WHAT IS A STEEL ENGRAVING?

This lil' overview is NOT meant to be exhaustive, it is simply a quick "what is it??" with regards to steel engravings, etching, antique prints, etc. The terms "steel engraving", "copper etching", "copper engraving", "woodblock", and litho/lithograph" apply to paper prints created FROM these types of 'plates'. Roughly speaking, a steel plate engraving's linework is of almost mathematical precision (like a US dollar bill), an etching is more 'sketchlike' and spontaneous and created on a sheet of copper, a woodblock is generally courser with large areas of solid black instead of areas of black built up with corsshatching (like steel engravings and etchings) and created on a 'plate' made of wood, and a litho is remarkably similar to a charcoal drawing in line quality and created on a stone plate (hence 'litho' or 'lithic', meaning stone). 'Copies' of all of these can be found as typogravures, photogravures, and so forth.

A STEEL ENGRAVING print was produced, basically, in this manner:

1. A painting, drawing, artwork is sketched out onto a steel plate
2. The engraver will then, using burs and scribing tools, engrave the artwork onto the steel plate. Any line the engraver makes on the plate will print black when printed -- the deeper/wider the line he makes, the darker and thicker the line will be on the finished print. Dark and thick lines are used for up-close subjects in the artwork, thinner/shallow lines would denote things further away.
3. Once the plate is fully engraved, it is heated and inked. The heat of the plate keep the oily ink fluid. The ink is squeezed into the engraved lines using tarlatans (like a cheesecloth) and a brayer and 'squeegee' to force the lines full of ink.
4. The inked plate is then completely wiped clean using tarlatans and rags so that the ONLY ink remaining on the plate is within the engraved lines.
5. On the "O" or "D" roller press ("O" and "D" names as those are the cross-sectioned shapes of the two types of rollers used in intaglio printing presses), the inked plate is placed art side up. A sheet of wet cotton paper is laid on top (this will become the print). Then pusher/catcher felt blankets are placed on top of this (these will help force the paper into the inked lines).
6. The plate/paper/felts are run through the press and out the other side pops out the finished print -- the pressure of the "O" or "D" having forced the wet paper into the engraved lines, sucking the oily ink out of the linework and onto the paper.
7. The paper is dried and often rewetted and 'calendered' -- run through the press again but between clean paper or blankets, just to flatten out the plate impressions and other wrinkles.

Additional Info:

Steel Plates have been used since the 1820s. Steel plates can be distinguished from those on copper. The parallel lines and the lines in the cross-hatched areas tend to be finer and closer together on steel engravings than on copper engravings. This was a skilled trade, with individual engravers often being responsible for just one aspect of an engraving, such as use of a roulette to create texture, or engraving faces, or interlining. In later years, equipment was produced for drawing parallel lines mechanically. Steel plate engraving is considered to have achieved its
greatest results between 1820 and 1860. Large single loose prints for collectors continued for much longer. From the late 1850s onwards, the 'steel plates' used were, in fact, copper plates faced with steel. So the engraver had the advantage of a hard-wearing surface combined with a more easily engraved metal beneath.

ETCHINGS are created in much the same fashion, except that the linework isn't engraved into the plate. Instead, here is how an etched plate is created (once created, the printing aspect is the same as steel engraved plates):
1. A smooth, clean copper or zinc plate is polished and degreased using ammonia, salt, talc, and alcohol.
2. The plate is then heated on a hotplate or 'griddle' affair and a dark wax is applied (called either ball hard ground or soft ground. There are other waxes, but that's not important). The wax melts a bit and is brayered out with a rubber roller on the plate. This is done evening and carefully so as to not create bubbles or unwaxed areas. The wax acts as a barrier against the acids that will follow.
3. The plate is then suspended, wax side down, from a stick or pole and a flaming taper of cheeseclothe and carnuba wax is held UNDER the plate's surface towards the waxed side. Care is taken not to let the flame touch the wax -- just close enough so that the carbon of the burning taper is deposited in the re-melted ball hard ground or soft ground on the plate. This creates a satin/glossy black surface to the copper plate and allows the artist to see a coppery metal reflection where ever the artist draws a line in the plate.
4. The artwork is drawn through the wax to expose the copper (the copper isn't actually scratched or marked, it is simply a matter of drawing lines through the wax to expose lines of copper. Removing the wax will allow for acid to reach the copper.
5. The back of the copper plate, the undrawn side, is covered with denatured alcohol and resin to act as a barrier to the acid. Once the plate is submerged the ONLY thing the artist wants exposed to the acid are the lines drawn through the wax.
6. The plate is submerged in nitric acid or a dutch mordant
7. The acid 'eats' away at the exposed copper, creating fissures and pits and channels -- these, like the engraved plate discussed above, will hold the ink and create the print.
8. The plate is run through the press the same as the steel plate engraving.

