

Ink and Paper testing Part 1.
AS 54

By: Calamus
Jararvellir
Northshield

Introduction:

While I have been doing calligraphy since the 80's, I haven't been what one would call diligent in the pursuit. I've taken several breaks and stepped away for sometimes more than 10 years at a time. My love of books, however, has never left me, and last summer I found an advertisement online for a 'replica reprinting' of the Gutenberg Bible. The crossing point between the hand written manuscript bible and the printed page is a time period that I find most fascinating. My interest in the period was reignited by the advertisement.

I attempted to research exactly *which* copy of the Gutenberg was the one being replicated but the publishers were recalcitrant to give up the information. Therefore, I dove into finding as many digital copies of the book as I could. I never did find one that matched and in my frustration, an idea crept back into my mind that had been dormant for several decades. The concept of outright doing a blackletter manuscript bible of my own.

I did some more research and discovered that the last of the great manuscript bibles was being written in Mainz at virtually the same time that Gutenberg was printing his copies and in the 18 months that the Great Bible of Mainz was written, Gutenberg printed about 200 copies of his 42 line bible. The similarities in the typography and hand were remarkable but that was just a relic of the time period and location where the work was being done. I decided then, that a style of similar nature was what I wanted to use. As it turns out, blackletter was the first calligraphic hand that I had learned back when I started and I could give that a tune up and get back to work.

I quickly discovered that I had not the materials to really even practice anymore. I was bereft of useable inks, my nibs were two decades old and hadn't been properly cleaned the last I had used them, and while printer paper was fine I wanted something better. Thus, I started haunting arts and crafts stores, looking for inks and papers to use. I quickly discovered that not all inks are equal, not all papers respond well to inks, and the combination of the two was a myriad tangle of possibilities and that didn't even bring into account the different styles and manufacture of nibs and holders.

Thus was born this project.

I decided that I would attempt to start testing out all the inks I was collecting on all the papers I was collecting in order to get a better handle on all the combinations and try to discover which worked better than others and which simply were a Bad Idea from the start. During the discovery phase of this operation I was introduced to the SCA and the amazing Scribal community we have here. Many more ideas and suggestions for the testing came in through this group and thus the possibilities grew. More inks were added. I discovered Iron Gall ink. I learned about John Neal Booksellers and all the wonderful varieties of paper that I had forgotten about since my High School and College art classes. I discovered that there was something called Pergamenata.

I learned a lot in a short period of time.

Then I buckled down and started writing. One line of text per ink, 22 lines of inks per page. I will fully admit that this was probably not enough to do any of the inks or papers full justice. There were more considerations that I learned about as I went that I have yet to fully be able to test one. Water fastness will be an important one, as will the ability to hold up to having lines erased out from under the ink. How well will each paper hold up to gouache application is another important factor. These were not things I had thought of when I started.

Some may consider this a failing of the test but I prefer to think of them as an excellent reason to continue testing. Perhaps next year another round of reviews will be submitted including new ideas, new tests, and new information. New products both wet and dry may be included. I might learn gilding and do a full set of reviews on that subject. There is no end to the combination of factors that can be tested for and I don't think we'll ever have a full comprehensive list.

Eventually everyone finds what is comfortable for them. What works in their circumstances is the most important quality. Some people have read my reviews as I've released them and said that their experiences are different and I wholeheartedly applaud that. What is most important is to find what works for you.

Therefore, I hope that this review guide does two things. First, I hope that I review a few products that maybe the reader has never heard of or considered and put into their mind the idea to try a new product or combination of products. Secondly, I hope that for neophytes just starting on the journey of C&I that I can maybe steer them away from some products or combination of products that might hinder their journey and make it more difficult than it needs to be. Hopefully here I can direct them towards products that will make the journey a bit more enjoyable.

Method:

Unless otherwise mentioned, all tests were performed on an angled wood surface set to approximately 62 degrees elevation. The tests were performed with a single #3 Leonardt broad edged nib. The nib was new at the start of the testing and was accidentally broken shortly after testing was complete so further tests will not be performed with the exact same #3 nib, though the number and manufacture will likely be kept going forward. The tests were performed in natural light coming from behind the scribe though in no cases were the surfaces actually directly sun-lit (that I remember). As mentioned below, half way through the testing of Ink #17 (Green Man Iron Gall) a leather backing was introduced behind the surface to provide a better surface for ink transfer from nib to paper. This will be replicated for all future testing processes. Each ink was done in a batch across all 27 papers. Only one sequence was paused half way through and then restarted (ink #20, Fox & Quills) and it did not appear to have any effect on the test.

Throughout this paper, both the papers and inks are referred to by number. In both cases this is the order in which they were tested. Full lists with ID numbers are available as Appendix A and B for quick reference.

The Papers:

I have divided up the papers into five groups of somewhat similar paper types. Lightweight, Ingres, Drawing, Handcraft, and Bristol+. The lightweight papers cover thin papers which could be good for book making or other instances where thickness and weight are important. Ingres papers are likewise mostly lightweight but have a very particular laid texture that sets them apart, usually on only one side. Drawing paper here is used to define a category of general purpose medium weight papers generally used for pencil or other similar media for sketching or drawing. Handcraft paper here refers to medium to heavy weight papers usually with one or more rough edge deckles that are either mouldmade or made to appear as such. Bristol+ here is used to refer to papers that are either Bristol or similar made heavyweight papers or papers with a similar finish or use. The categories used here are of my own devising and are merely for organizational purposes in the construction of these reviews.

Lightweight:

There are three papers that I have put into the lightweight category. These are Canson Parchment Drawing, Zerkal Book White, and Strathmore 400 Sketch Recycled. All three are good papers and I like them all quite a bit. The Strathmore Sketch is the paper that I have been using for most of my warmup and practice work for the past 3 months and is therefore the paper whose faults I am most familiar with. The Zerkal Book White was honestly my favorite coming into the testing and the one I hoped would score the best. The Canson Parchment Drawing was

the last entry to the paper list, as I found it the morning I finished cutting and preparing all the papers.

Canson Parchment Drawing White 89 gsm

The Canson Parchment Drawing paper suffered the most from the testing. It was the first one of the 27 to be tested in each round and therefore the one that I would often go into testing cold if I hadn't done warm up calligraphy that day. The first position in the list also had the side effect that any inks that were prone to 'settle' as they were used would start dark or solid on this paper but by the end of the line could sometimes be seen to be getting lighter.

The paper has been sized and has a coating on it to simulate a parchment feel. Even with its position as lead on each series, the paper held up very nicely and I quite like the feel of writing on this paper. There were some marginal notes that were indicative of poor ink performance, but the notes concerning the paper itself were positive. It has a good feel and texture and writing upon it is very smooth to the touch.

The primary issue I have with it is that some inks can be fairly easily seen through on the reverse. The secondary issue is that I have yet to find this paper anywhere but the one store that I purchased it at, and I cannot confirm that Canson still makes it or if it's available anywhere else. Thus, I can't reasonably recommend it if I can't guarantee that you can find it. This is a shame, as it's a paper that I would love to use for scribing a manuscript and/or binding a book with.

