 19. The two Andy's demonstrated to the crowd in the morning and then it was open forge in the afternoon. There were vendors there and a fantastic barbeque lunch was catered by Firehouse Caterers. This meeting always draws a crowd there were about 150 people attending. Thanks go out to Dean and his crew for hosting an excellent meeting. Look for the 9th annual next year!

I still want us to host a conference next year, I'll start planning one as soon as I get over Madison. There is a lot of work involved so we'll have to all work as a team to put on a good conference. I'll be asking for volunteers to help with this. This conference has the potential to make the chapter some money.

We were finally able to have a board meeting at the last meeting. I have been updating our chapter bylaws as well as the scholarship bylaws. I still need to do some more work and then get the BOD to approve them. We will publish them once they have been finalized.

By the time you receive this Madison will already be over, I hope some of you were able to make it. I'll report more on this conference in the next issue of the HIS

Our 2<sup>nd</sup> quarter meeting will be on June 25 at the Dixie Classic fairgrounds. The triad area group always has an exciting meeting for us. Hope to see everyone there.

Forge Safely,  
Cindy

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## EDITOR'S NOTES

I have to start with bad news. The roof of the Liberty Warehouse, on Foster Street, in Durham, collapsed in a thunderstorm. This happened on Saturday, May 14. The studios and businesses housed in the building were inundated with rainwater. The Liberty Warehouse formally housed Jimmy Alexander's studio. After his death, Jimmy's studio passed to NC ABANA member Jackie MacLeod. You can see some of Jackie's work on page 26 of this issue. The building has been condemned and the occupants, like Jackie, forced to move out. Many of us remember, with great fondness, the many, many meetings we had at Jimmy's shop.

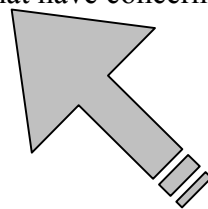
This issue is dedicated to the many NC ABANA members who responded to my request for input about what they are doing with your blacksmithing. Your responses occupy 15 pages of this issue - pages 19 through 33. I wish to thank every one of you who sent a few sentences to a few pages. You all have an open invitation to keep sending me the same type of things. This is a way for NC ABANA members to have connections with each other and to learn a little bit about each other. We are flung across the whole state of North Carolina. What do they say? It's about a gazillion miles between Manteo and Murphy. Well, it seems that way if you drive it. This newsletter, and your input to this newsletter, exist to make us feel a little bit closer together.

If you look on the inside back cover, you will see that the Southeastern Blacksmith Group is listed again as one of our local groups. Paul Whitty of the Wilmington area has agreed to coordinate this group. They have had several meetings, the last of which being at the Poplar Grove Plantation in Wilmington. The B.O.L.T.S group came and helped out and there were others who traveled a good distance to support this fledging bunch, such as Dick Snow and our VEEP, Garret Dunn. Paul was disappointed in the number of members and other blacksmiths, living in the area who turned out. He feels there are sufficient numbers of smiths to support this group and to make it grow; he just seems to be having trouble getting them involved. If you live anywhere near Wilmington, please come on out and help get this group off the ground. The local groups are an important part of NC ABANA. I see, through the meetings I attend, that the local meetings are important to the people who attend because much camaraderie and practical information is shared.

We have our second quarter chapter meeting in Winston Salem again. Marshall Swaringen is such a good host. We will be having a very special guest at this meeting: Peyton Anderson, President of ABANA. Peyton is a neighbor of ours from near Richmond, VA. He, of course, will be speaking about the advantages of ABANA membership but will be ready to answer your questions about how ABANA has changed recently, and how they have addressed the past issues that have concerned us in NC ABANA. Anyone for an anvil shoot?

Happy Reading and Good Blacksmithing,

Marty Lyon, Editor



Please Read

## SECRETARY'S REPORT

No Secretary's report this month

Marty Lyon, Secretary NC ABANA

# Local Group Meetings

## Southern Foothills Blacksmiths – Ray Clontz

Report of the **February** meeting of the Southern Foothills blacksmith meeting at Steve Barringers shop:

We had a low attendance at the meeting, but there is always some good forging and information exchange going on at our meetings. Picture 1 shows Brian Swink and I working on adding a forged-in guard to a knife blade Brian was forging.

picture 2 &3 shows Zane Carney forging a bowl

picture 4 shows Brian Swink forging his knife blade from an old file

picture 5 show Ben Andrews working on a forged heart with an arrow thru it

picture 6 shows Brian Swink and I working on Brians knife

Our meeting are not structured with demonstrations as the members want to try all aspects of forging and fabricating. Steve's shop is very well equipped with 2 Big Blu hammers, mig welders, plasma cutters, gas and coal forges, an iron worker, a hydraulic press for drifting when making hammer heads ,a treadle hammer, a hydraulic shear and vertical bandsaw for sheet metal so all types of metalworking can go on during a meeting.

I took my laptop and had a slide show of pictures I made at the ABANA conference in Kentucky, many pictures of the different demonstrations and of the art in the Gallery.



*Picture 1*



*Picture 2*



*Picture 3*



*Picture 4*



Picture 5



Picture 6

This report is for the **March** meeting as the April fell on Easter.

The Southern Foothills blacksmith meeting was held on the 2nd Sunday of March with approx 8 smiths in attendance. We had one new smith- Randy Calhoun who has been in touch with me on specs for building a tire hammer and he has it almost complete. Randy and Butch Silver made some Christoff Fredricks Crosses. Then we turned to some HC railroad spikes that I had brought and forged some RR spikes knives. The rest of the afternoon was spent discussing who was going to the Madison, Ga conference in May.

I made quite a few pictures as I mentioned to you at Deans-- But I mistakenly deleted them doing some picture of items to put on ebay. Our meetings were discontinued during the winter and we seem to have a hard time keeping our attendance numbers up - don't know about other meeting- glad to see new smiths such as Randy Calhoun showing interest- Hope to find more new smiths to keep meetings interesting.

## **B.O.L.T.S. Blacksmith Guild – Amos Tucker**

BOLTS has been active these last couple of months. We were invited to Poplar Grove Plantation in Wilmington by the smiths down there and we had a wonderful time watching Ben Kastner demonstrate forge welds and deer heads.

While we were there, we voted Don Dillon as our new representative to the NC ABANA Board of Directors and asked him to schedule our demonstrations for the Got To Be NC Festival in May and the State Fair in October. We also asked him to present our ideas to the board for changes in the scholarship program.

In early April, several BOLTS members helped demonstrate at The Pig In The Park Festival at Historic Waynesborough Village in Golsboro (Andy Anderson's stomping ground). It was truly an educational event because we had Andy Anderson making forged welded hatchet heads, Andy Wilkins making hoof picks from horse shoes, Kirt Jarrett making large holdfasts, John Sykes making his calling card wizard heads while Amy Hinson, Elton Etheridge, Dexter Langley and myself practiced making tongs.

The BOLTS group has secured a spot at the Maker Faire event on Saturday, June 18th at the fairgrounds in Raleigh. This is the second year for this event and we were asked to spread the word about it so please tell everyone you know and come out and see the show.

I am planning on sending in a story on the still but I could not this time because Andy has been dealing with tornado damage.



*Tongs Being Forged*



*Tongs Being Forged*



*Amy Hinson and Elton Etheridge practicing tong making*

*Andy Wilkins And Myself Standing Behind A Still Once Owned by George Washington. This Has Been In Andy's Family For Years, It Has A Very Interesting Story Behind It And Has Now Found It's Way Back To Mount Vernon.*



*Andy Wilkins surprised we caught him working*



*Dexter Lanley inspecting his tong*

## Triangle Blacksmith Guild – Randy Stoltz

The April 2011 meeting of the Triangle Blacksmiths Guild met April 2 at Allan Green's shop in Hillsborough, NC with 20 members and guests coming out. With only a short demo planned, I had asked several members to bring portable forges and anvils so we could have an open forging session at this meeting. We had a number of new people just getting started in blacksmithing who were planning on coming and I figured this would be a good way to get them forging.

For the demonstration part of the meeting, I showed how to make a spoon. Spoons are a good demonstration and beginning project as it is a common and useful utensil. Making a spoon involves the basic blacksmithing skills of drawing, shaping, fulling, and filing. The steps to make a spoon are also very similar those for making many utensils, tools, and decorative finials so it can be a useful learning tool. Additionally you can make a spoon as utilitarian or fancy as you want, and if it ends up too ugly to eat with you can still use it in the shop.

Following the demonstration, we fired up the portable forges in front of the shop and opened up all the forges to anyone who wanted to hammer. We had both gas and coal forges going with Dick Snow, Eric Campbell, Donnie Covalt, and others help out the new members. Several of these new folks were young enough that their parents had to bring them and it was great to see their interest for this ancient skill. Some folks worked on spoons while others worked on a variety of objects. As usual at our meetings there was a lot of questions, answers, and sharing of information between everyone there.

Allan and his wife fed us an excellent lunch featuring chili made with grass fed beef. Following lunch we continued with the open forging sessions until late into the afternoon. It looked like everyone had a good time and we had at least one person join NCABANA that day. Thanks to Allan Green for hosting this meeting and thanks to all those who brought portable forges and anvils for this meeting.

## Southeastern Blacksmith Group – Paul Whitty

The Southeastern Blacksmiths group had a meeting at Poplar Grove Plantation on March 12. We had about 10 blacksmiths in attendance and a lot of walk through spectators. Ben Kastner did demos on forge welding in the morning. He did 3 or 4 types of forge welds. In the afternoon Ben did some mortise and tenon joinery.

Amos Tucker was in attendance along with many of the BOLTS group. Amos did a demo on making a hold fast. The BOLTS guys cooked a great venison stew and peach cobbler over an open fire.

Overall we all had a great time and I would like to thank all the blacksmiths that traveled from far away to come to our meeting. Our turnout from local blacksmiths was very disappointing as only 4 local smiths attended. Hopefully we can build on that in the future.



*Ben Kastner*

B.O.L.T.S  
group doing  
the cooking



## Triad Area Blacksmiths – Marshall Swaringen

The Triad Area Blacksmiths (TAB) held six meetings in the first quarter of 2011. Now that deer season and the holidays are behind us, our attendance has gone back to more than 15 members and guest at each meeting.

I want to thank Richard Howard for arranging the purchase, delivery, and distribution of some very good coal. I do not know how many people benefitted from this 20 ton load, but I do know that it was shared with other clubs and members. I know Richard would be glad to share the source with anybody interested and he may arrange a load in the future. He will have fifty pound bags for sale at the June 25, 2011 meeting at the TAB shop at the Dixie Classic Fair Grounds.



TAB's March Saturday meeting is held at Larry Crews', Crews Ironworks, shop in Booneville, NC. We have moved this meeting to the second Saturday so members will be able to attend the first quarter state meeting. Thanks Larry and Darlene for the fellowship and lunch.

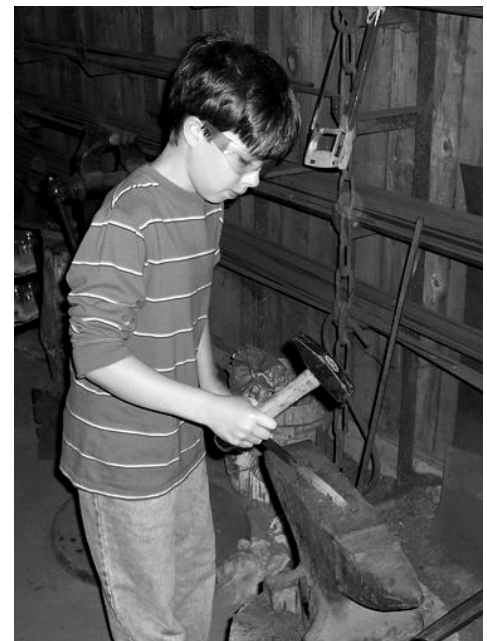
One of our younger members is Will Sears. He is home schooled and taking Japanese lessons from an instructor in



Greensboro, NC. The instructor had a relative visit from Yamaguchi, Japan to study and learn English. Miyou Yamane came with Will and joined us for a couple of our meetings. As always, we put the visitors on the forge and anvil after a short safety lesson. Miyou was shown how to draw, taper, and curl a piece of metal. She created an S hook and a J hook. She said blacksmithing was difficult. Difficult or not, she created two hooks that turned out very well for a beginner. I hope her hooks made it back to Japan OK.

Our youngest member is Samuel Wrye. Don't let his age and size fool you. His hammer may be smaller than most, sounds like someone just pecking at metal, but when he is finished, his age (11) and size do not show in the work. He is a member of the 4H club. He is doing a presentation on blacksmithing. I have ask if he would like to give it to us at one of our meetings or maybe even to the state meeting. It is great to see young people with an interest in blacksmithing. Ask him what he likes to do and he will tell "move metal".

The Second Quarter State meeting will be held at TAB shop on June 25, 2011. Meeting starts at 9 AM. The demonstrator will be Russ Wrye (Samuel's dad). Russ attended a tools making class and will be demonstrating some the techniques learned in class. If you have items to sell, please come and drop your tailgate in the parking area. We are to have a guest speaker from ABANA. Lunch will BBQ. Price for lunch should be \$6 per plate unless the price of pork goes up. TAB will have plenty of drinks and water on hand.