Copper Plate 'engravings'

This is an intaglio (not a relief) process. i.e. it is the grooves, rather than the raised portions that are inked. The steps are:
- A drawing is cut into a copper plate using a burin, a metal tool with a sharp point, to remove the metal and create the lines of the drawing.
- Ink is applied to the plate with a dabber or roller, and forced into the grooves.
- The surface is cleaned with soft muslin.
- A sheet of paper is laid over the plate
- The plate and paper are passed through a rolling press that applies pressure and forces the paper into the grooves to pick up the ink.

SOME TYPES of 19th CENTURY PRINTS:
Etchings -- A print created from an intaglio etched plate (see above). The paper is usually rather thickish (since it is printed wet and has to hold water) and the linework is 'raised'. There is sometimes, but NOT ALWAYS, a plate impression around the artwork. Some etchings have no titles beneath, while others may have the artist, etcher and title engraved beneath the artwork WITHIN the plate impression area (if there is a plate impression). Zinc is sometimes, but not often used as an etching plate. Magnesium in some very rare occurrences, but magnesium is explosive in acid. The paper is never glossy, always either thickish or at least index card thick, is cotton based, and is almost always produced with no text on the back.

Etching Process ==
The etching process is similar to Steel Plate Engraving (above) in that a picture is formed by grooves on a metal plate, and these grooves then filled with ink. However, for etching, the metal used may have been zink, and the picture was bitten into the plate with acid, rather than being cut in with a tool. The process was:
- Prepare a 'ground'. This is a waxy substance impervious to acid, normally a mix of beeswax, asphaltum, pitch and gum-mastic.
- Heat the metal plate, and rub the block of ground over it until it melts, spreading the ground over the surface with a roller or dabbler.
- Smoke the ground with burning tapers to make it black.
- Draw the picture onto the metal with a needle. This will open up bare metal.
- Varnish the back and edges of the plate to protect them.
- Insert the plate in acid.
- Remove from the acid after a period, which can vary from one minute to two hours.
- Add varnish to those lines where no further action is required, then return the plate to the acid (then repeat these steps as necessary).
- Remove the varnish and ground from the plate.
- Ink the plate and create prints, as described in engraving (above)

Steel Engravings -- A print created from an intaglio engraved plate. Other metals used for similar looking engravings are copper (the only real difference is that copper plate engravings are often a bit more thick lined as the copper metal is softer than steel and very fine engraved lines are less likely to hold up in the press). A steel plate engraving print may or may not have a plate impression. The paper is never glossy, always either thickish or at least index card thick, is cotton based, and is almost always produced with no text on the back.

Typogravures -- a photomechanical method of reproducing woodblocks, etchings, steel engravings, photos and photos of paintings. Typically, typogravures are of the late 1870s and onward. Steel engravings were eventually phased out as too expensive for artwork production and were replaced by typogravures and photogravures.

Photogravures -- a steel plate intaglio print that uses, instead of engraved lines, a process of reproducing a photograph of a painting or drawing on a steel plate. The plate is then augmented with mezzotint, aquatint, drypoint, etching, and engraving to bring out details. There is a wide range of quality of photogravures -- ranging from bland all the way up to a printmaking form that in some cases can surpass line engraving in terms of details and quality.