Inks responded in what I would consider a baseline fashion on this paper. It was a fortuitous choice for the lead off paper in that any issues I had with inks in general, I would notice here on this paper in some fashion first. It gave me a very good idea for each ink what I was getting into. Any inks that had large issues on this paper had issues on every paper. Cockling on this paper was minimal to mild for 89 gsm paper and not unreasonable.

Notes: Minor ink feathering on inks 6, 10, 12 - edges did not stay sharp with these inks. 5 was excessively pale for a commercial ink. 8 was a train wreck but that was a general issue, not a particular interaction with this paper. 1-4 were solid, dark, and maintained edges. Lines overall tended to stay sharper than edges with inks that bled. 19 did weird settling tricks as I was using it on this paper and remained light for the remainder of its series.

Zerkal Book White 100 gsm

Coming into the testing, I rather fancied this paper. I liked the feel, the texture, the weight, and to be perfectly honest I really like the name Zerkal. It appeals to me in a way that odd sounding words sometimes do.

This is a text weight bookmaking paper. It's thin and lightweight which lends to folding and using a lot of sheets without the book weighing a ton. The texture is smooth but not as smooth as the Canson parchment. This paper has a bit more bite, similar to copier paper in that regard. Unlike copier paper, though, this paper is soft to the touch and not as stiff. According to JNB it's 10% cotton / 90% high alpha cellulose.

There is very little cockling of the paper from the inks and significantly less than the Canson parchment drawing. Zero bleed-through of inks, though I haven't tested gouache at this time. For any project that is mostly or completely inks, this is a great paper. I would definitely suggest it for a journal or other similar book.

One of the issues I had with the paper was that due to its thinness some inks engaged poorly and did not flow off the nib as well. This was very evident with iron gall inks. Most of the tests were performed against a hard angled board and it became evident that the hard surface was causing issues. After placing the paper over a piece of leather to provide a softer support surface, inks all engaged much better. This became a standard practice for the last 4 iron gall inks and the final Sumi ink. This was a problem that was shared by all of the thinner papers.

This paper was purchased from John Neal Booksellers online shop. I can easily recommend this as a good paper for ink use. Again, I cannot say how it will stand up to heavier media. For manuscript writing or projects with minimal illumination, I would love to use this paper. As of this writing cost is \$4.35 for a 27.5" x 30" sheet. This was ultimately one of the downfalls of the paper in my testing as I cannot justify the cost per sheet for large projects.

Notes: Inks 5, 6, and 8 were less than great performers here as well. 14 and 15 were not as dark as I would like for iron gall on paper. 19 settled out in the bottle and was from here on out a uniform medium grey. Minimal to no feathering for all inks. Iron gall inks were especially sharp.

Strathmore 400 Recycled Sketch, Fine tooth surface, 89 gsm

This was paper #10 in each series. By the time I got around to this sheet I was well into each ink. Usually I had taken a break right after page #9, and interestingly, I have a margin note that this paper was predisposed to write with a heavy hand. I'm unsure if that's to do more with the paper or that I tended to break for 10 minutes before coming back and starting again with this paper.

The paper is average in almost every sense of the word. Lightweight for art paper it is still heavier than most bond, office, and school paper. The tooth gives nibs something to grab ahold of and inks flow nicely off the nib and onto the paper. The only major issue I had with the paper is that sometimes fibers would release from the page and stick in the tines of the nib.

At 89 gsm, cockling was a greater problem than on the 100 gsm Zerkal, but was more or less identical to the 89 gsm Canson Parchment. Having experimented heavily with this paper as it is my warm-up and practice paper, I can say that show-through is not an issue with this paper.

This paper was purchased as a pad at Lynn's in Madison, WI. Most of the Strathmore papers I have tested were purchased there. Price was therefore very decent, running about \$16 for a pad of 100 sheets of 14" x 17". For practice and learning, I highly recommend this paper.

The only issue for practice and learning is to match your budget to your ink and then make sure it's good. In this case, both Higgins inks (Eternal, Calligraphy) were less than stellar, but even so, would be acceptable for practice. Winsor & Newton performed well enough with the non-waterproof continuing to underperform compared to their main india ink, which I have heard called their 'spider ink' due to the decoration on the bottle. The Spider ink was a solid performer here. As with almost every other surface, both Yasutomo sumi inks, the Moon Palace sumi, and both bottles of Dr. Ph. Martin were top tier.

No inks showed any tendency to feather on this paper.

Notes: Again, ink 5, 6, and 8 weren't great, although 8 was improved on this paper compared to previous. 14 and 15 continue to be the lesser of the iron gall inks. 17 showed a bit of 'pooling' at the bottom of the letters.

Ingres:

Ingres paper is usually a medium to lightweight paper with a laid texture. The manufacturing process, whether hand or machine made, is designed to resemble the laid look of older handmade papers. The regular ribbed pattern is usually on only one side. Best suited for pastels and charcoal drawing, it has found use in calligraphy for those wanting an 'old world look' to their paper.

According to Wikipedia: "The development of ingres paper for drawing is ascribed to the French Neoclassical artist Dominique Ingres (1780-1867), although modern ingres papers can differ from those actually used by Ingres." So, for most of our purposes in the SCA, this type of paper would be considered out of period.

The three Ingres type papers I tested were the Strathmore 400 Calligraphy, Hahnemühle "German Ingres", and Canson Ingres.

Strathmore 400 Calligraphy, 75 gsm

This was, hands down, my least favorite paper of all 27. Thin and lightweight to the point where cockling occurred by simply breathing hard on it. The raised texture both inhibited full nib engagement on the paper and would catch the corners of the nib as I tried to form the letters. A lower angle of 40 degrees worked much better than my standard test angle of 60, and with a soft backing behind it, the paper wasn't completely worthless. If for some reason this paper comes into your possession you will probably find the reverse side more useful than the front, though obviously, experiment and find out which you prefer.

On the plus side, the texture does look nice and is subtle enough to not overpower the text itself. The paper also had almost zero feathering. A different nib than the Leonard might have worked better on this paper. A softer Mitchell might not have had the same engagement troubles that the stiffer nib did. Iron gall inks mostly darkened well on the paper. I would say that on average they were slightly darker on this than most of the lightweight papers. Many inks that performed well elsewhere did not perform well here and the problem was consistent in the engagement of first strokes on letters.

Notes: Ink 4 was uneven and patchy. 5 was, for once, at least even, if dark grey instead of black. Ink 8 continued to be a trainwreck. 14 was still patchy. 15 was uneven but not overly so, and the first thing noted is the grey shade rather than black. It continues to be one of the two lighter iron gall inks.

Hahnemühle German Ingres, 100 gsm

The first thing that stands out about this Ingres is that the two sides have very different patterns. The front is the standard horizontal ribbing with vertical smooth lines every 35mm or so. The reverse is a screen pattern of some sort and not the mottled smoothness of the Strathmore or Canson. I used the front with the horizontal ribs for this test.

When writing on this paper, I found that I had to slow down the speed of writing in order for the paper and nib to correctly interface for good ink flow. Writing too fast left skips and gaps. However, it does not have these issues to the same degree that the Strathmore paper has. When properly slowed down, nib engagement was fine and ink flow was fine, whereas on the Strathmore, there was little to be done to correct these issues.

