



CRAYON  
PORTRAITURE  
LIQUID WATER COLORS  
FRENCH CRYSTALS

J. A. Barry at.

THE BAKER AND TAYLOR CO.  
740 & 742 BROADWAY, N. Y.





By J. A. BARHYDT

## CRAYON PORTRAITURE

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Complete Instructions for making Crayon Portraits on Crayon Paper and on Platinum, Silver and Bromide Enlargements; also Directions for the use of Transparent Liquid Water Colors, and for making French Crystals. Illustrated. Revised and enlarged edition, paper, 50 cents; cloth, \$1.00.



Crayon Portraiture.







FREE-HAND CRAYON MADE ON STEINBACH CRAYON PAPER—STIPPLE  
EFFECT IN FACE, BROKEN LINE EFFECT IN BACK-  
GROUND. BY J. A. BARHYDT.

# CRAYON PORTRAITURE

COMPLETE INSTRUCTIONS FOR MAKING CRAYON

PORTRAITS ON CRAYON PAPER AND ON

PLATINUM, SILVER AND BRO-

MIDE ENLARGEMENTS

ALSO DIRECTIONS FOR THE USE OF

TRANSPARENT LIQUID WATER COLORS

AND FOR MAKING

FRENCH CRYSTALS

BY

J. A. BARHYDT

AUTHOR OF ARTICLE ON CRAYON PORTRAITURE IN  
*Appleton's Annual Cyclopaedia, 1890.*

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**Illustrated**

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*Revised and Enlarged Edition*

NEW YORK

THE BAKER & TAYLOR CO.

740 & 742 BROADWAY



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By J. A. BARHYDT

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## P R E F A C E .

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In issuing this second treatise on Crayon Portraiture, Liquid Water Colors and French Crystals, for the use of photographers and amateur artists, I do so with the hope and assurance that all the requirements in the way of instruction for making crayon portraits on photographic enlargements and for finishing photographs in color will be fully met. To these I have added complete instructions for free-hand crayons.

This book embodies the results of a studio experience of twenty-four years spent in practical work, in teaching, and in overcoming the everyday difficulties encountered, not alone in my own work, but in that of my pupils as well. Hence the book has been prepared with special reference to the needs of the student. It presents a brief course of precepts, and requires on the part of the pupil only perseverance in order that he may achieve excellence. The mechanical principles are few, and have been laid down in a few words; and, as nearly all students have felt, in the earlier period of their art work, the necessity of some general rules to guide them in the composition and arrange-

ment of color, I have given, without entering into any profound discussion of the subject, a few of its practical precepts, which, it is hoped, will prove helpful.

While this book does not treat of art in a very broad way, yet I am convinced that those who follow its teachings will, through the work they accomplish, be soon led to a higher appreciation of art. Although this kind of work does not *create*, yet who will say that it will not have accomplished much if it shall prove to be the first step that shall lead some student to devote his or her life to the sacred calling of art?

It has been said that artists rarely, if ever, write on art, because they have the impression that the public is too ill-informed to understand them—that is, to understand their ordinarily somewhat technical method of expression. If, therefore, in the following pages I may sometimes seem to take more space and time for an explanation than appears necessary, I hope the student will overlook it, as I seek to be thoroughly understood.

My hope with reference to this work is that it may prove of actual value to the earnest student in helping him reach the excellence which is the common aim of all true artists.

J. A. BARHYDT.

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## CRAYON PORTRAITURE.

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To many who know nothing about the art of crayon portraiture, the mastery of it not only seems very difficult, but almost unattainable. In fact, any work of art of whatever description, which in its execution is beyond the knowledge or comprehension of the spectator, is to him a thing of almost supernatural character. Of course, this is more decided when the subject portrayed carries our thoughts beyond the realms of visible things.

But the making of crayon portraits is not within the reach alone of the trained artist who follows it as a profession. I claim that any one who can learn to write can learn to draw, and that any one who can learn to draw can learn to make crayon portraits. Making them over a

photograph, that is, an enlargement, is a comparatively simple matter, as it does not require as much knowledge of drawing as do free-hand crayons. But you must not suppose that, because the photographic enlargement gives you the drawing in line and an indistinct impression of the form in light and shade, you are not required to draw at all in making a crayon portrait over such an enlargement. Some knowledge of drawing is necessary, though not a perfect knowledge.