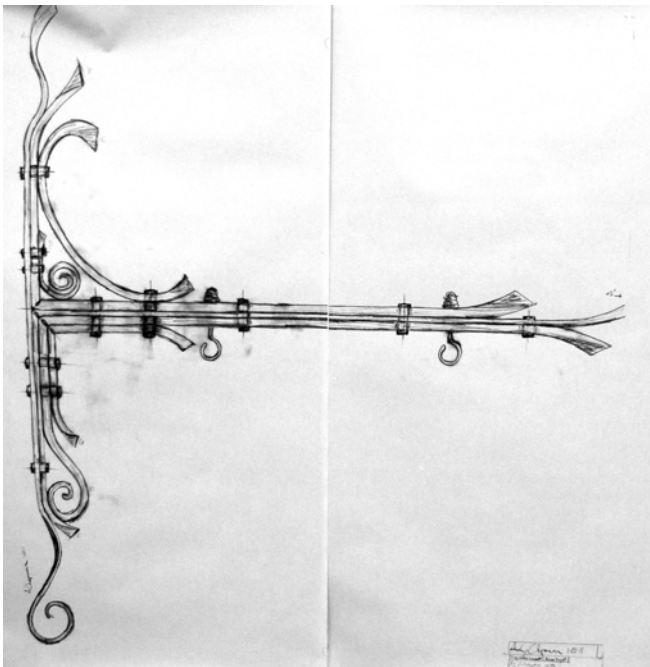
# First Quarter 2011 Chapter Meeting

## Oak Hill Iron, Morganton, NC– March 19, 2011

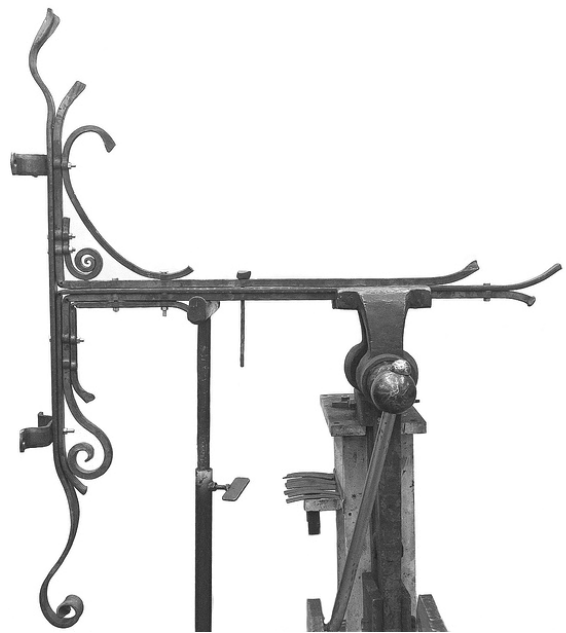
For the eighth year in a row, we have held the first quarter chapter meeting at Dean Curfman's Oak Hill Iron Shop – home of BigBlu. I guess it's starting to be a tradition.

The demonstrators were Dean's blacksmiths Andy Chapman and Andy Phillips. The two Andys made a complex sign bracket. This project used many, many skills and blacksmithing processes. The making of this bracket was really made for practice. They intend to make another as a demonstration piece at the Jimmy Alexander / Bert Smith Memorial Forging Station at the SBA conference in Madison, GA.

The board of directors held their annual meeting after lunch. The afternoon was open forge time.



*Design On Paper*



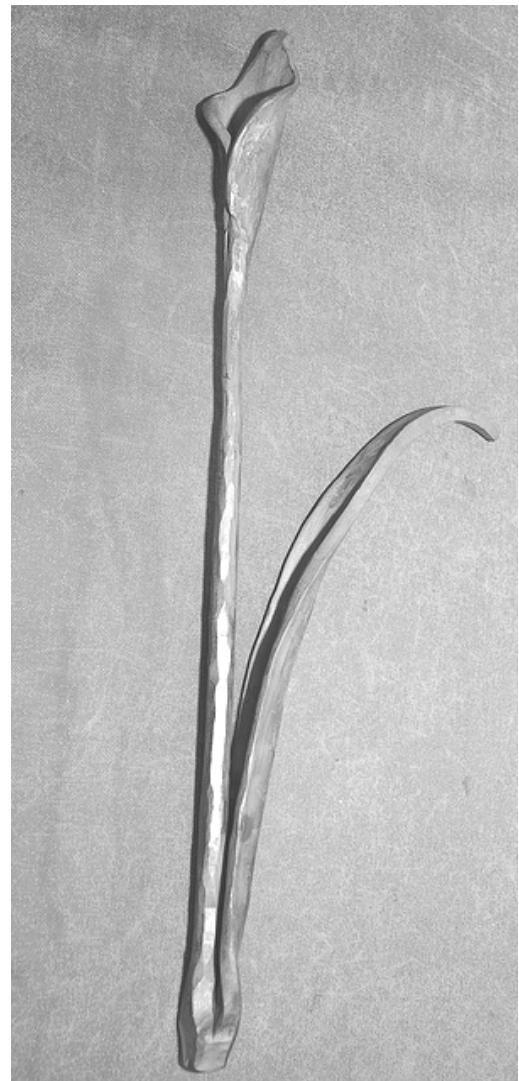
*Design Realized – Nearly Complete*



*Andy Phillips*



*Andy Chapman*



*Afternoon Demo Work By The Two Andys*



*Afternoon Demo Work By The Two Andys*

**Photos By Brian Nalley and Your Editor.  
The good ones are by Brian.**



*Looking Over Iron-In-The Hat*

## **Upcoming Chapter Meeting – Dixie Fairgrounds**

**Winston Salem, NC – June 25, 2011, 9:00 AM**

Once again, our second quarter chapter meeting will be in Winston Salem, hosted by the Triangle Area Blacksmiths. Russell Wrye will be demonstrating what he learned at the John C. Campbell Folk School.

**VERY IMPORTANT** – Peyton Anderson will be attending our meeting. Peyton is the new president of ABANA, yes ABANA, that national organization that many of you have strong opinions about – not always good opinions to say the least. But, now have an ABANA president who is practically a neighbor of ours. Peyton is also President of the Blacksmith Guild of Virginia. This group is located in Amelia, VA, just west of Richmond. Many of our members, including your editor have attended meetings in Amelia.

Peyton will be speaking to us about ABANA and will answer your questions. So please come equipped to discuss the past with him and see how he will address past attitudes.

Lunch will be BBQ, and Marshall makes marvelous BBQ, so bring your appetites and \$6.00 for lunch.

### **Directions to Dixie Classic Fairgrounds:**

From the East, South, and the West: Take I-40, switch to Business I-40/US-422 near Winston Salem. Exit at Cherry St. Cherry St. runs into University Parkway. Turn right onto W 27<sup>th</sup> St., then left into Gate 8 of the fairgrounds. The blacksmith shop is in the Yesterday Village. When you return, University Parkway will run into N. Marshall St., not Cherry St.

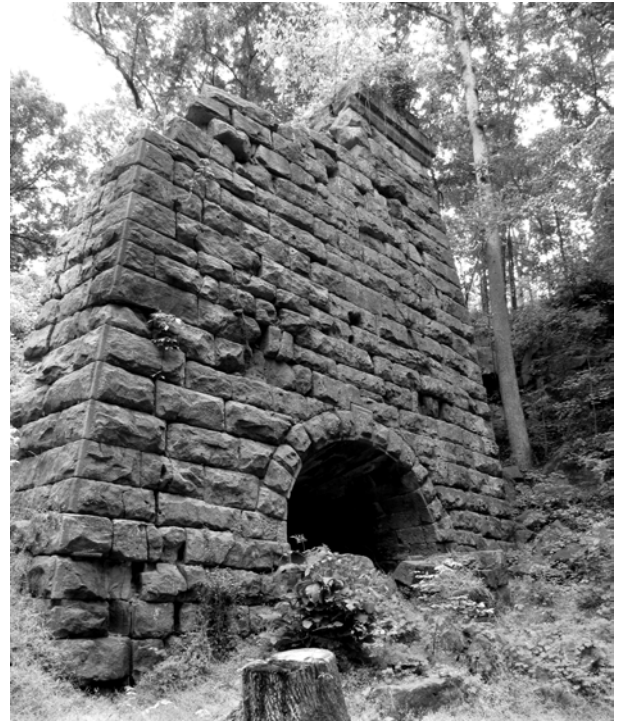
From the North: Find US-52. Exit US-52 at the Akron Drive Exit. Turn left onto Indiana Ave. Turn right onto Reynolds Blvd. Turn left onto Shorefair Dr. Turn right onto W 27<sup>th</sup> St. Turn right into Gate 8 of the fairgrounds. The blacksmith shop is in the Yesterday Village.

## The Endor Furnace – by Marty Lyon

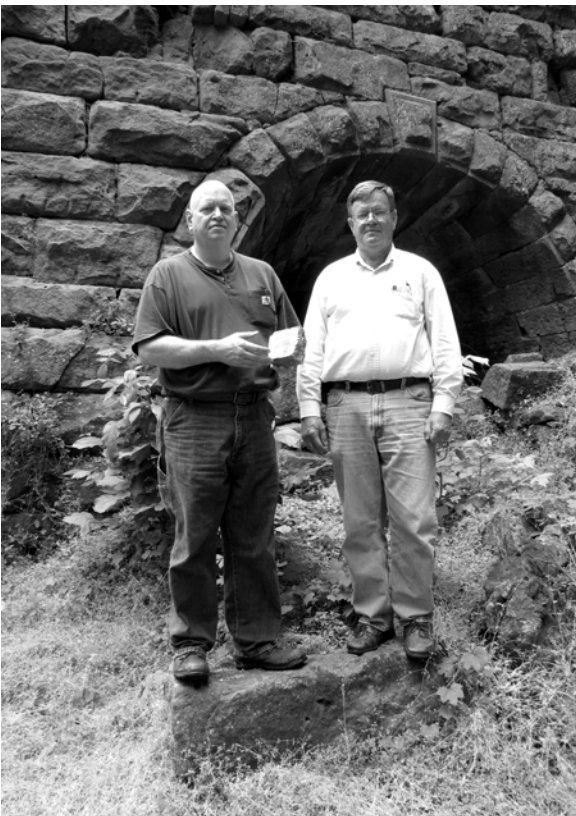
THE ENDOR FURNACE, WHAT IS IT? A stone blast furnace built in 1862 to make pig iron.

FINDING THE ENDOR FURNACE: About a year or so ago, I learned about a Civil War blast furnace that could be found near the Deep River, north of Sanford, NC. After my interview about wrought iron with Peter Ross, the time was right to find the Endor Furnace and do a follow-up article. Using a map I found on the Internet showing the location of the Furnace, Randy Stoltz and I set out to find it. After a couple hours of trudging through the woods, we gave up. We didn't find it; the location on the map was incorrect. The only thing I brought back with me was two ticks, one for me and one for Frannie, my wife.

We needed some help. Randy did a more thorough search and came up with that help. After a brief conversation with Edwin Patterson of the Railroad House Historical Association, assuring him that we had good reasons for wanting to see the furnace, he agreed to give Randy and I a guided tour. The Endor Furnace, owned by the state of North Carolina, is not open to the public and there is some



*The Endor Furnace*



*Randy Stoltz And Edwin Patterson  
Standing On One Of The Fallen Rocks Of  
The Furnace*

reluctance to have just anyone wonder in and possibly disturb the site. But, blacksmiths and iron - what two things go better together? So, off we went to see the Endor Furnace.

*When we returned to Edwin's truck we sat and talked for about half and hour. I recorded that conversation so some of what is written below is taken from that talk.*

After a short walk on a road, we hooked a left into the woods. The land was quite level up to that point. Suddenly, the land dropped with a nearly vertical cliff - and there it was. We were looking at the top of the stack of the Endor Furnace. At the bottom was a large cleared area surrounded with more woods. We could just see the Deep River at a somewhat lower level yet. It was really impressive, the way the land dropped off. Edwin says that this was natural; the land was not built up or carved out. The topography was just what was needed to make it easy to load the materials into the top of the furnace. Scattered around the top level was some of the iron ore itself. The iron is in the form of iron oxide (iron chemically combined with oxygen) called hematite and makes up about 50% of the ore. The ore looks like brown rocks. The surface color is uniform. About the only way to distinguish it from other rocks (it is non-magnetic) is the weight. It is quite heavy. Since this ore was obtained from iron bogs, it is called bog iron. The ore came from the Buckhorn Iron Pits near Corinth on the Cape Fear River, about a dozen miles, as the crow flies, from the Endor Furnace.



*View From The Top Level*



*The Furnace*

We took a path that wound down to the lower level to the base of the furnace stack. While walking on that path I noticed small, rather shiny, rocks. Edwin told us that this was the slag from the furnace, crushed up and used as a base for this road. The slag was mostly a glassy black with streaks of brown, which must be iron oxide. Randy remarked that it reminded him of obsidian, a form of silica glass. This makes sense as one of the main impurities of iron ore is compounds is silicon.

**THE FURNACE:** Once down to the lower level, the furnace stack can be seen in all its glory. It sits almost up against the wall that defines the 35 foot change in elevation of the site. The stack is 35 feet high with a square base of 32 feet on each side. The sides are trapezoidal. The stack reaches its full height on one side only as many of the stones have fallen. In fact, about all the stones have fallen on the front face (face opposite the side closest to the wall). Looking into that front side, you can see the conical inside of the furnace structure. At the base, there are arched openings. Each of the four sides would have had an opening, but with one side collapsed, only three are in evidence.

The stonework, itself, is really marvelous. The brown stone, quarried from nearby, was laid down with almost no mortar. The stones are simply set on top of each other. The sides are perfectly straight. The arched openings are beautifully made with a keystone set into the top of each arch. The sides and the edges of the arched openings are incised. If you look into the openings you can still see some of the firebrick that was used to line the furnace. The whole thing is just beautiful. Standing there you think you are looking a Mayan temple on Yucatan or Guatemala.

