



Heavy Weapons Vambrace



ID #:	Group Entry: Craft by 04051998DS, Lady Deborah Michelli Documentation by 11251982SM HL Ambra Michelli and Lady Deborah Michelli <i>Special Thanks to Lord Fasti and Lord Cuan for technical/hands on training/support</i>
Category & Division:	Technological Sciences, Armor
Title of Entry:	"Deborah's Vambrace"
Country or Region Item is From in Period:	Europe - England/Italy
Time Period of Item (within 50 years):	14 th Century (1360)
Intended Setting of Item:	War/Tourney

Summary



I've been fighting in the SCA since Gulf Wars, and have been working to improve my fighter kit. While the pattern I have chosen is not inherently period given the SCA standards of combat and armor it is an anachronistic attempt of periodicity. I have taken from basic martial armor expectations and period examples as my inspiration for this piece. Special thanks to Cuan of Darkwater and Fasti of Castlemere for helping to instruct, construct, and supervise this society legal vanbrace.

Inspiration



Günther von Schwarzburg-
Blankenburg 1362

http://www.kayserstuhl.de/ruestungsteile_oberkoerper.htm



Leather bracers, 1360s, Tartu, Estonia. Iron details had all but rusted away completely. Leather is most likely horse leather & cuir bouilli. Metal details were riveted to the leather base - steel strips alternately with rows of rivets & also buckles. Likely waxed or greased for weatherproofing. Possibly made locally or in Germany. In Tallinn, leather arm guards are mentioned among defense equipment distributed to males around 1360. The first discovery of medieval leather arm guards in Europe.

http://www.kayserstuhl.de/ruestungsteile_oberkoerper.htm
Also, <https://www.pinterest.com/pin/344947652687670986/>

Inspiration - Continued



European mail gauntlet splinted with iron plates over the forearm. Musee de Cluny also known as the Musee National du Moyen Age (Museum of the Middle Ages).



(Above) Ottoman Empire mail and plate kolçak (greaves or shin armor)

<https://www.pinterest.com/pin/7881368071815774/>



Vambrace, Valsgärde 8, Group 1

(Below) Leiden Vambrace

<http://www.archleathgrp.org.uk/N39web.pdf>



Splinted arm & leg armour based on Valsgärde 8 boat grave. (Uppland, Sweden 635-650AD)
Made by Jason Green of Wieland Forge.



<http://ageofcraft.com/image/cache/data/product/Hand/Brig/post-1649-1170879315-1000x1000.jpg>



Method and Technique



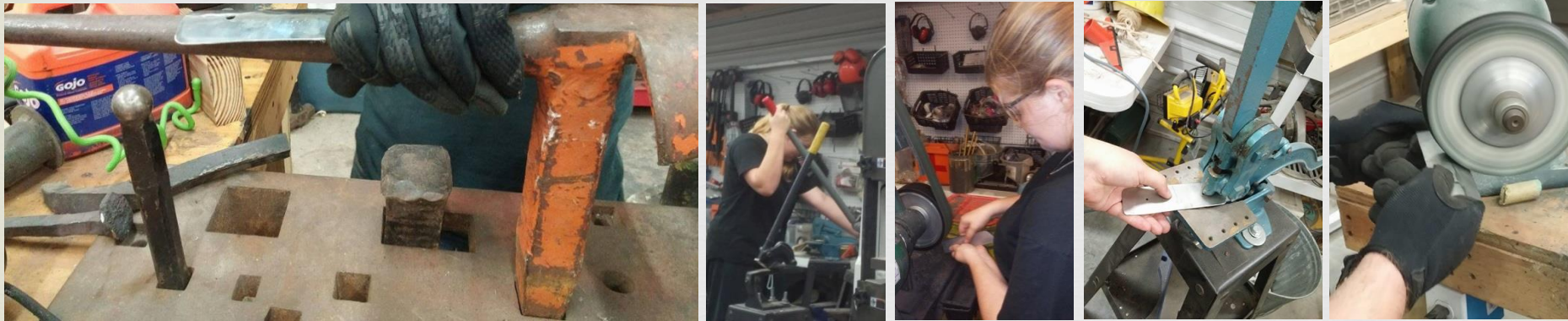
- ❧ Tools Used
- ❧ Templating
- ❧ Working the Metal
- ❧ Leather Straps and Riveting
- ❧ Making Society Legal

Tools I Used



Above you will see a list of the tools used for creating this vambrace. Not included is a list of safety equipment, such as goggles, gloves, closed-toe footwear, and a spotter. Some of the tools used were modern for time convenience, but many have medieval comparisons. This project was my first attempt shaping stainless steel, that was one of the most time consuming steps while creating my vambrace.