The only ink with any sort of uneven coloration is the heinous ink #8. None of the other 21 inks showed any sort of uneven application in any fashion. Even inks 5 and 14 were good on this paper. I have rarely mentioned the #13 walnut ink as it's not been a very good performer and that will come up in the individual ink review, but on this paper, the ink got one of its better outings and is almost rich in tone and very smooth in application with no pooling. Ink 1 suffered some slight bits of issue with engagement in a few spots but that was user error and neither the fault of the ink or paper.

Feathering was slight to none with clear, crisp lines. Cockling was a non-issue. The texture, feel, and weight of this paper is good. I have to say that this paper, with its texture, does slow down your writing a bit, which may contribute to the excellent smoothness of the ink coverage. This is an excellent Ingres type paper if that's what you're looking for.

Canson Ingres 100 gsm

This Ingres paper is smooth on one side with a subtle ribbed texture on the other. The vertical lines are slightly closer spaced than the Hahnemüle Ingres. The overall texture is not as severe as either of the other two papers. I failed this test spectacularly as I did the testing on the smooth side of the sheet rather than the ribbed side, which would provide more issues for nib smoothness.

There were no major issues with feathering on the paper. Cockling was a bit more than I care for in a paper with similar weight to one which had zero issues. It also feels less substantial than the German Ingres. Inks were more or less as expected with 8 continuing as expected. 5 and 14 were slightly more blotchy than on the German Ingres.

Overall a good paper. The clearest comparison is with the Hahnemüle German Ingres, which is thicker feeling and has a more pronounced texture on both sides. This paper is thinner, which leads to greater cockling, with a more subtle texture on one side. I suppose fundamentally the choice depends on your final use for the paper. Either way, don't make mistakes on these papers, you can't correct them without ruining the surface texture.

Drawing:

A lot of the paper that is easiest to find in pretty much any craft store is going to fall into the 'drawing paper' category. These are heavier than my lightweight and Ingres papers and cross over with some of the 'handmade' category papers. These are relatively cheap and easy to obtain papers that could be useful for practice or text-only situations but will not likely stand up to watercolors or gouache well.

All of the papers in this category are by Canson and Strathmore. From Canson we have XL Drawing, which I acquired in a pad, and Foundation Drawing which I acquired as a single large format sheet, but which is also available in pads. From Strathmore we have from the 300 line their lightweight Printmaking paper, and from the 400 line we have Toned Tan, Drawing, Recycled Drawing, and Colored Pencil.

Fundamentally, there isn't a lot of difference between these seven papers as far as response to ink and nib. A few of them are a bit more fibrous and will tend to grab your nibs, but I'll note

those in the individual reviews. For the most part, any of these papers would be well suited to practice or warm up activities.

Canson XL Drawing, Smooth Surface, 114 gsm

Canson Foundation Drawing, 115 gsm

More or less identical papers, these are both solid performers. The Foundation series bleeds ever so slightly and the XL did not appear to do so. Neither one had any other issues that I noted. Very average 'as expected' performers. Both papers are available up to at least 18x24 size and would work well for simple manuscript binding for practice books, or journals. The Foundation is slightly more textured than the XL line and slightly more off white. Both were highly considered for my book project and are still on the short list if I decide to take another look at using paper for the project, or other similar scale projects.

Strathmore 400 Toned Tan, medium surface, 118 gsm

The pad says 'medium' but it's a rather smooth surface. It's an interesting look but not likely very useful for Calligraphy. Otherwise, it's a decent to good performing average paper. One ink pooled a little at the bottom of letters, but otherwise no issues noted.

Strathmore 300 lightweight Printmaking, 120 gsm

This was possibly my favorite of the 'drawing paper' entries. It's a very solid paper with good absorbency and no issues with bleeding that I saw. Most inks performed admirably to well on this paper with zero issues. I liked the weight, the feel, and the performance. The front and back are slightly different textures with the back being more smooth.

Strathmore 400 medium surface Drawing, 130 gsm

Strathmore 400 medium surface Recycled Drawing, 130 gsm

More or less the same papers with one having a much higher percent of post-consumer recycled material. The recycled was not quite as smooth of a finish as the regular. Both were good but occasionally would be a bit grabby on the nib. Both were considered for manuscript book work and are still on my short list due to availability, size choices, and price. Good color (recycled is slightly more bleached/less ivory), no bleeding, sharp lines, no fiber loss, and a good weight made for a good paper. If I find manuscripts need a more buff lightweight paper I may go back to these.

Strathmore 400 medium surface Colored Pencil, 163 gsm

A good heavier drawing paper with a good surface. Even though it's designed for pencil work, the medium surface works well with nibs. The back of the page is slightly smoother than the

front, and that would keep me from using it for manuscript work, which is a shame as the 163 gsm weight will hold up to paints better than the lighter papers.

Handcraft:

For the purposes here, Handcraft paper is being used as a generic category for papers that are either handcrafted, mould made, or manufactured in a way that is designed to appear that way. These papers run from 120 gsm to 250 gsm, quite a wide margin that largely overlaps the drawing paper category and starts to run into the Bristol-like paper category.

The papers I have chosen to put into this category are as follows: Arches HP 90, Arches Text Wove, Stonehenge Cream Smooth, Zerkal Frankfurt Cream, and Rives BFK.

Zerkal Frankfurt Cream, 120 gsm

I like this paper. It's a fairly smooth surface, just slightly textured, but in a way that feels good without troubling the nibs. There is a wavy laid texture to the paper but it mostly shows up as a watermark effect, and doesn't have much actual impact on the surface performance. For someone wanting a 'different' look to their work, this would suit fine. The light weight at 120gsm may not work for applications requiring the ability to stand up to large amounts of paint, but for ink work, this paper is fantastic. There was little to no cockling at all due to the ink. Lines were sharp and I detected no bleeding. All of the inks save for the usual suspects (5, 6, 14) performed excellent. The Higgins inks were light, but uniform in application, which is rare. The front and back textures are slightly different with the laid pattern being slightly evident on the front and mostly absent on the back.

Arches Text Wove, 120 gsm

This paper has a very slight screen pattern that gives the impression of a 'wove' surface. This texture can get a bit fibrous and a freshly tuned nib might grab some fibers and drag them around the page, through the wet ink, and cause some minor issues. The paper is fairly 'thirsty' in that it will take ink off your nib faster and will require you to dip more often. For that, though, you get some fairly fantastic results. The extra ink that is pulled off the nib creates darker and more uniform characters. Ink 14, for instance, performed extremely well on this paper as it was able to get enough saturation to look smooth and dark. Inks 5 and 6 benefited as well with uniform characters, though still lighter than I would have liked. 8 is noticeably splotchy and was the only ink that had that issue on this paper. Of the lighter weight papers, this is one of the few that I consider "makes ink look good" paper.

I did find that this paper benefits from using a lower angle on my writing surface. Mostly I work at around 65 degrees elevation but this paper worked better at a 40, probably due to the speed at which it wants to pull ink off the nib. Due to the soft texture, the paper feels much thicker than it is. I recommend a blotter or leather behind the paper. The thinner and soft paper would be good for manuscript and book work. Tests for cockling with paint would need to be run, but ink had no effect. Lines are crisp and clear. This particular paper is one that I feel needs a special shout-out as it was one of the joys to write on and honestly feels somewhat 'luxurious' to write on. It's the paper equivalent of a really decadent chocolate cheesecake.