**RUNNING THE FURNACE:** The original reason for building the furnace where it stands was the discovery of bituminous coal at the Egypt mine. By this time many blast furnaces were using coke as the source of heat and carbon (much more efficient than charcoal). However, it appears that the owners of the Endor Furnace and the owners of the Egypt Mine might not have gotten along because the Endor Furnace used charcoal, not coke. The McRaes owned land with some surface coal.

Coal would have been used, however, to power several steam engines. There is evidence of a steam engine at the upper level that must have been used to pull carriages loaded with iron ore, charcoal, and, the flux to the opening at the top. There was a depression, lined with stone in the ground that looked to accommodate the bottom of a flywheel. Another steam engine would have powered the bellows used to blast air into the furnace.

The heavily forested area provided the trees for the charcoal. Making the charcoal was a dirty, nasty job. Most of the 80 people running the furnace would have been employed to cut down trees and make the charcoal.

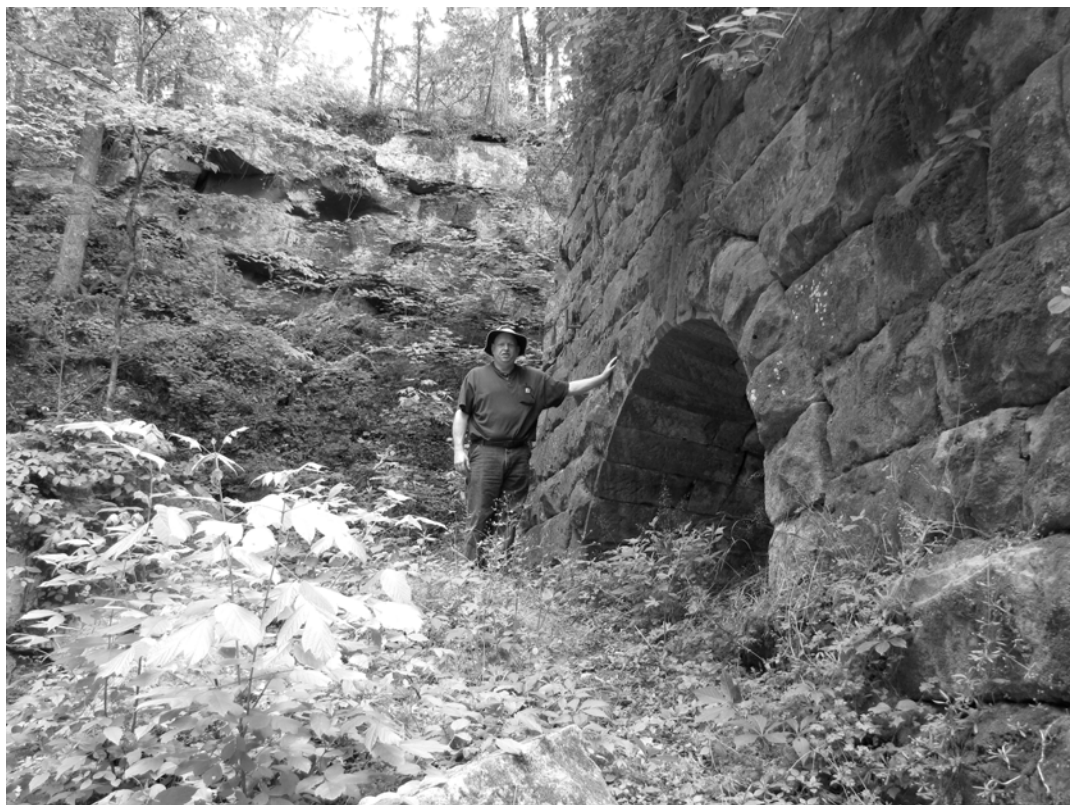
Once a fire was started in the bottom, air was blown in through a metal tube (tuyere), which may have been 6 to 8 inches in diameter. The iron ore and more charcoal were added at the top. One other item was added at the top and that was calcium carbonate. The most common form of calcium carbonate is limestone. However, it appears that limestone was not available. This was during the Civil War and the time of the Northern blockade of Southern shipping ports. It seems that the solution to this deficiency was to use oyster shells, which are also calcium carbonate. These would have come from the coast. There were oyster shells found at the top of the furnace stack.

As the material fell through the furnace, it became hotter – much hotter. The carbon (charcoal is nearly pure carbon) combines with oxygen from the air blast to form carbon dioxide, which combines with more carbon to form carbon monoxide. Carbon monoxide reacts with the iron oxide in the ore and removes that pesky oxygen to make elemental iron. Some of the carbon is infused with the iron so that about 6% of the final product is carbon. This is the product of the blast furnace and is called pig iron. Its carbon content is too high to even make cast iron (about 2% - 4% carbon) so further processing is required. This would have been done elsewhere, probably in Fayetteville or Richmond.

How about those oyster shells, what is its calcium carbonate used for? Iron ore is not pure iron oxide. Much of the rest of it is just rock which consists of silicates. Calcium carbonate reacts with the silicates to form calcium silicate, which runs down the furnace to form a layer on top of the molten iron. This material is the slag mentioned before.

After the batch is completed the pig iron would have been dug out by hand with pick axes at the four arched openings.

**TRANSPORTATION:** The Endor Furnace is within view of the Deep River so one would think that raw materials and product would have been transported by boat. Not So. The Deep River starts, at its upper elevation, east of Kernersville and runs into the Haw River near Haywood. During that run the river falls quite dramatically. In spite of its name the river is shallow. A series of dams and locks were built in the 1840s and 1850s to make it navigable. All but one of the locks was built of wooden timbers that would rot in a couple of years. Unfortunately, they were not maintained. By the time the furnace was constructed, in 1862, the system was in disrepair.



*Randy By  
One Of  
The  
Arched  
Openings  
– Note  
Sheer  
Cliff Wall  
Behind  
Him*



*Fine Stonework. There Was A Figure Carved In The Keystone But It Was Not Clear What It Was*

John W. R. Dix built the furnace. All three were from Wilmington. Unfortunately, John Dix died of yellow fever in 1862. Yellow fever was probably brought into Wilmington by blockade-runners coming from the Caribbean islands.

The McRae brothers were looking at land on the Deep River before the Civil War. Coal mining was just getting started in the area. They bought some property there as early as 1859. One of the McRaes was president of the first railroad in North Carolina, the Wilmington to Weldon Railroad. They had engineering interests and were highly educated.

They built the property where the furnace now stands in June of 1862. The construction was supported by the Confederacy. It was one of the largest operations funded by the Confederacy in North Carolina. After their contractor, hired to build the furnace, abandoned the project before completion, Donald McRae moved to Lee County from Wilmington. At that time Lee County was a part of Chatham County. Donald took over and finished the furnace and put it into production. It was "in blast" in early 1863.

There were many problems operating the furnace and production never reached the levels they had anticipated. They thought they could have gotten 21 tons a day of pig iron every day. More realistic production would have been about 7 or 8 tons a day. They probably never even reached those levels. The furnace was run intermittently. The McRae brothers started looking for a way out and in 1863 sold it to a group of investors from the Richmond area who had their hands in the war. One of the investors was Edward Spiller from Spiller and Burr of the revolver factory. It is not clear how much they ran the furnace. One thing of note is that by wars end, the area had not been touched by an invasion of the armies from the union.

The furnace sat dormant for years. At the end of the war, people tried to find the owners without luck. George Lobdell bought it at a bankruptcy auction held on the steps of the Chatham County courthouse, in Pittsboro, in 1870. (At that time, Lee County didn't exist, it was Chatham County). The whole property was purchased for a few hundred dollars. Lobdell owned huge manufacturing facilities in Wilmington, Delaware and they were making cast iron railroad wheels for the union. He was the largest cast rail wheel manufacture for the North. He had plans to build slitting mills and rolling mills between Endor and the iron pits. A lot of money was spent and they were just getting into production when the ore ran out at the Buckhorn iron pits. After that, the entire operation was shut down. By 1872 or 1873 it was just dead. The furnace has been dormant ever since.

The pig iron was transported to Fayetteville by railroad. The Western Railroad, that ran from Fayetteville to the coalmines passed within a mile of the furnace. This closed end railroad (did not connect to any other rail line) was chartered in 1852 and was about 43 miles in length. It was known locally as the Coal Field railroad. If you visit the furnace, there are two railroad lines that parallel each other near the furnace. One of these railroads is very close to the site, but this a new railroad run by Norfolk Southern. It is the other, more distant line that served the furnace. From Fayetteville, the pig iron would have transported by barge to Wilmington.

HISTORY OF THE ENDOR FURNACE:  
Brothers John and Donald McRae and partner

**PRESENT OWNERSHIP:** Several years ago the Triangle Land Conservancy bought 426 acres of property along the Deep River, including the site of the furnace. They turned the land over to the North Carolina Department of Cultural Resources and that is how the furnace came under state ownership.

The Triangle Land Conservancy is a group to be admired. It's mission (from its web site) "is to protect important open space—stream corridors, forests, wildlife habitat, farmland and natural areas—in Chatham, Durham, Johnston, Lee, Orange and Wake counties to help keep our region a healthy and vibrant place to live and work." They do this by purchasing land.

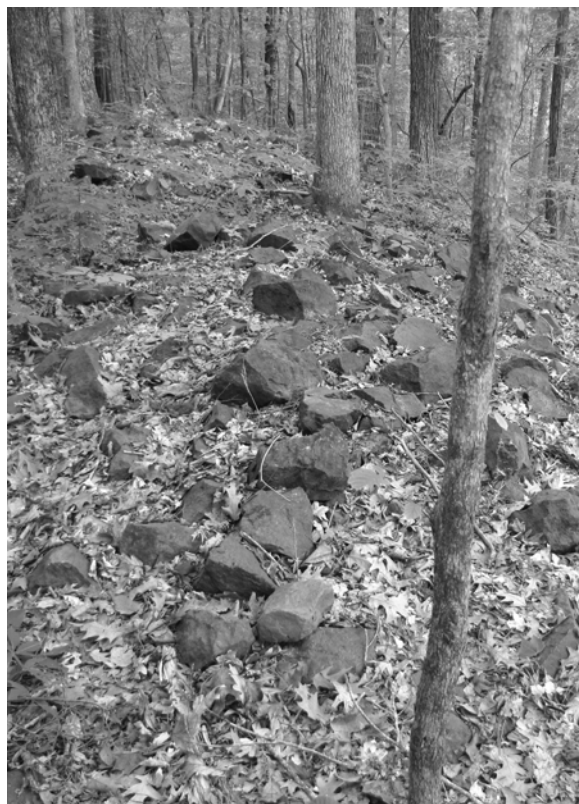
Triangle Land Conservancy wanted the land because it was on the river and they did not want it developed. Edwin Patterson said, "They are not into history, but, the Railroad House Group, in Sanford, is interested in history. We were an ally of the Triangle Land Conservancy in the fund raising effort to purchase the land. For them the furnace was a bonus. They were after the mile or so of river and stream frontage that they wanted to protect. The Railroad House has been involved with the NC Department of Cultural Resources from that time. We are trying to raise money with the ultimate goal of creating a State Park. It will take more than the 426 acres; they generally want about a thousand acres. I can envision hiking trails, canoeing trails, and family facilities, with perhaps a visitor's center, explaining the iron making business, and how it was done. We have been trying to raise money to stabilize and restore the furnace. That effort would take about seven to eight hundred thousand dollars. We have raised about a quarter million of that."

**EDITOR'S NOTE:** If you would like to visit the Endor Furnace, I would suggest that you form a group. I'm not going to provide the exact location here. To get a tour you can contact the Railroad House at the number below. You can also contact me.

If any of you are interested in volunteering to work with the Railroad House in their efforts to restore the Endor Furnace, or if you wish to make a financial contribution, you can contact them at: **Endor Iron Furnace Campaign, c/o Railroad House Historical Association, Inc.** Post Office Box 1023 ~ Sanford, NC 27331-1023 ~ Phone: 919-776-7479.



*Collapsed Face. Note Conical Structure Inside*



*Iron Ore Scattered On The Ground*

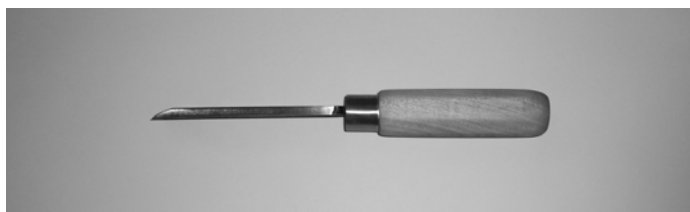


# Scholarship Report – Russell Wrye

## Forging and Heat Treating Your Own Tools

I would like to thank the NCABANA Board of Directors and the W. Dean Taylor Memorial Scholarship Fund for allowing me the opportunity to attend the John C. Campbell Folk School. I attended a week long class taught by Dave Smucker and assisted by Anthony Goodrum with emphasis on making your own woodcarving and blacksmithing tools. This class was aimed at distinguishing the different types of steel and how to forge and heat-treat tools without expensive equipment.

Many different techniques were discussed during the week, but I would like to concentrate on one particular tool that I created. It is a wood chisel.



*Russell's Wood Chisel*



*Russell Wrye At The Forge*

First, I begin by using 7/8 inch round stock approximately one foot long. The stock is heated and drawn out to desired length, keeping it approximately 7/8 to 1 inch wide by 1/4 inch thick. This particular chisel is drawn out to about six inches long, reheated then cut off with the hardy cutter so only the flat part of the piece is being worked at this point. You could start with flat stock if it is the type of steel that works for the tool you are making.

