



# the redgings

*Official Newsletter of the Barony of Lochmere  
in the Kingdom of Atlantia  
Volume 35, Issue 1 | ASL Vggg | January 2024*



## NEW MEMBER INFORMATION

If you are new to the Barony of Lochmere, these websites may be of help:

Barony of Lochmere Homepage: <https://www.lochmere.atlantia.sca.org>

Baronial Facebook Group: <https://www.facebook.com/groups/LochmereSCA>

Kingdom of Atlantia Homepage: <https://www.atlantia.sca.org>

Kingdom of Atlantia Event Page: <https://www.atlantia.sca.org/events>

Kingdom of Atlantia Online Event Page: <https://virtual.atlantia.sca.org/calender.php>

The Acorn, Atlantia's Official Newsletter: <https://www.acorn.atlantia.sca.org>

Official SCA Homepage: <https://www.sca.org>

You can also contact the Barony of Lochmere's Chatelain at:  
[chatelain@lochmere.atlantia.sca.org](mailto:chatelain@lochmere.atlantia.sca.org)

## LOCHMERE ACTIVITIES CALENDAR

### Populace Meeting

First Monday of every month  
7:15 pm Via Google Meet or live at the Odenton  
Library

### Archery Practice

Every Thursday  
Lord Ivan's Home  
511 Chad Avenue, Severn, MD 21144

### Fighter Practice (Heavy & Rapier)

Every Tuesday at 7:00 pm  
Severn Christian Church  
8132 New Cut Road ,  
Severn, MD 21144

### Arts and Sciences

Contact Lady Eilionora  
[moas@lochmere.atlantia.sca.org](mailto:moas@lochmere.atlantia.sca.org)





## CREDITS

- Cover: Lady Wanda Ostojowna (Wanda Lee Kinney) (Digital Scribes Project)
- All Baronial devices, badges, etc are stock art of the Barony of Lochmere

## INFORMATION ON THE DREDGINGS

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The Dredgings is a free publication and is available electronically. You may request a copy from the Barony of Lochmere Chronicler at [jake.martin@alumni.ou.edu](mailto:jake.martin@alumni.ou.edu). This newsletter is not a corporate publication of the Society of Creative Anachronism, Inc., and does not delineate SCA policies. © 2024, Society of Creative Anachronism, Inc.

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## LOCHMERE BARONIAL OFFICERS

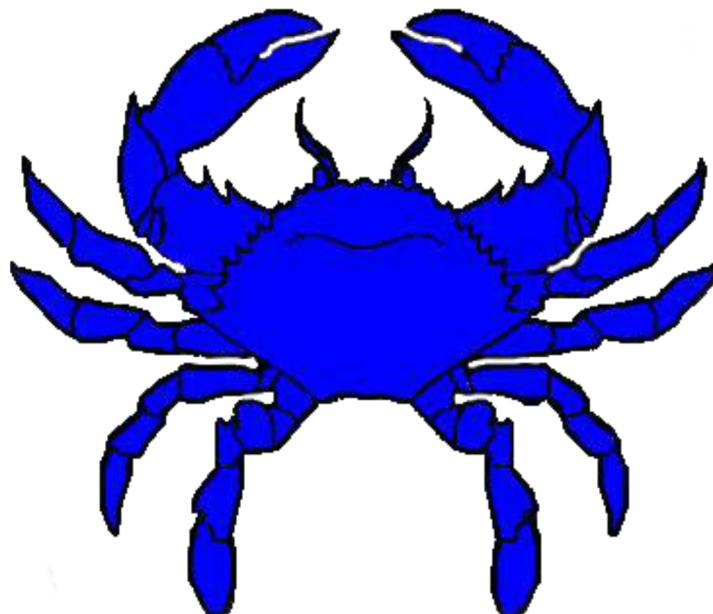
Make sure your information in this newsletter and website is correct. Contact the Chronicler at [jake.martin@alumni.ou.edu](mailto:jake.martin@alumni.ou.edu) for The Dredgings and Webminister at [webminister@lochmere.atlantia.sca.org](mailto:webminister@lochmere.atlantia.sca.org) for the website.