Photogravure Process ==

Photogravure was invented in 1869, and widely used by the 1880s. It consists of transferring a
photographic image onto a metal plate. The process is:
- Project an image onto a sheet of light sensitive gelatine. The gelatine will harden and become insensitive to light in proportion to the amount of light received.
- Attach the sheet of gelatine to a plate, possibly first covered in aquatint ground.
- Immerse the plate in warm water to remove soft gelatine.
- Immerse in acid, then proceed as for etching (above).
- Ink the plate and create prints, as described for engraving (above)

Comments
The instructions above are for hand photogravure. During the 1880s, a machine photogravure process was also invented. The machine photogravure used a screen consisting of tiny square dots, rather than a ground, and normally ending with printing from a drum. This enabled high quality prints to be created cheaply and quickly and so took over from the earlier engraving and etching processes for commercial printing.

[ *I recently came across this additional information regarding photogravures:* Photogravure is an intaglio printmaking process initially developed in the 1830s by Henry Fox Talbot in England and Nicéphore Niépce in France. These early images were among the first photographs, pre-dating daguerreotypes and the later wet-collodion photographic processes. Photogravure in its mature form was developed in 1878 by Czech painter Karel Klíč (Karel Klitsch, 1841–1926). This process, the one still in use today, is called the Talbot-Klíč process. Photogravure was developed to provide an archivally permanent way of reproducing a photographic image. Because of its high quality and richness, photogravure was used for both original fine art prints and for photo-reproduction of works from other media such as paintings. Photogravure is distinguished from rotogravure in that photogravure uses a flat copperplate etched rather deeply and printed by hand, while in rotogravure, as the name implies, a rotary cylinder is only lightly etched, and it is a factory printing process for newspapers, magazines, and packaging. Due to an unfortunate confusion of terms, searches for "photogravure" on the web often turn up industrial machinery designed for rotogravure. In France, the correct term for photogravure is heliogravure, which the French term photogravure refers to any photo-based etching technique.]

Photoetching -- Like a photogravure, relies on photographic reproduction of linework. I've not seen any photoetching with platemarks. The lines of a photoetching are smooth, unlike an etching or steel engraving where the lines are raised.

Woodblock/Wood Engraving -- America/European woodblock engravings are very different from the Japanese woodblock engravings (which are a much higher form of artwork, using many different plates and inking technologies). Although there are many nice American/European wood engraving prints, the simplist way of considering woods is that they are printed much like a giant rubber stamp. Unlike the steel engravings or copper plate etchings, where the engraved/etched lines are what is printed, with woodblock engravings the engraved parts are what is NOT printed. Everything the engraver carves out of the flat woodblock will be left unprinted in the final print.

Woodblock prints (American and European) can be on thick or thin, almost always on dull finish paper. A woodblock engraving is printed 'dry' (meaning the paper isn't soaked like in etchings or steel engravings). A GLOSSY sheeted woodblock is most likely a typogravure.
The wood engraving process, like the woodcutting process is a relief process, i.e. it is the raised parts that are inked. 

Wood engraving is similar to woodcutting (above) except that:
- hard wood, cut across the grain, is used.
- the picture to be cut could be traced onto the block or, since the 1860s transferred photographically onto the block.

Comments
Wood engraving like woodcutting, is a relief process, i.e. it is the raised parts of the block that are inked and form the picture. Thin white lines cut into the wood can result in the engraving having the appearance of a white drawing on black.

[EXCEPTION: There are a few examples of European 'colored' engravings wherein the print was actually produced using a series of plates, each engraved for a different color, to yield a multi colored GENUINE wood engraving. G. Virtue in the 1840s/50s produced a Landseer engraving in multi colors using sequential wood engravings for each color. And the genuine 1850s Morris "egg and nest" series likewise used genuine wood plates for the artwork and multi colors].

Lithograph -- a print created form a stone 'plate' which is actually a stone. The artwork is drawn on the stone with a waxy crayon, or tusche. The print that results has the mirror image of the artwork as drawn on the stone. Perhaps the most famous lithographs are those of David Roberts through Moon/London of the Holy Land. Lithographs are often incorrectly indentified as typogravures or another printing process, lithographs or attribute typogravures and other types of prints to this art form. A lithograph, though, is a very specific type of print -- the lines on close examination appear exactly like a fine charcoal drawing. There is no pixilation of the lines unlike a typogravure or photolithograph which, upon very close examination will have teensy uniform dotwork...like an enlarged magazine or newspaper photo).