Next the piece is heated to a good orange color and one end is drawn out and tapered using the edge of the anvil. A guillotine works well if one is available to make an offset starting approximately 1/2 inch back from the end. You want to keep flipping the piece over in order to keep the offset in the middle of the stock. The part that is being tapered needs to be about 1/4 to 3/8 inch thick at the base and gradually down to a point at the end, maintaining the square shape to the taper. This will become the tang of the tool which will later be inserted into the wooden handle.

The other end of the piece is now tapered on the horizontal of the flat in order to create an edge. For a wood chisel, at this point you want to bring the bevel down to about a 30 degree angle. The final edge will end up with a 15-20 degree angle, but only right at the cutting edge. This process can initially be done on the anvil or at a grinder. I used a large belt sander but the end result will be the same.

Once the forging is completed, you want to “normalize” the piece. That means do not quench at this point, just let it air cool. This helps reduce stress in the piece and because it is going to be a tool you don't want it to crack. Normalizing is actually the first step in the heat-treating process.

After the rough work is done at the forge, it is time to grind. I use a belt sander with a fairly course grit to begin with then change to a finer grit. A belt sander works well because this particular chisel is flat and it is easier to maintain better alignment. I sand only the blade side and the bevel of the edge because I like to leave the backside with the hand forged look. This step is to give an initial polish to remove much of the rougher attributes of forging so that after heat-treating process is complete, less polishing is necessary. After the piece is sanded to the desired finish it goes back to the fire.

The next step in heat-treating is to slowly heat the piece at the forge. I take about 10-15 minutes with the piece on “top” of my fire to bring the temperature up. I don’t put the piece down in the fire because I am only raising the temperature, not forging at this point. The goal here is to bring the temperature above “critical”. Critical is the term used for the temperature at which the metal loses its magnetic properties. Do not overheat because it will crack. Depending on what steel is used the critical temperature will be different. I keep a fairly good size magnet on hand and continually remove the piece in order to check it with the magnet. Once you reach critical it is a good idea to maintain the piece at that temperature a little longer. This is called the “soak time”. Soak time is also relative depending on what type of steel is used and how thick it is. In this case I let the piece “soak” for about 3-5 minutes. Depending on the size of the tool and its use, you may want to heat the entire piece to critical or just the edge.

After the piece has achieved critical and its soak time is completed, it is time to quench it. For this chisel I use O1 steel, which means it is necessary to quench it in oil. In the class we used hydraulic oil, but others would work, like vegetable oil, but it also spoils and turns rancid. Oil does have a flash point at which it will ignite so when quenching in oil it is necessary to have a lid that fits the slack tub well. I hold the lid in my left hand and the piece in the tongs in my right while quenching. It is also a good idea to get the piece way down in the tub even wetting the tongs is good.

Once the quenching process is complete, the next step is to quickly get the piece back up to tempering temperature. In order to achieve this step I used an oven to temper the piece. This is called “oven tempering”. A regular home oven or even a toaster oven can be used for this process, just be sure to use an oven thermometer. Don’t trust the dial settings. This piece is placed in the oven for 2 hours at 400 degrees. O1 and W1 steel needs a tempering temperature of 300-600 degrees for 2 hours. It is important to get the piece back up to tempering temperature quickly because once it is quenched it is under a lot of stress and the longer it is stressed the more likely it is to crack. After the 2 hours is up let the piece slowly air cool, this continues to relieve the stress on the piece. Different steels and different temperatures will yield different levels of hardness in your tools.

Now that the piece has cooled it is ready to give the final sanding, polishing and sharpening. This process is again achieved on a sander. It is critical at this point not to overheat because the temper will be taken back out of the piece and the process will have to start all over again so keep that can of water close. Polish to the desired finish. Now the metal part of the chisel is set aside.

After the forged part of the chisel is finished I begin working on the wooden handle of the tool. The handle is made out of a piece of red oak 2”x2” that is ripped on a table saw which is placed on a 45degree angle in order to turn the square into an octagon, then cut to the desired length. In this case I cut a 6 inch section for the handle. After the shaping into an octagon this piece was about 1 3/16 inch in diameter. On the drill press, I clamp the handle in a jig to hold it in place vertically and used a hole saw to cut the ferrule on the end about 1 ½ inches down from the end, then trimmed off the excess with a coping saw around the outside edge. This process drills the center hole to accept the tang of the chisel and prepares the ferrule as well. Then I used a ¾ inch long section of ¾ inch metal electrical conduit for a ferrule cap. This keeps the end of the handle from splitting as I drive the handle onto the chisel. The handle is then assembled and sanded as one unit in order to give a cleaner look.

In order to assemble the entire tool I heated just the tip of the tang of the chisel to a light red and put it in the vise vertically, tang end up, then drove the handle down on the tang with a wooden mallet. This fully embeds the chisel into the handle. Sometimes the metal end may need to be quenched again depending on how hot the tang is. I sand a little more and oil to give the wood and metal a nice finish.

The tool made here is just one of the tools that were made but the principles of heat-treating are basically the same, there are other methods and details, but these steps work for many different applications. This class was a great experience and Dave and Anthony made it even more enjoyable. They were a great wealth of information and help. Thank you again for letting me be a part of this class.

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# What's Been Keeping You Busy

By NC ABANA Members

**EDITOR'S NOTE:** A couple of weeks ago I sent out emails to everyone I know who has an email account asking you to tell me what projects you have been working on, have completed, or are planning. I said it could be a sentence or two to whatever length you wanted to submit. The response was a little underwhelming so I resorted to what any poor editor would do: I laid a little guilt on you all in a second email. Then: Va Va Voom – your emails started pouring in. I can't tell you how happy that made me.

I put in every response I received. I checked my email a couple of times to make sure I did not miss anybody. If I did, please let me know and I will put yours in the next newsletter. I did a little editing, not much - mostly where Word flagged spelling and other stuff. I tried to put in all the photographs, but I did eliminate some if I thought the photo would not reproduce well, or if the subject was covered in another of your photographs.

Some of your responses were so comprehensive; they could have been made into a stand-alone article and some of you may have wished for that. However, I decided, for better, or worse, to assume that you were responding to my email request and put them here in this article.

This is an open invitation to any of you to submit a similar article to me at any time. This is not limited to this issue. The most important content that goes into "The Hot Iron Sparkle" comes from you the members.

Here is what you all sent, in no particular order:

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## From Paul Bourgalt, Rose Hill, NC

As a farrier 1st and a blacksmith 2nd.....I am very busy teaching my son how forge a piece of steel into a theurapetic horseshoe( called a Patten Shoe ) for his lame pony using a gas forge. The challenge for me is not being in Massachusetts to help him personally.....we use cell phones, email xrays and wireless laptops to view instant results....



The shoe was a perfect fit the 1st go around and now the pony is able to make the trip to the Equine Clinic in New Hampshire in comfort.

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## From Allan Green, Hillsborough, NC

At the moment, having infected yet another of my sons (the most serious case yet) with an interest in blacksmithing, I am working with Dan to practice forging with coal while he and his sweet wife, Liza, are in town from NYC for a few days. He is already more skillful than I am, but not as versatile, which is the story of my life. All my sons are better craftsmen than I am, just haven't lived as long. Next week (the 14th) Cody Howdeshell and I are going to St. Pauls to do the blacksmith demo at the Arts Festival there. I'll write something for the Sparkle on our experience.

**From Chris Bradley, Roxboro, NC**

### **MAKE A DATE WITH YOUR ANVIL**

They say that the Road to Hell is paved with good intentions, if this is true, I have laid more of the stones than I care to remember. I seem to remember a time when I had more time to do things. Life seems to be moving faster and I never seem to catch up. Businesses cut back on people and expect more from those that are left. I'm thankful to have a good job but satisfaction in a "job well done" is harder to achieve these days. This makes getting the Honey-Do List and yard work harder to get done because of the longer hours at work. There are birthdays, anniversaries, school functions, and other social events that must be planned and or attended. Count in a few colds and unexpected events and you have totally taken all your time for leisure away.

Now I'm new to blacksmithing. It is something that has fascinated me since I was a kid. I've worked with metal a good part of my life, mostly welding and machining. A couple of years ago a good friend of mine started up a coal fire and handed me a hammer. I've been hooked ever since. Here's where my starting paragraph falls in to place. I never seem to be able to find myself holding a hammer and beating a hot piece of metal. I make plans but other things get in the way and most of the time the things that come up are important. I finally got my coal forge built and my gas one is almost finished. I thought that having a forge here at home would help me get more blacksmithing done but I have actually done less.

I've decided to do something about it and the idea was the simplest thing that I've ever heard. My wife said that you have a work schedule, a gym schedule, a fire department meeting and class schedule. Doctors appointments and other such important things are planned out, so why not make an appointment to work in the forge. Make a date with an anvil and see how much fun you can have! Simple, ain't it! If anything I've described relates to you, take your anvil and hammer on a date. Spend some quality time getting better at blacksmithing. Who knows, the next time that Marty asks for some info on our current projects he will need to wait a couple of newsletters before he dares to inquire again!

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**From Chris Dietz, Hedgeville, WV**

I haven't been doing too much new in the shop, just the same old stock. Lately I've been working on a bunch of brooches for a wholesale customer of mine. These brooches are made of stainless steel or nickle silver measure about 2 1/2" long.



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**From Chris Paul, Hillsborough, NC**

I've been planning a propane forge for awhile now, and have all the parts to finish it up, but could use some help from experienced folks. Got the burner parts and refractory materials from Ellis Custom Knife Works, and an 11 gallon air tank for the forge body from Harbor Freight. Anyone near Durham/Chapel Hill who wants to help me finish putting it together gets to name their beer, and I'll throw in the pizza.

**From Chris Williams, Fayetteville, NC**

Lately I have been creating damascus for knives using 1084 and 15n20 steels, heating them up to 2300F and forge welding them together using borax as a flux for knife stock. I also been creating tomahawks using 16oz ballpeen hammers I have been purchasing locally. Its been a hoot and I have been hosting between 1-5 new knifemakers every Saturday. I create knives from everything from Old files, to my damascus or stainless steels depending on the use of the knife. I just do it for fun and I don't sell my knives yet, Afraid it might turn into a job.



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**From Dave Tosi, Pfafftwon NC**

I am currently working on a one half scale swan using a sheet metal body and forged appendages.

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**From Tom Pangborn, Carthage, NC**

Having reworked a 100 year old forge from the mountains of North, Carolina, I now operate a primitive Blacksmith Shop in Carthage, NC. I started the forge in the summer of 2006. I am a retired Engineer/Artist. In other words, I was able to use both sides of my brain. However some may disagree with that point There is a beautiful Iron Wall located in a walkway in downtown Troy, NC which was commissioned through the Arts Council of NC. This wall stands 6' tall and 12' long. It depicts the Uhwarrie Mountains and the Little River. This was created by Pangborn Forge. Stop by and see it if you get a chance. My latest project has been creating and forging special hooks for an assisted living facility in Jackson, MI where my mother stays. They are blunt nose hooks with brass covered leaves on the other end curled and bent. Used a brass brush to create the leaf color.



**From Gail Beavers Wall, Winston Salem, NC**

Working on some new art pieces for a spring art show in King, NC! I'm recycling iron and signs I got at the scrap yard in Ashville years ago!



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**From Mark Balent, Charlotte, NC**

I am s l o w l y working on finishing a small cross peen hammer made from cable damascus. I'm planning on giving it away as a gift but will take a picture for the newsletter prior to that.

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**From Russell Wrye, Mocksville, NC**

My son Samuel and I are members of the Triad Chapter and we purchased a forge for our home a couple of years ago but never got it going. It has been gathering dust in our barn since then. A lot of dust. We were procrastinating and waiting for the "right" time to fire it up. Well I am pleased to say that through the coal order that Richard Howard brought in a little while back, we finally got it up and running. It's not the ideal setup, but it works for now and we are having fun. Sometimes we get so busy being busy that we forget to have fun. I hope this tells you a little of what we are working on.

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**From Joshua Snead, Apex, NC**

Being a new smith I've been gathering whatever tools and experience I can. Currently I am finishing the face of a piece of railroad rail to use as a temporary anvil. After that's done I plan to finally finish my first bowie knife.

### From Jim Moore, Morganton, NC

A couple of years ago I began making garden trowels from drops of 1 ½" x ½" flat bar that were cluttering up the shop. I had made a garden trowel for my wife a couple of years ago that involved a sheet metal blade riveted to a forged handle, but having the drops and a tire hammer, I thought I would make a trowel that was one piece of iron.

I use about six inches of the 1 ½" x ½" flat bar and draw about 2 ½ or 3" out into the handle. I have flat dies on my tire hammer and using the edge of the dies, isolate the handle material and draw it out to about 5/8" round. I then draw a taper about 3" long for the loop at the end of the handle.



The blade of the trowel is made of about 3 or 3 ½" of the stock. Start by drawing a very short taper. If the taper is too long, the blade of the trowel becomes too elongated. To forge the blade, I use a broad fuller that sits on top of the bottom die of the hammer. This fuller is from a drop of what I was told was T-1 when I bought it at a meeting. It's just welded to a piece of 2" x 1/8 flat bar, and I did pre-heat the T-1 before welding it and then heated it after welding. Thinking that it would get hot during forging, I didn't temper it. There is a shank welded to the bottom that fits in a piece of tubing welded to the anvil of the tire hammer

This fuller acts much like the horn of an anvil, and forging the blade is like forging a large leaf. Starting from the center, use the fuller to spread the material from side to side without worrying too much about it getting longer.