Tools Used - Continued

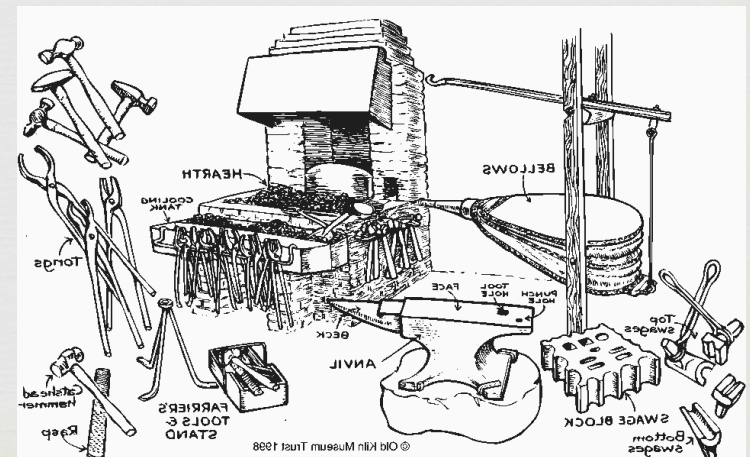
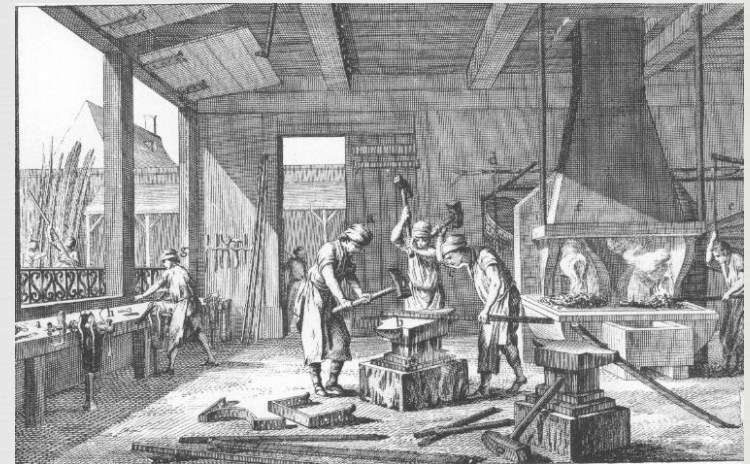
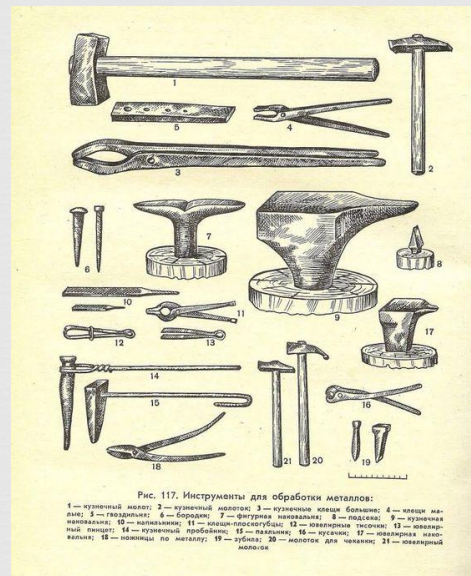


In the picture above are modern machines, and an anvil used to create my vambrace. The first picture (from the left) is of the anvil used to help shape and balance the pieces of stainless steel. The second and fourth are pictures of the hole puncher used to punch holes in pieces of stainless steel. The third and fifth are the most dangerous machines used in this project. The third picture is of the sand belt grinder, used to clean the edges of the stainless steel to make smooth. The fifth picture is of the buffer which buff's off the dirt of the metal to make it shine. As these machines can take quite a chunk out of you, while I grew accustomed to them I had a spotter before I 'authorized' on them in the shop.