Lithography Process ==
Lithography was invented in Munich in 1798. It relies on the fact that grease and water repel each other.
- A picture is drawn using a greasy medium
- The drawing is protected by sponging the stone with a solution of gum arabic (to protect the surface from further grease) and weak acid (to open up the surface)
- The surface is then dampened with water that settles only on the unmarked areas
- Greasy paint is applied to the surface with a roller, and so adheres to the areas that have been drawn.
- The picture is transferred to paper by laying the paper, supported from behind on the stone or plate.

Comments
The surface used for the lithograph was originally limestone. Stone is still often preferred by artists, but for practical reasons, zink has been used from from about 1830, then aluminium from about 1890. The picture can be drawn with chalk, crayons or printing ink in grease. Color lithography usually involves the use of several stones to make a single color print.
Aquatint Process ==
Aquatint is an etching process that uses a porous ground. This creates an etching with texture and tone.
- Use asphaltum and resin to create a finely powdered ground.
- Shake the ground over the plate and allow the dust particles to settle.
- Heat the metal plate gently until the ground melts on it.
- Etch the plate with acid as for the etching (above).
- Ink the plate and create prints, as described for engraving (above)

Stipple Engraving Process == Stipple engraving is a cross between engraving and etching. The process is:
- Prepare the plate with a normal etching ground.
- Use an etching needle to make dotted patterns
- Immerse in acid until the dotted areas become small pits.
- Add to these pits that have been bitten out of the metal by scraping away further metal with a burin as in engraving.
- Ink the plate and create prints, as described for engraving (above)

QUESTIONS and ANSWERS (at least, the best answers I know ;-)

THERE'S NO PLATE IMPRESSION AROUND THIS ENGRAVING, SO IS IT GENUINE?

Although a plate impression is one way of sometimes determining the legitimacy of an antique etching or engraving, it is NOT the best way. Very often, large numbers of steel engravings would be stitched up into a folio. The publishers would purposely use plates MUCH larger than the engraved artwork so that once printed, the plate impressions could be trimmed away and the steel engraving prints stitched up into a folio that would lie flat -- if all the prints were left untrimmed the plate impressions would have perhaps doubled or worse the thickness of the folio. So, the absence of a plate impression doesn't mean the engraving is fake -- it simply means the plate impression extended perhaps many inches out from the artwork and was trimmed away by the publisher.
On the flipside, a plate impression does NOT always mean the antique print is genuine or truly as is appears. While photogravures often have plate impressions, some photogravures are of engravings -- so while the artwork APPEARS to be an etching, and while there IS a plate plate impression -- unless you really know what to look for in terms of the linework qualities of the artwork, the artwork in this case would not be an etching but rather a photogravure of an etching, even though a plate impression may exist. Also, many photogravure and photomechanically reproduced photogravures were produced with 'after printing' embossings to resemble plate impressions (and while they look nice, the plate impressions as such are strictly there for show and not part of the legitimate printing process). A plate impression is perhaps best described as a 'clue' -- but not the sole clue to solve the mystery.

WHY ARE SOME ENGRAVINGS TAN, IVORY, WHITE, SPOTTED?
Steel engravings and etchings were, for the most part, produced using a cotton based rag sheet of paper. As both types are printed wet, engravings and etchings rely on a sheet that is absorbent AND can survive the brutality of the press. The paper is sized, with an organic sizing to help hold the fibers together and keep colors from spreading where they shouldn't spread.
Paper is subject to aging, like anything else, however cotton can hold up very well over time (hence some perfectly preserved cotton dresses have been brought out of ancient Egyptian tombs 2,000-3,000 years later). Unlike cheap paper that is largely wood pulp and highly acidic, cotton in naturally virtually nonacidic and will not brown very much over time (sometimes an engraving or etching will tan over time...but for the most part, one should NOT be especially surprised to find an engraving or etching that appears virtually like new or otherwise white and clean). If the sheet of paper has been in a high, dry climate then there will be little change to the paper. If, however, the print has been somewhere like...well, FLORIDA...for many many years, where it is humid with changes in temperature, then spotting (called foxing) can bespeckle a sheet. These little amber colored spots may be caused by any number of things: breakdown of the organic sizing in the paper, impurities in the paper, mold, reactions to acidic papers or materials in close contact with the print for many years, etc.

