



FORGE

Dedicated to the revival of the "King of Crafts"



Vancouver Island Blacksmiths

www.viliblacksmiths.com

The Village Blacksmith

UNDER a spreading chestnut-tree
The village smithy stands;
The smith, a mighty man is he,
With large and sinewy hands;
And the muscles of his brawny arms
Are strong as iron bands.

His hair is crisp, and black, and long,
His face is like the tan;
His brow is wet with honest sweat,
He earns whate'er he can,
And looks the whole world in the face,
For he owes not any man.

Week in, week out, from morn till night,
You can hear his bellows blow;
You can hear him swing his heavy sledge,
With measured beat and slow,
Like a sexton ringing the village bell,
When the evening sun is low.

And children coming home from school
Look in at the open door;
They love to see the flaming forge,
And hear the bellows roar,
And catch the burning sparks that fly
Like chaff from a threshing-floor.

He goes on Sunday to the church,
And sits among his boys;
He hears the parson pray and preach,
He hears his daughter's voice,
Singing in the village choir,
And it makes his heart rejoice.

It sounds to him like her mother's voice,
Singing in Paradise!
He needs must think of her once more,
How in the grave she lies;
And with his hard, rough hand he wipes
A tear out of his eyes.

Toiling,---rejoicing,---sorrowing,
Onward through life he goes;
Each morning sees some task begin,
Each evening sees it close;
Something attempted, something done,
Has earned a night's repose.

Thanks, thanks to thee, my worthy friend,
For the lesson thou hast taught!
Thus at the flaming forge of life
Our fortunes must be wrought;
Thus on its sounding anvil shaped
Each burning deed and thought.

Henry Wadsworth Longfellow

COMING EVENTS

November 29 2009..... Meeting at Luxton
December 2009No meeting Merry Christmas
January 31 2010.....Annual General Meeting

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Submissions & Contributions

Submissions to "Forge" can be made at any monthly meeting or by snail mail to:

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President's Report

By: Ray Orchard



We have a renewed agreement for a three year stay at Luxton. The papers, as discussed and approved at our last meeting were signed November 3 2009. At that time I mentioned our need for more space and was assured the request would be given early consideration.

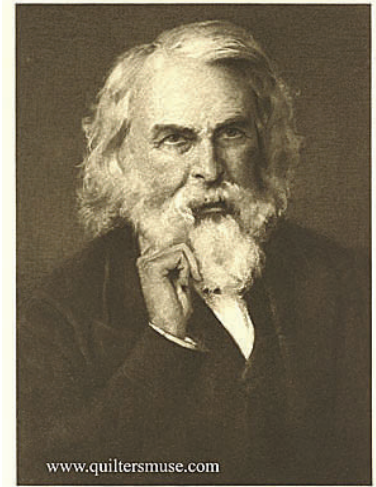
About that gate. MFI has suggested we might make one for the main entrance to the grounds. The space to be filled is about 20 ft. Think about it. Can we? Is it a practical project? How should it look? Put your ideas on paper and bring your sketch to the next meeting or send it in. I think if we go ahead with the idea, all members, regardless of experience or expertise, should be able to do some work on it.

This is the last newsletter of the year and after the meeting on the 29th, the next will be January 31 2010 our Annual General Meeting, which includes executive elections. We will need, at least, a new secretary and a new treasurer, Charlie and Norm having completed their second year of service in the positions. Give some thought to running. The work is not onerous and you won't be lumbered forever. You can only serve a maximum of two years in a position, and then only if you want to go beyond the first.

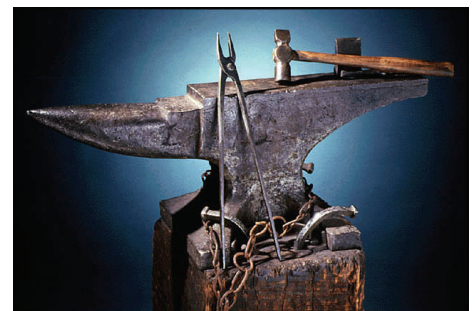
Have a great Christmas and New Year celebration.

The Village Blacksmith (1842)

by Henry Wadsworth Longfellow (1807-1882)



This poem evokes nostalgia for a time when life was simpler, not easier necessarily, but simpler. Hard work and honesty were highly valued, and Longfellow's smith embodies these. This self-employed artisan produced, with his own hands, all the work for which he was paid. No work, no pay - also no sick leave, no entitlements. Longfellow, a superb lyrical poet, knows how to bring this to us; we admire the value system and we long for the "good life" of honest toil and pleasures.



Secretary's Report

By: Charlie Low



VIBA Oct 25 09

Show and Tell:

Dennis brought in another beautiful knife, a Damascus blade, made from 1084 and 15N20, with a bright bold pattern identified as Turkish or Persian ribbon. The layers are forge welded and folded to make 72 layers, then the material is drawn out into a bar, and nicked into 3 parts. The center part is twisted tightly, and then the three are welded, giving a pattern with straight lines top and bottom and a convoluted strip in the middle. The blade was stress relieved by dunking in a molten salt bath at 1500 degrees F, 3 times, with cooling to magnetic in between, then a final dunk followed by an edge quench in oil. The pattern was developed using ferric chloride. The handle included sections of cast acrylic, the sheath was made from bird's eye maple with a leather hanger, and inside the sheath was a small yttrium magnet, which had the unintended consequence of magnetizing the blade.