Medieval Tools



Many of the tools I used are decidedly 'not period' for the sake of ease and time, given this an early project for me. That said, and in reflection, these are the tools that would have been used in the creation of this or similar armoring:



<http://www.medieval-life-and-times.info/medieval-life/medieval-blacksmith.htm>

<http://www.renfaire.com/Acting/professions.html>

<https://www.pinterest.com/pin/519251032017719271/>

Notes on Medieval Methodology

Using different tools than would have been used, the methodology differs from period (14th century) efforts. With that in mind, here are some notes on period methodology:



<https://www.pinterest.com/pin/464855992763652836/>
<https://www.pinterest.com/pin/21110691973529056/>
<http://hennigansheritage.com/displays.html>

Templating



To begin, I had an experienced armorer create the first vambrace. This is the pattern Fasti has been experimenting with in order to create a lightweight but protective vambrace for SCA combat. From that, he helped me to create a paper template from which to cut out the pieces for the second vambrace. Something that needed adjustment was the paper template, as it was not wide enough, so, at the end, I attached another piece of leather to the vambrace to make it the right length for use. Otherwise, the paper templates helped with keeping the vambrace equal to the one made by Fasti. This will also be useful if for whatever reason in practical use the pattern needs adjustment.

Working the Metal



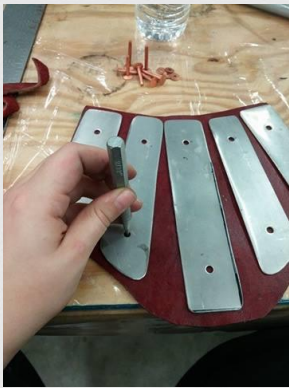
To figure out the size of the metal pieces needed, the leather was cut first then straps of stainless steel were positioned by the leather to find its placement and size to fit on the vambrace. To cut the pieces of stainless straps, we used a metal press cutter tool in the first picture (from the left). We ground the edges and angled the metal appropriately before using a metal gravity punch to cut the holes that would later be used to rivet and attach the metal to the leather.

Working the Metal - *Continued*



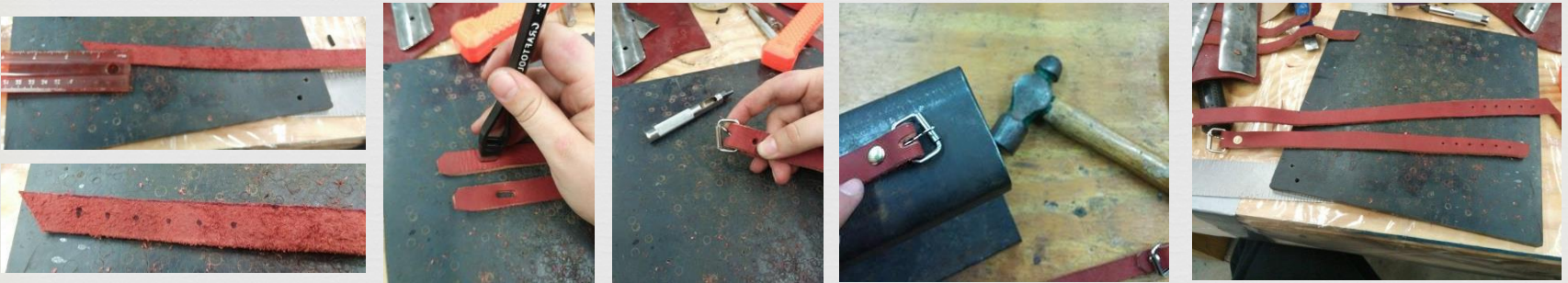
After we used the sandbelt grinder to smooth the edges so it would not cut me or the leather while fighting, and marked and bent the slight arch into the slats using varied anvils and heavy hammers, we then we used the an industrial buffer to shine the slates of stainless steel.

Leather Straps and Riveting



Next, I followed Fasti's example with the first vambrace to figure out where to punch the holes in the stainless steel. Then I placed the metal pieces with the holes punctured, on the leather piece of the vambrace to mark where the holes would be in the leather in order to rivet them in the right place.