THERE IS NO YEAR IMPRINTED ON THE PRINT, SO HOW OLD IS IT?
Most antique prints didn't come with years imprinted -- nor were they signed, nor did they come with signed certificates or papers, etc. Bear this in mind: antique steel engravings were basically a way of owning a nice, attractive fine art print. And for the most part, a steel engraving print could be bought during the 1800s for about 25 cents (which of course could also buy you a nice meal or a hotel room in some cities). At the time steel engravings were produced they did not normally come with a certificate of authenticity. Some are dated in the plate. For example, MANY of the engravings of Fisher & Co or Finden are yeared 1820s/1830s in the plate. Very often, engravings prior to the 1800s are dated. Some of the 1890s Appleton Goupil gravures are likewise dated in the plate. However, often times, antique prints are NOT dated. This doesn't generally pose much problem though, as a collector of a little experience, or a dealer with the benefit of having seen many many prints, can usually estimate the date of the engraving relatively close the year produced.

Nearly all antique prints were produced in 1-2 engraving folios, with some pages of text, wrapped in an inexpensive paper wrapper and sold as a 'part' of a larger folio. These parts would often have years printed on their jackets. It simply becomes a matter of a good print expert keeping accurate notes, keeping some folio wraps with years to identify certain plates, etc. ALL antique print sellers should be willing, at the buyer's request, to furnish a signed statement of authenticity attesting to the year, etc. of the print. Such a statement should include a statement of the genuine antique aspect of the print, the producer of the print (if known), the year of the print, or year range, and the sellers signature. This is his or her promise to you that the engraving is legitimate. Many collectors don't need such a statement because they have been collecting long enough to know what to look for and how to judge a genuine engraving. However, I would encourage all those new to collecting to simply request, at time of purchase, a signed statement as above.

ARE THERE FAKES or FORGERIES OF ANTIQUE PRINTS AND HOW DO I TELL THE DIFFERENCE?
As for forgeries of antique prints? Oddly enough, there are virtually NO forgeries of 19thC engravings. Or, to put this another way, there are NO well done forgeries. Some sellers sell...
computer scanned and digitally printed copies of engravings and prints. These are "sort" of forgeries, but the sellers I've encountered doing this state that the prints are copies, and so they are not really trying to pass of prints as real -- so they are unfraudulent forgeries (which are fine for people who do not care if they are displaying fakes). However, NO digitally or photomechanically recreated print will EVER have the clarity, detail, and allure of a genuine antique print -- and actually, MOST 1850s-1880s antique prints (engravings and etchings) are plentiful enough that they are affordable. There are also VERY very few 'repressings' -- in my 12+ years of collecting, I've only seen a couple repressings (which were easily distinguishable from originals in that they were on unusual paper, and from rather worn plates). And for the most part, re-issues of engravings are typically of banknotes. You can tell a fake from a real fairly easily, providing you have got halfway decent eye sight. For steel engravings and copper plate etchings, the linework is always 'raised' - sometimes slightly, and other times dramatically -- and by this, I mean the if you take a magnifying lense (8x photo loupe works best) and view the artwork, you shall see there's an aspect of 3D to the actual line, which is higher than the surface of the paper. In photomechanically reproduced prints, the linework is not raised. It is flush with the surface of the paper. On a real one, if you gently (and I mean GENTLY) drag your fingernail over the surface of the artwork, you will notice a slight roughness in the printed areas, and over thicker lines you will actually feel a bump. On fakes, the ink is deposited on the surface of the sheet without the intaglio method, so if you drag your fingernail across the surface, you will feel no difference between printed and unprinted areas.