Many people err in supposing that only the exceptionally skilled can produce the human features in life-like form upon the crayon paper. While recognizing great differences in natural aptitude for drawing in different persons, just as those who use the pen differ widely in their skill, some being able to write with almost mechanical perfection of form, I still hold that any one who is able to draw at all can succeed in producing creditable crayon portraits; and the lack of great skill as a draughtsman, should neither discourage a student nor debar him from undertaking to make crayon portraits (over enlargements, at least), either as an amateur or professional. To make a crayon from life undoubtedly requires considerable talent and some education as an artist; but photography, in recent times, has made such advances from the old fashioned daguerreotype to the dry plate process and instantaneous exposure, and

such developments have recently been made in the field of enlargements and in photographic papers, that it is now possible for anyone, who will carefully follow the plain instructions given in the following pages, to make a good crayon portrait by the aid of the different kinds of enlargements. These place in his hands a perfect reproduction of what he wishes to make ; and care and close attention to details will insure the rest.

The student, however, must have courage. I tell my pupils not to be afraid to work freely ; that if they spoil their work beyond their ability to redeem it, I can always fix it up and restore it for them ; and that they should go ahead confidently. The reader may say that he has no teacher to help him out of his difficulty ; but he must remember that he has the photographic enlargement as a sure guide, and that whenever he fears he is losing the outline, he can see at once what he is doing, by holding the enlargement against the light with its back towards him. My experience as a teacher has shown me that pupils, as a rule, are timid, especially that class which works mostly on enlargements, resulting from the fear of losing the outline and from lack of a thorough knowledge of drawing. I especially urge the necessity for boldness and freedom in execution. As an expert in chirography can read character in handwriting, so the artist's public will judge him



from his work. If he is, in fact, weak and timid, these traits will find expression in what he puts on paper. Let courage, then, be an important part of your equipment, if you would succeed in doing good crayon work.

## PHOTOGRAPHIC ENLARGEMENTS.

There are three kinds of photographic enlargements used as a basis for crayon portraits, and, with a little experience, the student can determine for himself which kind will prove the most satisfactory.

Free-hand crayons are made on Steinbach and other crayon papers, without any photograph as a basis. Silver enlargements are made on paper coated with a solution of chloride of silver, which the action of the light reduces to salts of silver. This is the oldest form of photography, and has been used since its introduction by Scheele in 1778. Silver enlargements are made by the aid of the sun (and are then called solar enlargements) or they can be made with the electric light.

Platinum enlargements are a recent advance in photographic printing with iron salts, the process which has been worked out and patented by W. Willis, Jr., being a development of such printing. Its principle is that a solution of ferrous oxalate in neutral potassium oxalate is effective as a developer. A paper is coated with a solution of ferric oxalate and platinum salts and then exposed behind a negative. It is then floated in a hot solu-

tion of neutral potassium oxalate, when the image is formed.

This process was first introduced by Mr. Willis in 1874, and he has since made improvements. He claims that the platinotype paper does not contain any animal sizing. The early experiments convinced him that the paper upon which the image was to be printed would prove an important factor, as all photographic paper contained animal sizing, which was found to be antagonistic to platinum salts. The action of platinum salts upon a paper containing animal sizing gave it a tint which no amount of acid washing could remove. For the past nine years Mr. Willis has had manufactured for his special use a Steinbach paper, free from the animal sizing, and he also uses a cold developer, thereby causing the paper to retain its original elasticity.

The chief points of difference between bromide enlargements and silver or platinum enlargements are that, in the former, we have the sensitive compound of silver suspended in a vehicle of gelatin, and, in the latter, a thin coating of an aqueous solution of the sensitive salts. In the former process, the image is not shown until the paper has been developed in the bath, while in the latter, the image is shown upon the paper when it is exposed to the light; so that, in the latter, the image or picture has only to be fixed

or made permanent, while in the former, it is developed, then fixed. The gelatin bromide paper is coated with a solution of gelatin, bromide of potassium and nitrate of silver, developed with a solution of oxalate of potash, protosulphate of iron, sulphuric acid and bromide of potassium and water, and fixed with hyposulphate of soda. It is manufactured in America by E. and H. T. Anthony & Co. and by the Eastman Dry Plate Company.

## CRAYON MATERIALS.

The following materials will be found necessary for crayon work :

A good photographic enlargement,  
Easel,  
Mahl stick,  
Three inch magnifying glass,  
Square black Conte crayon, Nos. 1, 2 and 3,  
Charcoal holder for the same,  
Hardmuth's black chalk points, Nos. 1, 2, 3, 4 and 5,  
Holder for the same,  
Box Faber's crayon points, Nos. 1, 2 and 3,  
Holder for the above crayons,  
Conte crayon, in wood, Nos. 0 and 1,  
6 B. Faber's holder for Siberian lead pencil points,  
4 H. Faber's holder with Siberian lead pencil point,  
Velour crayon,  
Peerless crayon sauce,  
Black Conte crayon sauce, in foil,  
White crayon, in wood,  
Bunch of tortillon stumps,  
Large grey paper stumps,



Small grey paper stumps,  
The Peerless stump,  
Large rubber eraser, 4 inches by 3-4 inches square,  
bevelled end.

