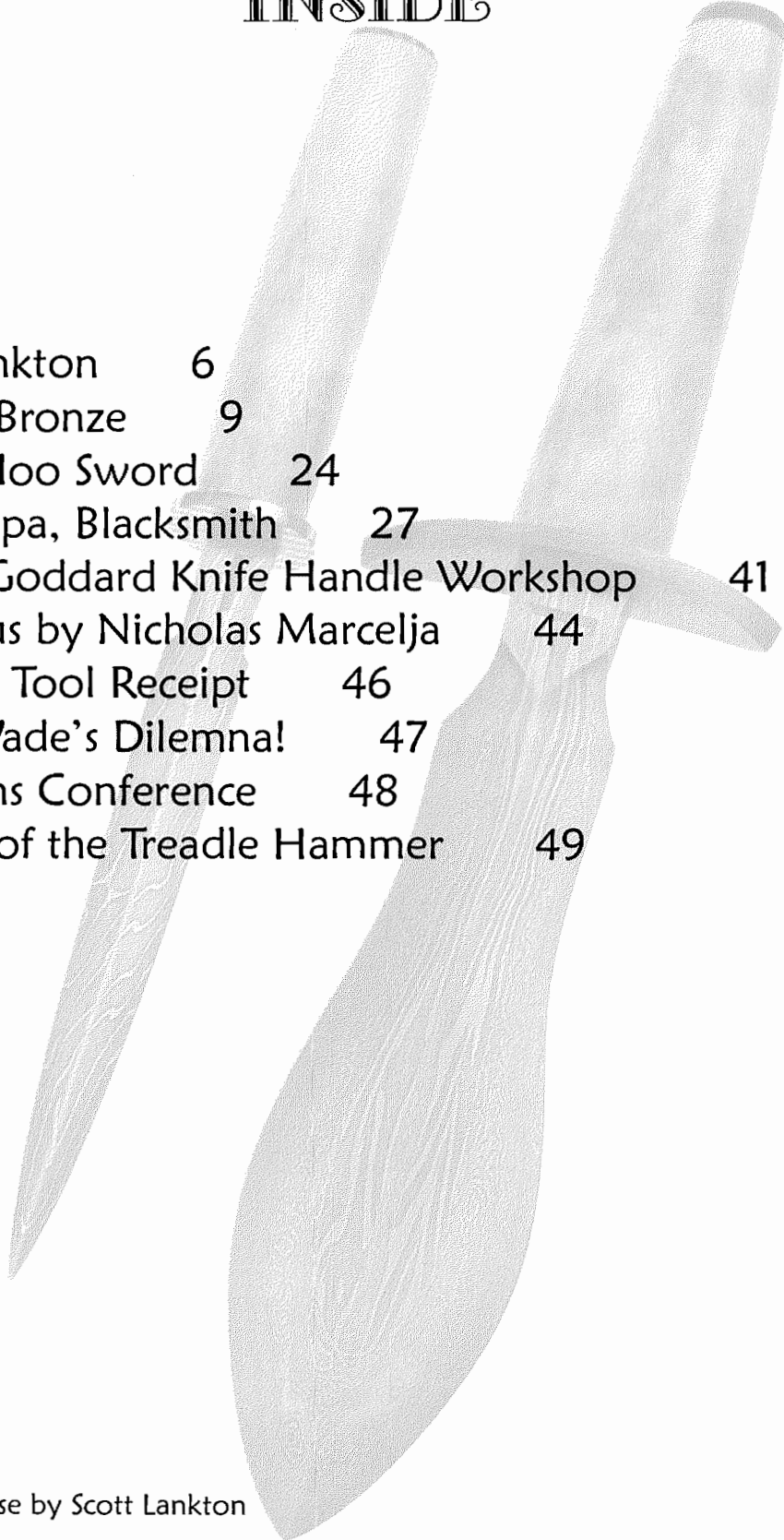


HOT IRON NEWS





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Cover~ Staircase by Scott Lankton



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Membership includes a subscription to the **Anvil's Ring** and **The Hammer's Blow** magazines. Regular membership is \$45, Senior (65+) \$40, Student \$35, Foreign \$65.

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Jerry Kagele

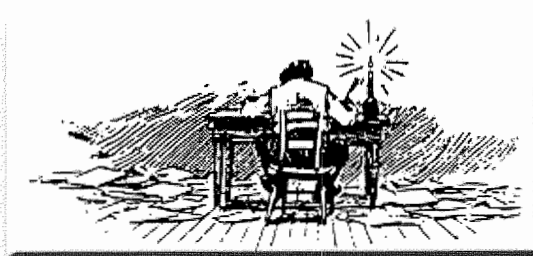
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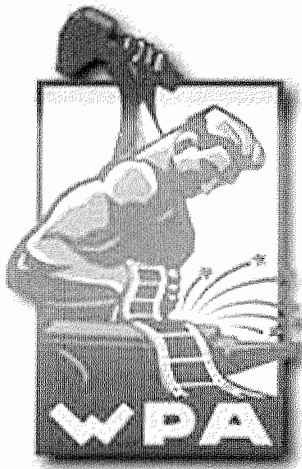


Editor's Notes!

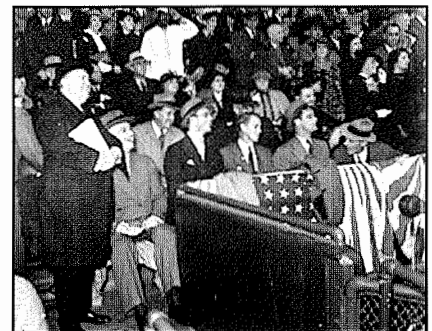
The next time you admire the ironwork at Timberline Lodge on Mount Hood, thank Harry Hopkins. Probably no individual in the Twentieth Century had such a profound effect upon public ornamental blacksmithing--remarkable for a man who wasn't even a blacksmith! On April 8, 1935 President Roosevelt created the Works Progress Administration and named Harry Hopkins as it's director. This was in the depths of the depression and work, especially for ornamental blacksmiths and other artists, was non-existent in the United States. Eventually 8.5 million people were put to work constructing public projects such as Timberline, parks, art projects, and other works which would never have been possible without government support. Harry Hopkin's response to the objections to including artists in the program was curt: "Hell, they've got to eat just like other people!" As a result, 17,744 works of art were created, many of which were in iron. Over 22,000 artistic plates were created in the Index of American Design, which recorded American design since Colonial times. Some 2,566 murals were painted in public buildings, many of which still survive. The average monthly wage was \$41.57--which was a godsend to craftsmen at the time. The program lasted until 1943. It's effects still survive. It's bold efforts at public art led directly to the creation of the National Foundation for the Arts and the National Endowment for the Humanities. It kept ornamental blacksmithing alive during the Depression and trained a whole generation of young blacksmiths who would propagate the craft. Thanks, Harry!

Another force that affected art in America in the 1930's and 1940's was the exodus of highly talented individuals fleeing the effects of war in Europe. One of these artists was Max Saupa, who immigrated from Germany to open a blacksmith shop in Rochester, New York. His repousse' and metalwork is nothing sort of phenomenal. The works look like portraits, not metal. The detail and finesse sets the highest standard of craftsmanship. Thanks to Lisa Geertsen for sharing her great grandfather's legacy of artistic treasures.

Thanks also to ABANA President Scott Lankton for sharing his portfolio. Scott enjoys an international reputation as an accomplished iron artist. These artists, along with Nick Marcelja, Dick Postman, and Hardie Swage, have combined to share their talents to bring this issue to you.



Harry Hopkins in photo taken in Seattle



FDR, with Harry Hopkins at his left, attending a baseball game



AND NOW . . .

A FEW WORDS FROM THE PRESIDENT!~



The NWBA election votes were tallied on January 15th and the results are as follows: Re-elected to the board were: Gary Chapman, Al Karg and Terry Carson. Also elected as new members to the board were: Alan Flashing and Dave Lisch. The board met on January 25th in Federal Way, Washington. Christa Fairbrother was elected to the open secretary position. (Thank you Christa) The treasurer's financial report shows that we are in very good shape with the 2002 year ending with a balance of \$27,534. The board is looking into investing some of this money into producing high-quality videos of conference demos for the NWBA library. The

board also selected members for the 2003 committee assignments. Along with adding two new committees (video systems and conference safety) we decided to have the committee assignment list posted in the Hot Iron News and on the www.blacksmith.org web site. This way all members can see who is on which committees, and will be better able to seek out information about different aspects of NWBA operations.

Because of our ever-increasing number of members, the board approved that 100 additional copies of each issue of the Hot Iron News be printed in the future.

David Tuthill made a proposal to the board to have a nail tree at upcoming conferences. The basic idea is this: all those attending a conference would be able to either bring a nail they had made, or make a nail at the conference, and install it into a log that would be displayed as a tree. The board agreed that this would be a good conference activity. David will give a presentation about the nail tree at the up-coming spring conference in St. Helens, Oregon.

Speaking of the spring conference, I was just talking with one of the conference demonstrators, Richard Sheppard from West Virginia. He told me there was two feet of snow on the ground and the temperature had been below 20 degrees for two weeks. Richard works alone in his shop in the mountains of West Virginia and enjoys traveling the country and visiting with folks about blacksmithing. He and his

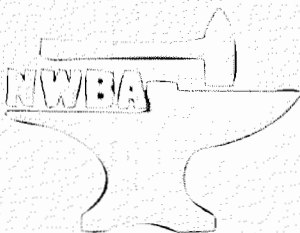
wife are looking forward to coming to Oregon in the spring. I am sure that all of you will enjoy his demos.

Remember that the NWBA grants program has a new budget for 2003 for those of you who could use a little financial help with your blacksmithing education. Contact one of the grant committee members for more information. Also, there is an application form in your new NWBA resource handbook. A big thanks to Gary Chapman for producing the new resource handbook. (great job Gary!)

I hope those of you who smith full time find time for your other interests, and those of you who smith as a hobby find lots of time to do so.

WORK SAFE AND ENJOY YOURSELVES

Mark Mantery





SCOTTIE LANKTON!

**ABANA
PRESIDENT
EXTRAORDINAIRE!**



Scott Lankton was born in 1956. He received his B.F.A. at Western Michigan University in 1978. He opened his own studio in 1979 and later went to Aachen, Germany to apprentice with Manfred Bredohl at the International Teaching Center for Metal Design. In 1989 The British Museum commissioned him to make a replication of the Sutton Hoo Sword which is on permanent display in London. He has taught classes at the Penland School of Craft and Peter's Valley Craft School as well as leading workshops and demonstrating for international conferences. He currently serves as President on the Board of Directors of ABANA. He is a past president of the Michigan Artist Blacksmiths. Today his work consists mainly of architectural commissions in steel and bronze such as stair railings, gates, furniture, kitchen racks, and sculpture. Recent projects include forging handguns into artwork and a large hanging sculpture for a cancer center. According to Scott, "The spontaneity of forging hot steel continues to delight me as does the strength and integrity of this medium. I am fascinated by the duality of beauty and danger that life combines, and I hope that through my work the lives of others will be made a bit more beautiful."

Forging Bronze



"Duality" Medical Center, Novi, Michigan

Forging bronze? It isn't so hard!

Over the years, I have used many alloys of brass and bronze. Some of them were a known alloy, some were unidentified. I prefer to use known materials so that I can more readily repeat my mistakes (and successes). The alloy I currently choose to use most is silicon bronze, #655. It is about 96% copper and 4% silicon. The main reasons I use this are : it forges well, having a decent size window of opportunity, it is relatively easy to tig-weld invisibly, it is available in a reasonable range of sizes including many rounds and sheet, plus it is the color that I like. It is also good for foundry work. Other alloys such as naval bronze work decently too although my experience here is small.

So what is different and what is the same when compared with steel forging? Well, it is easier and softer to hot forge than steel but this is balanced by the need for care and finesse. Rough tools (and forges) scar it more easily for example. This same quality may be exploited by polishing the tools that then transfer their finish to the material as you work.

Temperature. Depending on the amount of light in your shop you may want to turn off some of the lights or block windows a bit. This allows you to see the lower red range more easily. All copper alloys will crumble like a cookie if you get them too hot. How hot is too hot? Heat it up till it crumbles and then don't get it quite so hot next time. Reds are fine, at orange it is getting very weak and dangerous. These lower colors are often hard to see in a gas forge so you may need to remove the work to see the colors better. I throttle the air and gas back to run the forge cooler but you must pay attention to multiple pieces. It has a generous window (for bronze), but it is nowhere near as forgiving as steel, the king of materials. You may forge bronze cold too. It will work harden and need to be annealed. Forging it down too far into the black color range will eventually cause cracking if it is pushed too far. You must feel the force, its forges readily when hot and gets progressively harder as it cools, then it cracks. Sound familiar? Materials talk and only fools don't listen.

Most of us know that copper is used for electrical applications because it is a great conductor. This goes for heat as well as electricity. The upshot is that it is hard to get a small local heat, and your handle gets hot early. However, you can quench it repeatedly without adverse effect, but I do not recommend it when very hot. Pure copper gets softer when quenched at red heat, but its' alloys are a bit more fussy.

Not only can you tig it, stick feeding with the identical alloy, you can also mig it. Pure argon is the shield gas in both cases. Tig is neater, mig is faster but messy. I buy the parent metal and the filler from the same source (Atlas metals in Denver) to ensure a long-term color match. Mostly I buy round stock and forge it to whatever cross section is desired. It is way cheaper due to milling costs.