After the blade has the shape, curve it in a swage block and give the handle a curve right behind the blade. The resulting trowel in the picture is 14" X 3½" X ½" deep.

After wiring brushing the scale off, I use an initial finish of Penetrol, which is an oil paint additive that inhibits rust. If wiped on clean steel and allowed to air dry, it leaves a brown finish. In humid weather it may stay tacky, but at that point it can be dried in an oven or toaster oven. I then spray it with Helmsman Spar Urethane.

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### From Jim Gallucci, Greensboro, NC

We are working on a light sculpture for St. Louis Metro, an NEA grant to do 12 gates for the GSO Greenway Underpass, and a sculpture for the NC Veterans Park in Fayetteville, NC.

### From Jay Close, Clover, SC

Here are a couple of photos that show what has been keeping me out of trouble.

The first is a panel project I'm working up for a class I'll be teaching this August at the New England School of Metalwork. The class is on English Ironwork of the 18th c. and this project is meant to be a sampler of joinery and decoration. Even though it is a bilaterally symmetrical design, the two halves have purposefully been approached differently. One half is a single scroll, welded together; and the other half is made up of two riveted components.



Likewise, I've varied the way the heel bars are constructed and made the waterleaves distinct. I still need to tweak everything and make the collars. One collar will be a typical English "clip", assembled hot. The other collar will either be a

common, period two-piece, stirrup and faceplate design or a four-piece collar with bead moldings all around. I haven't decided yet but will probably opt for the simpler, two-piece form. One potential negative to the stirrup and faceplate is that it does have a front and a back --- perhaps that is why they've fallen from favor.

The second photo is a piece I'm working on for myself, as a way to challenge my understandings. It is a small part of a much larger and elaborate porch bracket. I liked the photo because it shows the "before" stage with all welds and branches established but before scrolling. That's the Ugly Duckling stage and then the "swan" next to it. A long way to go on this project -- a mass of forge welds all concentrated in a very small area.



### From Julia Wilson, Statesville, NC

I took a copper weathervane class at Penland last summer taught by Jim Cooper, an excellent teacher. A few months later I was able to use what I learned and was commissioned by a Statesville, NC couple to design and build a weathervane for their garden potting shed. They were very happy with the results.

**EDITOR'S NOTE:** Wish I could do the newsletter in color, especially for this photo to the right – Just Beautiful.





**From Steve Young, Durham, NC**

Here's a photo of a gate hanging at my mountain house where I have a smithy. Current project is a small table about 28" high meant as a chair side piece, topped with an unusual wood gifted by Perry Whitted.



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**From Jeff Morris, Raeford, NC**

Being a recent newcomer to the world of the NC ABANA, I Would love to be able to add to your request for individual projects from members but I am definitely a greenhorn here and I am looking to make my first official meeting with other members at the upcoming "Gotta be NC Festival" on the NC Fairgrounds May 20,21,or 23 for the Bolts Group Demo as well as see if I can find anyone out there selling BASIC Blacksmithing tools for a starter-up like myself. Appreciate all that you seem to do here for my long time interest but only recently acting upon passion for learning more about Blacksmith history and applications

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**From Brian Swink, Cherryville, NC**

Gathering parts to build a Ray Clontz tire hammer.

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**From Doug Merkel, Vilas, NC**

Here are a few things that I have been putting together. 14 May I do a one-day demo for the VA blacksmithing group up in Amilia Court House. Am in the process of forging out 25 RR spike belt knives for prizes to be given away in NC, VA, and TN IDPA pistol matches. Will be making throwing tomahawks and asps from ferrier's rasps as part of the demos in VA. Have fired up the wood lath to turn some wooden mallets and handles to be used on cold copper/tin work as well as for use on hot steel projects. The wood mallet provides a good solid blow to move the metal but it does not leave a mark on the metal nor does it knock off the sharp edges from the forged work. And last but not least by any means is that it is time to do spring cleaning of the shop.

**From Jackie MacLeod, Durham, NC**

I am installing "Windy River" tomorrow and thought I would send you a picture of the completed project. This 5' x 6' measured piece of wall art is going into a private home. It was designed together with the future owners according to their likings. They own and love several prints by van Gogh, especially his depiction of wind and the cypresses. Of course they wanted the whole thing in metal. So I designed and constructed the below piece of copper and steel sheet and the "wind" from rod. As you can see it is just lying on my studio table right now, but will be installed tomorrow. it is relatively light (under 50 pounds) so should be quite easy to install



*Inspiration: Van Gogh's Starry Night*



*I have worked with textures and heat induced color on the metal*



*Wind scrolls are hot and cold forged*



*Close up of the river. It is 18 gauge steel sheet, all hand cut, sanded and polished and then mig welded on back. Then i added some color with the torch*



*Another close up of the "river" For the finish I heated and waxed it all.*

**From Tom Como, Wake Forrest, NC**

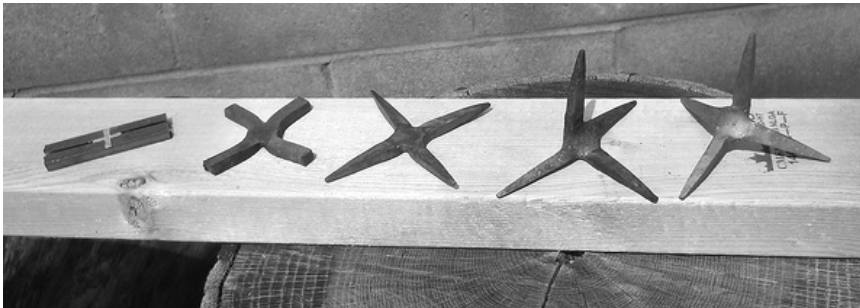
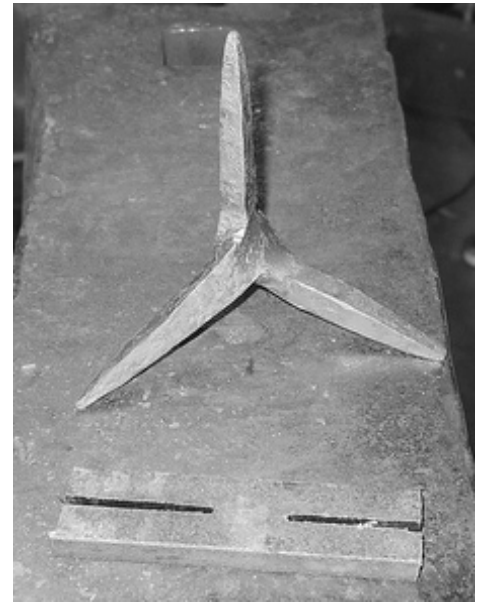
I am repairing the broken lock to a replica of an 1730's era musket for the Powder Magazine museum in Charleston, SC. I am also making tent stakes, lantern poles, and cooking utensils for Revolutionary War re enactors.

### From Eric Campbell, Raleigh, NC

The caltrop is an anti cavalry weapon I get get the occasional request to make for reenactors. They are four spiked weapon built so that when thrown to the ground one spike is always pointing up. Pictured is the progression I use for making them.

From left to right (photo below).

- 1) take a piece of 2 3/4 inch by 1/4 flat stock and slit it 1 inch from both ends so that the gap in the center is 3/4 inch which is the the same as the width of the flat stock.
- 2) 2) spread the legs into a rough plus shape
- 3) 3) taper each of the legs to a point that is the same length
- 4) 4)Clamp one leg in the vise and bend it over towards the opposite leg so that the "V" is roughly 109.5 degrees
- 5) 5) Clamp one of the other legs in a vise and bend it over towards the opposite leg so that the "V" is roughly 109.5 degrees



The plane of the two "V"s are 90 degrees to each other.

Other variants of this is to make the "plus" out of square stock the same way you do a split cross but do not overlap the split in the center.

### From Steve Barringer, Mooresville, NC

Here's what I've been doing this week: I sold about 50 feet of custom railing that has both 1/2" and 3/8" 'pickets'. All the round stock is cut in 6' lengths and cold textured with Big Blu, as well as the top rail and lower horizontals. The 'pickets' will be bent in half (to form a 'U' shape) and then bent some more to create a random vertical form. None of the vertical elements are straight, while all the horizontals are straight. I cold textured about 400 feet of round bar on Tuesday and Wednesday.. my fingers and elbows are still kinda' numb. Still a lot to do. Thanks for a great newsletter...we'll keep info coming.

### From Zane Carney, Morresville, NC

My next project will be a guitar stand.for my wife. She is not the rocker type so it will have vines and leaves but still contemporary.

**From Tal Harris, Waxhaw, NC**

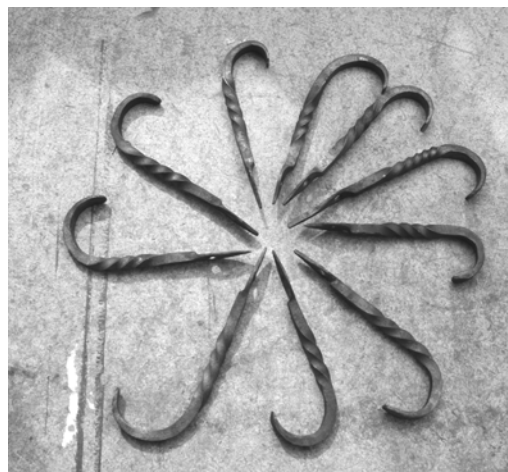
Girl Scout Troop Gets Hooked on Blacksmithing

On Sunday afternoon May 1<sup>st</sup> from 2-5PM, a local Girl Scout troop spent the afternoon getting exposed to blacksmithing. Each scout in attendance (and two boys that were along for the ride) tried their hand at making a simple hook. The hammer control was impressive and the resulting hooks can be seen in the accompanying photographs. Jimmy Freeze was on hand to help kick things off, but had to leave for a birthday event being held in his honor.

I'm not sure if any of the troop will explore blacksmithing as a hobby or career, but at least they all have tried it successively. It's another means of planting seeds and getting people interested in our work (Scouts and leaders alike).

One thing I forgot too late in the planning of the hook making event, is not everyone understands what they are getting into when requesting a blacksmithing outing such as this. I totally missed asking the leaders to require long pants, no open shoes, etc. By taking lower than normal heats and being very careful we made it through the afternoon without incident. Anyone having a similar opportunity should be sure to include all aspects of safety in their event planning process.

All pics courtesy of Stephanie Rose-Belcher



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**From Keith Berner, Hendersonville, NC**

I have just fabricated a 2x72 belt grinder patterned loosely on the "Big Red" grinder from Wayne Goddard's 50 Dollar Knife Book.

I am also forging some chasing and repousse tools from coil spring stock.

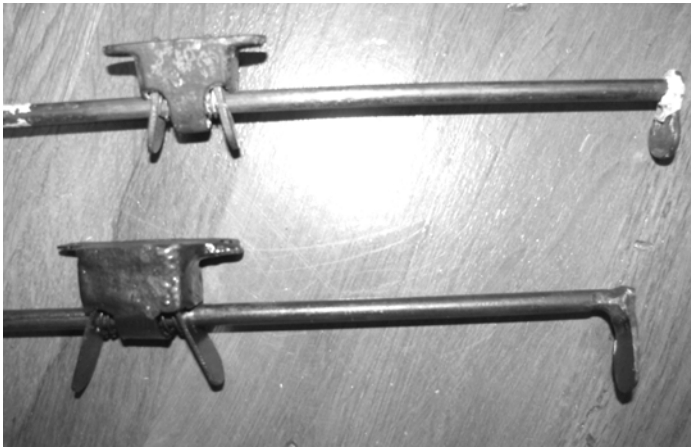
Lastly, a 3 oz. Ball pien hammer from drill rod, hardened in oil, drawn at 450 degrees F in an electric oven

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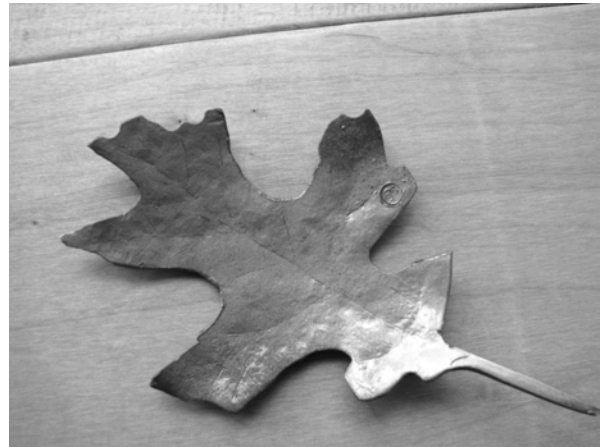
**From Tyler Rasche, Cleveland, NC**

Some projects that I have been working on: I finished a life size set of cat tails donated to the Dove House that will be auctioned off tonight, I am working on a wall art piece that will wrap around one corner of a flat screen tv using about 10 circles of different sizes and filling in some of them with metal shaped sheet metal. My next project is a 5 flower bouquet of bird of paradise with vase.