Please submit your Baronial Report in advance of the business meeting via email to the Seneschal at [seneschal@lochmere.atlantia.sca.org](mailto:seneschal@lochmere.atlantia.sca.org) and the Chronicler [jake.martin@alumni.ou.edu](mailto:jake.martin@alumni.ou.edu).

Thank You!

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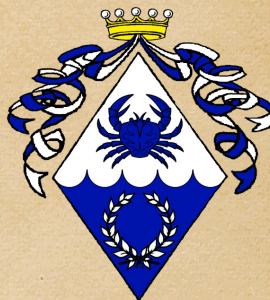
## *Words from Their Excellencies*

Greetings, Lochmere,

Now that the darkest day of winter is behind us, we look forward to the new year and celebrating with friends at our Holiday Court of Volodymyr the Great. We hear that many great things are being planned for the event. His Excellency is planning a delicious lunch to support our fighter practice. Her Excellency is looking forward to the comradery and the third-annual gift exchange. She also is excited for the number of arts and sciences activities that have been planned.

We have been delighted with all the people stepping up into new positions lately and helping support our barony. Thank you again for all your efforts in making Lochmere the wonderful, crabby barony that it is!

- Baron Linhart and Baroness Letia





## *From the Chronicler's Desk*

Greetings, Lochmere,

With a new year comes new beginnings, and the winter break from the deluge of events provides time for reflection, training, research, and finishing projects. I have seen the work to which the members of our populace dedicate themselves and the enrichment they bring to our barony and our Dream.

Master Kryss' excellent cover for last month's Dredgings has received praise from kingdom officials, and I could not be happier with how well it turned out. This month, I am excited to share with you one of His Excellency's projects. My goal for my tenure is to feature at least one work by our populace in each remaining issue of the Dredgings. Submitting in another SCA newsletter is not a barrier to publishing here, so please send me your art and projects so I can show them off to everyone.

If you are interested in becoming a deputy chronicler and helping me to compile the baronial history, Winter University has you covered. The class required to obtain a chronicler's warrant is scheduled from 1-3 on Sunday, February 4. If chronicler is not your style but you still want to serve as an officer or deputy, or if your warrant is expiring, there are plenty of classes for you. In addition to the class for chroniclers, warrant classes are being offered for marshals, A&S officers, exchequers, ministers of the lists, webministers, and chatelaines, and there are classes that may be of interest to heralds, as well. The opportunities to learn and to support our barony are abundant, and I hope that many of you take advantage of them.

I am excited to see what the new year will bring, and I hope you will join me in making our barony the envy of the kingdom.

- Lord Godwin



## Lochmere Business Meeting

1/8/2024

### Officer Reports

- Baronage: Their Excellencies will be attending Midwinter's Revel. We have received several signups for the event's gift exchange, which will occur at 10:00 in the site's conference room. The results from the baronial polling of confidence are pending. Please submit award recommendations and paint scrolls.
- Seneschal: Lady Marta has submitted the quarterly report. She will be out of the country from January 12-28 but has deputies should a need arise.
- Exchequer: The official turnover to Reginald is scheduled for the end of the month. The baronial account balance is the same as last month, \$11,988.85.
- MOAS: Lady Eilionora would like to take on a deputy. Please send in A&S activities from October to December so they can be included in the quarterly report. Please let Eilionora know what classes you would like at A&S nights.
- Webminister: The baronial home page now has an automated agenda for activities and events. The calendar page is also automated.
- Herald: Baron Gabrell has submitted a name and badge registration request for a baronial award. Ollam Yrsa had a name change accepted.
- Knight Marshal: The position is available, but Ollam Yrsa will stay on until a successor is chosen and trained.