Once you have completed the hot forging part of your process it is necessary to pickle the bronze to remove the black copper oxide. I use sparex # 2 for this although a 10% solution of sulphuric acid will work well. 30 to 120 minutes is usually enough depending on temperature. Rinse the work well. Do not drink, bathe, or clean eyes with these solutions.

Oh, yeah, copper and its alloys are *poisonous*! The dust, forging fumes and the welding fumes especially will make you sick and eventually *kill* in sufficient concentrations or if exposed for long enough. Wear a mask, a respirator, lean away, open the windows, run extractor fans, etc. Even handling it barehanded allows copper into your system. It is called heavy metal poisoning and is to be avoided. Fairly unpleasant, kind of a combo of flu, sinusitis and having your kidneys punched. Many are quite sensitive to it. Copper displaces zinc in your body. If exposure can't be avoided take your vitamins, have saunas, et cetera.

I just made an all-copper weathervane/lighting rod. Copper is really soft and easy to shape too although it is better to gas weld it with copper wire as a filler rod, no flux or shield gas is needed.

So, how many times have I been asked the difference between brass and bronze? Mostly I would say it is in the spelling and pronunciation. The "original bronze" that the Greeks and Romans used for casting, sometimes referred to as sculptors' bronze, was 90% copper, 10% tin. Some would say brass is more yellow and contains zinc, some would say that bronze is more red and does not. The truth is that there are hundreds of copper alloys, pick one that can be worked and has the color you want.

Ah yes, color and finishing. There are also many patinas possible. Keep it simple and repeatable. I like to use a solution of "liver of sulphur" (sulphurated potash) to get things going. The bronze is usually power-brushed and steelwooled first, then darkened, then lightly steelwooled to bring up the highlights. Sometimes we wax it if the color is right with a quality paste wax or with renaissance wax.

So, have fun, combining steel and bronze together is very interesting. Yeah it's expensive and the time gained by easy malleability is offset the by finishing process. The good part is that BRONZE is a charged word, like silver and gold are, they imply value, quality, and longevity (for the work) and one simply charges more.

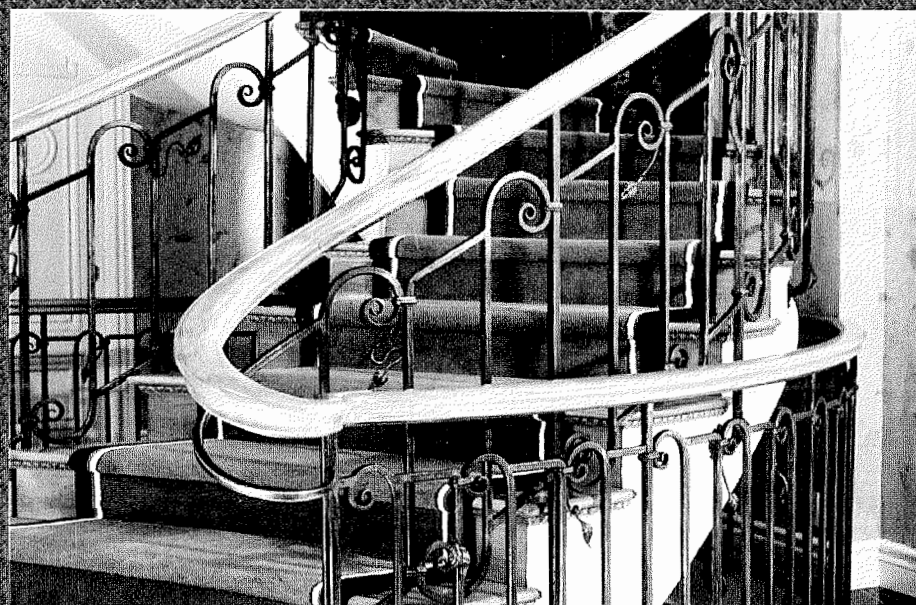
It's a sorry dog that won't wag its own tail!

Bronze Tips from the Hot Iron News Files ~

Everdur is the brand name for forgeable bronze. The generic name is copper-silicon alloy C87300. Buying the metal by the generic designation is cheaper than by brand name. Everdur silicon bronze is 95-1-4. 95% copper, 1% manganese and 4% silicon. It forges well, casts beautifully, and is easy to patinate.

Sources: Alaskan Copper & Brass Co., 3223 Sixth Avenue South, Seattle 206 623-5800; in Portland at 2440 Southeast Raymond 503 238-7171, in Vancouver, B.C. at 225 North Road 604 937-6620, www.alaskancopper.com

Atlas Metals in Denver has good bronze metal information on it's website: www.atlasmetals.com