From Gordon Cable, Lawndale, NC



*Window Transom Adjuster, For Victorian House-  
Order*



*For Young Un At Church Who Helped Me Pick  
Up Oak Leaves (For Patterns), And Asking Why?*



*Extra Long Froe  
(For 18" Shakes)  
- Order*

*Camp Fire Pot Holder- order*

*Mailbox Holder- Wife Order*



**Here is an Excellent Source of Tool Steel:**  
The Atlantic Steel Corp  
35-27 36th St.  
Astoria, NY 11106

**From Eric Morlino, Black Mountain, NC**

Greetings from Black Mountain. I am excited to be a new member of the organization and an aspiring black smith. I have had a strong urge and desire to bang on hot metal ever since I watched a friend of mine forge a very primitive piton (I was doing a lot of climbing at the time) for me. That was circa 1994 or so. Well I have been on the search and scavenging material ever since, originally planning to make a very simple and basic forge from a motor off an old drill press and using a pan filled with stove cement with some holes in it. That never materialized and recently a welder friend of mine gave me an old forge he had been carting around that needed some work. The first order of repair was the blower, which was seized in the housing. That was as simple as pushing a large screw driver down on to the blades and forcing them to spin with the help of some oil. The next step was the process of making the blower spin; it looked like the original belt that drives the blower was shredded, so it needed to be fabricated as well. After getting the blower going again, I needed to address the crack in the fire pot (picture B) and create some grating to hold the coal. After asking around about the details of welding some cast iron and brazing the crack I decided to see what I could make do with on my own. Having recently learned to weld on an old Lincoln stick welder I got some scrap steel plate at the Biltmore iron as well as some 3/8 rod and went to work to create a floating bottom with a cross hatch of rod to sit in the base of the forge (picture C). This would allow the air from the blower to pass through and also hold the coal in place. I have only fired the forge once since getting it operational, it seemed to work in the sense that metal got red hot and I was able to work it in a neophyte manner. I think it would be beneficial to have a partner around to help turn the crank and monitor the metal in the forge. In my three hour session I hammered out the beginnings of a pair of tongs and a knife blade. This left me feeling excited about the prospects of working hot metal and lacking in the tools and infrastructure that most smiths take for granted. At last the tools are coming together and soon the sound of hammer on anvil will ring out more often from around my forge.

Eric Morlino lives on a small farm with his wife Heather and two girls, trying to live and work as close to the earth as possible. In his spare time he teaches wood shop at a small private school for boys.



*Picture B*



*Picture C*



**From Ray Clontz, Charlotte, NC**

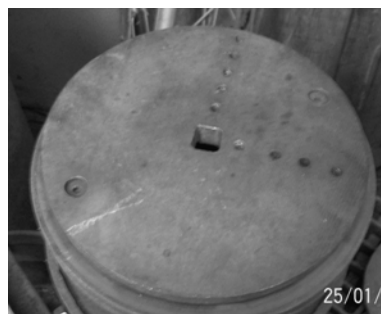
My blacksmith shop has limited floor area so I cannot bend long pieces around a tool that is either on the anvil or clamped in a vise. Since my shop is small and I do not do large iron, my market seems to be a lot of different style forged iron for Civil War, Rev. War and living history encampments which means lots of hooks. So to solve the space problem. I made a rotatable hardie hole. Picture 1 shows a front hub of a front wheel drive car with a center hole that used to hold the front drive shaft. Picture 2 shows the front disc brake that came off the hub. I found these at a repair shop. They discard them both when repairing the front end so both were free. The disc has holes around the perimeter, which comes in handy for sticking a bar in for more leverage. Mount the disc to the hub using the existing lugs. Disc should extend above hub when mounted. Now you need to make some type of top plate that has a square hole thru it that matches the hardy tools you want to use. I drilled and milled a hole, but it would have been easier to weld up a plate from pieces leaving a square hole in the center. I bolted the brake disc by drilling thru the plate and brake disc and bolted with 2 flat head bolts. I did drill and tap some holes in the top plate to be able to bolt on a handle, if required, when winding rings. The other pictures show what type tooling I use to for hooks and scrolls, but I make mostly hooks of all sizes. My unit is mounted on a permanent base, but it could be mounted on a plate that could be clamped on a table or in a vise or even with a square pin to go in the hardy hole of your anvil. This is a very handy tool and since it is made mostly from discarded car parts, it is easy to make.



*Picture 1*



*Picture 2*



**From Kent Flowers, New Bern, NC****Our Unusual Trip to Old Sturbridge Village**

On July 1, 2010, when Zoe Ann Flowers was not quite five days old, her mom (Nico), her dad (Kent III) and Granddad (Kent Jr) all went to visit Old Sturbridge Village, Massachusetts.

While at the village, everyone got on a horse-drawn wagon. Granddad and Zoe, comfy in her stroller, got in the first row, where two little girls were already sitting. As they all waited for the wagon to start rolling, one of the little girls asked Kent Jr., "What is the baby's name?" He said, "Her name is Zoe." She replied, "MY name is Zoe!" The mother of the third little girl then spoke up and said "My daughter's name is ALSO Zoe!"

As they all realized the great coincidence, one of the little girls, mothers offered, "My daughter's middle name is Ann." To which Kent Jr. replied, "Well, OUR Zoe's middle name is Ann!" Incredibly, the third little girl's mother added, "My daughter's middle name is ALSO Ann!"

One of the moms then inquired about each Zoe Ann's last name. To nobody's surprise, each Zoe Ann had a different last name.

As the driver of the wagon got ready to leave, he announced that they were off to the blacksmith shop. He told everyone the horses' names, and then introduced himself by saying "I am Zoe Ann!"

Everyone laughed and he gave his real name, and the journey to the blacksmith shop began. But as they traveled, all were amazed and marveled at the odds of three Zoe Anns being on the same row in the same wagon in the same town on the same day at the same time.



*This Picture Is Of The Three Zoe Anns.*



# What I Did On My Spring Vacation - Or

## A Week Blacksmithing Course At The John C. Campbell Folk School

**By Dave Tosi**

“What I did on my spring vacation” – This is the phrase that most school kids hate after a break in class. However, this time I am ready to spill all the beans about my experience. First, I am a very beginner type of blacksmith. I have done a lot of reading, but not much hammer to metal.

So I was a rank beginner when I bid on a gift certificate on eBay. The auction said that it was for a 1 week course including room and board. I had heard about the John C. Campbell School of Folk Arts and its wonderful blacksmithing courses, so I bid anxiously. I won! As it turns out, the value was for more than I paid for the certificate!

I signed up for a beginner course during Scandinavian week. The Vikings and the Scandinavians were some of the first blacksmiths and were quite adept at forging iron. Upon arrival Sunday afternoon, I was given directions to my lodging for the week. I was billeted in the Log House in a private room with its own bath. Wow! The first evening we (the class) all met down at the new smithy. It was terrific and very well arranged. After introductions of who we were and our level of skills, we each chose a forge and anvil that would be ours for the week. Charlie Orlando from NY was the main instructor and he was ably assisted by Doug Merkle of NC. Basic safety rules were then reviewed. Everyone must wear safety glasses, hot metal is always stored on the floor, check each piece for heat before you pick it up, and hearing protection is strongly suggested!

Monday morning dawned clear and sunny – very sunny. By noon the temperature was about 88 degrees outside in the shade. For the smiths in the shop with forges going, it got considerably warmer. First up was learning how to start and maintain a coal fire. Not as easy as it sounds. We were also shown how to start the gas fired forges without blowing ourselves up. We were allowed to use either one and encouraged to try both. I practiced a lot using the coal forge since that is what I will have at home. The fellow beside me seemed to be having a lot of trouble, so we worked together and got his fire going. People helped each other all through the week.

After practicing maintaining a fire, we watched Doug and Charlie makes ivy type leaves. It looked so easy; of course we could do it! Surprise, it takes more skill than expected! We started with SOR and then to making ivy leave. My first leaf looked more like a pin oak leaf – long and skinny! I followed Charlie’s advice and continued to make leaves. Make a leaf, hot cut it off, make a leaf, and hot cut it off. I used an entire 3’ piece of rod. After I made 28 leaves, I was starting to get the hang of it!

The theme of the week was all things Scandinavian. The food served each day was what people in Norway, Sweden, Denmark, and Finland might have. It was very delicious! The meals were served family style and there was plenty for all. Each meal was different and when the week was over, there was a cookbook with recipes for all the foods served and it was made available for students. Being Scandinavian week, we were visited by the “Svenson” family and they were all enrolled in the fish drying class. Of course they all wore their helmets with large horns sticking out to each meal. ☺ There was a theme of having fun while learning. It was great! Choosing a theme week is highly recommended.

Back in the smithy, Tuesday was another scorcher. More demonstrations on splitting hot metal and punching holes were happening. We were all beginning to choose items to make. Choices were varied. Some came to the school with an item in mind. Others could choose from about 10 different Scandinavian items. Trivets, scarf clasps and pins, women’s knife, and candle holders for tables and walls were some of the items that had directions on how to make. Some really wanted to go home with a “product” while others, such as me, were interested in learning as many processes as possible and then practicing at home.

We all watched Charlie make a center punch and then learned about annealing and heat treating and finally tempering to make a hardened point. I made a center punch and heat treated it and later a hot cutting chisel that I hardened and tempered. This heat treating information was valuable to those who made knives. We also had some pieces of car coiled springs that we torch cut and then straightened in the forge and then used the Big Blu power hammer to forge it into square rod that was used for knives and chisels. The power hammer was really fun after using a hammer to stretch out stock.

Thursday the weather started to cool off, but the students in the smithy were getting hotter. All sorts of items were being made. Another demonstration showed us how to make "Thor's Hammer". This was a very tiny hammer made from a horseshoe nail that was then hung on a silver chain. I made three for the three women in my life. Each one is different and individual.

I took the time to look up where the NC Triad Blacksmith beam was in the new smithy. The layout and equipment was fantastic. The whole end was windows for light and visibility. There was a conference room upstairs and part of that was a small library for reading and researching. The school has done a wonderful job in building the new smithy. The old smith area is now used as an assembly and fabrication area. Equipment consisted of anvils and coal forges so that each of us had their own place. They have about 6 gas forges on wheeled carts that can be hooked up to gas lines pre-plumbed all around the shop. There were 2 Big Blu power hammers, 2 tire hammers and a small Little Giant hammer. Oxy-Acetylene, torches, and MIG welders and a plasma cutter were available as well as numerous grinders, sanders, swage blocks and wood stumps for forming. Everything one could need was there from tongs and hammers to large power hammers. Wow!

Friday was quite cool and rainy outside, but the smithy was really cranking. Everyone was trying to finish their projects. We were told that all items had to be done as it was "all fires out at 3:00 pm". I was finishing making my coal scoop and shovel for my own forge at home. I did manage to get it finished. Most of us could not believe that it was Friday already. So much had happened and we had learned so much that it didn't seem possible that it was over already.

As a summary, I would say that the week was a rousing success. The instructions were very clear and concise. With 2 instructors there was a lot of individual and personal instructions and demonstration. The learning method was effective and simple and easy to follow. Both Charlie and Doug really cared about the students and their projects. They were tremendous. I learned many ways and techniques for working hot metal. I started project to learn the process and took them home to finish. I also made a hardened center punch and chisel, and a coal scoop and shovel to take home.

The class consisted of 11 people, of whom 5 were women. Our youngest was an 18 high school girl and the oldest was Old Harmless Dave (me). Items made went from a large swinging 2 piece gate to small dragons, to Thor's hammer necklaces. We had 2 active military (husband and wife) and people from New England, Wisconsin, Georgia, Maryland, North Carolina, and Florida.

This was the best class I have ever taken and I would highly recommend people to go and take a course and the school. They have courses for every skill level in blacksmithing. If you think you are really good, go and be an instructor. They had as much fun as we did.

Dave Tosi  
AKA Harmless Dave  
Green Bear Forge

# Lyle Wheeler's Flag Staff Holder

These are forging notes from a nice job to pass through the Wilbar Forge recently and it went something like this:

*Materials* - 1/2 square hot rolled steel  
3/16 x 3/4 hot rolled steel

Description: overall finished length of 36 inches - Two eye rings of two inches inside diameter twelve inches apart with a hammer spot four inches at the top and a four inch octagonal taper drive point. Two collars.