You can avoid buying fakes very easily: LEARN what to look for in a genuine engraving or etching. And then ONLY buy from established, reputable sellers. ASK questions! There are probably 20 or so 'big' sellers on on line auctions of antique prints and engravings. And nearly ALL that I have come in contact with are really decent folks, who enjoy dealing in prints and are quick to answer questions. Most are also collectors, specializing in one thing or another (my own personal specializations are David Roberts lithographs, female portraits produced by Finden/Fisher/Virtue, and engravings related to Byron and Moore).

I'M LOOKING FOR AN ENGRAVING OF [subject matter] -- HOW DO I FIND IT?
For the most part, my estimated guess is that approximately 95% of all steel plate engravings are based on paintings (or drawings). So, part of your search for that elusive engraving is to find out (1) the artist, (2) the title of the artwork, and (3) obtain a picture of the artwork. You will probably need to have either the artist's name or the title of the artwork to fill in the rest of the clues to help both you (and a print dealer) find the engraving. Write down all the info you know about the artwork you are seeking and take that info to a decent search engine online (like metacrawler.com). Do a search and try to obtain SOME visual of the original painting you are seeking, the name of the artwork, etc. Many sellers can help best with want lists for engravings, IF they have a view of what the original painting looked like (as many engravings have similar names, and supplying a print dealer with the name of the artwork is not always helpful... as "landscape and sheep" could apply equally to hundreds of 19thC paintings).

I JUST BOUGHT A STEEL ENGRAVING AND IT HAS WRINKLES IN IT, CAN I IRON IT?
To remove undulations, wrinkles, bends (to some degree), etc. from a steel plate engraving print,
the safest and LEAST risky method is to wash and press the print. Remember, steel engravings were originally printed wet anyway -- and so rewetting won't pose any problem to the paper fibers. Obviously, you need to be careful and use some common sense, but for the most part you can wash and press a print with little to no difficulty and remove most/all undulations and warps. Here's what to do:

1. First, see about cleaning the print. If there are any smudges or pencil marks, etc., you can remove these by carefully erasing the area using a soft white Staedler art eraser (which is the least abrasive and will not hurt your print. A pink pencil eraser is harder, rougher and may rough up the paper fibers).

2. In a large, clean plastic (or metal or glass) pan put in some water. Room temperature is best, warm is okay. HOT is BAD as this will degrade the sizing in the paper and weaken the fibers. Be sure the pan is larger than the print since the water will expand the sheet slightly. The print should be able to float around without having to touch the sides of the pan.

3. Let the print soak for awhile. An hour is okay. There is no real time frame, just common sense (if you leave it soaking over night, depending on soft/hard water aspects and microbes and such, you open up the door to possible harm to the print). An hour or so it pretty good rule of thumb.

4. Remove the print CAREFULLY! between thumb and index finer, grip the print firmly but gently in one marginal corner -- not too close to the end, otherwise the print may rip...but don't grip it in the inked area either or you may smudge the pigment.

5. Place the print face up on some WHITE, unprinted paper towels or a clean cotton towel. Print should be laying flat and smooth. It may curl while drying, that is okay, just make sure it is laying on a smooth surface.

6. Once the print is dry to the touch, and you can tell it is lightweight and has no feel of damp, place the print between two sheet of typing paper (white bond, Xerox, etc. unprinted white paper). You should allow about a day for the sheet to dry -- from the time it is removed from the bath to the time you will be re-pressing it. Naturally, if it is humid or rainy outside, the air will be damper and the print will take longer to dry. If you live where it is dry and 100 degrees, you might be able to press the print after only a couple few hours. Press the print between books (phone books are fine, or large flat books, etc.). It is VERY important that the print is NOT damp when you do this, otherwise the pressing will result in 'ripples' to the sheet that are near impossible to remove. It's better to err on the side of waiting too long, since you can always re-wet the print if you waited too long to press it. After a couple days, remove the print. It should be flat now, and free of undulations, waves, ripples, etc. You can now remove any noticeable bends in this manner:

1. place the print on a perfectly smooth surface (like clean formica counter, laminated particle board, etc.).