### Officer Reports, Continued

- Missile: Kyra is the new baronial archery marshal. The archery backstop order has been placed. A thrown weapons training marshal class being offered at University, taught by Dame Dealla and Master Kryss.
- Chronicler: Lord Godwin submitted the December and January issues of the Dredgings. He will submit an updated January issue that includes the meeting minutes tomorrow. Master Kryss' cover art from last month was well received. This month's featured an article by His Excellency. Please submit content.
- Chatelaine: The position is available, but Lady Aine will remain in office until a successor is chosen and trained.
- MOY: The position is vacant.

### Event updates

- Midwinter's Revel: A number of classes are being offered. Lady Eilionora will post a form to sign up for classes. Some classes have small equipment fees. Some classes will take place in a room we have not used before. Mistress Arianna will check to see if that classroom has disability access. An A&S competition and display will be open. Setup is at 7:00 A.M. on the day of the event. Candles in the hall are permitted. There will be an Eastern-European history trivia game.
- Night on the Town: The site staff did not vote on our event application at their last meeting, so we are moving to plan B: Down's Park. The site is within the original budget and available in April and June. Our event staff will meet with their representatives to see if they will allow everything we will need.
- On Target: The date has been spiked for May 11. The budget has been submitted for review, and it is identical to last year's. A vote to approve the budget will occur at the February populace meeting. June 1. Kyra will be marshal in charge. Master Reynard will take care of final contract details.
- Odenton Library Demo: The event has been scheduled for June 1. The barony is looking for volunteers to coordinate aspects of planning with library staff. The first planning meeting will be after Marta returns from travel.
- Battle on the Bay: Event staff is working with site staff to determine the better of two weekends in September.
- Pennsic: The "Lochmere" land group registration has opened. Talk to Master Raynard if you want to camp with the barony.



## Upcoming Events

### January - 2024

- 01-13 - 01-13 : Atlantian 12th Night: Yadkinville NC (Atlantia)  
01-19 - 01-21 : Nottingham Coill Baronial Birthday/Investiture: Bennettsville SC (Nottingham Coill)  
01-26 - 01-27 : Raven's Cove Baronial Birthday/Investiture: Richlands NC (Raven's Cove)  
01-27 - 01-27 : Tourney of Manannan Mac Lir: Harleyville SC (Tear-Sea's Shore)  
01-27 - 01-27 : Holiday Court of Volodymyr the Great: Lothian MD (Lochmere)

### February - 2024

- 02-03 - 02-04 : Winter University: Madison Heights VA (Atlantia)  
02-09 - 02-11 : Barony of Marinus Investiture: Spring Grove VA (Marinus)  
02-10 - 02-10 : Bright Hills Baronial Birthday: Manchester MD (Bright Hills)  
02-10 - 02-10 : Sir Walter Raleigh Costume Ball II: Durham NC (Buckston-on-Eno)  
02-17 - 02-17 : Celebration - de Medici: Ashland VA (Caer Mear)  
02-17 - 02-17 : Competitions & Displays Workshop: Spartanburg SC (Nottingham Coill)  
02-17 - 02-18 : AEdult Swim (Aethelmearc)  
02-23 - 02-25 : Ymir 49: Ellerbe NC (Windmaster's Hill)

### March - 2024

- 03-02 - 03-02 : Kingdom A&S/Tir-y-Don Investiture: Newport News VA (Tir-y-Don)  
03-09 - 03-17 : Gulf Wars 2024: Gleann Abhann  
03-23 - 03-23 : World Turned Upside Down - Attack of the Killer Rabbits: Wellford SC (Falconcree)  
03-23 - 03-23 : Defending the Gate/Stierbach Investiture: Spotsylvania VA (Sudentorre)  
03-29 - 03-31 : Hidden Mountain Baronial Birthday: Bennettsville SC (Hidden Mountain)  
03-29 - 03-31 : Missile Madness: Monroe VA (Seven Hills)  
03-30 - 03-30 : Barony of Ponte Alto Investiture: Vienna VA (Ponte Alto)