Top: Gingko railing design inspired by Louis Mejorelle. Bronze and steel



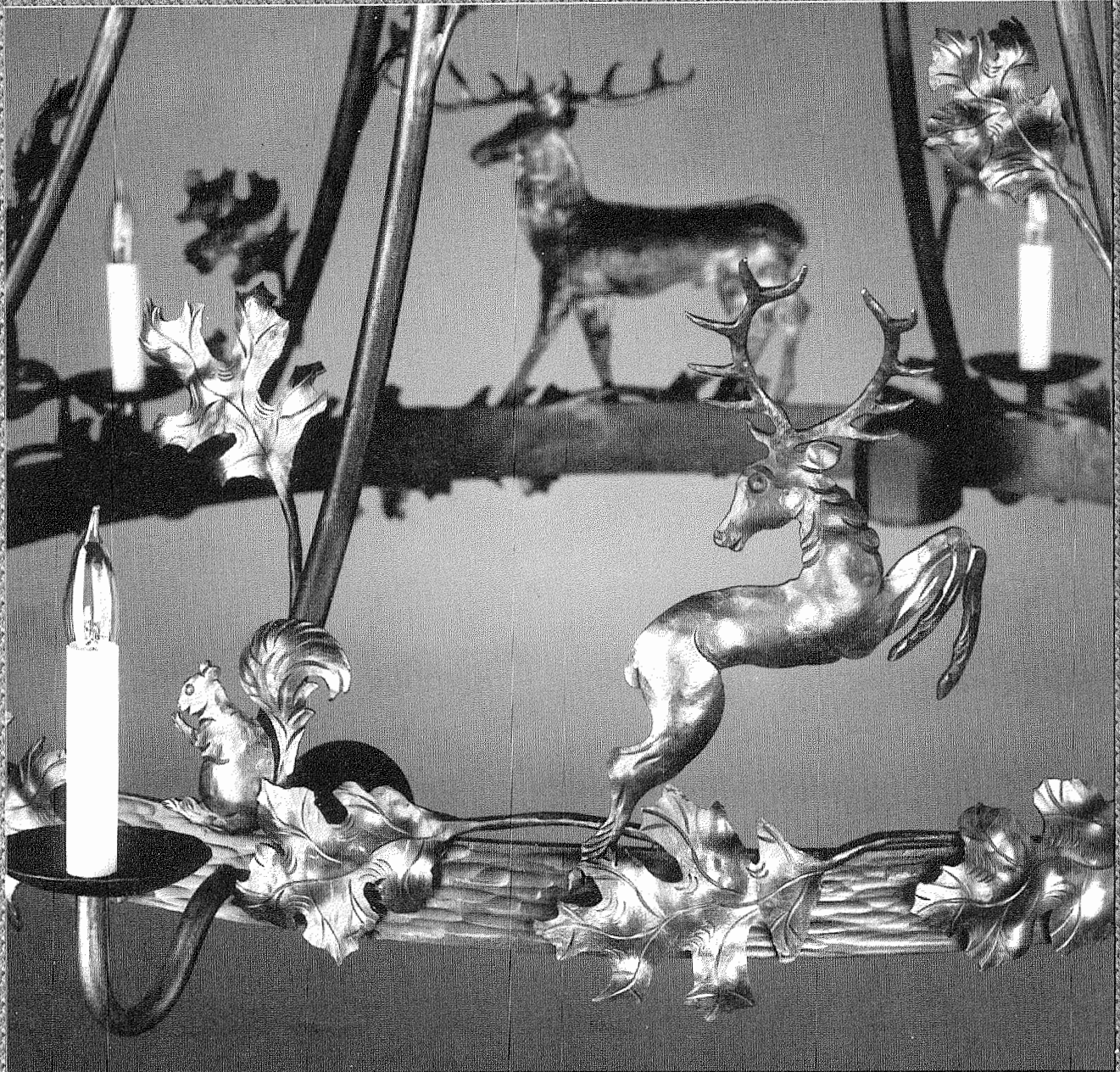


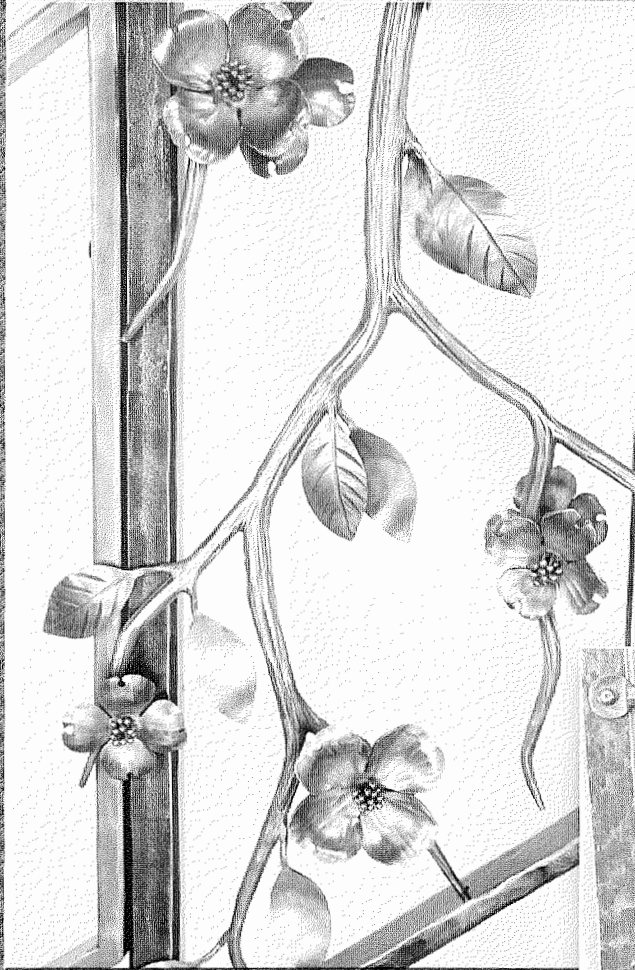


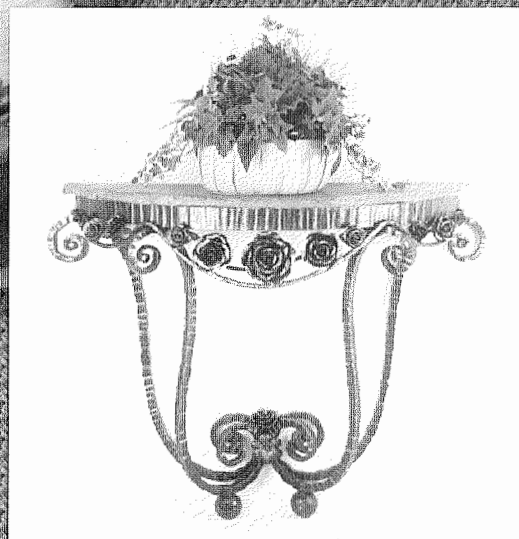


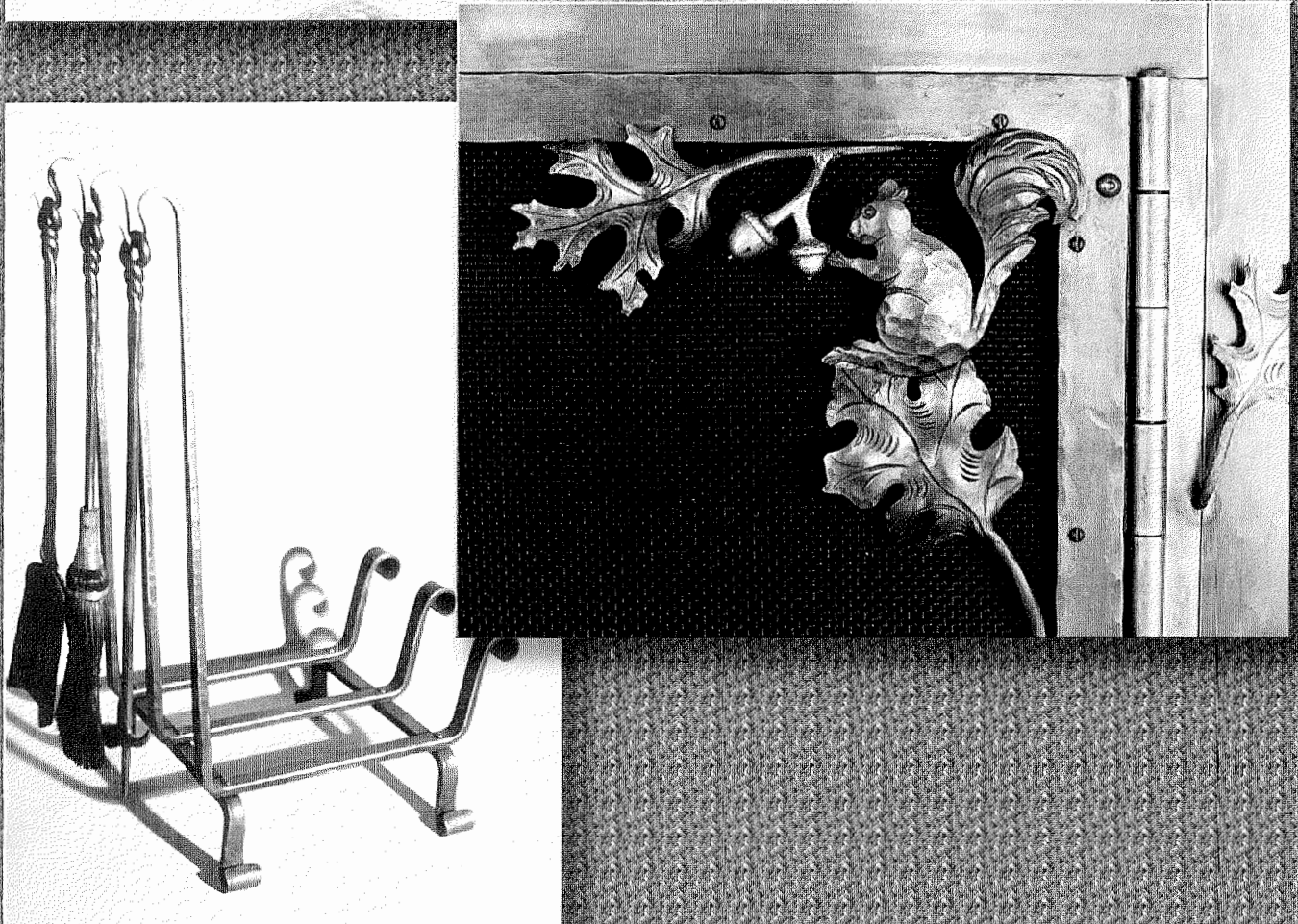
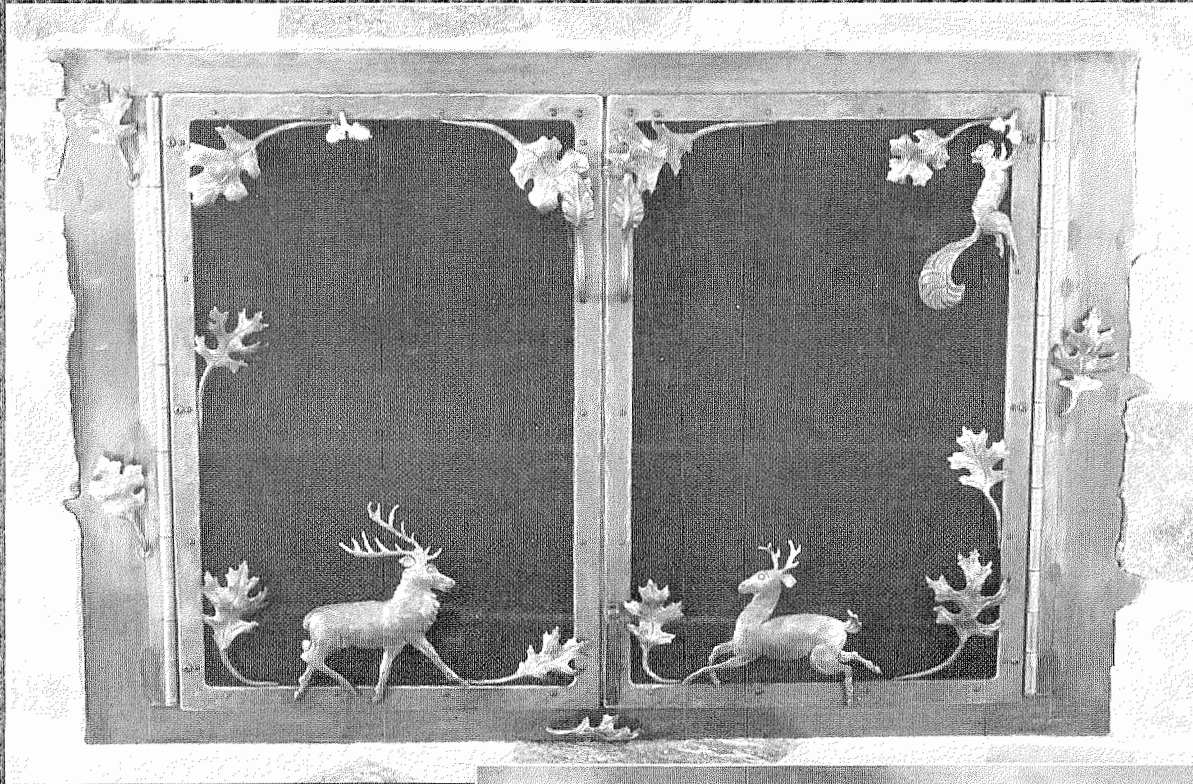


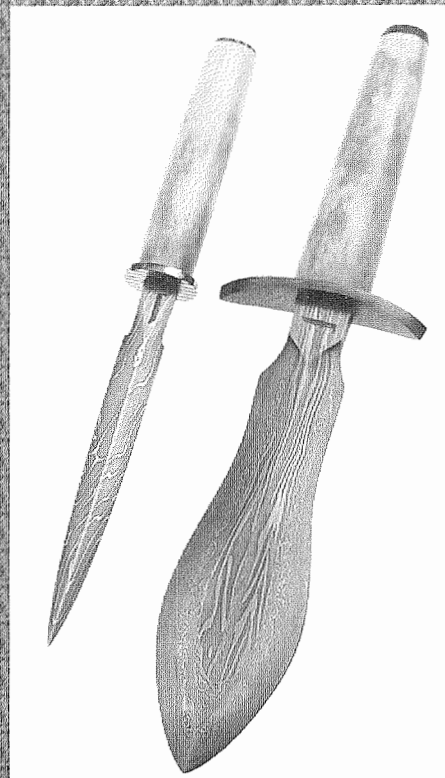


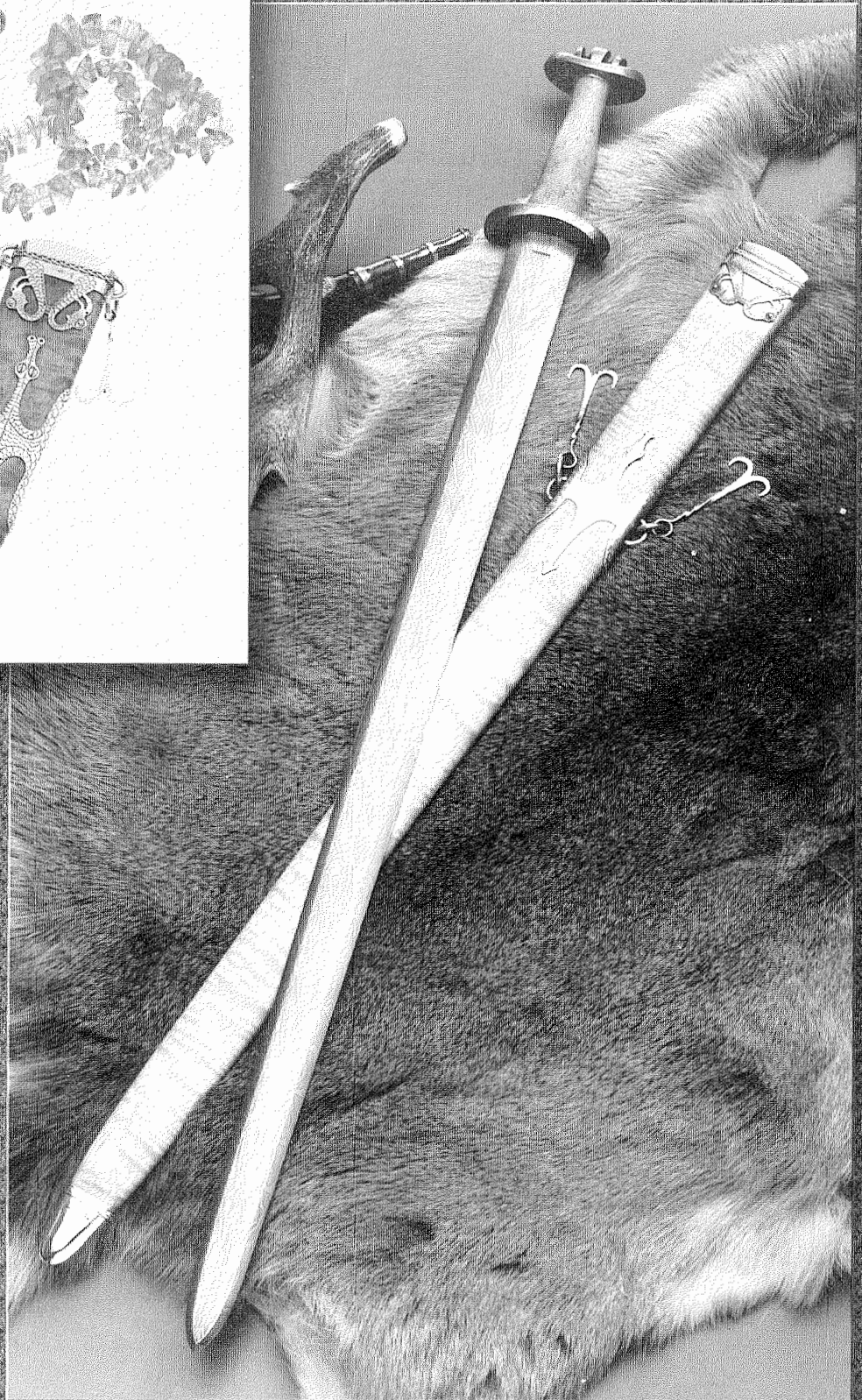
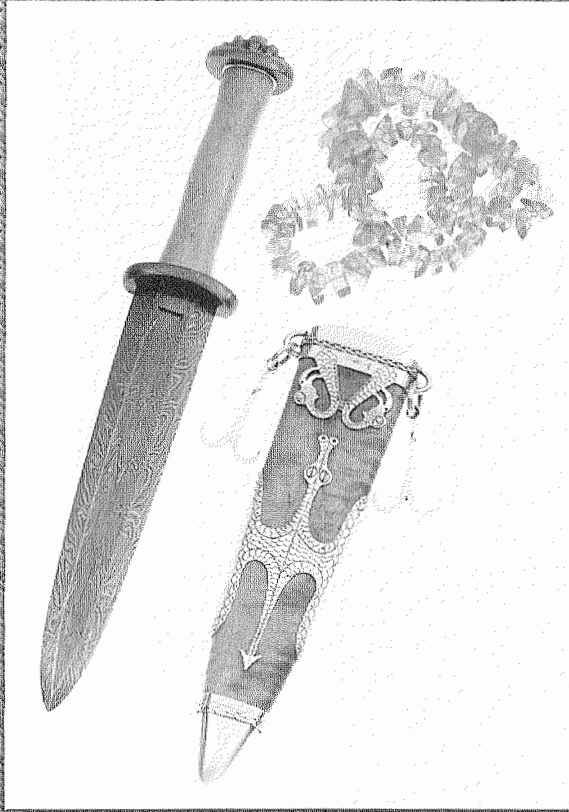