Two small nigrivorine erasers,  
Holder for “ “  
Piece of chamois skin,  
Cotton batting of the best quality,  
A sheet of fine emery paper,  
A sharp pen knife,  
One pound of pulverized pumice stone,  
Mortar and pestle,  
A large black apron,  
Paste-board box about ten inches square and two inches  
deep,  
Back-boards for mounting crayon paper and photogra-  
phic enlargements,  
Pliers,  
Paste brush, three inches wide, to be used for starch paste  
or for water.

Experience has taught me that we cannot be too particu-  
lar in giving directions as to the materials for our work, and  
therefore I have carefully included in the above list everything  
necessary to thoroughly equip the student. While the  
magnifying glass mentioned above is not an actual neces-

sity, still a good one will be found very useful, as it will often show details in the photograph which would not be discovered by the naked eye. My male readers may at first object to so feminine an article as an apron, but it will be found thoroughly useful, and I am sure they will never consent to abandon it after they have once become accustomed to wearing it.

## THE SPECIFIC USE OF CRAYON MATERIALS.

I will now explain the specific use and nature of these materials, reserving the various kinds of photographic enlargements and their special qualities and advantages, for treatment under their different manipulations.

The easel should be set so that the light strikes the picture at an angle of 90 deg., and, when working from a side light, it will very often be necessary to darken the lower part of the window to accomplish this result.

The mahl stick is held in the left hand, and is used as a rest for the right arm in working. Though a trifle awkward and difficult at first, its use must, nevertheless, be learned, as the hand will not be steady without it, especially in portrait work.

The square black Conte crayons are for filling in where there are large dark places. The No. 1 is used with the black Conte crayon sauce in making the crayon sauce (to be applied with the ends of the fingers) to produce a broad effect and to make the stipple effect on the paper after it has been rubbed with pumice stone.

The crayon points, Nos. 1, 2 and 3, are used in making outlines and also in putting in the lines to produce the line

effect. In general, they are to be used in free-hand crayons and on silver and platinum enlargements.

The Hardmuth black chalk points are similar to the crayon points, and, if preferred, should be used according to the directions given for the crayon points.

The Hardmuth points are made in five numbers and will, therefore, produce more shades of black than the crayon points. They are also twice as long as the latter, without costing any more.

The Conte crayons, in wood, are used for finishing the crayon, especially the No. 0, its hardness adapting it to that purpose.

The 6 B. Faber's holder, for lead pencil points, is for holding the Faber's Conte crayon No. 0 after it has become short, the wood being carefully removed before the crayon is placed in the holder.

The 4 H. holder, with Siberian lead pencil point, is used in the very finest work on bromide paper, for finishing in the light places. Care must be employed not to use too much lead on the paper, as, being of a different color from the crayon, it would show if too freely applied. It is also used in making monochromes.

Velour crayon is very black. It is only used to produce a velvet effect and whenever it is necessary to make a very strong dark—that is, a dark that is deeper than an ordinary shadow.

The Peerless crayon sauce is the same as the crayon sauce made from No. 1 Conte crayon and the black Conte crayon sauce in foil. It is made and put up in bottles by F. W. Devoe & Co., and can be bought of any dealer in artist's materials. It will be found more convenient to get it in this form than to prepare it in the studio; it costs no more and saves the expense of a mortar and pestle. As it is ground by machinery and passed through a very fine screen, there are no small hard particles in the preparation, and its use is recommended.

Black Conte crayon sauce, in foil, is used in making the crayon sauce to be applied with the fingers.

White crayon, in wood, is for touching up the high lights of white drapery, and especially for the high lights on white lace; it is to be used very sparingly.

Tortillon stumps are used in making the face, when it is desired to produce the stump effect, and also in making the hair.

The large grey paper stump serves to make the broad effect of shade in the stump effect in the hair and dress.

The Peerless stump is used to produce the same effect as the large grey paper stump. It will be found far better than the paper stump for work on the bromide paper, as it is made of softer material and causes the crayon to adhere to the paper more readily.