Ray brought in a "What is it?" - a 2 piece object, the top piece having a bunch of steel fingers enclosed in a shallow dish, bolting onto a curved lower piece with a chain ending in a bolt. It had patent dates of 1912 and 1915, and was made in Hamilton Ont. After a suitable period of cogitation, Ray revealed that it was for vulcanizing patches on tires. The patch was placed over the hole, clamped in place with the two sections bolted together, the dish was filled with gasoline and lit, and the fingers conducted the heat to the patch.

Skip brought in a candle holder from a mine in Atlin, Charlie L brought 2 hat and coat hooks, Dave Winestock brought a pair of candlesticks made with steel stems and brass cups, as well as some weld tests, one of which had turned into a long-handled spoon. Don brought in his Cobble Hill Fair entries, a hoof pick made from a railway spike, and a double coat hook made from a horse shoe. Frank brought photos of iron work, mostly gates, from all over the world.

The minutes were adopted as published in the forge and there was no business arising.

New business included discussion of the agreement with the Metchosin Farmers Institute. The executive recommended ratification, and the members present agreed.

There was then discussion of the gate the MFI would like us to build. As one of the requirements of the agreement is that we put in 200 hours of work per year, and that our input be

formally recorded, it was agreed that building a gate would put us ahead of the curve. It was suggested that everyone with an idea make sketches and bring them to the next meeting, and be prepared to make some decisions on design so that we have a starting point for discussion with the MFI

There was a discussion of the fairs, and the fact that this year we were quite thin for manpower several times. It was agreed that we should go back to the pattern that Charlie D established, with a particular person in charge of organizing each fair, and putting up sign-up sheets in the forge, so that we know who will be committed to work what hours before the actual day of the fair. Don volunteered to phone people for the fairs.

Ray and Skip put on a demo at "The Forge Church", making nails for the congregation. When asked what they charge, they said they would accept a donation. They were given a rather large amount, quite in excess of what they thought proper, and suggested that we in return make a donation of that amount back to the church, which needs it more than we do. This was approved.

The Wax Museum has one of our forges on display. Ray dropped in and discussed it with the current management, and suggested that a soundscape would be appropriate to go with it. At some time, he will bring in a recorder and tape what goes on in the shop.

The question was raised "Why is the entrance to the fairgrounds not off Sooke Rd" It would make the location of the fairgrounds much more obvious to everyone, which in turn could well improve attendance at the rodeo and fair, a matter of some concern, both to us and to the MFI.

The treasurer's report is that we are rich! Dennis suggested that we get some new toys, such as a good belt grinder. It is purely coincidental that he has such a grinder that he wishes to get rid of. There was also discussion of moving to a Quonset hut on the current site of the batting cage, which would give us a fire-proof shop, and put us a lot closer to the coal bin.

Skip reports that the library has lots of books, some new this summer, and some publications are for sale.

New member Terry Hohner identified himself.

After the meeting, Dr Dave demonstrated his new propane forge, and showed us the correct way to sharpen drills, a technique I was completely unaware of. He did 3 forge welds using different fluxes. All three were perfect.

Show and Tell

Photos by D Gillett



Charlie's Coat/hat hooks



Ray's tire patch vulcanizer



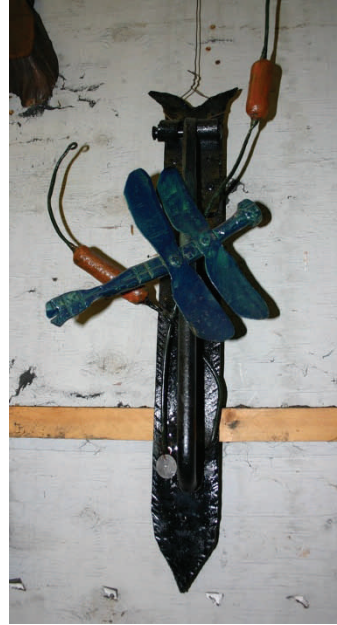
Dennis' Damascus knife



Don's hoof pick and wall hook



Skip's candleholder



Keith's door bell and dragonfly door knocker



Dave's propane forge, candle holders and welding demo





BUILDING A PROPANE FORGE AND BURNER (Dave Winestock, November 2009)

I set out to build a propane forge and burner that would; (a) reach a heat sufficient to permit forge welding of mild steel; (b) use the Venturi principle to supply air for combustion (c) consume propane efficiently and (d) be small and light enough to be easily portable.

I got my ideas for this project from Darryl Nelson at his "Forge Welding With a Propane Forge" class and from the excellent book " Gas Burners for Forges, Furnaces and Kilns" by Michael Porter. I followed the instructions in the book very closely.