2. Take a sheet of clean bond paper, xerox paper, computer paper, etc. and place it over the bend or crease.

3. Using the bowl aspect of a metal spoon, rub (burnish) the area of the crease THROUGH the bond/xerox paper. Start gently rubbing the area with the spoon. Check occasionally to make sure you're burnishing the right area. Make swirls, back and forth, random burnishings so you don't emboss a pattern into the print.

4. If bend or crease still shows, flip the print over and try this all from the backside. Generally, this will decrease the intensity of any bend or crease -- and while not removing 100% a crease, it will at lease force it flat.
COLORING STEEL ENGRAVINGS

If you want to add some tinting to your engraving, it is pretty easy. This method below applies ONLY to intaglio prints (steel engravings, etchings, and photogravures. NOT typogravures).

1. Relax the paper fibers. Do this by the washing method above used to remove undulations and wrinkles and then press it.
2. You will be tinting with watercolors (okay, acrylic and gouache would also work, but would obscure much of the linework). Watercolors are the easiest to control the intensity of and ought to produce a fairly nice tinted engraving when you're all done. Start LIGHT -- you can always darken later, but if you paint too dark at first, then you are in trouble as you can not 'scrub' the artwork like watercolor paper without removing and ruining the pigment of the engraving.
3. Be sure the brush you are using is soft. Avoid brushing thick engraved lines as this motion will dislodge the century-dried pigment particles and deposit them where you've painted, giving the tinting a murky, muddy appearance.
4. Once you are done, you'll notice that the print may have picked up some undulations. That is okay. Let the sheet air dry completely. After a couple days, use a clean atomizer to spray down the print with clean water. Allow to air dry until dry to the touch, and then press (as outlined above for flattening warped prints).

and finally, the age old question about "what are those little amber spots on some antique prints?" (source of this information is from Ethering and Robert)... with some of my own observations in brackets [[ ]].

Stains, specks, spots and blotches in paper. The cause or causes of foxing, which usually occurs in machine-made paper of the late 18th and the 19th centuries, are not completely understood, but in all likelihood, it is fungoid in nature. Fungi, however, are not necessarily visible on foxed areas, nor does prolific growth necessarily imply excessive discoloration, and vice versa. This has been attributed partly to the fact that action may have been initiated before the examination of the paper, and partly, but less convincingly, to the so-called, action at a distance, which enables an agent to exert its effect at some distance from the object acted upon. ][some Arches paper of the 1880s may have been handmade, but will sometimes have small amber or blackish spots on them, not inclusions but rather foxing... and Buffon engravings of the 1780s will often have foxing, too, yet the paper is deckled (usually a sign of either hand made paper or mould made stock). Probably accurate as a general rule of thumb regarding machine-made]

Two significant differences between foxed and clean areas of a paper are the higher proportion of acid and iron in the former, although there does not seem to be any clear and definitive relationship between iron and foxing. Insofar as the acid is involved, it is not clear whether this is produced chemically or as a byproduct of the life function of the organisms present. Iron is attributed to impurities present in the paper, and this conclusion seems to be based largely on the fact that it is seldom found in papers produced before the introduction of papermaking equipment made of iron, e.g., the beater, and improvements in techniques and other forms of chemical treatment. But what role iron has in accelerating foxing, or causing a change from the invisible to visible state, has yet to be demonstrated.

The other factor which controls foxing is relative humidity (R.H.), since these fungi will not develop if the R.H. falls below 75%. The fact that foxing generally starts from the edge of the
leaf and spreads inward would seem to indicate that something in the atmosphere is relevant, although air borne organisms may be adequate as an explanation for this effect. In addition, it must still be explained how the center of the leaf is affected most in occasional instances. Perhaps the most logical explanation is that infection by air borne organisms (or by organisms that are natural to the paper) may occur if the conditions, and especially the R.H., are favorable, and that growth, resulting in the generation of fox marks, then occurs. The acid subsequently renders any iron in the paper soluble and therefore visible, with its color being intensified by the presence of organic matter.