The large rubber eraser is to put in the broad effects of light in the background and dress. The small nigrivorine erasers are used when it is necessary to remove the crayon, in order to produce small decided lights—principally in making free-hand crayons and to produce the line effects over a platinum and silver enlargement. While the stumps are used for putting on the crayon, the erasers are used to remove it. The chamois is also used for removing the crayon, to produce broad effects of light.

The cotton is for applying the crayon sauce to the paper and for rubbing the crayon at different stages in the completion of the picture. The crayon cannot be removed with the eraser unless it has first been rubbed with the cotton; and this must be borne in mind, as the use of the eraser at this stage would only result in making a black line or spot, when it was intended to produce a white line or spot.

It will also be well to make a chamois block for applying the crayon sauce, to be worked with the tortillon stump. This is done by tacking onto a block, four inches long, two inches wide and three-quarters of an inch thick, a piece of chamois skin, three inches wide by five inches long, allowing it to cover the top, while it is fastened along the four edges. This is placed face down in the box of crayon sauce and rubbed around in it, so that the crayon will adhere thoroughly to the chamois.



Emery paper is used to sharpen the nigrivorine erasers and the crayon points.

The knife, which is a very important tool, should be a good one, always kept well sharpened. The best for this work is an ink eraser, with a rounding point, a long edge on one side of the blade and a short one on the other side, extending about an inch from the point.

The mortar and pestle are for pounding or grinding the Conte crayon No. 1 and the crayon sauce, in making the special crayon sauce mentioned above.

The paste-board box is intended to hold this special crayon sauce or the Peerless sauce.

The back-boards are one inch thick, made to fit the back of the strainer (described in the next chapter), and are used in mounting. It will be necessary to have three different sizes, the most useful being 11x15, 15x19 and 19x24 inches, to fit, respectively, strainers measuring 16x20, 20x24, 24x29 and 25x30 inches.

The pliers should be either what is known as shoemaker's pliers (which are the cheapest) or the canvas pliers, used in stretching that material; they are needed to stretch the cloth on the strainer.

The pulverized pumice stone is used in preparing the surface of crayon paper and bromide enlargements, to produce the stipple effect.

## THE STRAINER.

The strainer, on which crayon paper or any kind of photographic enlargement is to be mounted, should be the same size as the intended picture. The frame is made of four strips of pine wood, two inches wide, one inch thick on the outside, and three quarter inch on the inside, making a quarter inch bevel on the inside edge of the face; these are nailed together and glued. To this, tack a piece of bleached muslin, free from knots and rough places, which has been cut two inches larger each way than the frame. Use six ounce Swede upholsterers' tacks, placing one in the centre of the outside edge of one side and another directly opposite, stretching the muslin as firmly as possible with the fingers. Then place a third tack in the centre of the outside edge of the top, and a fourth in the centre of the bottom of the frame, stretching as before. In finishing, use the pliers in addition to the fingers, and remember that you must always stretch from the centre towards the corner or you will have wrinkles in the muslin. As this process should be thoroughly understood, I will give minute directions for completing the operation. Having already placed the four tacks as above, stand the

strainer on its bottom edge on the floor, with the back towards you, and put in the fifth tack two inches to the right of the third, that is, the one on the top previously mentioned. Instead of stretching the muslin directly back in a straight line towards you and at right angles to the fourth tack, you must draw it with the fingers towards the right hand corner. Then finish stretching, and tacking this edge to the right hand corner of the top, placing the tacks two inches apart and taking care to only draw the cloth sufficiently to have it perfectly smooth and straight on the edges, leaving the stretching to be done with the pliers; then turn the strainer on the side edge and tack at two inch intervals from the centre of the other (that is the upper) side to the right hand corner, same as before, and then tack half of the bottom edge and half of the other side in the same way. You will observe that you now have only one half of the muslin tacked—that is, one half on each edge—and you then complete the tacking, using the pliers to thoroughly stretch the muslin. This method has the advantage that you can stretch the muslin on the strainer and get it on better and in less than half the time required by the old method; also that you stretch the whole surface of the muslin with the pliers, and do it with only half the work.

### MOUNTING CRAYON PAPER AND PLATINUM AND SILVER ENLARGEMENTS.

Wet in clean water a piece of muslin about two inches larger each way than the paper you intend to mount, and lay it on the mounting board or table, removing all the wrinkles with a wet brush; then place the paper on this cloth, face down, and with some water and a brush, wet the back of the paper, continuing to use the brush until all the wrinkles are entirely smoothed out and the paper lies down perfectly flat. Any number of pieces of paper can be wet at the same time by placing one over the other, provided the larger sizes are laid down first and each is brushed out flat before another is placed over it. Let the paper soak for about fifteen minutes.