*Stock calculations:*

Calculating the over all length of the piece:

$$2(2pi + 2T) + 3T + 12 + 4 + 36 - 2 = \text{rough length} \quad \text{Where } T = 1/2 \text{ "}$$

solving the equation:  $2(6 \frac{1}{4} + 1) + 51 \frac{1}{2} = 66 \text{ "}$  of the 1/2" square stock

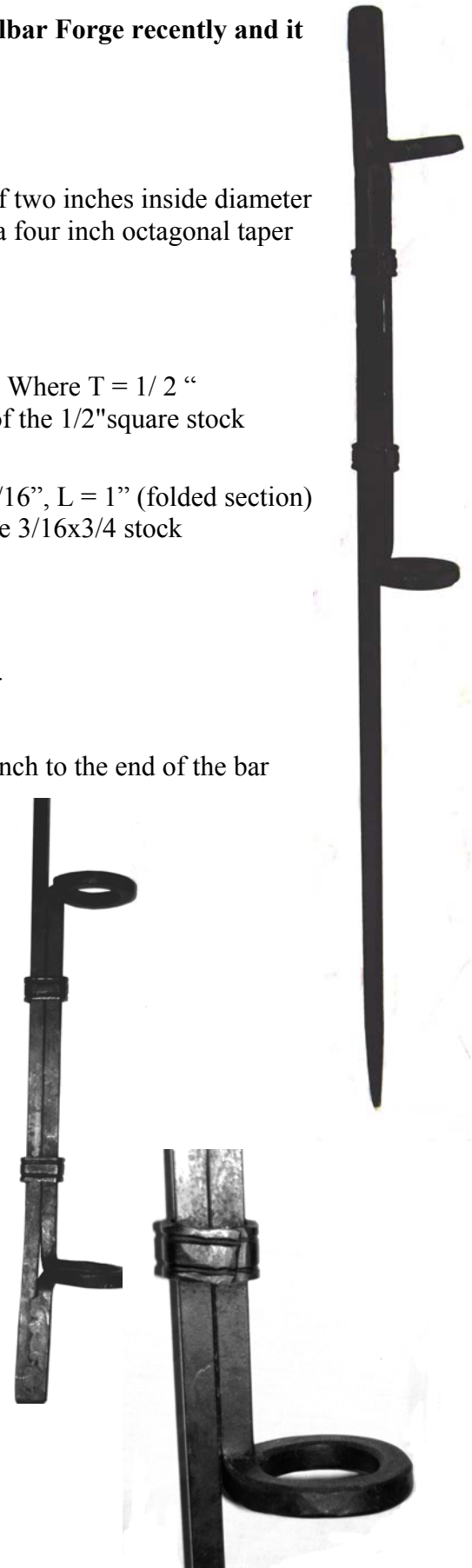
Calculating length of material for both collars:

$$2(2L + 2T + 2t) = \text{rough length} \quad \text{Where } T = 1/2 \text{ "}, t = 3/16 \text{ "}, L = 1 \text{ " (folded section)}$$

solving the equation:  $2(2 + 1 + 3/8) = 6 \frac{3}{4} \text{ "}$  of the 3/16x3/4 stock

*Sequence of operations:*

- Draw four inch octagonal taper on one end of 1/2 square bar.
- Measure 36 " from that point and dent on hardy to mark length.
- Make prick punches at 4", 11 1/4" and 23 1/4" from the dent.
- Make two sections octagonal: the first from the 23 1/4" prick punch to the end of the bar opposite the point (7 1/4" long). The second is the section between the 4" and the 11 1/4" prick punches.
- Make two right angle bends with the inside octagonal sections in between the long sections. Check for wind (straightness) and twist.
- Form eye ring between these bends and size to 2 inches ID
- Right angle bend and form eye ring on end and size.
- Align rings
- Cut on hardy not quite half way through from front and bend back
- Weld section down to top ring
- Bevel these edges, upset and finish a hammering spot
- Straighten and align
- Set two collars, double grooved with overlapped ends.
- Reference is made to "Doug Merkel on Collars" HIS March/April 1998 as reprinted HIS Vol.23, No.2 pg. 26.
- Final alignment
- Finish



# Lightweight Portable Clamshell Gas Forge

By Randy H. Stoltz

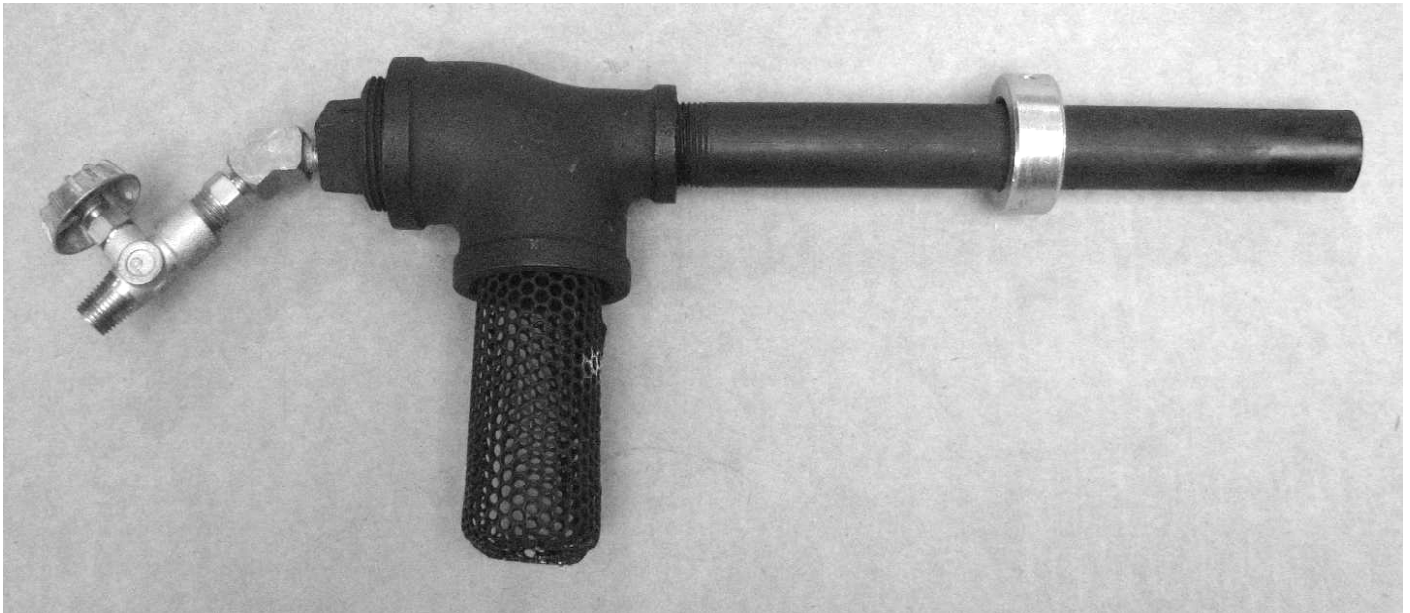
I decided to build a small single burner gas forge that would be easy to transport and use a lot less propane than my 3 burner NC Tool Forge. After talking to Wayne Coe at the NCABANA meeting, in Morganton, I decided to make it a clamshell design with top and bottom sections that are hinged on one side. This design makes it very easy to work on the forge and allows you to use it on larger pieces like scrolls. Instead of a freon tank I used a 8 inch diameter fire extinguishing bottle from a commercial Kitchen hood system. The fire extinguisher bottle has 1/8 inch thick steel walls (much thicker than the freon tanks) making it sturdier and easier to weld on.

The forge uses a single side arm style burner, a built in "trombone" work support, and a pedestal stand that can be disassembled for easy transport. In addition to the front opening there is a smaller pass through port on the back side.





The upper half of the forge (left side) is lined with 2 inches of ceramic fiber blanket that is protected by a coating of 2700 degree furnace cement. The lower half is lined with insulating fire brick carved to fit the curved bottom and set in a bed of fire clay. The lower half is also coated with furnace cement. The furnace cement encapsulates the ceramic fiber blanket, protects the insulation from damage during use, and protects it from flux used for welding.



The side arm style burner is made from a 1 1/4 inch by 1 1/4 inch by 3/4 reducing Tee, a 9 inch section of 3/4 inch pipe, and uses a .030 MIG tip for the orifice. The locking collar on the 3/4 pipe sets the depth of the burner when inserted into the forge and seals off the top of the burner port. Instead of a ball valve I use a 1/4 inch gas needle valve which allows you to control the heat and flame over a very wide range. The needle valve attaches to the burner with a 45 degree elbow so the propane hose connects at a better angle. The wind screen on the bottom of the burner is made from a steel mesh rolled into a tube that is just friction fit into the bottom 1 1/4 inlet for outdoor use.

Note that this is not a Ward reducing Tee that all the web sites insist you need to use. This fitting is an exceptionally clean casting with a very smooth and regular interior. I got several of these fitting very cheap and decide to try them anyway. I also have a burner made with a Ward fitting and side by side testing does not show a large difference with this non Ward burner actually working better. I've used this burner with gas pressures from 2 to 15 PSI and with .030, .035, and .045 orifices. It should work up to 30 PSI but my portable setup has a 0 – 15 PSI regulator.



The base of the breakdown stand is made from a plow disk. The dome shape of the plow disk is steadier than a flat plate on uneven or irregular ground. I welded a floor flange (standard pipe thread fitting) to the disk and used a angle grinder to dull the sharp edges of the plow disk. Add a threaded section of pipe and you have a lightweight stand that breaks down for easy transport. To mount the forge I welded a smaller flange onto the bottom and screwed a short piece of pipe into it. The smaller pipe on the forge slides into the larger pipe on the stand so it functions as a pintle mount and you can rotate the forge if needed.

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## Upcoming Events For Your Calendar From Randy Stoltz

### **Blacksmith Guild of Virginia 2nd Annual IronFest**

June 18th, 2011 9:30am-4:30pm

Yesteryear School of Blacksmithing

Amelia VA

<http://bgvaevents.webs.com/>

### **Southeast Old Threshers' Reunion**

June 30 - July 4, 2011

Denton FarmPark

1072 Cranford Rd.

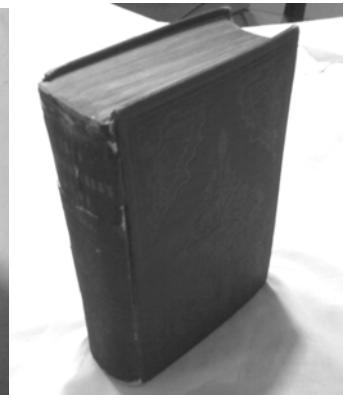
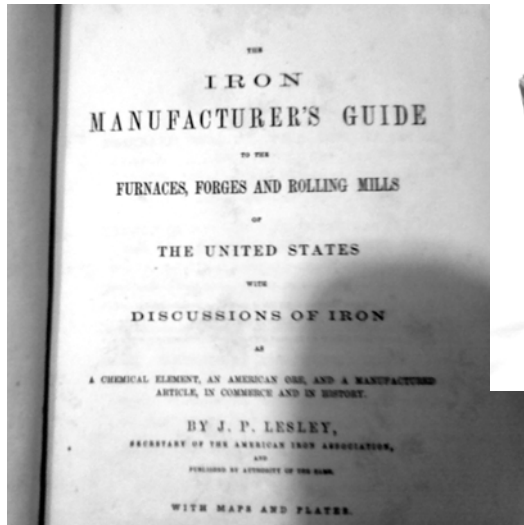
Denton, NC 27239

[www.farmpark.com](http://www.farmpark.com)

This is the largest steam, gas and antique farm machinery show in the Southeast. In addition to all the antique tractors and equipment on display there is a complete machine shop (in operation), blacksmith shop, and a huge vendor / tailgate area where you can find all sorts of tools. This is a great place to find tools, anvils, and supplies. This is one of the largest steam and gas powered farm equipment shows on the east coast. The horse powered implements, steam tractors, gas tractors, steam shovel, and other equipment is not just on display, most of it is running and they do a power parade every day. They even have their own operational steam powered train. As this is in July and in Denton (near Lexington, NC) plan on it being very hot and doing a lot of walking. \$14 admission fee.

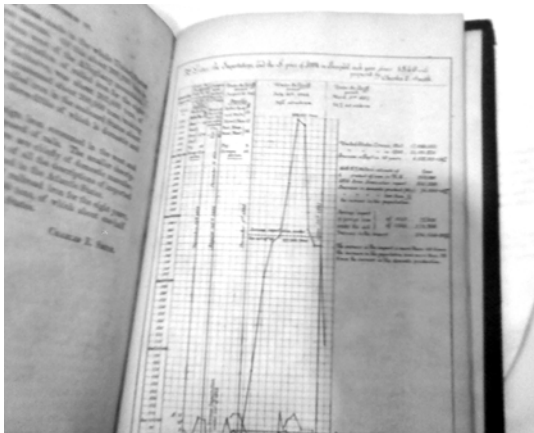
# Bernd Mergener

Bernd Mergener, a long time member of NC ABANA and the Triad Area Blacksmiths, has suffered some health problems and has decided to sell his blacksmithing equipment and historical objects. He has other items for sale including another forge, with electric blower for \$500. You can reach Bernd at 336 / 788-3542, or his email address at BerndM@BellSouth.net

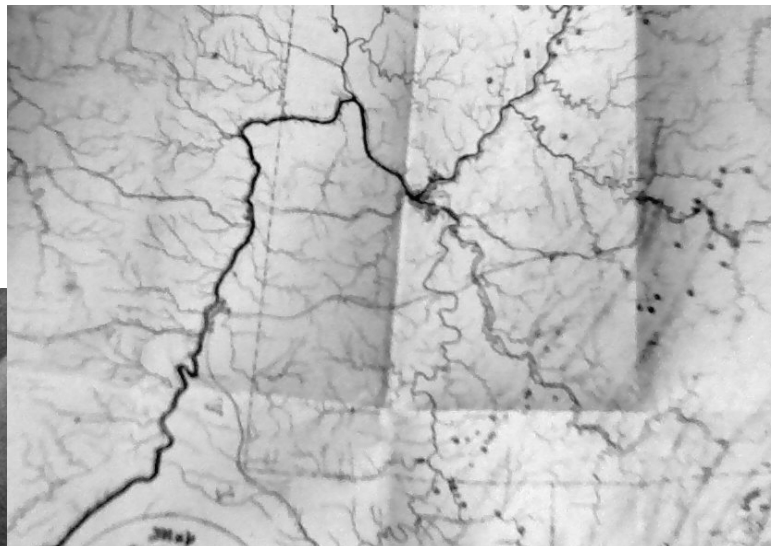


*Spine and front*

*1859 Iron Manufacturer's Guide To The Furnaces, Forges And Rolling Mills Of The United States, First Edition, 5 Folding Maps. \$600 Firm*