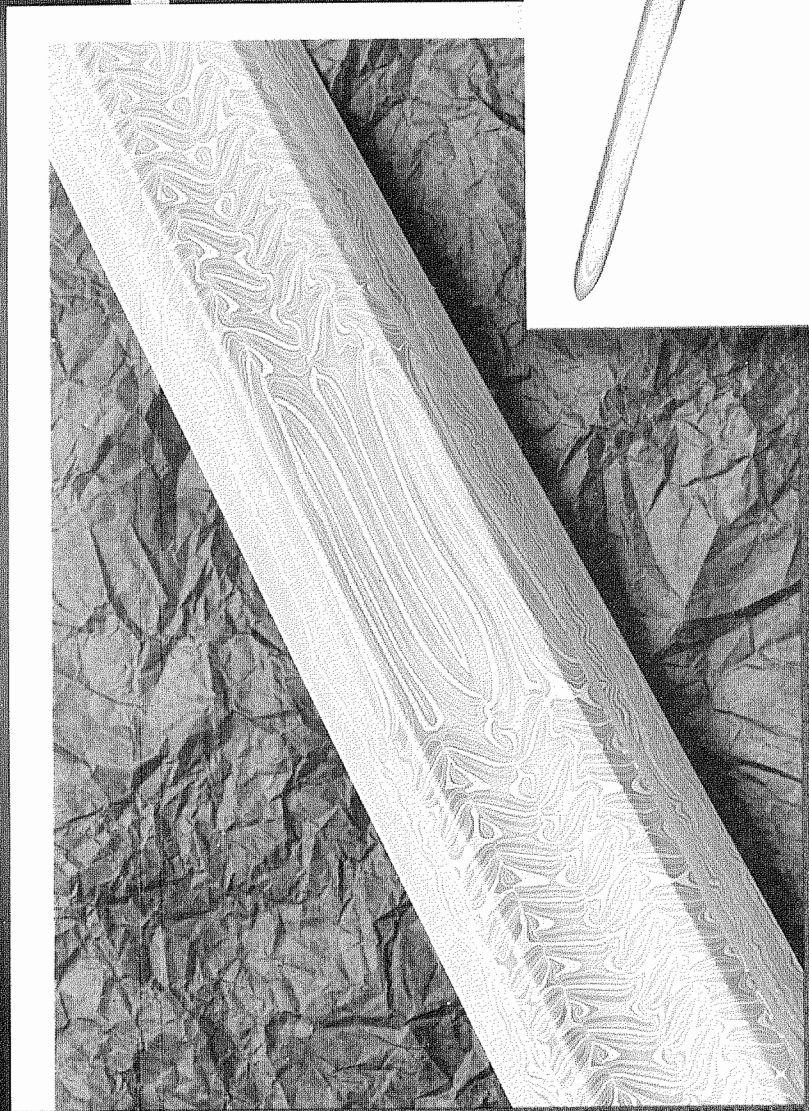
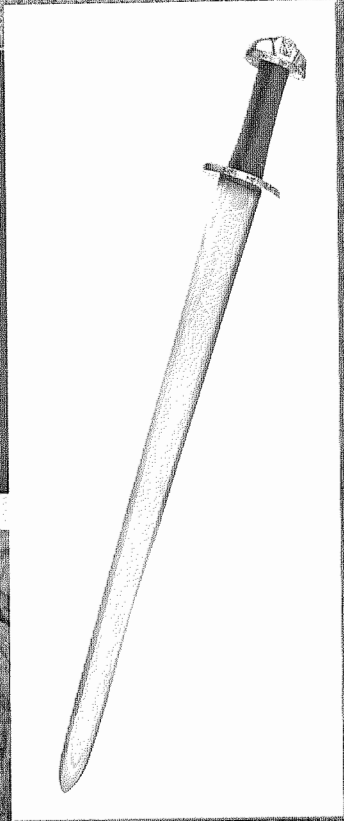
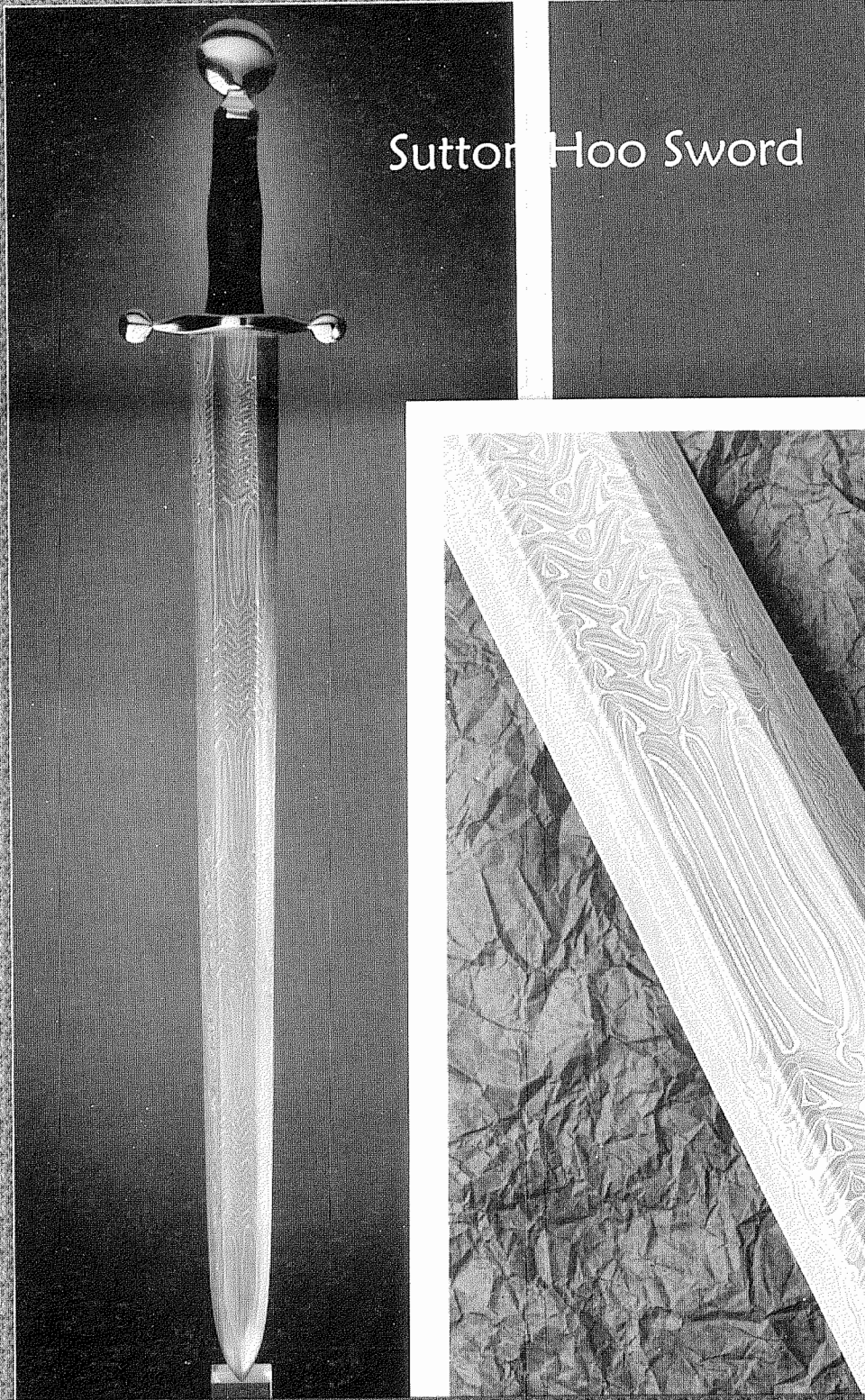








Sutton Hoo Sword

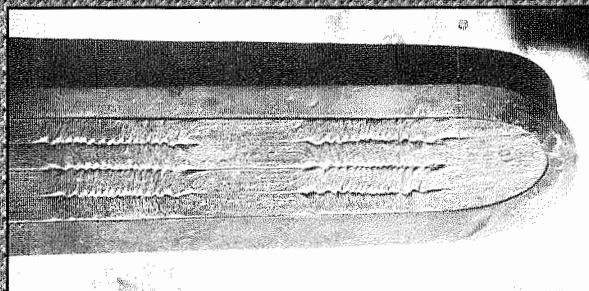
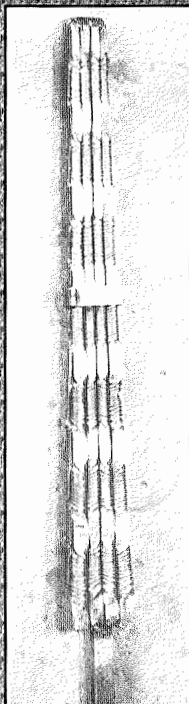


The Saga of the Sutton Hoo Sword

The full story of the Sutton Hoo sword and how Scott Lankton replicated it can be found in the Fall Anvil's Ring, Volume 17, Number 2 of 1989. Sutton Hoo is the name of an excavated ship burial which was found near present-day Woodbridge, England, in 1939. It is considered to be one of the richest and most important archeological finds in Great Britain. Coins from the burial mound date the site at no later than 625 A.D.

The exact origin of the people who raised this mound to their leader is still in some dispute. The Anglo-Saxons believe it to be the burial of an East Anglian king, perhaps Redwald. Many parallels to the famous saga of Beowulf have been drawn. The garnet inlay gold sword fittings bear striking resemblances to work found in Scandinavia. Regardless of the exact origin of this collection of treasures, they lay for 1300 years on a hill overlooking the river Deben. It was up to Scott Lankton, along with researchers from the British Museum, to determine what the Sutton Hoo blade looked like when new. Through radiographs of the original sword, supplied by the museum, Scott worked out the possibilities for the pattern. The radiographs suggested that it was built up of four bundles of seven rods twist-forged in an alternating pattern and lying back-to-back with four more bundles of seven rods. The bundles of rods twist alternately to right and left, forming a double band of the characteristic herringbone pattern that is one of the most distinctive features of such blades. The twisted bands alternate with straight bands along the length of the blade.

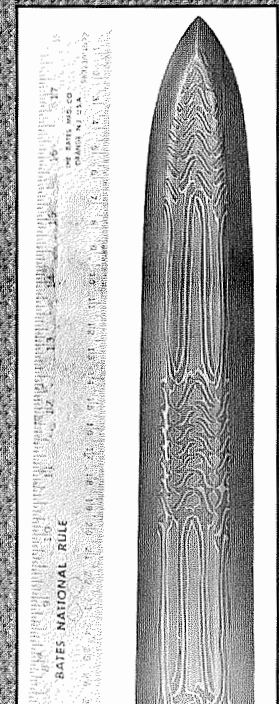
Scott also had to decide on what materials to use. The original sword had oxidized to the point that specific metal identification was impossible. The replica contains 1045 and 1018. As Scott stated in the Anvil's Ring, "It would be foolish to suggest that the materials available in 550 A.D. could be had in 1989, or that this modern sword could look precisely like the original. Instead, the original has provided the inspiration for this modern piece. I am sure that the original smith used the best steels available to him at the time, in any case."

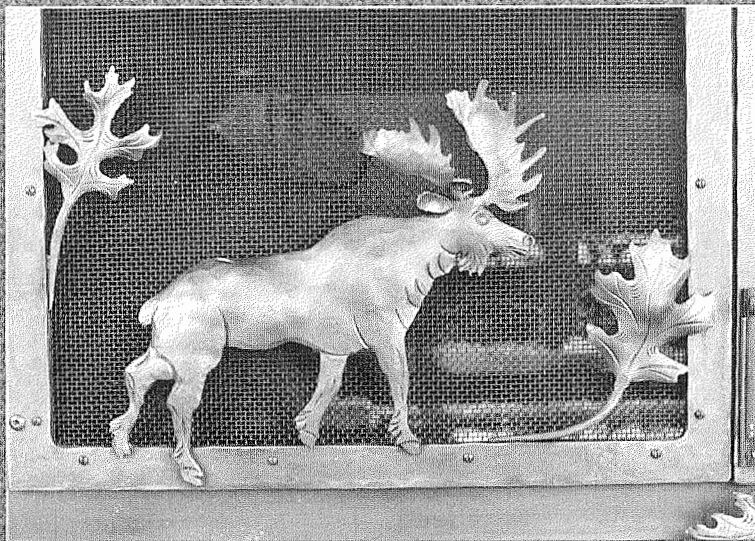
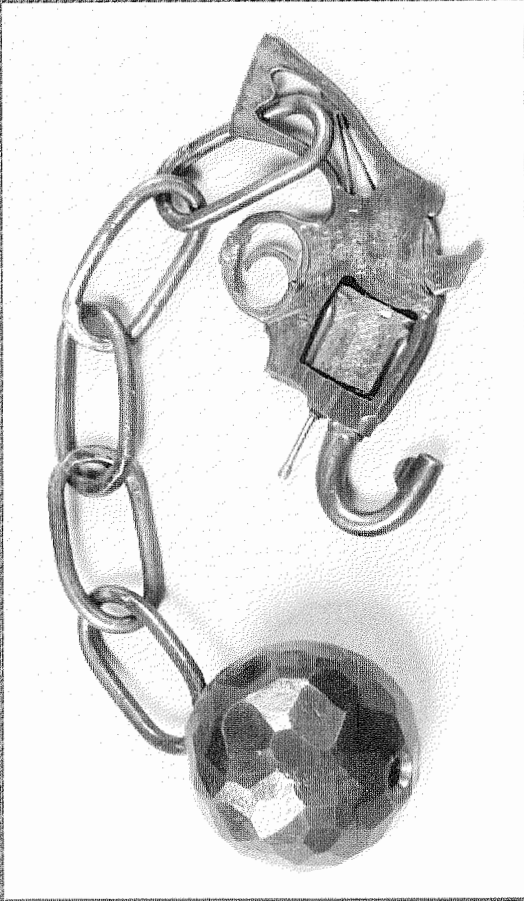


Left: Eight billets were forge-welded to form the twisted core bars. The eight lengths, four wide and two thick, are shown ready for welding. Note collar and details.

Top: Laminated edge wrapped around welded core.

Right: The finished blade.





When Scott isn't busy keeping ABANA running like a Swiss watch, he hangs in his beloved vintage Morgan.

Scott Lankton
8065 Jackson Road R11
Ann Arbor, Michigan 48103
734 426-3735

Lisa Geertsen recently made the move from Seattle and the NWBA to Florida in order to assist her grandparents. Little did she realize the treasure trove of talent that she would discover when she uncovered her great grandfather's blacksmithing past. Max Herman Saupa had been an ornamental blacksmith in Rochester, New York. His work, portrayed here, represents the highly stylized ironwork of the period--the same style found in the work of his contemporary Samuel Yellin. The exquisite copperwork shows the influence of the Art Deco Style. Max had been a product of the German apprentice system--and the discipline of the European craft is reflected in his work!



Fertig für
den Abend
(Ready for
the evening)



General Baron von Steuben 20" x 22" Portrait and Frame
are one piece of bronze

Iron Heritage ~ Lisa Geertsen

Howdy to all the NWBA folks! I'm usually a very quiet part of our group, but I wanted to share a bit of history with you all. I've recently relocated from Seattle to Fort Myers, Florida. Why the heck did I do that? Early retirement? Sick of the rain? In search of cultural isolation? No! I'm here living with and helping out my grandparents. So far I've done a lot of cleaning out of cobwebs and found some treasures in the process.

When I began the metal business at the late 47 Productions, my grandparents informed me that great grandpa Max Saupa did the same work when they lived in upstate New York. I had grown up knowing of the copper work that is everywhere in their house and my mother's but never really thought about it. Since I have gotten more involved with metalwork, these pieces stand out as some incredible works of art as well as family history.

Max Herman Saupa, his wife and 13 year old daughter (my grandma now 91) came to the US from Dresden, Germany to escape the war. His married grandma and soon they all lived in a big old house in Rochester, New York that grandma paid \$5,000 for and fixed it up. Meanwhile, great grandpa could spend his time as a blacksmith and make intricate copper lamps, portraits and boxes for sale and for profit.

I'm sure you can imagine how fun it was to clean the garage (not really). I came upon a nice old tool box filled with nice old tools. How fun to find great grandpa's taps, drill bits, hand tools, hand made chisels and chisels. I carefully cleaned them and returned them neatly to their box. Of course now I am set on figuring a way to use them as soon as possible. I thought I had found a treasure with that, but the next day what I found was even more valuable!