After having removed the surplus water from the paper with a cloth, sponge or squeegee, apply starch paste to the paper with a paste brush, going over it thoroughly, until it has received an even coat of paste free from lumps. Then lay one of the back-boards on a table and, having placed the strainer down on it face up, give the cloth of the latter a coat of paste, using the same care you did in going over the paper, taking pains to have the edges

of the cloth well pasted, and to remove, by passing your finger all around the outside edges of the strainer, any paste which may be there. Now pick the paper up and place it on the pasted surface of the strainer, which an assistant should hold tipped towards you. (The help of an assistant will be found almost indispensable in mounting). After the paper is in the proper place, lay the strainer down and secure each corner of the paper, by first lifting it slightly and then rubbing it down with a clean cloth from the direction of the centre towards the corner you have lifted up. With a sharp knife trim off the edges of the paper and set it away to dry, but neither near a fire nor in too cold a place. You can very often save the remounting of a paper by occasionally glancing at it as it dries and by gently rubbing down a little with the fingers any places that look as if they would not stick. Very often the paper will be all right with the exception of this difficulty at one edge or corner. This is invariably the lower part, and is caused by the water settling there. It is therefore advisable to change the position of the strainer two or three times as it dries, letting it stand on different edges.

After the paper is dry, if there are any places that have refused to stick fast to the cloth, it will be impossible for you to remedy the matter, and you must remount it.



You proceed, therefore, to remove the paper from the cloth. This you do by turning the strainer face down and filling the back of it with warm water, allowing it to remain there until you think that the paste has become thoroughly dissolved; then turn the strainer over and carefully remove the paper. If it should not come off readily, fill the strainer again with water, and soak it until it will come off. After you have removed the paper, lay it on a wet cloth, and with a case knife clean off the starch, using care not to injure the surface of the paper, and also clean off the starch from the strainer; then proceed to remount as before. When you once understand that you cannot spoil an enlargement on account of defective mounting, you will work more confidently. After you have tried three times to remount, and the paper still insists in not sticking, you must take a new strainer, as too many wettings will have spoilt the cloth and wood. Sometimes there seems to be a difference in the stretching qualities of the enlargement and cloth, which makes it impossible to produce a perfect cohesion. When, therefore, it has been remounted three times and does not come out perfect, your best course is to mount a piece of crayon paper on a new strainer, and after it is thoroughly dry to then mount the enlargement on that. This you do in the manner described for mounting in the first instance, directly on the



strainer, except that you do not coat with paste the crayon paper already mounted.

It sometimes happens, that after the paper has been mounted and dried, it is discovered that lumps in the paste have caused defects to appear on the face of the paper in the shape of raised surfaces that unfit it for the intended purpose. These can be entirely removed by wetting the back of the strainer with some clean water immediately behind where the lumps of paste are, and with a knife scraping the cloth a little at these places; the surplus paste will work itself out through the cloth.

The starch paste used in mounting should not be made very thick; on the contrary, it should be as thin as is consistent with still retaining all its adhesive qualities. Should you fear that it is too thick or lumpy, strain it through a piece of cheese cloth. In a former edition of this book I advised adding to the paste a little white glue dissolved in warm water, but I do not now consider this necessary for crayon paper or photographic enlargements, and do not recommend its use except for mounting paper of unusual thickness.

The foregoing directions for mounting apply to platinum or silver enlargements, crayon or other kinds of paper, but not to bromide enlargements. The bromide paper requires a different method of handling on account of the gelatin

surface, which when wet is destroyed by contact with any dry substance, as the latter removes the gelatin.

For determining the proper position of photographic enlargements (bust pictures) on the strainer, the following scale will be useful as a general guide. When the size of the strainer is 16x20, 20x24, 22x26, or 25x30 inches, the distances from its top to the top of the head of the portrait should be respectively  $3\frac{1}{2}$ , 4,  $4\frac{1}{2}$  and  $5\frac{1}{2}$  inches.