Rives BFK, 180 gsm

This paper was consistently the most difficult to work with and had one of the few cases where I was so fed up I just stopped midway through a line. I discovered part way through that gently burnishing the paper helps significantly with all issues, but the paper is problematic. This is understandable as it is functionally designed to be a printmaking paper, not a calligraphy paper.

This paper is very fibrous and has an almost fuzzy surface that will consistently shed into your nib. I had conveniently placed this paper at #21 in the testing list (of 27) which meant I got a great pause $\frac{3}{4}$ of the way through a run to clean off my nib and give my shoulder a break.

When the paper isn't clogging up your nib, or dragging fibers through your work, or draining all the ink off your nib in three letters, it's fabulous. Another paper that works much better at 40 degrees, but writing over a leather backing feels like using a chisel felt tip marker. The absorbency of the paper also lends itself to extremely dark blacks, which can look good when they're not 'fuzzy'. The paper doesn't bleed terribly, but the lines are not crisp. The texture also meant that I found writing on the paper to be very slow.

Arches HP 90, 185 gsm

This is the lightest weight of the Arches HP watercolor papers. There is also Arches HP 140, 260, and 300 (at 300, 356, and 640 gsm respectively). I primarily had in flow problems getting letters to start on the very smooth and somewhat slippery surface. Once started, the problems didn't end, however. Many inks were inconsistent and blotchy. Some inks bled. This is one of the few cases I found where the number of inks that worked well was smaller than the ones I would avoid. The Ph. Martin and Sumi Inks were the least problematic, but looking carefully over the sheet, I would avoid this paper. Scribal Workshop and Sable Pestle Iron Gall inks were the two best performers on this paper. Inks 7, and 9-12 were acceptable with minor issues.

I've heard very good things about the HP 140, and will possibly test that in the future, but unless your ink lines up perfectly with the paper, I wouldn't spend the money on this one.

Stonehenge Cream Smooth, 250 gsm

This one is a favorite of many scribes and I can completely understand why. This paper has a good smooth surface which is the same on both sides. The heavier weight will stand up to more ink and paint, and the response is fantastic. It's not an overly thirsty paper but will take enough pigment to give a good and dark appearance. Most Iron Gall inks will soak in enough to get quite dark. Inks 14 and 15 continue to be irrelevant to the discussion but 5 and 6 look good at arms reach, though closer inspection shows them to be inconsistent.

This paper will handle most inks quite well and is an overall great performing paper. No major bleeding, doesn't shed, clean lines, and a pleasant surface feel.

Bristol +

This category is for Bristol, Bristol-like, and the heavier weight papers. While I understand that there are many extremely good papers that are much heavier than the 300 gsm paper I tested here, that was as far up the ladder as I went, as my testing was primarily for manuscript and book making work. The idea of using anything much over 160 gsm for book binding was simply not something I wanted to examine. That being said, after many requests for bristol and similar papers, I added them to the list, and I had a few of the papers in this category in storage already, so I went ahead and added them to the testing.

This turned out to be the biggest category in number of paper options, which is somewhat ironic given that I had zero interest in using them for the project that this entire experiment was predicated on working towards. That being said, there is still an outside chance that I'll go with a heavier paper. Testing breeds experience which can change minds, which of course is the whole purpose of the testing to begin with.

Borden & Riley Paris Bleedproof Paper for Pens #234, 74lb listed weight

This is the only paper I was unable to get a gsm for. This is also, by far, the absolute worst paper I tested. Good for doing pen and line work, it's horrible for calligraphy. Most inks blotched up and were uneven in coverage. Even the ones that look even actually aren't and if you hold the sheet up to the light at an angle you can see the uneven texture of the letters. The ink sat on top of the paper too much, running around, and prone to smearing. Avoid this paper for calligraphy.

Strathmore 400 Marker, 190 gsm

Almost the same as the Paris paper. Not quite as bad, but a close second. Suffers all the same problems at a slightly lesser degree. These two papers, taken together, will show any and all flaws that an ink will have concerning coverage and viscosity. My thoughts on these were "These papers can make any ink look bad". Avoid this paper for calligraphy.

Canson Bristol, Vellum and Smooth finishes, 260 gsm

First off, in most cases with the Bristol papers I personally preferred the Vellum to the Smooth finishes. The inks seemed to settle better on the vellum and had less blotchy/pooling issues with the sloped surface. Despite being rougher finished than the 'smooth' I found the vellum to be a smoother writing experience. One of my marginal notes is "-smoooth-" for example. Canson is ever so slightly superior to the Strathmore bristol.

Strathmore 300 Bristol, Vellum and Smooth finishes, 270 gsm

These are almost identical in every way to the Canson bristol boards. I find the writing to be ever so slightly inferior, but only with very close attention to detail. The writing itself is an identical experience. Again, I prefer the vellum finish to the smooth for the same reasons as above, and were I to rank the four bristol papers, I would take the Canson vellum, then the Strathmore vellum, then Canson smooth, and then Strathmore smooth.

All of these bostols perform as expected. Solid, heavy weight, no bleeding, sharp edges, crisp lines. The inks didn't perform in any ways that surprised me on these boards. I didn't run any paint tests, but these are all strong performers with easy to use surfaces that will give you zero issues.

Strathmore 400 Printmaking, Heavyweight finish, 280 gsm

This was the surprise finisher in the entire test. I said of this one, "this paper makes every ink look good." I would contend this to be a challenger for Bristol as a possible alternative scroll surface. The surface has enough texture to be visually interesting but not so much that it interferes with writing. This is the only paper that the walnut ink came out looking honestly good. Even the Higgins inks looked respectable. All of the iron gall inks came out solid and most looked much darker on this paper than any other. The paper has the potential for fiber buildup, but I think the one time that I noted it as such, the root cause was actually the Rives BFK that was a few pages earlier in the testing run, and I hadn't yet caught on to the issues with BFK. The reverse side is arguably smoother, but it could have just been this particular sheet, as the difference is very difficult to tell. The 280 gsm weight should hold up to gouache illumination easily.

This is, by far, my favorite paper of the entire testing run.

That being said, I'm highly unlikely to illuminate and bind an entire book using 280 gsm paper, though I'm counting nothing out.

Strathmore 400 Mixed Media Vellumn Surface, 300 gsm

This is a very similar paper to the 400 Printmaking paper. The surface is smoother, the weight is slightly more. I would say of the papers that I tested, this one bears the most resemblance to vellum in surface feel, weight, flexibility, and sound (yes, I sort of wave the papers back and forth to see how they sound). If the heavyweight texture of the Printmaking paper puts you off, the Mixed Media paper solves that issue. This is another paper I would recommend considering as a replacement for bristol when doing scroll work. For my manuscript work, the back and front sides are different enough that I would have to pay close attention to how I set up the signatures to make sure that equivalent surfaces are facing each other. This is one case where the different textures align with the two different levels of smoothness you get on actual vellum. If you don't like using perg and prefer bristol, I would suggest that you try out some of the heavyweight printmaking and the mixed media papers.