In a drawer I found drawings and photos of tables, ratings, copper work and a 1942 photo of great grandpa in front of the workshop. That one is the most special. A happy blacksmith in a coat. I would have never found these things had I stayed in Seattle. As strange as it is for me to be here among people three times my age (I'm not kidding!) and trying as it is at times I am sad to have left, but glad to be here. I hope you enjoy the pictures and I'm sure I'm not the only one with blacksmithing in the blood!

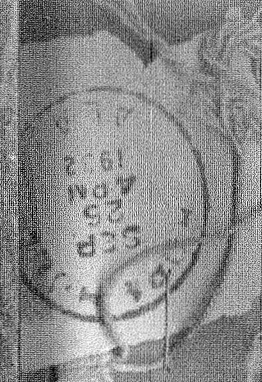
And, wouldn't you know, there are blacksmiths in Florida!



Bottom Boys / Written by
Pat Enright - Yodel
Blake - Guitar; Stuart Duncan
Block - Banjo; Jerry Douglas

OF CONSTANT SOI
Bottom Boys / Arranged by
Guitar: Harley Allen and
Jerry Douglas - Dobro;
Compton - Mandolin; Stuart D

"IN WAR WHOOP"
Written by Hoyt Ming / Jo
Mandolin; Mike Com



Written by Hoyt Ming / John Hartford -
Sharp - Mandolin; Mike Compton - Guitar

"LONESOME VALLEY"
Fairfield Four / Traditional / Isaac Freeman -
Best - Second Lead; James Hill - Baritone; W
Hamlett - Utility Lead; Joseph Rice - Utility

14. "PICTURE ART" frame one piece of copper
formed by The Stanley Brothers
arranged by Ralph Stanley





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One piece copper made from personal sitting

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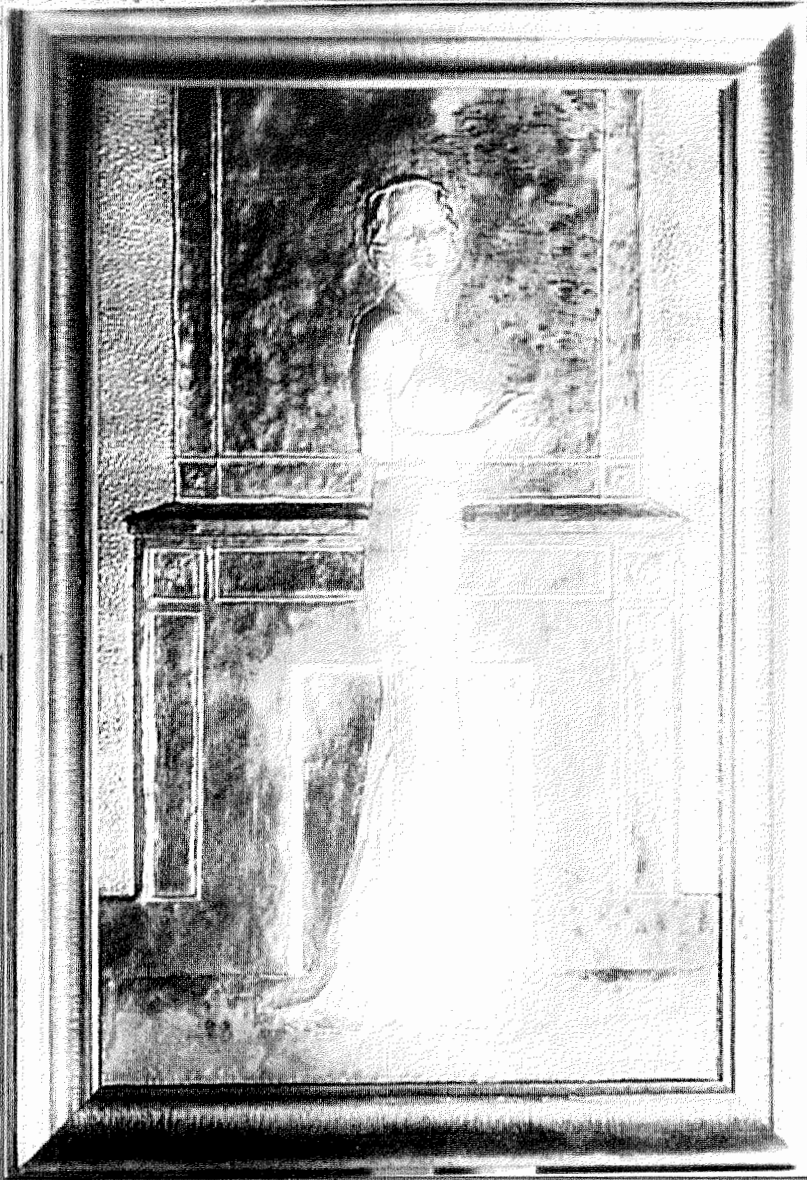
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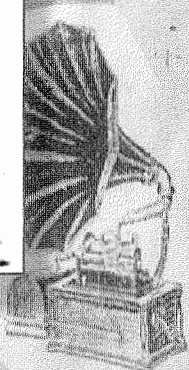
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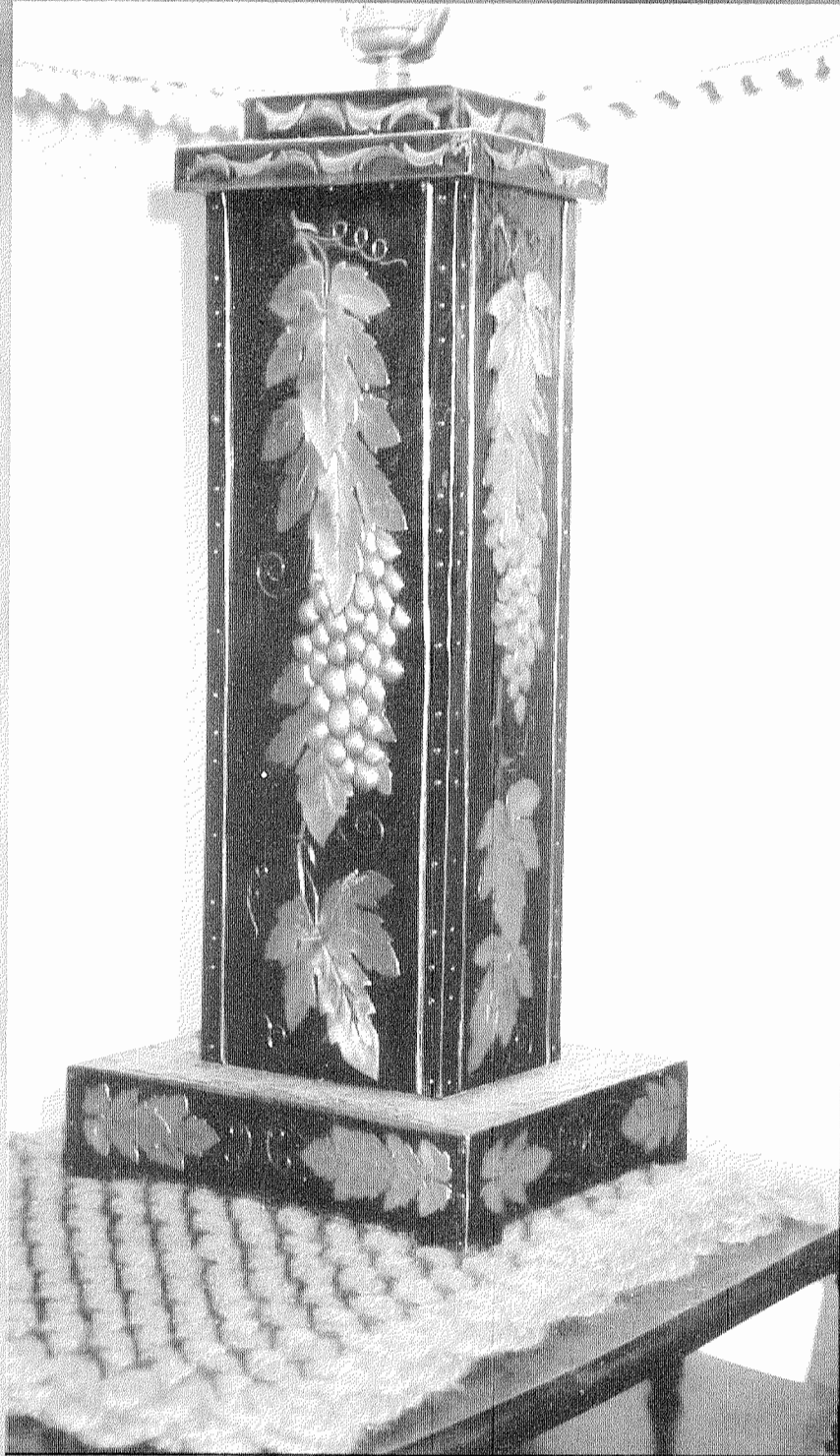




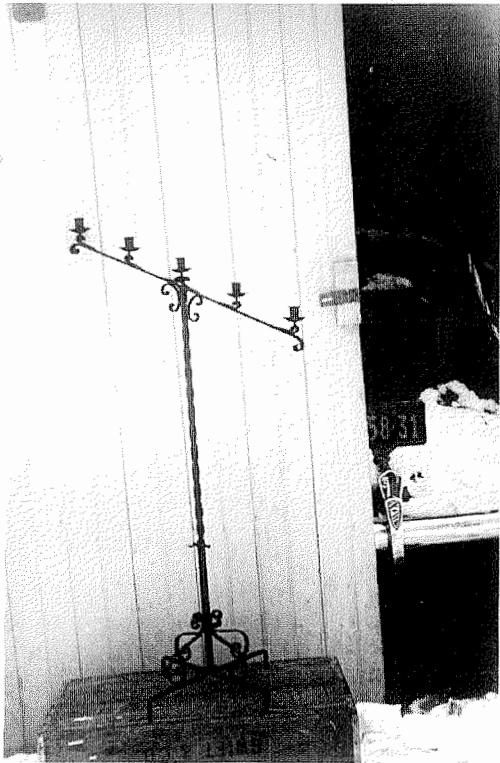












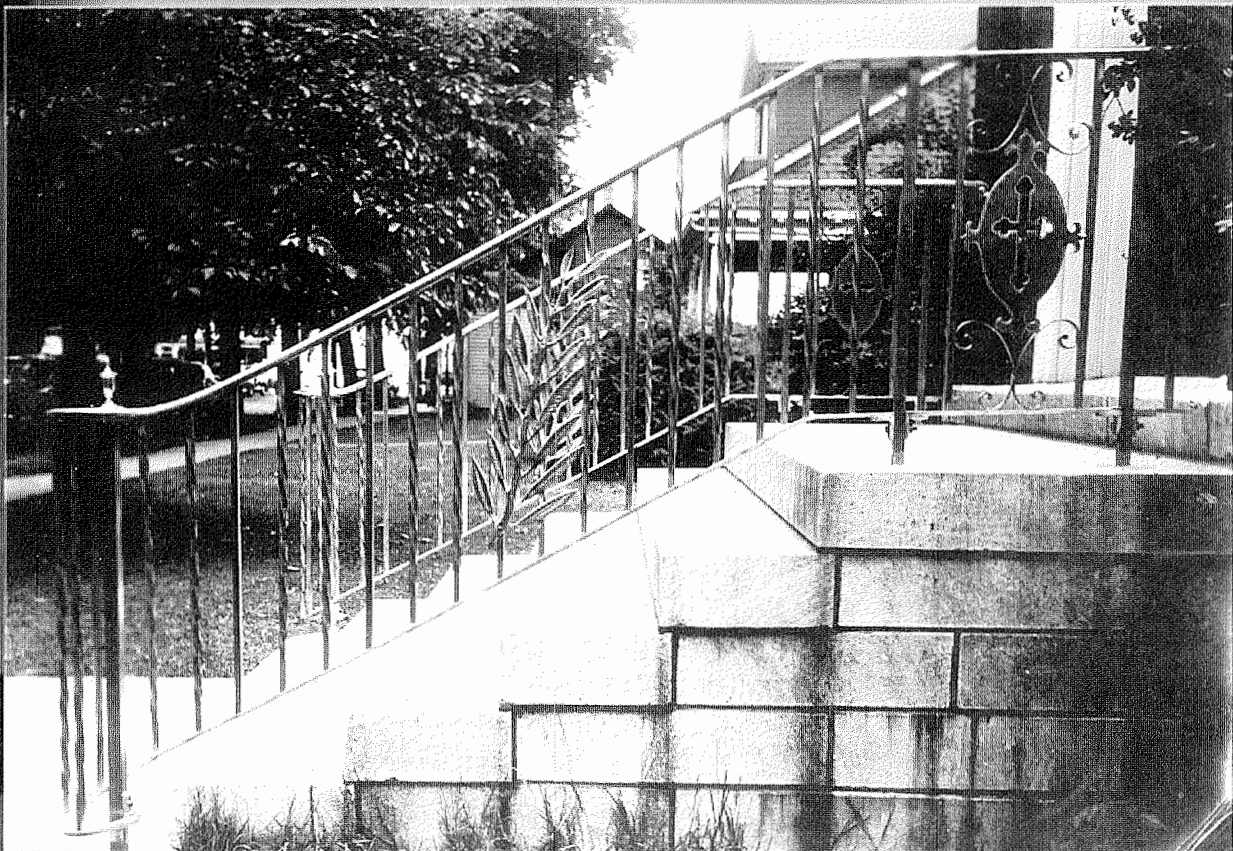
Lisa's grandmother and great grandfather.