THE FORGE

The forge has an opening at one end only and does not have a chimney. This was done to minimize heat loss. The outer rigid cylinder was originally a fire extinguisher. Two, one inch thick, layers of Kaowool were placed against the inside of the metal cylinder. A " rigidizer" was sprayed over the surface of the Kaowool and two thin layers of the refractory, ITC 100,

was painted over the rigidizer. . As is the common practice the entrance to the forge is partially covered with kiln bricks. A piece of "Kiln Shelving", a rigid heat resistant board, available in any pottery supply shop, was used at the base of the forge. This protects the Kaowool from the very caustic action of flux. The forge is mounted on a reticulated arm that is attached to a post which allows it to swing out of the

way when not in use. It is mounted at eye level for convenience. It can also be held in any vise.



THE BURNER

The burner was made following the instructions for a 3/4 inch burner in the book, except that mild steel rather than stainless steel, was used as for the distal expansion ring of the burner. I suspect this will eventually have to be replaced with stainless but is presently satisfactory. A single stage acety-



lene type regulator was attached to the propane bottle source. Care needs to be taken at the junction of the burner with the forge. Heat must be prevented from escaping here, otherwise a the area becomes a chimney. The area can be wrapped with Kaowool but it is preferable to make a permanent close fitting cap. The nozzle at the proximal end of the burner is an .035 " mig welding tip.



FLUX

It is necessary to use a flux to forge weld. This is because the gas forge has an oxidative environment and does not reach as high a heat as a coal or coke forge. Fluxes protect the molten metal from oxygen in the atmosphere and reduce the temperature at which the surface crystalline structure of the steel fuses. Metallurgical engineers continually study fluxes as they are extremely important in many welding processes. The exact ingredients of proprietary fluxes are not public record. However here is a list of some of the common ones that have been used for many years: borax; anhydrous borax; boric acid; powdered iron oxide; calcium flourite (old name = flourspar); ammonium chloride (old name = sal ammoniac); potassium and sodium silicate (sand) and iron filings. I have done some experimenting with combinations of these chemical but have not yet reached a scientifically sound result. There are many recipes in old texts and on the internet but it is difficult to know which may be scientific assessments and which anecdotal. If you have ever watched master blacksmiths at a forge welding demonstration you soon realize that even they have forge welding failures. There are many variable at play in forge welding.



THE RESULTS:

With the regulator set a 7 psi, the forge reaches forging temperature within 5 minutes. It reaches 2200 degrees Fahrenheit, which is satisfactory for forge welding with flux, within 20 minutes. With the regulator set above 7 psi I suspect the forge could get hotter.

With the regulator set at 7 psi the forge consumes about 2 lbs of propane per hour. In Canada the price of propane (Nov 2009) is \$1 per pound.



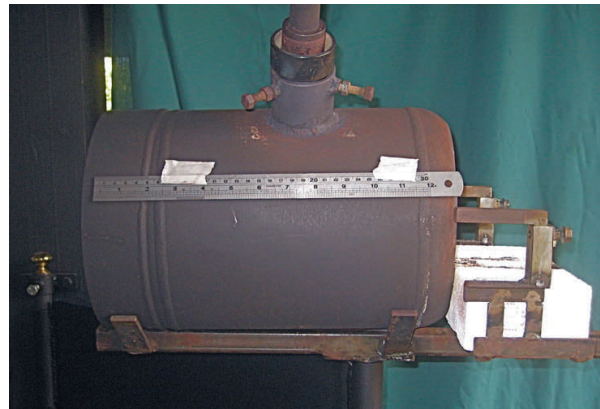
CAUTION

Remove the nozzle from the burner immediately after the propane valve is switched off. Because once the propane stops flowing the Venturi effect disappears and cold air is no longer flowing through the burner. Instead very hot air (2200 degrees F.) is now traveling through the burner which is acting as a chimney while the forge begins to cool.

If you are thinking of building a forge or burner or both invest in the book which has all the information you need for safety and proficiency.

Never store propane indoors.

Making your own forge and burner is very satisfying and not terribly difficult. Have fun!



Gallery from the NWBA Fall meeting

Liane Gustafson sent these along for our inspiration



**Vancouver Island Blacksmith Association
Membership Application**

Name: _____

Address: _____

City: _____ Prov./State: _____

Post/Zip Code: _____

Email: _____

Phone: (____) _____

Fax: (____) _____

Are you a: New Member Renewal

Regular Membership \$30.00 Annually

Contributory Member \$100.00 Annually

Members are required to sign a Liability Waiver
Make cheques or money orders payable to:

**Vancouver Island Blacksmith Assoc. (VIBA)
1040 Marwood Avenue
Victoria, BC CANADA
V9C 3C4**

**Artist Blacksmiths Assoc. of North America
Membership Application**

Name: _____

Address: _____

City: _____ State/Prov.: _____

Zip/Postal Code: _____

Phone: (____) _____

Fax: (____) _____

Full Time Student.....\$35./year

Regular Membership.....\$45./year

Senior Citizen (age 65+).....\$40./year

Overseas Surface Mail.....\$60./year

Oversea Air Mail.....\$80./year

Contributory Membership.....\$100./year

Public Library Subscription.....\$35./year

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by Phone: 703-680-1632

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NWBA Gallery photos