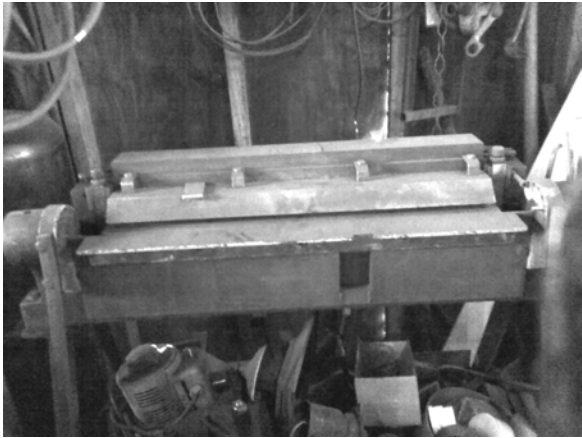
*Example Of Content In The Book*



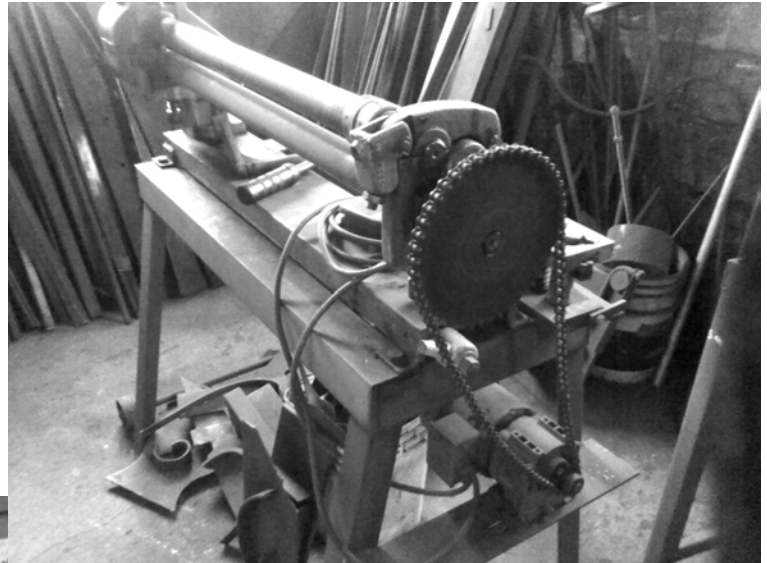
*Part Of Map In Book*



*Colonial Anvil Priced At \$1200*



*Bender Priced at \$800*



*Bender Priced at \$800*



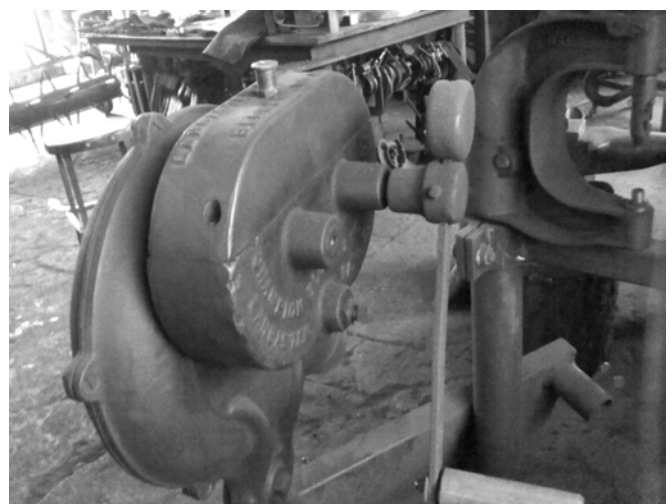
*Roller Priced at \$800*



*Miller Millermatic 210 Mig. Priced at \$1200*



*Miller Econotic Tig. Priced at \$1200*



*Hand cranked blower and potebel forge priced at \$500*



## Blacksmith's Exchange

Have something for sale, or looking for something? This is just the place to look.

*Send your "for sale" or "looking for" requests to Marty Lyon (at the address or email address on the back cover). Please include your name and phone number*

- Welders. Current price is \$250. Selling them for \$150.
- Three hydraulic presses. One is electric powered and the other two are hand pumped.
- E-Z up canopy/tent 10'x 10' with side curtains, a nylon top, and a water proof vinyl top. It has a steel frame and is very strong and durable.
- Hossenfeld Bender #1 with a number of bending parts and manuals to go with it.

Parks Low at 919 818-3036

### For Sale – Antique Forge

I have an antique forge with some tools- it appears to still work. It is from the Champion Blower and Forge Company, Lancaster, Pa. I was told it is about 100 yrs. old. I also have a few blacksmith tools to go with it. I am interested in selling it. I live in Florence, S.C. E-mail me if you are interested in it. I bought it for my brother who has done some blacksmithing, but he has become disabled from cancer and is unable to use it. Thanks Martha Smith - memarmarsc@yahoo.com

### Ray Clontz Tire Hammer Plans by Clay Spencer

Ray Clontz Tire Hammer Plans, \$30, including postage to US and Canadian addresses. Send check or money order, e-mail me for cost to other countries

Tire Hammers for sale, 50 lb. hammer head, approx. 250 blows per minute, 1 hp motor, 6" diameter anvil, 700 lbs., 2 ft. square base, Contact me for price/availability. Reasonable delivery if I am headed to your area..

Beverly Shear blades sharpened, \$35 + postage. Blades must be removed from shear, extra cost for deep nicks or blades previously sharpened at angle.

Clay Spencer, 73 Penniston Private Drive, Somerville, AL 35670, 256-498-1498, cell 256-558-3658, clay@tirehammer.com

### For Sale

#### Blacksmithing/ Knifemaking/ Forging POWER HAMMER - 50# Little Giant

Little Giant 50#, manufactured in 1947, modern style (clutch at rear) excellent condition, Plug and pound! Has drawing dies, 2hp original motor, single phase, runs like a sewing machine can forge up to 2" solid metal. \$3800.00  
919 / 444-1665

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Email: d.hozza@wisconsinwoodchuck.net  
Web site: www.wisconsinwoodchuck.net

### MEMBERSHIP APPLICATION

NORTH CAROLINA CHAPTER OF ABANA

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: (\_\_\_\_\_) \_\_\_\_\_

E-mail Address: \_\_\_\_\_

ABANA Member?: Yes No

Blacksmithing Experience: \_\_\_\_\_

DUES: \$25.00 per year (within USA)  
\$35.00 per year (outside USA)

MAKE CHECK PAYABLE TO: NC ABANA

REMIT TO: Marty Lyon  
6 Carolina Meadows, Apt 203  
Chapel Hill, NC

If you are renewing your membership and your address and phone number have not changed, you do not need to use this form.

### ABANA APPLICATION

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: (\_\_\_\_\_) \_\_\_\_\_

E-mail Address: \_\_\_\_\_

- DUES:  Regular (US/Canada/Mexico) \$55.00
- Senior 65+ (US/Canada/Mexico) \$50.00
- Student (US/Canada/Mexico) \$45.00
- Foreign \$65.00
- Library (US) \$45.00
- Contributory \$100.00

Make check payable to: ABANA

Credit Card:  American Express  MC  
 Discover  VISA

Card #: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Signature: \_\_\_\_\_

REMIT TO: ABANA  
15754 Widewater Dr.  
Dumfries, VA 22025-1212

### NC ABANA LIBRARY BOOK ORDER FORM

Date of Request: \_\_\_\_\_

Requested by: (Please Print)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: (\_\_\_\_\_) \_\_\_\_\_

Library Code of Item: (if known) \_\_\_\_\_

Title of Item: \_\_\_\_\_

Mail this request form to:

Dick Snow, NC ABANA  
4222 E.L.G. Road  
Efland, NC 27243

If you are a member in good standing of the NC Chapter of ABANA, the book you select will be mailed to you as soon as it is available. You may keep it for up to 30 days and then you must mail it back to the librarian. A return address label will be included when the book is mailed to you. All books must be returned in the condition they were received in or you may be charged for the damages. You may have ONE book (Code BK) or up to THREE Hot Iron Sparkles (Code HIS) or THREE magazines (Code MAG) at any one time. A new copy of this form will be sent with each book.

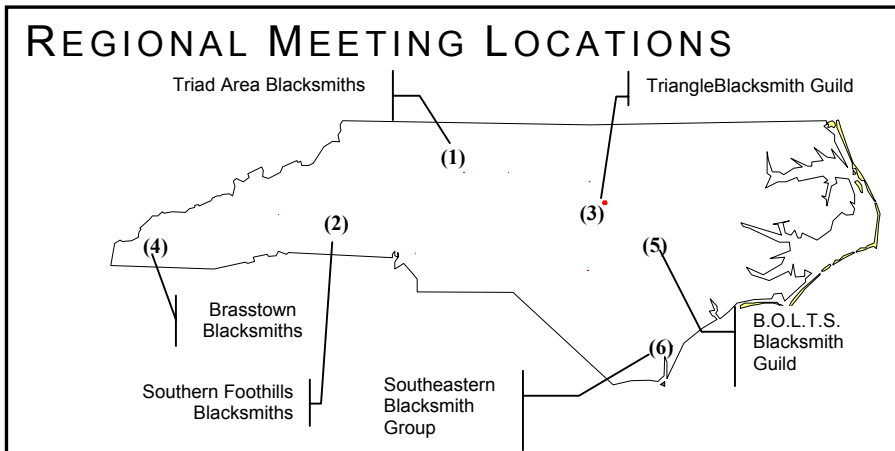
## Chapter Calendar 2011

<b>January</b>	☞ <u>Regional Meetings</u>
<b>February</b>	☞ <u>Regional Meetings</u>
<b>March</b>	☞ <u>Regional Meetings</u> ☞ <b><u>1<sup>st</sup> QUARTER CHAPTER MEETING</u></b> <b>March 20, 2011</b> AT 9:00 A.M. DEAN CURFMAN'S, OAK HILL IRON WORKS MORGANTON, NC
<b>April</b>	☞ <u>Regional Meetings</u>
<b>May</b>	☞ <u>Regional Meetings</u>
<b>June</b>	☞ <u>Regional Meetings</u> ☞ <b><u>2<sup>nd</sup> QUARTER CHAPTER MEETING</u></b> <b>June 25, 2011</b> AT 9:00 A.M. DIXIE FAIRGROUNDS WINSTON SALEM, NC
<b>July</b>	☞ <u>Regional Meetings</u>
<b>August</b>	☞ <u>Regional Meetings</u>
<b>September</b>	☞ <u>Regional Meetings</u> ☞ <b><u>3<sup>rd</sup> QUARTER CHAPTER MEETING</u></b> <b>Date and time T.B.D.</b> Andy Anderson's Shop GOLDSBORO, NC
<b>October</b>	☞ <u>Regional Meetings</u> ☞ <u>Dixie Classic FAIR SEPTEMBER 30 – OCTOBER 9</u> ☞ <u>NORTH CAROLINA STATE FAIR OCTOBER 13 - 23</u>
<b>November</b>	☞ <u>Regional Meetings</u> ☞ <b><u>BONUS MEETING</u></b> <b>November 5, 2011</b> at 9:30 a.m. J.C. Campbell Folk School, Brasstown, NC
<b>December</b>	☞ <u>Regional Meetings</u> ☞ <b><u>4<sup>th</sup> QUARTER CHAPTER MEETING</u></b> <b>December 3, 2011</b> at 9:30 a.m. Rodger Barbour's Shop, Clayton, NC

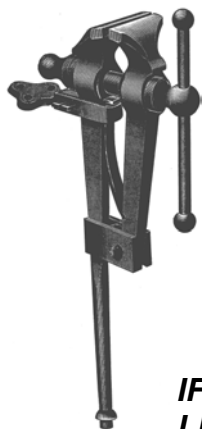
## Local Groups

See map on bottom of the page for approximate locations of each region within North Carolina

- (1)  
**Triad Area Blacksmiths**  
Marshall Swaringen Advance, NC  
(336) 998-7827  
1<sup>st</sup> Tuesday 6:30PM for demos  
3<sup>rd</sup> Saturday, 9AM for business  
and all day forging  
Dixie Fairgrounds, Winston Salem, NC
  
- (2)  
**Southern Foothills Blacksmiths**  
Steve Barringer Mooresville, NC  
(704) 660-1560  
2<sup>nd</sup> Sunday, each month
  
- (3)  
**Triangle Blacksmith Guild**  
Randy Stoltz Cary, NC  
(919) 481-9263  
1<sup>st</sup> Saturday, even # months
  
- (4)  
**Brasstown Blacksmiths**  
Paul Garrett Brasstown, NC  
(828) 835-8441  
3<sup>rd</sup> Saturday, even # months  
Noon to 4PM
  
- (5)  
**B.O.L.T.S. Blacksmith Guild**  
Amos Tucker Kenly, NC  
(252) – 289-7317  
1st Sat or Sun. Even # months
  
- (6)  
**Southeastern Blacksmith Group**  
Paul Whitty Wilmington, NC  
(910) – 228-8925



Note: Any member is welcome at each of the Regional meetings. Call host to confirm date, time and location.



North Carolina Chapter Artist Blacksmith Association of North America

**THE HOT IRON SPARKLE**

Marty Lyon, Editor  
6 Carolina Meadows, Apt. 203  
Chapel Hill, NC 27517  
919 / 918-4180

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**TO:**

**President**

**Cindy Alexander**  
922 Lakeside Drive  
Durham, NC 27712  
919 / 684-7820  
alexa007@mc.duke.edu

<b><u>PLEASE WELCOME THESE NEW MEMBERS</u></b>		
Keith Berner	Hendersonville	NC
Jeff Morris	Raeford	NC
Matthew C. Bruce	Hiddenite	NC
Gregory Dwight Price Jr.	Clayton	NC

**Vice-President**

**Garret Dunn**  
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**Treasurer**

**James Kennady**  
1171 Cash Road  
Creedmoor, NC 27522  
919 / 528-5636  
jimkennady@gmail.com

**Don't Forget: 2011, 2nd Quarter Chapter Meeting**

Saturday, June 25 - 9:00 AM

Dixie Fairgrounds, Winston Salem, NC