Summary

I realized in the home stretch of doing the ink runs that during each run, I was dreading certain papers, (rives bfk, paris, marker, strathmore calligraphy) and looking forward to others. These two were the final papers in each series (25 and 26) and I came to think of these as my 'reward' for finishing each run (before I did the single sheet of perg at 27). I think when I start to view getting to work on a specific type of paper as a reward, it means that that paper, or papers, has something that I have to look deeper at when reviewing. For me, the fact that I could throw just about any ink on that printmaking paper and have it look amazing was really just a fantastic way to finish out every run. It actually makes me feel bad to give harsh reviews of products, though it's easier when they're commercial rather than the handmade etsy inks. Even so, I could point to the Strathmore 400 Printmaking paper test and honestly say "if this is the only paper I used, I could use any ink out there"

For those that like lists, here we go. Some rank differently than you might expect from the reviews, such as the Canson Parchment which I can't recommend due to availability, but I really like it so I'm putting it where I rate it. I also did not take cost per sheet into account in this ranking, which of course plays a huge part in any project.

1. Strathmore 400 Printmaking

2. Strathmore 400 Mixed Media
3. Canson Parchment Drawing White
4. Zerkal Book White
5. Stonhenge Cream Smooth
6. Zerkal Frankfurt Cream
7. Strathmore 300 Printmaking
8. Arches Text Wove
9. Canson Bristol Vellum
10. Strathmore 300 Bristol Vellum
11. Canson Bristol Smooth
12. Strathmore 300 Bristol Smooth
13. Strathmore 400 Colored Pencil
14. Canson XL Drawing
15. Strathmore 400 Drawing
16. Canson Foundation Drawing
17. Strathmore 400 Drawing Recycled
18. Strathmore 400 Sketch Recycled
19. Strathmore 400 Toned Tan
20. Arches HP 90
21. German Ingres
22. Canson Ingres
23. Rives BFK
24. Strathmore 400 Marker
25. Borden & Riley Paris #234
26. Strathmore 400 Calligraphy

That the worst ranked paper on my list is one labelled for “calligraphy” is not lost on me. Even though they appear far down the list, all of the papers down to the Sketch Recycled are still entirely fine for calligraphy, depending on your use and need for the paper. I know a lot of people like the Arches HP 90 but it just didn't work for me, and I didn't get a chance to snag the heavier weights to test. I may do that in a future run.

Also, this ranking is a general results with no particular project, price point, or purpose in mind. This is purely my opinion of the paper and its response to the inks I tested with the nib I used

The Inks:

Much like the papers, the inks were divided into several testing categories. Loosely, they were divided into Sumi Inks, Modern Inks, Walnut Ink, and Iron Gall Inks.

Sumi Inks are of East Asian origin. Traditionally made with lamp soot and formed into a stick, they are ground on a stone and mixed with water to produce ink to be used. The inks I tested were all purchased in liquid form. These inks were purchased in arts and crafts stores locally.

Modern Inks include a variety of ink types. These are India inks, Acrylic inks, and other pigment and dye-based inks. These are inks that are commonly available in art and crafts stores and online. Mine were acquired both locally and online.

The single bottle that I tested of walnut ink was purchased at a local crafts store and was used primarily to provide a visual break in the testing series between the modern inks and the Iron Gall inks. (Not kidding, that's why it was in the test)

The Iron Gall inks can be sub-divided into two categories: Commercial and Craft, or Enhanced and non-enhanced. Either one will garner a small amount of dissatisfaction and while the temptation is to use neither category, for the moment I have decided to leave it with enhanced vs non.

The enhanced inks are ones that go on initially very dark. In the case of these inks they either have had materials added to the formulation that act as an initial darkening pigment, or these pigments have occurred naturally through age and oxidation. In the case of pigments or other materials being added, this is completely in period and the materials are mentioned if I know what they are. This is in no way a judgement on the inks, just a note that those inks have been formulated or prepared in such a way that you get a much different result both in initial application and final product. The inks I'm considering non-enhanced go on clear or very pale and then darken through oxidation on the page and generally end up with an overall lesser density and saturation.

As for commercial versus craft; the first three Iron Gall inks are commercially available on John Neal Booksellers. Thus my consideration that they are made in a more commercial setting though I honestly should do more research to find out more about how they are made and by whom.

The final five Iron Gall inks are inks known to be made by individuals, some are in the SCA, and some are not. These are inks that were acquired off Etsy, usually made in small batches. This puts the price point well above that of commercially available inks, but honestly, I'm perfectly fine with that. These are inks that someone has put time and effort into learning and making by hand. I'll always support that. In that vein, it's going to be *really* hard for me to come down on any of these inks as one I don't fully support.

There was a sixth ink that I really didn't like after I opened it and I chose simply to not review it at all. However, in retrospect I probably really should have, but by the time that I changed my mind, it was too late. I had been moving inks from shipping jars and other containers that didn't work well for my storage and I made the hasty and improper decision to fill the remaining space in the jar for that ink

with the remainders of the other inks that wouldn't fit in the jars they were being transferred to..

This resulted in the very interesting result that this particular ink mixture has been what I've been using for my practice pages, and it's utterly fabulous. The large-format bible pages done in 43 line double column pages have all been done with this completely undefined and unreproducible ink mixture. To one degree, I find that it's possibly more 'accurate' to period that I would have initially assumed. I would imagine that as various batches of ink were finished, they would be passed out to the scribes who would just add them to whatever they had remaining in their ink pots and jars. Thus, my practice ink has become just a mixture of whatever Iron Gall inks were lying around in excess quantity and have been mixed together.

Mostly, however, I wish that I'd just tested the ink as shipped.

#1 Yasutomo Black Sumi Ink (with shellac)

#22 Yasutomo Black Sumi Ink (no shellac)

These two inks will be reviewed together as they are almost identical. The only major difference is that the no shellac version is less waterproof. I had difficulties getting the non waterproof to run even by soaking the paper, though I eventually succeeded. The shellac added ink has a noticeable shine to it as you would expect. The non-shellac is not matte, but the shine is much less noticeable than on the former.

Overall these inks performed well on almost all surfaces. The #1 didn't perform quite as well as the #22 on Arches text wove, but that was a universal among all the 'thicker' and more heavily pigmented inks. There are no papers where either of these inks performed poorly.

I have had very little issue so far with these inks smearing when erased. I did a specific test on 110gsm Pergamena to see if the heavily pigmented ink would sit too much on top of the page and smear when erased and neither of these inks showed any tendency to smear when subjected to rigorous erasing to the point where while some of the ink came off the page, it did not smear or leave ink elsewhere.

As mentioned, these were also subjected to a water test and I was eventually able to get both inks to release in minor amounts (the non shellac more so than the shellac added). The test was done on 110gsm perg.

These KF (shellac) ink currently runs for \$6.57 on Amazon, and the KY (no shellac) is \$6.84. Both prices are for 2oz. If you're in need of a lot of in, 12oz bottles of KF are \$13.32.

Warning: Sumi inks all have a fairly strong smell to them. I happen to love this smell. It's rather earthy and I've been told it's camphor. I adore it, but a lot of people are very sensitive to the

smell or do not like it.

These are currently my standard go-to inks and what I have used for the scrolls that I have done.

#2 Moon Palace Sumi ink

This ink is almost identical in every way to the Yasutomo. I'm sure more advanced calligraphers than I can give you a more in depth breakdown of the differences between these sumi inks. For those of you just getting started, though, I find very little difference. The primary reason I go with Yasutomo over Moon Palace is simply that the local art store carries Yasutomo and doesn't carry Moon Palace. If it were the other way around, I'd probably prefer Moon Palace.