Church candleabra, railing, and light fixture by Max Saupa. Above: stair railing



Blacksmith Max Sauper at a craft show exhibiting his exquisite art.





Wayne Goddard Knife Handle Workshop Notes by Hardie Swage

Wayne is an excellent teacher who helps you understand the “why” behind what he does. He is also a fanatical packrat and recycler, as well as thrifty beyond measure. This drives him to make up his own special jigs, fixtures and tools to help him with his knife making. All of this is covered in his two books “The Wonder Of Knife Making” and “\$50 Knife Shop”. Interestingly, the second title has outsold the first. Clearly lots of people are wanting to make knives without investing major bucks in the equipment. The focus of this class was to put a handle on a finished blade you brought to class, but we covered a lot of information on the broad spectrum of knife-making.

Belts and Blades

2" X 72" belts are major workhorses for the knife builder. Great variety of grits and abrasives are available. Lots of equipment made for this size or you can easily make your own set-up. This is covered very well in the “\$50 Knife Shop” Chapter 5. There were several examples at the workshop for the students to study and use. All performed very well. Another alternative is the units made by N.E. Coote who has great stuff at very good prices. He sells a top quality complete unit without a motor for less than you can buy the key components. Contact him at 360-437-0366 or coote@olympen.com. Suggested motor HP for a belt grinder, 1/2 just barely adequate, 3/4 is better, 1hp better yet.

Use new belts on handle material, if you start with steel then the belt can be used for nothing else.

Rough out knife to 80% and heat treat. Do last 20% after heat treat done and care must be taken not to spoil the heat treat.

Belts most commonly used by Wayne in this order when making a knife: forged or stock removal:

1. 60-grit ceramic hoggers.
2. 120 alum oxide or resin bond.
3. 240 alum oxide or resin bond; this is the point you get to 80% and heat treat. After heat-treat start back at top of ladder and work back down.
4. 320 NORAX or alum oxide and then hand rub from here.
5. Greaseless buff last if desired

. Unplugged knife = tribal or primitive (little or no power tools)

1. forge to shape
2. Straighten (three point set up in a vice) *Get forge scale off some way that saves your files or grinder belts.*
3. Draw file, heat treat and start at straighten step and go down entire ladder.
4. 120 grit hand finish and on down grit ladder as desired – see “\$50 Knife Shop” book for details

. Short tang is best design for many knife shapes, step down to tang starts with about 70% of blade width and tapers from there.

. The guard is set on this shoulder with a friction fit to ensure tightness. Literally driven on after slightly undersized hole made corresponding to the tang size at the shoulder.

. A block with slot cut out for the blade and hammer driven, pushes the soft guard material (most often yellow or silver brass) on to the tang while the blade is held in a vice by hard leather jaw pads. It is a file-and-fit-as-you-go until you achieve desired results.

. In preparation for this friction fit, the tang and shoulder area need to be dead flat and both sides parallel. Hole in end of tang gives you a holding place (while grinding) using a blunt pointed tool made from an old junk screwdriver. The quality of your flat wheel and/or belt grinder platen, are the keys to this operation.

. If tang hole in the handle material is a loose fit, glue small sections of wood (pop cycle stick) to sides of tang and file/fit until snug enough to easily glue but not wander out of line. “Wiggle” errors can mess up the final piece during glue up.

. Major tool that gets great amount of use is a top quality flat sanding disc on an electric motor operated with a foot switch. A disc sander should run 800-1750 RPM, slower gives good control, faster less control, more heat but better abrasive life. Material is placed on disc and then disc started and not removed until disc stops. Great control and dead flat can be easily attained. Can be made with a second hand enclosed motor and an arbor set up, this gives you an opportunity to “gear” the unit down by your choice of pulley sizes. Key elements of this setup are the quality of the sanding disc plate and the foot switch. Abrasive discs can be made from abrasive paper sheets for an 8-9" disc. 3M spray on adhesive #08054 allows three or more disc changes without more adhesive being added. The foot switches are available in a number of woodworking catalogues and stores. Use enclosed motors so grinding dust won't kill them.



Wayne says "The sandpaper I like best for wood, micarta and stag finishing is MIRKA, Royal Plus, Finishing Paper made in Finland. I buy it by the sleeve from Western Tool Supply in Eugene. It outlasts any US made paper I've tried by at least 200%. I go from 120 on the belt grinder to the 180 MIRKA disc to get the super flat surface for a final fit. For metal I use wet or dry paper made by Klingspor. I get it from: Tru-Grit Inc. Abrasive Specialties, 760 E. Francis St, Suite N, Ontario, CA 91761 Out of State orders only, 800-532-3336 California orders an information 909-923-7046 or <http://www.trugrit.com> Wayne says: "The metal disc that I had at the workshop (the one I use daily) came from a lapidary supply store locally. It has a threaded hole made to mount to a grinder with the proper thread, or arbor. However they may or may not have the arbor to mount it on. The arbor outfit seems to have gone out of business. Lynn and I have been looking for a source but came up dry. The light weight disc's that go right onto the end of a motor are available from knifemaker supply companies but rarely run very accurate. These discs have to be dead true in order to get things truly flat". An alternative is to clamp sand paper to a saw table and hand lap until flatness is achieved (AKA backwoods belt sander).

. Wayne is a big fan of enclosed washing machine motors, they often out live the equipment they are put into and are available in second hand shops, garage sales and tailgate sales. Motor arbors for electric motors are available at bigger hardware stores likes Winks in Portland and many knife supply catalogues. They attach to the motor shaft and give you a 1/2" threaded shaft, washers and nut. Available to fit motor shafts of 1/2" & 5/8", left or right side, these take grinding wheels, buffing wheels, cut-off wheels, Scotch Brite wheels, or contact wheels (drive wheel) on your home made belt grinder.

. Second very useful hand made set up is a basic cut off wheel on a second hand motor (enclosed) with a table set just under the centerline of the motor shaft. Table extends on both sides of the wheel to allow you control on close work. A wonderful tool to true up the shoulders of a short tang knife and many other detailed grinding jobs. Cut off wheel suggested RPM range: 3400 or close, 1750 will work but wheels will not last as long. Wheels can be purchases at Harbor Freight, Builders Square, Home Depot and many other places. Large cut off wheels are often discarded when they get small and these are ideal for this use. You will have to find adaptors to bring them down from one inch to the 1/2" dia arbor. Many of the smaller wheels are made for a 5/8" shaft but the center diamond can be punched out and replaced with a unit with the proper size hole.

. Buffers can be very helpful, shroud all but the front and bottom with wooden box and always hang over end of bench/table or stand. If blade caught in wheel you want the only way to freedom not aimed at you. Recommended RPM for a buffer: for 10" wheels, not more than 1750, for 5" wheels and under 3400 is OK.

Note: there are many ways to achieve the above functions other than those detailed. The conversion of exiting equipment or using other platforms like a wood lathe, also offer possibilities. Use your imagination and always build safety features into your designs. Minimum HP for buffer, cut off and disc can be 1/3. Of course bigger is better, so use it if available.

Jigs and fixtures:

Wayne has made up a great number of jigs and fixtures to ensure careful work. Using hand or powered equipment you must be able to firmly hold the material to apply the tool. The key is to have control of the work and clean sharp tools. Lack of control is what leads to poor quality work and shop accidents. Take the time to build aids that help take the risk out of this work.

Odds and Ends of information:

. Marking pen is cheap replacement for layout blue but it gets on the hands and ends up in places you don't want it to. Use a pencil if at all possible.

. Long handle with shorter piece secured by two adjustable bolts gives you a way to hold and manage sections of antler while drilling for tang, just because objects are hard to hold in a vice do not offer your hand as a sacrificial holding jig. THINK SAFE

. Make mock up of knife, old clipboards have a very heavy Masonite that does not seem to be available elsewhere. Your hands will tell you if it fits and feels good.

. Knife patterns: see Bob Engnath or knives.com on a search engine and look at the listed links. Don Fogg has a site also that is a virtual university of knifemaking knowledge. <http://www.dfoggknives.com/>

. Multi part handles can be glued to tang in a series of steps not all at once.

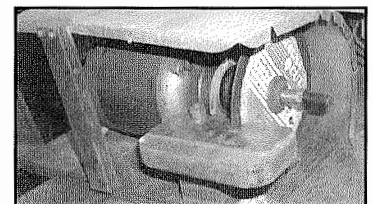
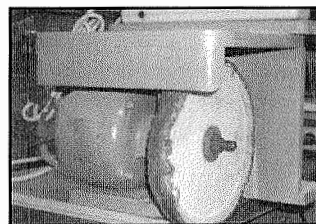
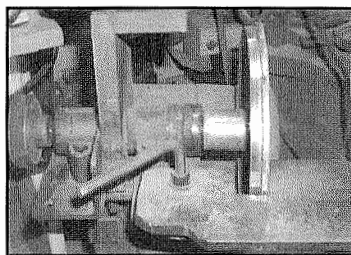
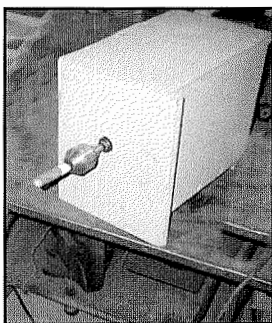
. A bolt on a wood handle with octagon facets gives you a hold on difficult work and still lets you rotate to different presentations in a vice. Good for use with hand or power tools. If guard needs a bend, do it over a form so the bend is consistent on both ends. . Use 5-Min epoxies to glue up knife and then let sit overnight in a heated room. Heat epoxy (Devcon 5-Min) with a lamp before mixing, glue mixes and flows better. Heat in the tubes or even the two trails, on the paper, before they are mixed, keep the mixing paper around to act as a guide to when the glue is set. Keep under clamp pressure for 24 hours in a warn room. Super Glue – do not squeeze the tube until fluid is down into the neck.



- . Make upright holders with wood base and 35MM film cans to hold small items and mix small batches of die, etc. A spill can spoil a lot of work in progress. Don't take chances.
 - . Fluxing Damascus billet. Use small can with pierced end like an oversized saltshaker. Catch flux that does not stick to heated billet in a medium pan for reuse
 - . To look into the fire to judge if your work is ready to weld, use a brazing mask with shield cut down 50% of length gives you freedom to look at the fire and also look below the shield when working the billet on the anvil.
 - . Welding up a Chain Saw billet, grind tooth of the chain and pile up on end of a bar, it's a loose fit with some welding and wire ties. Takes several heats to bring it to together. Heat #1 – push together and reflux, Heat #2 power hammer or striker into a real billet. Let fluxed piece soak for 2 min to really get the scale off before working, Push billet into a square and then work on diamond into another square to force all gaps out. Heat and forge until satisfied. Cut and stack and forge at welding heat to insure good billet.
 - . Hard leather jaws backed by micarta make good vice jaws to hold knife blade to friction fit guards
 - . File work. A round chain saw file and a small triangle are all you need. Safe one side of the triangle to get a sharp crisp edge for fine lines. Re-grind when it gets dull. Blade edge must be finished before starting and then go over file work with fine grit paper and a buffing wheel when done. Make up forms to clean out filed depressions whenever possible as file leaves rather course finish. Brass rod soldered to a light bar works well in the rounds, the fine lines take no more finishing.
 - . High Temp Silver Braze Alloy – get the flux that matches the rod from the welding supply store. 1300 or 1400 degrees is the range. Joint is stronger than parent metal.
- Wayne heats from below using a stainless screen to hold item on a section of cut out angle iron. Used on tangs and tool construction.
- . Low temp solder must be lead free silver bearing solder, used to fill gaps on guards.
 - . Bernz-O-Matic JTH7 torch is adjustable level of flame and is considered the best of the propane torches for this work. Can be hooked up to disposable or larger refillable tanks.
 - . Sharpening, 15 degrees is the Micro bevel, build a guide to teach yourself. Count strokes to insure same on both sides.
 - . 4.5" is a good handle length, cut longer and trim to what feels good.