## MOUNTING BROMIDE ENLARGEMENTS.

The first requisite for this is a water-tight tray, large enough to hold the enlargements. A hard rubber tray can be purchased, or a wooden one that will answer the purpose may be made. I use one of my own construction that is cheap and serviceable. It is simply a wooden box, 27x32 inches and 4 inches deep, made of  $\frac{1}{2}$  inch grooved material and lined with black oil cloth, not cut at the corners, but folded in. In this, when about half full of water, lay the enlargement face up, and let it remain in the water fifteen minutes. It should then be laid face down on the wet cloth (which should be all ready) as described in the preceding chapter, for mounting crayon paper. Care must be exercised to have the cloth wet all over, for if there should be any dry spots in it they would ruin the gelatin surface. With a cloth or squeegee remove the water from the back of the enlargement and also from the cloth around its edges, for if there is too much water on the edge of the cloth it will work up into the paste and prevent it from sticking when mounted. Now paste the enlargement and strainer according to the directions given for mounting crayon paper, place the enlargement on the strainer and

rub it down by using the fingers wet in a little water, or the squeegee can be used ; and then trim off even with the outside of the strainer. Avoid rubbing too hard along the edges, as by so doing you will press out all the paste and it will not stick.

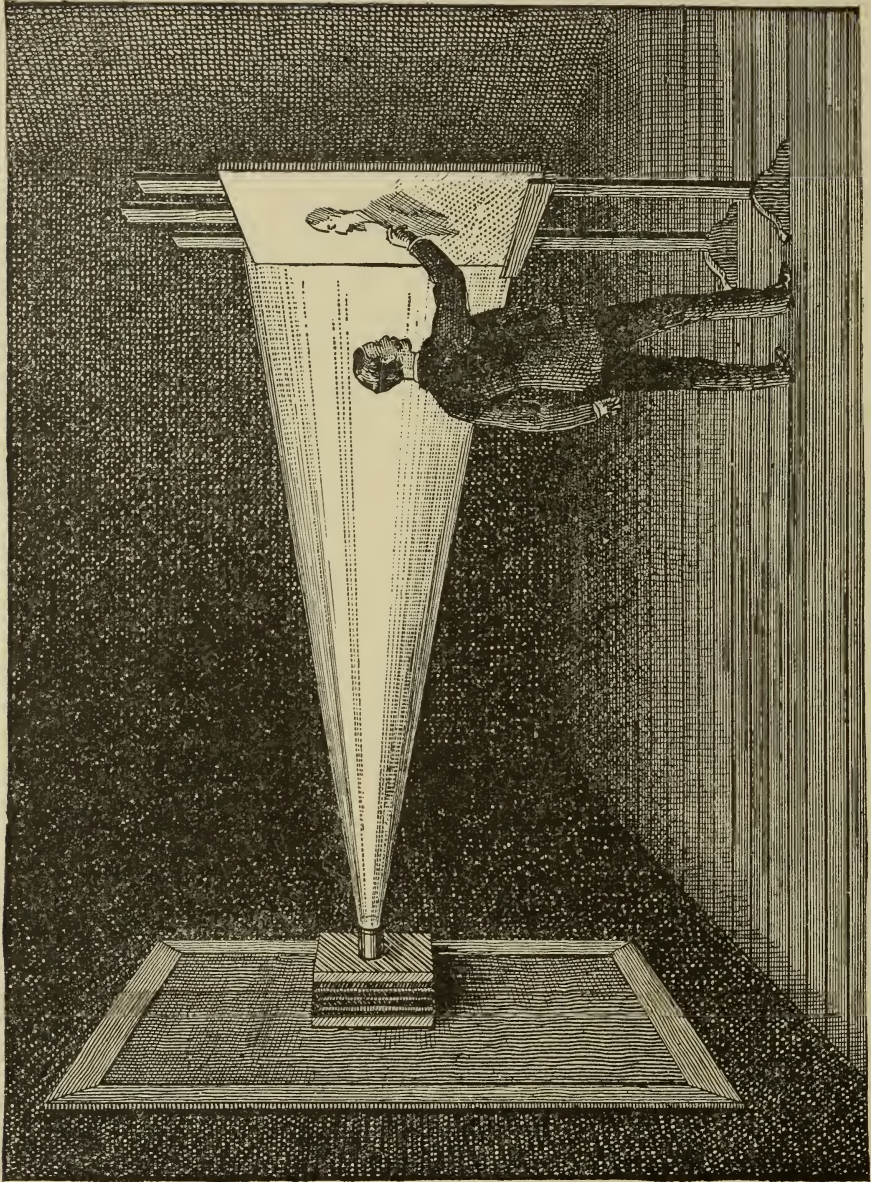
You can remount a bromide enlargement as often as necessary in case it does not come out perfect, only bear in mind that you must not allow anything dry to touch the surface when wet. But I should not advise you to try more than three times directly on the strainer. It would be better to mount a piece of crayon paper on a new strainer, and after it is dry to remount the bromide enlargement on that.