Moon Palace Sumi is incrementally less 'shiny' than the Yasutomo with shellac, but it's difficult to notice at a casual glance. I purchased my ink at John Neal and the price point per ounce is better than the Yasutomo on Amazon. Between the addition of shipping and then SCA discount at JNB it's about a wash to Amazon prime shipping.

Much like Yasutomo, this ink has the strong earthy smell to it.

This is currently my 'back up' ink in case I can't find, run out, or otherwise am having a bad day with the Yasutomo inks.

#3 Dr. Ph. Martin Black Star Hi-Carb

#4 Dr. Ph. Martin Black Star Matte

Again we're looking at two inks that are very similar in overall rating. There are differences between the two inks, but in overall quality of use, they act more or less identical. The primary functional difference is that the Hi-Carb has a glossy finish to it and might be ever so slightly darker with a faint red sheen. The matte appears under my lighting to have a more blue tint to it than the hi-carb but that may just be comparison. The matte is less shiny than the hi-carb but overall has more of a sheen than many other inks and is not nearly as matte as iron gall inks. If these inks can be easily acquired, they are both very good inks.

Neither ink has a strong odor. Yes, I judge inks based on their smell.

Price is where these inks start to suffer. Amazon has the hi-carb at \$8.99 a bottle and JNB has it for \$9.22. These are 1 ounce bottles, putting the price point almost 3 times that of sumi ink, which performs nearly the same. When I can get 15oz of Moon Palace from JNB for the same price as 2oz of Martin, I know exactly where my money is going.

Price aside, these are both very strong performers. Between the pair of Sumi inks at #1 and #2, then these being series three and four, I was beginning to wonder if I had made a mistake in

doing the testing at all. All of these inks were such strong performers that I figured I might just cash it in and not bother. The next two inks, however, showed me that I had nothing to fear.

#5 Higgins Calligraphy

#6 Higgins Eternal

If someone gifts you these inks, thank them for their kind thoughts and then throw them away when their back is turned. I've been told that the Higgins Black Magic is okay, but I didn't have that at the time I was doing this testing and I'll do a test of it later. The Higgins Non-waterproof was so useless I didn't even include it in my testing.

Note 1: the Eternal is noticeably better than the calligraphy ink.

Note 2: both inks have a *very strong* ammonia smell. Avoid if that smell is an irritant to you. It's not a medical irritant to me, I just hate it.

These inks fail impressively on any hot press surface. On hot press they will immediately pool to the bottom of the letter if you're writing at an angle or pool at the last point of contact if you're writing flat. Either way you end up with a letter that is mostly a pale grey wash with a blob of darker grey wash at the bottom.

If you use them on a more absorbent paper, they'll respond in a not-horrific way, and actually look smooth and even. However, when placed next to almost any other ink I have, they still suffer by comparison. Both inks in this case show as a more uniform grey wash due to the lack of body and pigmentation. There is very little saturation with either ink. These might work well in a fountain pen but I'm not going to sacrifice any of mine to find out. The eternal has the advantage of being one of the most 'matte' finish inks in the test series and that literally is the only nice thing I can say about it. The price point is similar to sumi inks, but fail miserably in comparison.

In seriousness, though, if you come into possession of these inks you can use them for something like learning a new hand on cheap paper. But honestly that's about the only real use I can think of for them. I've done exactly that a few times and used the Eternal on drawing pad paper for testing of spacing and layout, until the smell gets to me.

#7 Winsor and Newton Black India Ink (spider bottle)

Much like Higgins, the W&N 'spider bottle' black india ink has an ammonia based smell to it. Fortunately, that's where the similarities end. This ink was a bright spot in the middle of a sequence of very awful inks. In almost every other respect, this ink performs very well. The body and thickness of this ink is not quite as heavy as that of Ph. Martin or Sumi inks. The flow is faster and better, and therefore, it will feel like it's writing a little quicker. I saw no issues with heavier paper, but on some of the light weight drawing and sketch papers, the thinner body

caused this ink to feather and bleed ever so slightly. I would say overall it's not quite as crisp as Inks #3 and #4 but still a solid performer.

This ink is commonly found throughout art stores and that makes it easy to come by. Be careful of price points, however. I find this on Amazon for \$7.57 for a 1 oz bottle.

#8 Winsor and Newton Liquid Indian Ink - Non Waterproof

When you throw away the Higgins Calligraphy ink, this one should go in the bin right next to it. Like the Higgins Non-waterproof that wasn't tested, this also should have been left off the list entirely. It took 75 minutes to do this test series and I want those minutes back.

While this ink occasionally only performs as bad as Higgins Eternal, on Bristol and other hot press papers, this ink does everything that the Higgins Calligraphy does, but more so. I won't even use this ink for scrap testing.

#9 Speedball Super Black India Ink

#10 Speedball Super Black Calligraphy Ink

We're now getting back into solid performance territory and out of the dark ages of really bad inks. Both Speedball entries are excellent inks. They don't have an overwhelming smell, both are sharp, clear, and very black. There was one incident of a bit of bleeding at first point of contact on one paper (canson drawing foundation) which I had with another ink, but on further review I can't really find where that happened in either case. Everything about these inks were sharp and clear with good consistency of coverage. The letters had no fade of note anywhere inside of the letter body.

The india ink is your 'standard' Speedball ink that you can find at almost every art store that sells calligraphy supplies. This ink has a slight shine to it, similar to W&N India or Martin Hi-carb. Amazon carries 2oz bottles for \$5.11, a similar price point to Sumi inks in the store, and a good price point for starters. This is also available from Blick art materials in pints and quarts if that's more your speed. A 32oz quart bottle is \$14.74.

The Black Calligraphy ink is harder to find, generally you're going to find it in 0.4oz bottles for \$2.30. Again, Blick art supply has this in 2oz bottles for \$4.99, which is completely worth it in my mind. I do need to order some and see if the 2oz bottles are the same ink as the 0.4oz bottles. The smaller jars do not say that they're acrylic but the larger ones do.

#11 Daler-Rowney FW Acrylic Ink

Generally speaking this was an outstanding ink. This was by far the best performer on the Paris paper and one of the few that I would suggest using on that sort of surface. This ink performs very well on very smooth hot press papers. The paper even performed well on the Arches text

wove which generally drank ink off of nibs and required 2-3 'dips' per line of text.

Generally the lines were thin and the letters crisply defined. There were a few paper types where this didn't happen. The Ingress papers were dicey and the Rives BFK performed as expected and there was bleeding involved with the edges of the letters. Otherwise, however, this ink performs exceedingly well and I would recommend it for any project.

In my ink notes this was listed as "Really Good". There are zero scent issues with this ink. This ink would be in my standard travel kit if I better liked the jar that I transferred it into. I dislike dropper bottle style jars as they take up too much vertical space in storage so I always transfer those inks to shorter jars. I have two styles that I use, one is a 2oz jar from JNB, and the other is a slightly under 2oz Badger Airbrush jar. I prefer the Badger jars as they have a smaller top opening, leading to less evaporation issues, while being larger than, say, the standard Winsor and Newton jar (which is also a favorite) and thus easier to get my nib holders into (I use the cork handled holders). If I transfer this ink into the Badger Jar from the larger format jar I will use this as a regular travel ink.