Resources:

- . *Books by Goddard* "The Wonder of Knifemaking" and "Wayne Goddard's \$50 Knife Shop" are available for \$23. Postpaid from Wayne. The Video, "The Wire Damascus Hunting Knife, How To Do It". \$50 postpaid E-mail wgoddard44@earthlink.net or phone 541-689-8098, Visa, Mastercharge or Discovery, Cash, Hammers, whatever.
- . *Supply sources:*
- . Koval Knives koval@kovalknives.com OR www.kovalknives.com OR \$4.00 PO Box 492, New Albany, Ohio 43054
- . K&G Finishing Supplies PO Box 458, Lakeside, Ariz 85929-0458
- . Micarta: Chuck Bybee <http://www.alphaknivesupply.com>
Phone 425-868-5880 Fax 425-898-7715
- . *Collector associations that put on top quality shows in our areas:*
- . Oregon Knife Collectors Box 2091, Eugene, Or 97402 have a newsletter and put on some great workshops and shows. <http://www.oregonknifeclub.org/>
- . NW Knife Collectors 1911 SW Campus Drive, Suite 271, Federal Way, WA 98023 has a great newsletter and shows

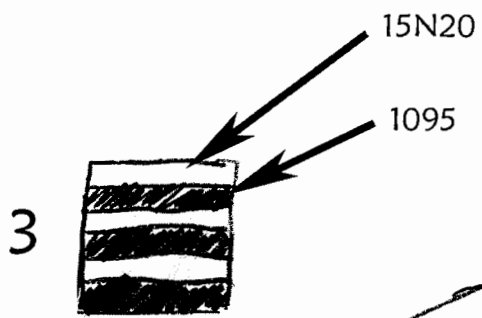
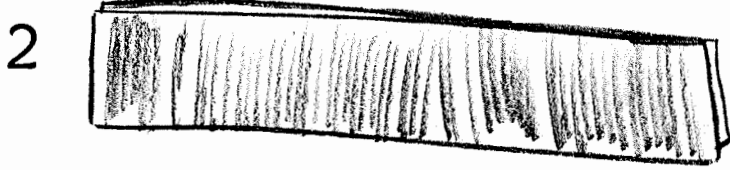


Assorted grinders, shapers, buffers and cut-offs used in the knife process

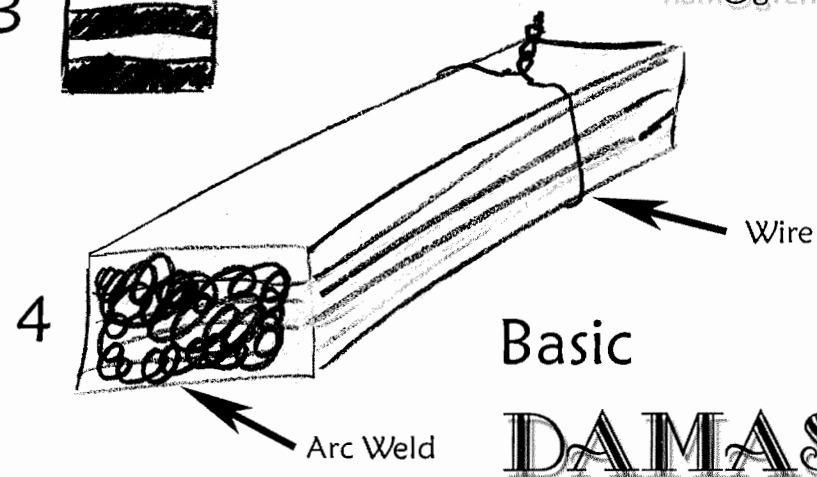


Damascus by Nicholas Marcelja

1. Use L6 or 15N20 for the lighter colored layers. 1095 for the black layers.
2. Grind ALL of the mill scale off of the materials. Grind line should go across the bar stock, not lengthwise.
3. Stack the two types of steel in alternating layers. Clamp this stack together.
4. Use a welder to weld one end of the billet solidly together.
5. Wire the other end of the billet securely. This allows the layers to shift while heating.
6. Place the billet in the forge.
7. When the billet has gotten to a low red color, flux the billet. Put an even coat of flux over the entire billet.
8. You want to coat even the parts of the billet that have not come to full temperature. This ensures that oxides will not form in-between the layers.
9. Continue to heat until the billet comes to about the same color as the forge. Use a thin steel/iron rod to test the billet to determine if it is at welding temperature. When the rod begins to stick to the billet it is ready for welding. Test the billet in several places to ensure even temp.
10. Remove the billet from the forge and strike solidly. Start at one end of the billet in the center. Then strike towards the edges. Move along the bar until the entire billet is sealed. Brush the edges to look for any delaminating. The layers will cool at different rates if delaminated. So look for dark areas. If found then flux and weld.
11. Draw out the billet to about ½ inch thick and about 1 inch wide. Make sure it is even thickness and width throughout.
12. Prepare to fold by notching the billet in the center with a hot cut. Cut about ¾ of the way thru the billet. Flatten the enter billet
13. Allow the billet to cool. Grind the surfaces that will be joined clean of all scale.
14. Heat billet in forge. Make sure that the center thin hinge area is in the hot part of the forge. As soon as the billet shows red color flux. This will help prevent oxides from forming.
15. When the center hinge is yellow hot, fold the billet onto itself. Flux some more.
16. Use the touch rod to determine when the billet is at welding temperature.
17. Go thru steps 10-16 until the desired number of layers is achieved. Remember each fold doubles the number of layers.
18. Forge out to desired size for making whatever.

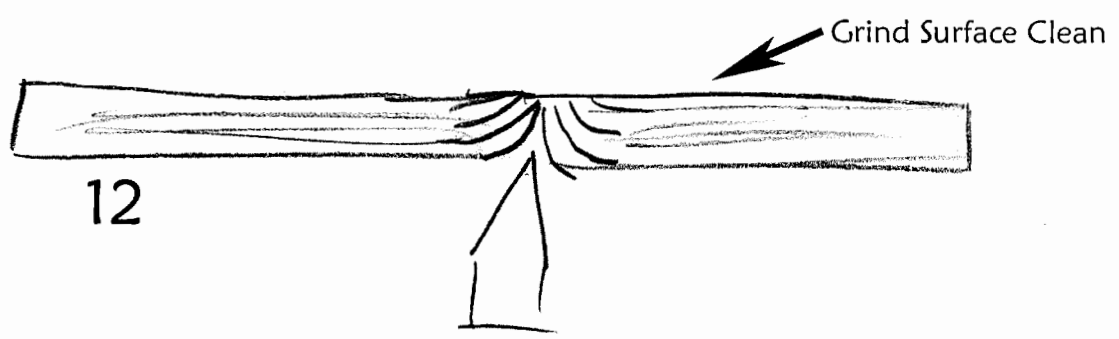
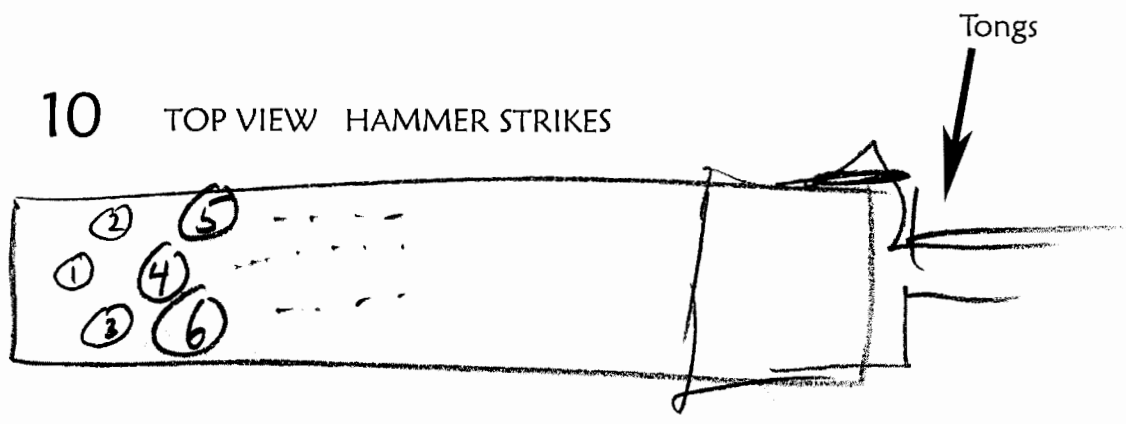


Nicholas Marcelja
 Bladesmith/Blacksmith
 Damascus Steels
 POB 87313
 Vancouver, Washington 98687
 360 201-3986
 nam@grendal.rain.com

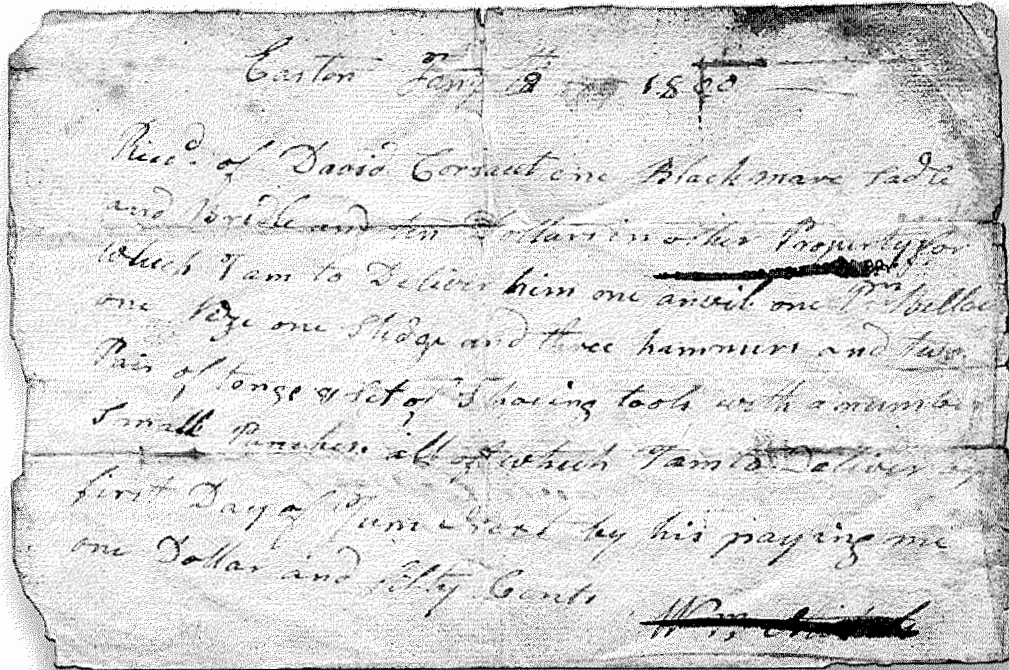


Basic
DAMASCUS

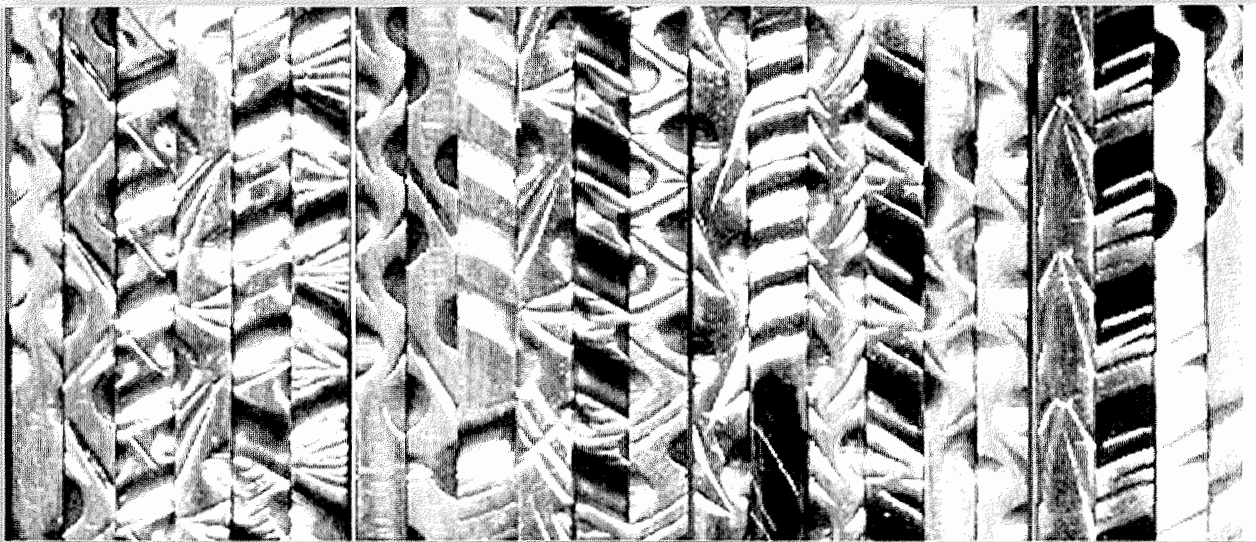
10 TOP VIEW HAMMER STRIKES



Colonial Tool Receipt . . .



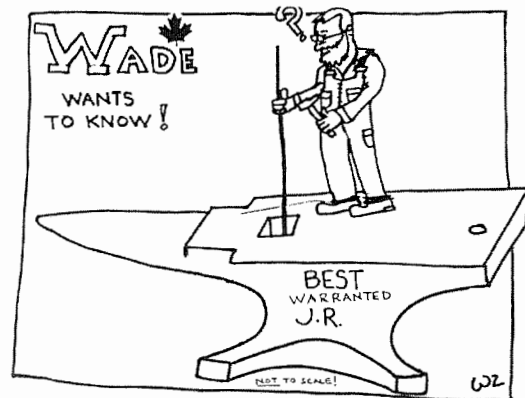
Easton, 1800. Received from David Corsuat one black mare saddle and bridle and ten dollars in other property for which I am to Deliver him one anvil, one pair bellows, one vize, one sledge and three hammers and two pair of tonge & set of shoeing tools with a number of small punches all which I am to deliver by first day of June next by his paying me one Dollar and fifty Cents.



Goddard examples of filework on various knife edges

Wade Wade's
QUESTION CORNER

MY NEW ANVIL, A "BEST," HAS THE SQUARE HOLE AT THE HORN END. IS THIS SOME KIND OF LEFT-HAND ANVIL? OR SOMETHING COMMON IN EUROPE? IS THE "BEST" MADE IN HOLLAND? BELGIUM? GERMANY?



FAITHFUL READERS OF THE HOT IRON NEWS WILL RECALL THE CONFUSION THAT HAS BEEN REIGNING IN MT. LEHMAN, BRITISH COLUMBIA, SINCE WADE WADE COULDN'T FIND HIS "BEST" ANVIL IN RICHARD POSTMAN'S "ANVILS IN AMERICA"! ONE POSSIBLE EXPLANATION WAS THAT THE BOOK IS NOT "ANVILS IN AMERICA AND CANADA"! FORTUNATELY, AFTER FRANTIC COMMUNICATION, VIA ONSTAR, TO ANVILMAN HIMSELF, RICHARD POSTMAN HAS BRIEFLY INTERRUPTED HIS CONTINUING RESEARCH ON THE EARTH'S ANVILS TO CAST A PINPRICK OF LIGHT INTO THE INKY DARKNESS OF ANVIL KNOWLEDGE IN MT. LEHMAN--ONLY PARTIALLY AMELIORATING THE CONFUSION WHICH STILL DWELLS THERE!