You can find the full Atlantian calender at  
<https://atlantia.sca.org/events>



## Feasibility Study and Safety Review for the Reconstruction of a Late 16th / Early 17th century Toy Matchlock Musket

About a year ago I began seeing several pictures of toy muskets floating around social media. Between my curiosity in the topic and the fact that it seems to be a relatively unexplored space I decided to see what it would take to replicate one of these toy matchlock pistols. Given that I regularly hear about extant pieces having their breaches blown out, I was concerned over the period attitude towards consumer safety in the manufacture of these toys. I, personally, don't have much interest in grave bodily harm and decided to undertake more rigorous analysis of the extant examples before trying to replicate any of them. What follows are my attempts to accurately model and analyze a period design before moving forward with any sort of physical testing.

Most of the toy muskets I've been able to find extant examples of seem to come in one of two varieties. The more simple ones are often in the shape of a full sized fishtail stock musket. These are usually similar in design to this piece listed in the Portable Antiquities Scheme (PAS) with the identifier SUR-393131. I have yet to see one in this style with anything more complicated than just a touch hole for ignition.

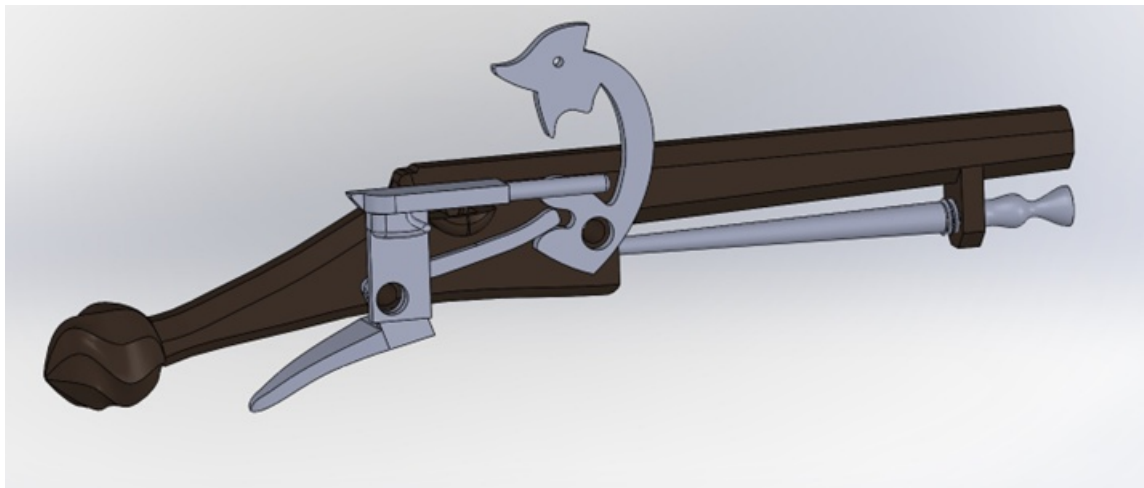


The second variety is typified by PAS SUR-A79E18. Every extant piece I have been able to track down has a similar outline more closely resembling a wheellock pistol than a musket. The best preserved of these still have their firing mechanism still intact and some even still have their ramrod. Probably the most well documented example is in the Royal Armouries collection.



Considering the completeness of the piece as well as how well documented it is, I chose to base my recreation on this example in the Royal Armouries collection. Practicality aside, I also think it's one of the more aesthetically pleasing extant examples.