#12 Calli Jet Black India Ink 010

Among the non-sumi inks, this one ranked second right behind the Daler-Rowney and first among the India-type inks. I rate this one just marginally ahead of the Speedball India. The note for the FW Acrylic was "Really Good" and the note right below it on my sheet, for the Calli was "Almost Really Good".

The Calli ink sometimes appears every so slightly less saturated than the FW acrylic ink, and on other papers more, which is going to be a function of acrylic versus india ink. This one inconsistency is why I rate it just below the FW Acrylic. The Calli is also a touch more of a blue based black whereas the FW is a red based ink. If you wear glasses and have a really high index and you look at the letters towards the edges of your lenses, this can be significantly more obvious in the spectrum of the inks.

This has exactly the same crispness issues that the FW Acrylic has. That is to day that on most papers it's very crisp with clear and concise hairlines and edges to the letters. On some of the more absorbent papers (Rives BFK) it can bleed slightly.

I like the bottle this one came in slightly better than the one that the FW Acrylic was put into, so this one actually does ride in my portable kit. This ink is completely scent neutral as far as I can tell.

#13 Tom Norton Original Walnut Drawing Ink

This ink I purchased for the sole purpose of using to do set-up lines. Marking margins and minim heights. For that, it works fine. It's not really cheap enough to qualify as a 'practice ink' and doesn't

work well on most surfaces for broad-nib calligraphy. This ink is simply too thin to get good results. It does, however, do linework very nicely.

#14 McCaffery's Penman's Ink

This was the first of the Iron Gall inks that I tested. This ink was unsaturated and thin. It applied unevenly to almost all surfaces with blotching and irregular density. This is a feature that is common, but not universal, to Iron Gall inks. This ink does not appear to have any additives to provide an initial darkness to the page. The ink goes on a pale lavender color. I found this ink did not fully engage with the Leonardt nib and I had to use a Brause to get it to flow at all, and used a lower 40 degree table angle than the usual 60 degree.

The ink only provided a fully dark letter on thicker paper which more readily absorbed more of the ink. Rives BFK, Arches Text, German Ingress, and Strathmore 400 Printmaking were the four of the 27 that gave good results with this ink. For the most part, I'm going to vote a no on this ink, it was the bottom of the list for Iron Gall inks for broad-nib calligraphy. The ink has strong notes of apple cider vinegar.

#15 Old World Iron Gall Ink

This ink has a decent body and goes on a very pale grey color. Again, I think this ink has no additives to achieve a darker color when applying the ink. This ink is again very thin, but that is normal for most Iron Gall inks. This ink is less saturated than the McCaffery's ink but tends to go on slightly more consistently with less density variation through the letters. Still, there are six better choices that I tested for Iron Gall inks, at least for broad-nib calligraphy. This one has more of a wine base smell than vinegar, sweet and pleasant, probably a white.

#16 Blots Iron Gall Ink

Of the eight Iron Gall inks that I tested this one somehow escaped my note taking. That being said, a quick test supplied the necessary information which is that it goes on medium grey and darkens quickly. The color is dark enough at application that I believe it may have some additives to provide initial darkening, or the ink is old enough that a casual stirring of the ink kicks up enough oxidation precipitate to provide a good color when written. Given how dark the ink was on application, I'm tossing this one into the 'enhanced' category, though I do not know for sure. This is a good middle-ground Iron Gall ink. I have no issues with using this ink. It's not the most saturated ink but it has good density when used for broad-nib calligraphy. There is no obvious issues with inconsistent ink application.

This ink smells completely different than other Iron Gall inks. The base smell is almost akin to a mineral spirit, which I find odd, and may contribute to whatever chemical reaction caused the dark application of the ink. Not a fan of the smell, though it's not strong or overpowering.

#17 Green Man Iron Gall 20190214

I think first and foremost we need to point out that Ian was making Iron Gall Ink on Valentines Day. This is the first of the five Etsy-sourced inks and the only one that I have (so far) personally talked to the crafter of the ink in question. This ink is one of what I am calling 'non-enhanced' inks. It goes on very pale and then quickly changes to a red color, then to black. I quite like this one. It's not the most saturated deep black of the Iron Gall inks, but I think with some time to rest in the bottle it may darken some more overall. This batch was created on 2/14/19 and was applied on 4/6/19, giving it less than two months to rest before being used. This was also the first of the inks tested to benefit from having a piece of leather backing the paper while it was being written on. This greatly improved the performance of the iron gall inks. While the three commercial inks did not benefit from this, all five of the small-batch inks did.

The lines with this ink are clear and crisp and there is very little to no bleed, even on Rives BFK and Archest Text. This is good clear ink. Density is good and only in a few places were there any inconsistencies. The saturation is obviously not as high as other Iron Gall inks, but I believe this one suffers from being right next to one of the darkest of the inks. Of the Iron Gall inks that I am for now categorizing as 'non-enhanced', this one is consistently the best. The scent of this ink is, hands down, my favorite of all 22 inks. It's a very nice blend of wine and vinegar.

#18 Scribal Work Shop Historic Iron Gall Ink

Of the 8 Iron Gall inks that I reviewed, this was the most saturated and darkest. This ink is in the same category as Sumi inks for overall darkness and complete black. This ink, like most Iron Gall inks, is also matte in finish, similar to Speedball Calligraphy ink. Overall this is an incredibly dark ink. There is very little particulate matter on the bottom of the bottle that might require stirring to put back into the solution.

I don't know if this Iron Gall ink has additives to bring a darker appearance but I do know that it goes on to the page darker than any other Iron Gall that I tested. This leads me to believe that the ink may have an additive of some sort that both provides an initial darkening and thus an overall darker appearance once the oxidation has occurred on the writing surface. Given this behavior I've elected to put this ink in my 'enhanced' Iron Gall ink category until I get further data.

I must note that historically, additives and other enhancements were commonly added to inks to get the desired richness, texture, and viscosity desired by the users. Inks for various different implements and surfaces had different needs and the ink you would use on a reed calamus was different than the ink you would want for a cut quill pen and both of those might change between rag paper and a true vellum surface. I do not view 'enhanced' Iron Gall inks as inherently inferior to non-enhanced inks. It is simply a different means to achieve the end, which is letters on the page.

The only papers that this was not the most superior ink were the Rives BFK test where it bled very marginally more than some of the other Iron Gall inks, but none of the Iron Gall inks bled profusely. Otherwise in all tests thin lines were sharp and the edges of broad-nib calligraphy were sharp and well defined.

The scent of this ink seems to be a very oddly pleasant combination of vinegar and wine base. I quite adore it. As a preview of future test results, this was also the best performing Iron Gall ink on Pergamenata 160 gsm.

#19 Augury Press Iron Gall Ink

This Iron Gall ink had the misfortune of being a very solid, but neutral grey Iron Gall ink that was sandwiched between two of the darkest Iron Gall inks that I tested. I can only assume that the final color of this ink is on purpose. It is a very nice medium to dark grey. It is not black at all. This is uniform across all tested papers and surfaces. On most surfaces the density of the ink is very consistent and uniform. The ink has a wonderful rich grey tone with a hint of red in it. If this is the color and result that you're looking for this is absolutely the best possible ink to give it to you.