## OUTLINES—NEGATIVE OUTLINE.

After the crayon paper has been mounted on the strainer and dried, the next step is to obtain the outline. I will first treat of free-hand crayons, taking it for granted that the reader is not able to produce crayons from life, but works from a photograph. There are five different methods of making an outline, from which the reader can make his own selection.

Make a negative from the photograph that is to be enlarged, and construct for a room that is entirely dark, with the exception of one window, a dark inside shutter, with an opening in it the size of the negative you intend to use. Place a cleat on each side and at the bottom of this opening, so that the negative may be made to slide in front of it. Having removed the ground glass from your camera box, fasten the latter against the shutter so that the opening comes in the centre of the box. You can fasten it with four hooks and eyes, or arrange cleats on the shutter and pieces on the box, so that it will slide into place. Be sure and have the box come tight against the shutter so that the light will be entirely excluded. Place the negative over the small opening in the shutter and ad-





NEGATIVE OUTLINE—DARK CHAMBER.

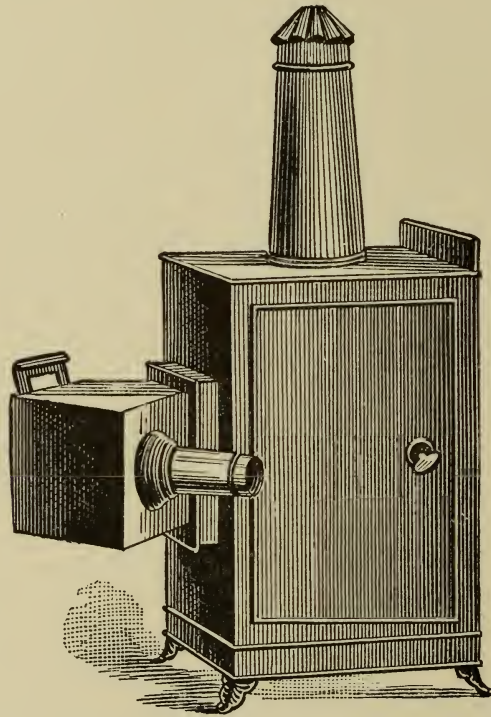
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just the camera box ; then stand the easel with the crayon strainer on it at the proper distance to give the required size of the enlargement and focus the image sharp on the crayon paper. The strainer must stand at the same angle as the shutter ; that is, if the shutter is perpendicular then the strainer must stand perpendicular also. Then go over the outline and shadow lines with the charcoal, after which open the shutter and examine the outline and see if it is right. As you are working in the dark you are apt to overlook some lines. If you have done so you can close the shutter again and make them. If it proves to be all right go over it with the crayon point No. 2.

## MAGIC LANTERN OUTLINE.

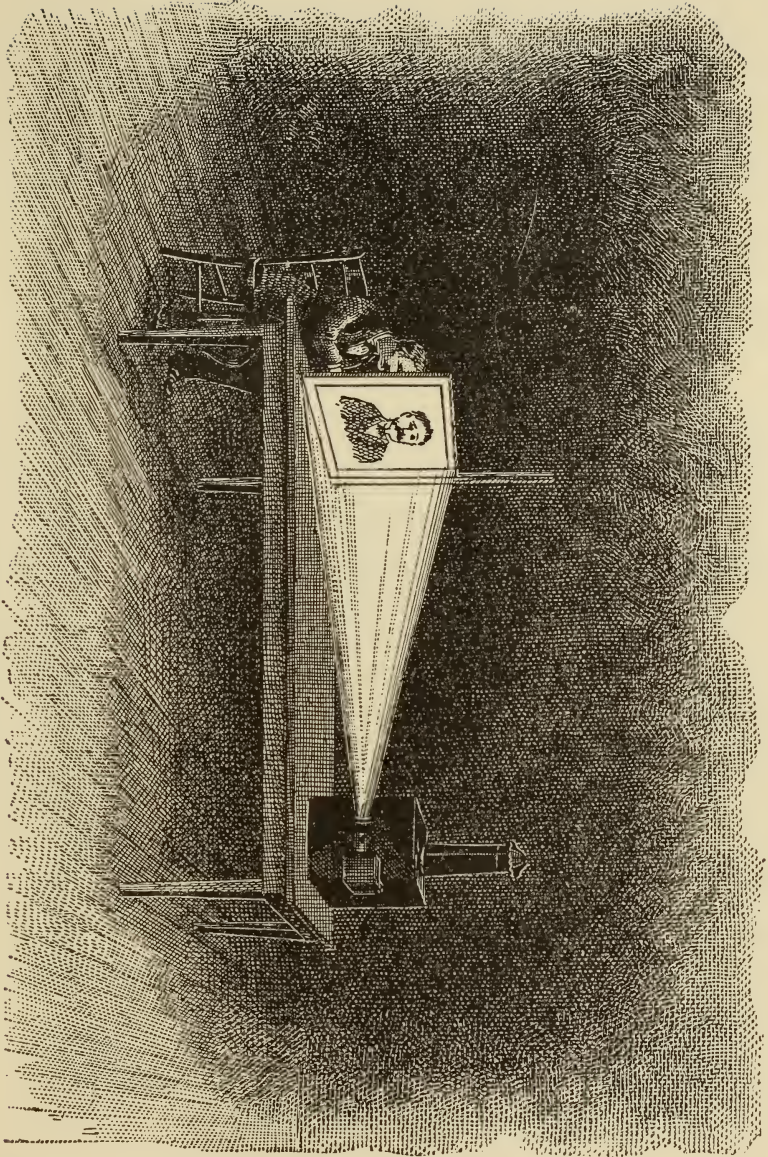
This is the method I am using at present in my own free-hand crayon work, and prefer because it does not require a negative. I use a McAllister Magic Lantern, No. 653, with a wonder camera attachment. This attachment