RICHARD POSTMAN:

I am in the process of finishing a small book titled *Mousehole Forge* and I don't want to take the time to wade (Wade?! ed.) through all of my material on English anvils just now. So I will answer from what I saw in the HOT IRON NEWS.

The anvil is English and because the table extends from the face and because of the forward hardie hole it is known as a "Soho." I do not know why the English gave it that name, but Mousehole and other anvil makers advertise it as such. Also, I am not sure what type of smith would have used it, but it was for a particular craft of the smithing trade.

The word "Best" is not the name of the anvil maker. Apparently the maker did not want his name on it and sold it through an exporter. When you see the word "Best" on the side of an English anvil it generally means "Best Scrap Iron." Scrap iron was used in making the better-made anvils. As I recall the photo the "Best" was rather small. The fact that it has Warranted would indicate that it was made in the latter part of the 19th Century.

When I finish this book on Mousehole of about 130 pages and publish it I will go to work on *another* book titled *More About Anvils* and *then* I will get into all of the new material that I have found and that has been sent to me since *Anvils In America* came out. The new book will focus primarily on English-made anvils and ones such as this will be discussed at length. The new book will be almost as large as *Anvils In America* as far as I can tell right now and with all of the new material and anvils that are not in the other books. So, to get the full story on anvils such as this one I guess that you will *just have to wait*. I hope that this has been of some help to Wade and to your readers. *Richard Postman.*

SO, THERE YOU HAVE IT! MT. LEHMAN'S DEARTH OF ANVIL KNOWLEDGE WILL HAVE TO REMAIN SOMEWHAT SUSPENDED UNTIL RICHARD WRITES TWO MORE BOOKS. MAYBE SOMEDAY RICHARD WILL GET AROUND TO WRITING "ANVILS IN CANADA"--AND RESTORE COMPLETE AND FINAL TRANQUILITY TO WADE WADE'S CORNER OF THE COMMONWEALTH.



**YOU WON'T HAVE TO
CLIMB A TREE TO SEE
THE DEMOS!**



**ST HELENS
OREGON**

**SPRING CONFERENCE
APRIL 25 ~ 27, 2003**

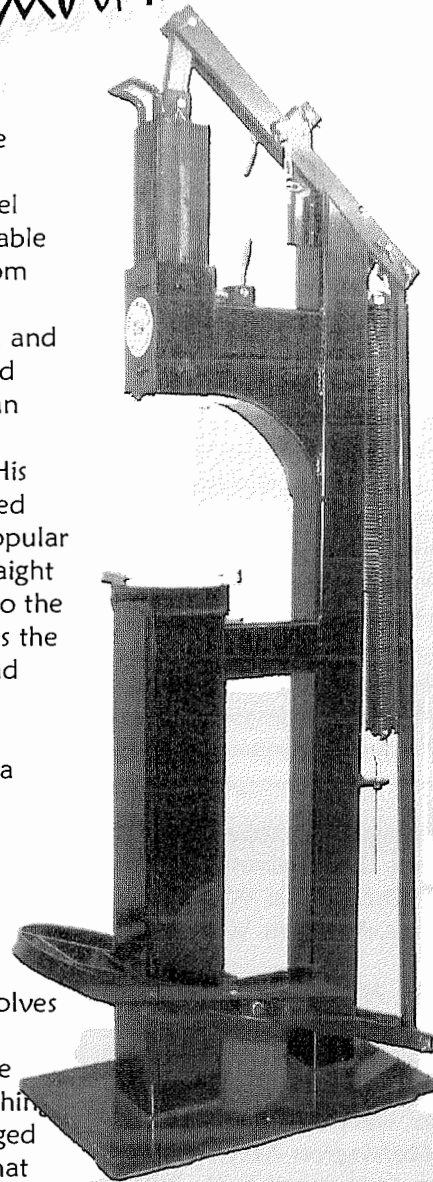
THE ART OF THE TREADLE HAMMER

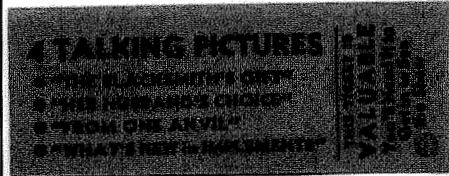
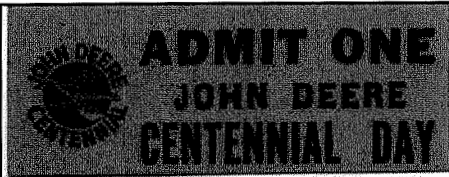
SPRING CONFERENCE DEMO BY RICHARD SHEPPARD

Richard Sheppard will be using his Sheppard "Big Lick" Treadle Hammer to demo unique techniques on this little-understood smithy workhorse. Richard will be showing hot and cold chisel work, slitting square and flat stock, piercing holes that are useable in square and round stock, how to cold cut a beautiful leaf from flat stock, Repousse' technique, chisel and chased cold work, channeling wire in lighting projects, quick and easy tenons . . . and more! There will be plenty of time for questions, answers, and individual problem solving and sharing. Richard has more than 30 years of experience as an artisan blacksmith, operating Sheppard Mountain Studio in Bruceeton Mills, West Virginia. His main field is architectural forged ironwork. In 1995 he designed and built his first in-line treadle hammer which is now very popular in the United States and Canada. The hammer can deliver straight up and down blows which can be light, or hard blows. Due to the head action, the blow is even and the vertical stroke eliminates the need of adjustment for aligning tools. He has also designed and markets a heavy-duty, side draft coal forge. Richard will be bringing a few hammers along for anyone interested. Richard Sheppard, Rt. 3 Box 161s, Bruceeton Mills, West Virginia 26525 304 379-7450 sheppardmtstudio@hotmail.com

LOCAL DEMONSTRATOR TERRY CARSON!

On Friday, Terry will demo a basket handle fire tool. This involves forge welding, drawing, splitting, twisting and other critical techniques! His repertoire will also include dies, forging candle sticks with decorative fullering, mortise and tenon joints, punching and pipe forging. His piece de resistance' will be a flower forged from solid stock. Terry will emphasize small attractive items that will sell and make great gifts!





Spring Conference 2003 set for St. Helens, Oregon, April 25-27. Guest demonstrator will be Richard Sheppard, Bruceon Mills, West Virginia, who will be using his Big Lick Treadle Hammer to demo treadle hammer technique. Local demonstrator will be Terry Carson who will demo a fireplace tool basket handle and other basic techniques. The conference will be at the Columbia County Fairgrounds. The two motels in town are the Best Western Oak Meadows Inn, 585 South Columbia River Highway, 503 397-3000, with rates of about \$75, and the Village Inn Motel, Restaurant and RV Park, 536 South Highway, 503 397-1490, with rates of \$40-52. Ask for the NWBA discount at check-in at both, thanks to the leg-work of Scott Kelly. And don't forget about the **Tong Keeper Contest** which will offer \$50 prizes in each of the categories of Most Functional Keepers, Most Artistic Keepers, and the Most Original Keepers! All entries will be auctioned off! Also, time to start working on an **Auction Item** for the Saturday Night extravaganza!

Fall Conference 2003 will be at Mt. Vernon, Washington, October 10-12, at the fairgrounds. Demonstrators will be Jorgen Harle, Orcas Island, Washington, and Paul Thorne, Anacortes, Washington.

Caniron IV, Hamilton, Ontario, Canada, July 10-13, 2003.
www.caniron.com

Blacksmiths Needed to Sell at the Western Washington Fair, Puyallup, Washington, September 5-21, 2003, Contact Terry Carson, 253 847-3235.

Fraser Valley Blacksmith Association might be in the offing. Interested persons in the Fraser Valley or Vancouver area can contact Louis Seguin at 604 858-7222 or fraservalleyblacksmithassociation@hotmail.com (whew!).

Blacksmithing Classes at SSCC in Seattle are being planned this Spring by Ernie Leimkuhler 425 235-2859, ernie@stagesmith.com, in league with David Lisch.

NWBA 2003 Committees~

Insurance: John Loeffler/Jerry Kagele
Grants: Terry Carson/Dave Lisch
Workshops/Education: John Loeffler/Terry Carson/Alan Flashing
Club Storage/Trailer: Christa Fairbrother, Dave Lisch
Website: KentRudisill (www.blacksmith.org)/ Christa Fairbrother
Library: Don Kemper
Sound System: Mark Manley
Video System: Laura Goemaat/Gary Chapman/Christa Fairbrother
Roster/Mailing List: Al Karg
Hot Iron News: Jerry Kagele/Mark Manley
Conference Safety: Dave Lisch/Alan Flashing
Spring 2003 Conference: Mark Manley/Christa Fairbrother
Fall 2003 Conference: Chad Heiserman/Gary Chapman
Spring 2004 Conference: Alan Flashing/John Loeffler
Fall 2004 Conference: John Loeffler/Alan Flashing (25th Anniversary)

Red Troll Forge Workshops with Nick Marcelja in Bellingham, Washington, including Damascus, Blade Forging, Basic Blacksmithing, 360 921-3804, www.redtrollforge.com for info.

Old Cedar Forge Workshops, April 11-13 Basics; May 16-18 Intermediate, Tool Making, Joinery; October 24-26 Basics; November 14-16 Intermediate, Tool Making, Joinery. 220 East Cronquist Road, Allyn, Washington 98524, 360 275-6769, oldcedarforge@web-o.net, www.oldcedarforge.com

Kemper Workshops. Call for info. 360 887-3903

NWBA Finances~

Spring Conference 2002	Inc. 16,733.
	Exp. 10,241.59
Spring 2002 Auction	Inc. 5,549.50
Fall Conference 2002	Inc. 10,211.
	Exp. 9,936.77
Fall Auction 2002	Inc. 7,053.50
Spring Conference 2003	Inc. -0-
	Exp. 817.75
Dues 2001	Inc. 12,681.50
Hot Iron News	Exp. Spring 4,000.
	Summer 4,000.
	Fall 4,000.
	Winter 4000.
Sales	35.
Grants/Scholarships	Exp. 550.
Library	Inc.
342.	
	Operating Expense 18.94
	Capital Expense 486.16
Capital Expend./Equip.	Exp. 540.42
Workshops/Open Forge	Inc. 5,720.
	Exp. 5,377.
Admin./Member Serv.	Exp. 5,448.56
Misc.	Inc. 375.
	Exp. 0
Income (Total)	\$58,700.50
Expense (Total)	\$49,417.19
Net Gain/Loss	\$ 9,283.31
Capital Reserves	
Beginning	\$18,250.71
End	\$27,534.02

Thanks to Laura Goemaat and Jeremy Anderson for all the hard work!

Calling all Lexicographers! Martin Brandt suggests: a racket of blacksmiths, a cacophony of blacksmiths, a cackle, clamor, rabble, or, a Clangor of blacksmiths!

Defend Your Smithy! **Bells Novelty Casting Company, Inc., Oxford, Alabama** www.bellsandmore.com, 877 327-6235, is a foundry making blacksmith tools, anvils, hand grenades.

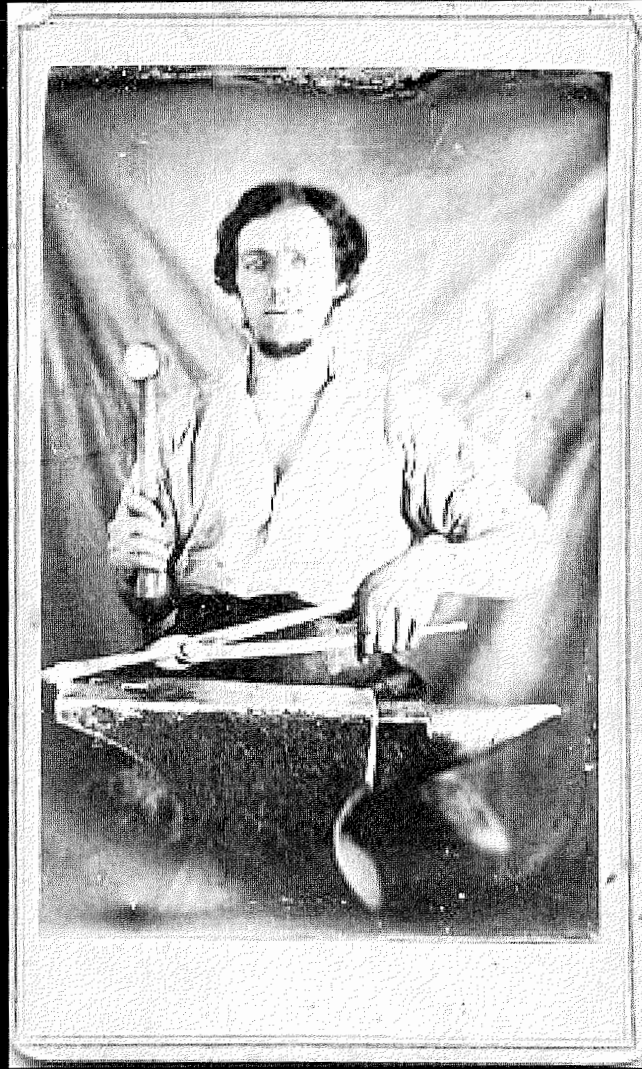


FORGING AHEAD



WORKS PROGRESS ADMINISTRATION

FEDERAL ART PROJECTS



American Blacksmith circa 1860

HOT IRON NEWS
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