Fine lines are crisp and clear and the edges of broad nib letters are sharp. This ink did not bleed on Rives BFK. I'm going to rate it a very nice dark grey ink and it stands well in the non-enhanced division of the Iron Gall inks. The scent of this ink is somewhat fruity and I surmise that it's a fruity wine base, with little to no vinegar.

#20 Fox & Quills Iron Gall Ink: Iron Throne

Fox & Quills has some fantastically named Iron Gall inks with various colorants and other additives. This particular ink is enhanced by the addition of indigo and gives the finished ink a very nice dark blue color. I happen to really like this ink and it's color and I'm a huge fan. Obviously this ink is in the 'enhanced' division of my Iron Gall ink testing. The color saturation of this ink is similar to the Scribal Workshop ink as well as the FW and Calli inks. The blue color brings the overall 'dark' factor a stop below the SWS ink in much the same way that FW and Calli are a stop below Sumi and PH. Marten.

Lines are crisp on all surfaces and the edges of broad nib letters remain clear and sharp even on the Rives BFK paper. The ink goes on very blue and then darkens to a blue-black. Depending on paper the color can be so black as to be indistinguishable from other black Iron Gall inks. The more absorbent the paper is, the more black the ink is, which is a feature of all Iron Gall inks, but in this case, it takes away from the otherwise deep blue of the indigo. On Bristol, the color is a more pronounced blue. The blue is also more visible on Pergamenata.

There is very little precipitate in my current bottle of Iron Throne. This is mostly due to it not coming fully out of the original bottle when I transferred it to the current bottle. The precipitate that was left after the transfer was diluted with distilled water, shaken into solution, and dumped into the 'mix' bottle that I've been using for practice. The lack of precipitate has not seemed to impact the functionality of the ink, but may have reduced the overall 'blueness' of the ink. The smell of the ink is a pleasant fruity mix of wine and vinegar, much like many of the good Iron Gall inks.

#21 Sable Pestle Iron Gall Ink

This is my second favorite smelling ink. Again, I think it's a cider vinegar with possibly a Reisling wine for a base. Regardless of the actual liquids, I love the smell. This ink has a lot of sediment after sitting for a while. I've placed it in the enhanced division of my rankings for this reason. It may be just a natural result of the material oxidation but given the percent by volume of sediment (as it appears on the bottom of the jar) I have drawn the conclusion that there may be additives involved past the basic chemicals used for Iron Gall ink.

Regardless of the chemical constituency of the ink, it goes on medium grey and darkens to a rich black. The saturation is a stop below SWS Iron Gall ink and is similar to Iron Throne, but without the blue. If I wrote on two pieces of paper and didn't put them side by side you might be hard pressed to figure out which one was SWS and which one was Sable Pestle. The difference really only shows on smooth hot press surfaces such as smooth Bristol, where the slightly less viscous Sable Pestle has a bit more difficult time maintaining consistent density across a full letter. This behavior is increased on Pergamenata in initial testing. Like most Iron Gall inks, the lines are sharp and the edges of broad-nib letters are crisp and clean.

Summary

Even more so than the papers, ranking the Inks in an overall rating is almost impossible. There are too many variables to be completely comfortable with ranking wholly different types of inks against each other. It's very difficult to rate a modern acrylic ink against a historical Iron Gall ink. As mentioned above, my personal favorites are the three Sumi inks that I tested. The three sumi inks are to me almost all identical. I'm sure if I got into buying and testing a lot of different brands of Sumi, I would be better able to tell the difference between them. In the short amount of testing I have done, there is very little difference.

Due to the complete functional differences, I will be breaking up these rankings into three divisions. Sumi, Modern, Iron Gall.

Sumi Inks:

1. Yasutomo Sumi KF formula
2. Moon Palace Sumi Ink
3. Yasutomo Sumi KY formula

Modern Inks:

1. Daler-Rowney FW Acrylic
2. Calli Jet Black India
3. Dr. Ph. Martin Matte
4. Dr. Ph. Martin Hi-Carb
5. Winsor & Newton Black India Ink
6. Speedball Super Black Calligraphy Ink
7. Speedball Super Black India Ink
8. Winsor & Newton Liquid Indian Ink Non-Waterproof
9. Higgins Eternal
10. Higgins Calligraphy

Iron Gall Inks:

1. Scribal Workshop Historic Iron Gall Ink
2. Sable Pestle Iron Gall
3. Fox & Quills Iron Throne
4. Green Man Iron Gall
5. Blots Iron Gall
6. Augury Press Iron Gall
7. McCaffery's Penman's Ink
8. Old World Ink Iron Gall

Appendices

Appendix A: The Papers

ID #	Company	Name	Color	Finish	Weight
1	Canson	Parchment Drawing	White		89
2	Zerkal	Book	White		100
3	Canson	Foundation Drawing	White		115
4	Strathmore	300 Printmaking	White	Lightweight	120
5	Arches	HP 90	White	HP	185
6	Canson	Bristol	White	Vellum	260
7	Canson	Bristol	White	Smooth	260
8	Stonehenge		Cream	Smooth	250
9	Strathmore	400 Calligraphy	Cream	Wove Ingress	75
10	Strathmore	400 Sketch Recycled	White	Fine Tooth	89
11	Hahnemühle	German Ingress	White	Ingress	100
12	Canson	Ingress	White	Ingress	100
13	Canson	XL Drawing	White	Smooth	114
14	Strathmore	400 Toned Tan	Tan	Medium	118
15	Arches	Text Wove	Off White		120
16	Zerkal	Frankfurt	Cream	Frankfurt	120
17	Borden & Riley	Paris #234	White		74lbs
18	Strathmore	400 Drawing	White	Medium	130
19	Strathmore	400 Drawing Recycled	White	Medium	130
20	Strathmore	400 Colored Pencil	White	Medium	163
21	Rives	BFK	White		180
22	Strathmore	400 Marker	White	Smooth	190
23	Strathmore	300 Bristol	White	Smooth	270
24	Strathmore	300 Bristol	White	Vellum	270
25	Strathmore	400 Printmaking	White	Heavyweight	280
26	Strathmore	400 Mixed Media	White	Vellum	300

Appendix B: The Inks

ID #	Company	Name
1	Yasutomo	Black Sumi Ink
2	Moon Palace	Sumi Ink I70
3	Dr. Ph. Martin	Black Star HiCarb
4	Dr. Ph. Martin	Black Star Matte
5	Higgins	Calligraphy
6	Higgins	Eternal
7	Winsor & Newton	Black India Ink
8	Winsor & Newton	Liquid Indian Ink
9	Speedball	Super Black India Ink
10	Speedball	Super Black Calligraphy Ink
11	Daler-Rowney	FW Acrylic Ink
12	Calli	Jet Black India 010
13	Tom Norton	Original Walnut Drawing Ink
14	McCaffery's	Penman's Ink
15	Old World Ink	Iron Gall
16	Blots	Iron Gall
17	Green Man	Iron Gall 20190214
18	Scribal Work Shop	Historic Iron Gall Ink
19	Augury Press	Iron Gall
20	Fox & Quills	Iron Throne
21	Sable Pestle	Iron Gall
22	Yasutomo	Black Sumi Ink - No Shellac