Having chosen an exemplar, the next step in the process would be making a 3D model of the musket to use for analysis and eventual testing. I used Dassault Systemes Solidworks to do the modeling and analysis with. I was able to import the many photos taken by the Royal Armouries and scale them to their given dimensions. I could then build and dimension the model using the photos as guidelines. The photos don't cover every single angle, so I had to fill in the gaps myself when I couldn't take an exact dimension off the original. This also led to me having to model the motion of the lock mechanism to make sure it would actually function once assembled. Since the exemplar is currently assembled, I also wasn't able to take measurements of the pitch, major diameter, or minor diameter of the screws. I used modern screw dimensions for now and hopefully, I'll eventually be able to replace them with more accurate representations of the original. Although, I think learning how to make period thread cutting tools would be an interesting project all on its own. The only other deviation is the decorative fluting I added to the pommel. It's there as both my own personal twist on the design and as a safeguard against someone trying to pass off one of my replicas as an original. Every original I've seen has straight flutes, so I hope it would be a dead giveaway.



Before I could move on to the analysis, I had to figure out what sorts of pressure's I'd be subjecting the musket to. Without having the original in hand to measure, I had to pick a size that seemed as close as possible based on the photos I had. I decided it would be best to pick the closest bore size to something commonly used modernly. Fortunately .177" (pellets for air rifles) is extremely close to the best measurements I could take. Once I had the barrel length and bore size I could use a ballistic calculator to determine the pressure's that would be present in the barrel at the time of ignition. Ideally with a shorter barrel, I'd want to use a faster burning powder to make sure it was burned completely before the projectile left the barrel. However, I'm trying to optimize for safety, so I picked a powder with a longer burn rate to help meet the lower pressures needed for the bronze material.

The bronze alloy is the other half of the equation. Yet again, without access to an original, I can't perform any testing to know the exact alloy. If I were to have access to an original, x-ray fluorescence testing could be used to determine the alloying elements. My next best option was to find research done on other castings from the time period. There were 2



bronze cannons found in a wreck from a Swedish warship cast in 1535 and 1628 respectively that were found to contain around 84% copper, 14% tin, with the remaining 2% being made up from lead and other trace elements. The closest material I could find data for was UNS C90700 tin bronze after sand casting

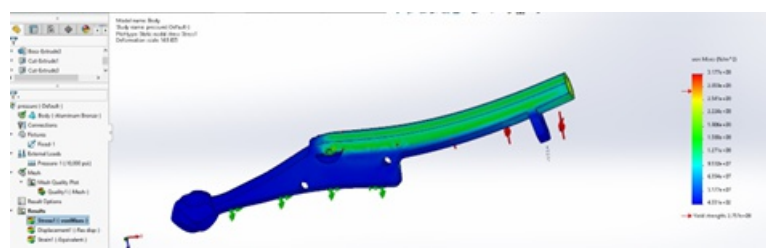
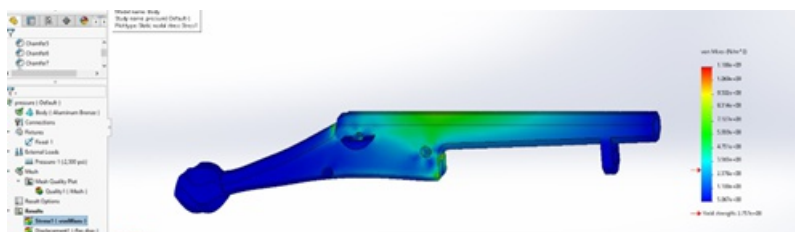
(<https://www.matweb.com/search/DataSheet.aspx?MatGUID=313a16ab4bd54855b7ad8b86282f37a2>). Its modulus of elasticity and yield strength were 15.2 and 21.8 ksi respectively. Below you can see the results when using 2 grains of FFF blackpowder and an 8 grain projectile. The 5709 psi max pressure gives a 2.6x safety margin to the modulus of elasticity.