Leather Straps and Riveting



The straps were easy to make, by comparison. I used a ruler, a marker, a hand held hole puncher, buckle punch, and a hammer. One strap is longer for the wider part of fore arm, and the smaller one is for closer to my wrist.

Leather straps and rivets are used throughout history to make straps for armor. See examples in slides 3 and 4.

Assembling



These pictures above are of the finished product. To attach the leather straps beneath the slates of stainless steel, i had to put them under whilst riveting the metal to the leather, one at a time. You'll see in this example nylon cording was used where the piece connects to the society required elbow cop. Later, I will rivit these, but as the elbow cop is plastic for light weight SCA marshal combat use, and thus decidedly less period, I used a valid and precedented technique with practical material. Typically, this would have been connected by leather thong.



Making Society Legal



The very last step is for protection, by using rubber cement to glue a half inch piece of padding to the opposite side of the leather, as to protect my arm from any real harm if hit.

From the Marshal Handbook: https://www.trimaris.org/files/marshal/Kingdom_of_Trimaris_Marshal_Handbook.pdf



G. Arm Armor

...2. [Trimaris] The forearms, defined as the outer arm (ulna bone) area between the wrists and the elbows, **must be protected by a minimum of rigid material.**



F. Hand and Wrist Armor

...1. A rigid basket or cup hilt with enough bars or plates to prevent a blow from striking the fingers or the back of the hand. If a basket or cup hilt, shield basket, or center-grip shield is used, a vambrace and or partial gauntlet shall cover the remaining exposed portions of the hand and wrist.



Glossary

Rigid material:

Steel of no less than 18 gauge, or aluminum of no less than 0.075"

Other metals of sufficient thickness to give similar rigidity to those listed above to include treated steel or aluminum High-impact-resistant plastics such as ABS or polyethylene of sufficient thickness to give similar rigidity to those listed above Heavy leather (as defined above) that has been hardened in hot wax, soaked in polyester resin (properly catalyzed), or treated in such a manner as to permanently harden the leather Two layers of untreated heavy leather (as defined above) Other materials equivalent to those items listed above (Any armor of unusual construction or materials must meet the approval of the Kingdom or Principality Earl Marshal or their designated deputy.)

Historical Appearance: looking like a reasonable example of a warrior from the SCA's period of study, to a casual observer

Period Anachronism: describes using or wearing equipment and armor that would appear to be from two or more different cultures or centuries, but still from the SCA's period of study.

Conclusion



The most difficult was shaping the metal, it takes time to shape it just right and have it balanced at the same time. In this project I learned a lot of new things, such as an easier way to rivet, and how to use the sand belt grinder. The project took me approximately 2 days. In many instances, you'd need to include staining time for the leather, but the leather in this project was bought in the appropriate color so no need. This practical project has allowed me to dip my toe in the Art Sci pond while improving my kit. It has been a rewarding process.

Bibliography



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https://www.trimaris.org/files/marshal/Kingdom_of_Trimaris_Marshal_Handbook.pdf
- ✎ Günther von Schwarzburg-Blankenburg 1362
http://www.kayserstuhl.de/ruestungsteile_oberkoerper.htm
- ✎ Leather bracers, 1360s, Tartu, Estonia. http://www.kayserstuhl.de/ruestungsteile_oberkoerper.htm
- ✎ Also, <https://www.pinterest.com/pin/344947652687670986/>
- ✎ Ottoman Empire mail and plate kolçak (greaves or shin armor)
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- ✎ Leiden Vambrace
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- ✎ European mail gauntlet splinted with iron plates over the forearm. Musee de Cluny also known as the Musee National du Moyen Age (Museum of the Middle Ages).
- ✎ Splinted arm & leg armour based on Valsgårde 8 boat grave. (Uppland, Sweden 635-650AD) Made by Jason Green of Wieland Forge.
- ✎ Vambrace, Valsgårde 8, Group 1, 14th Century statue. <http://ageofcraft.com/image/cache/data/product/Hand/Brig/post-1649-1170879315-1000x1000.jpg>
- ✎ Pictures found for period tools:
 - <http://www.medieval-life-and-times.info/medieval-life/medieval-blacksmith.htm>
 - <http://www.renfaire.com/Acting/professions.html>
 - <https://www.pinterest.com/pin/519251032017719271/>
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 - <http://hennigansheritage.com/displays.html>