### P-Max black powder internal ballistics simulator

POWDER SELECTION	REQUIRED DATA		RESULTS
Whaling <input type="radio"/>	Powder weight: <input type="text" value="2"/>	<input type="radio"/> grams <input checked="" type="radio"/> grains	Load density: 100 %
Cannon <input type="radio"/>	Bullet weight: <input type="text" value="8"/>	<input type="radio"/> grams <input checked="" type="radio"/> grains	Pressure P-Max: 5709 psi
Saluting <input type="radio"/>	Bullet diameter: <input type="text" value="177"/>	<input type="radio"/> millimetres <input checked="" type="radio"/> inches	Bullet travel to P-Max: 0 in.
Fg <input type="radio"/>	Barrel length: <input type="text" value="3"/>	<input type="radio"/> millimetres <input checked="" type="radio"/> inches	Muzzle velocity: 795 ft/sec.
FFg <input type="radio"/>			Muzzle energy: 11 ft-lbs.
FFFg <input checked="" type="radio"/>			Muzzle pressure: 1336 psi
FFFFg <input type="radio"/>			Amount of powder burnt: 47 %
FFFFFg <input type="radio"/>			
EXTRA DATA FOR CARTRIDGE GUNS			<b>WARNING</b> This program does not take the place of a manual published by the relevant powder company or gun maker for maximum loads.
Powder space: <input type="text"/> <input type="radio"/> cc <input checked="" type="radio"/> grains of water			
Case length: <input type="text"/> <input type="radio"/> millimetres <input checked="" type="radio"/> inches			
OUTPUT UNITS			
Pressure output: <input checked="" type="radio"/> psi (piezo). <input type="radio"/> bar			
Velocity output: <input type="radio"/> metres/sec. <input checked="" type="radio"/> feet/sec.			
Energy output: <input type="radio"/> Joules. <input checked="" type="radio"/> ft-lbs.			

Once I had the pressure from the ballistic calculator I could apply it to the 3D model of the main body of the musket. One of the main issues with the analysis in Solidworks is that there isn't a good way to accurately simulate the decreasing pressure curve that happens as the projectile travels down the barrel. I decided the best way to compensate would be to apply the maximum force to the entire length of the barrel to build in yet another safety factor. As you can see in the results from the ballistic calculator, the muzzle would, more realistically, only be seeing around 23% of the max pressure occurring in the breach. Below you can see two runs done from my experimentations with aluminum bronze and with pressures of 2500 psi and 10,000 psi respectively.

After having run the analysis, I decided to run a test print in resin using a SLA 3D printer. I then had the chance to examine an extant toy matchlock at the Baltimore Antique Arms Show from the collection of Wayne Driskill and compare my printed version to it.



(<https://www.waynedriskillminiatures.com/miniature-firearms/antique-17th-century-petronel-toy-matchlock-pistol/?portfolioCats=4>).



It's likely missing several features, but still provides some useful information. Besides providing a reference point for scaling and the layout of features such as the holes for the moving parts, I was also excited to see the slight upturned sweep to the barrel. This was consistent with some of the simulation I had done which leads me to believe the original were actually fired and not just used with blank loads akin to a complicated cap gun. Without the backpressure caused by firing a projectile, it would be unlikely for the barrel to become deformed at all.

All of these calculations are well and good, but eventually I'll need experimental results to validate them. The next step is going to be casting several samples for testing. One of my main concerns is how much the casting method will have on yield strength. The first step would be casting coupons to use for material testing to make sure I'm meeting yield strength specifications for the alloy and casting methods I use. After that I should be able to use the ballistic calculator to slowly increase loads and check that the musket can experimentally match my safety calculations. Once I'm confident that I can produce a final product with the expected strength, my current plan is to use the proofing test method developed by the CIP. This consists of firing two loads that develop 25% more pressure than the standard load. After I've determined that the muskets are safe to use, I can finally complete them with the assembly of the firing mechanism.

If you have any experience in these matters and have suggestions or feedback, please feel free to reach out.

Baron Linhart Von Marburg, OD



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Rapier Fighting: Noble Blaze Frostell

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Equestrian: Lady Aine d'Alton