McALLISTER MAGIC LANTERN, No. 653, WITH WONDER CAMERA ATTACHMENT.

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MAGIC LANTERN OUTLINE.  
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enables you to make an enlargement from a cabinet or card photograph, and to dispense with a negative. If you intend to do very much free-hand crayon work I should advise you to get one, as it will soon pay for itself. The lantern should be put in working condition according to the printed directions that come with it, and placed on your table. I use a table six feet long, sixteen inches wide, and thirty inches high. Nail to one side of the table, four inches from the end, a stick six feet long, one inch wide, and one-half inch thick, using two two-inch brads. One end of the stick should rest on the floor, care being taken that it stand perfectly perpendicular, a square being used if necessary to secure this result. The stick will have a length of 42 inches above the table, which will be ample for the use of a 25 by 30 strainer. Place the strainer, with the crayon paper mounted on it, facing outward on its bottom edge on the table and nail it fast to the stick with two brads, letting it stand at right angles with the edge of the table with its back towards the lantern, which is at the other end of the table. The object of placing the strainer with the back towards the lantern is that the image must show through the strainer or the outline would be drawn reversed. Draw a charcoal mark on the back of the strainer vertically through the centre, and mark the proper distance from the top of strainer horizontally where

the top of the head should come. Now move the lantern until you have it the proper distance from the strainer to make the head the size desired, and afterwards focus the features sharp and distinct, using the charcoal marks for the proper place to make the head, the vertical line coming through the centre of the face; then, seated at the end of the table, in front of the strainer, make a charcoal outline as in the former method.

Of course the magic lantern can be used for producing an outline only at night, or in a perfectly darkened room.

The following table will prove a safe guide to follow in determining the size of the head for bust pictures. The distance from the roots of the hair on the forehead to the bottom of the chin should be :

For 14 by 17 inch pictures, 4 inches,	
“ 16 “ 20 “ “ 4 $\frac{1}{2}$ “	
“ 18 “ 22 “ “ 5 “	
“ 20 “ 24 “ “ 6 “	
“ 22 “ 27 “ “ 6 $\frac{1}{2}$ “	
“ 25 “ 30 “ “ 7 “	
“ 29 “ 36 “ “ 7 “ showing the hands.	

## TRANSFER OUTLINE.

For this method an enlargement made from the photograph is required, but it needs to be an enlargement of the head only—that is, a 11x14 inch enlargement of the head will answer for a 25x30 inch crayon portrait, and serve as a guide to work from in making the crayon.

Transparent tracing paper (made of fine tissue paper, oiled with clarified linseed oil and then dried,) is laid on the enlarged photograph, and the outline gone over with a soft lead pencil. The tracing paper is then turned and its back is rubbed all over with charcoal, when it is laid charcoal side down on the mounted crayon paper, and carefully fastened with four thumb tacks. The lines first made are then gone over with a sharp pointed lead pencil. When the tracing paper is removed a perfect outline in charcoal is found to have been made. This should then be gone over with the crayon point No. 2. The rest of the portrait is sketched in from the original picture.



## THE METROSCOPE

Comprises a series of squares accurately engraved upon the finest plate glass by machinery. The two plates of glass (of which one form of the instrument consists), are ruled for convenience with squares differing in size. These are framed and held together by thumb screws, allowing sufficient space between them for inserting and securing a picture the size of a cabinet photograph. The lines are thus brought into such perfect contact with all parts of the photograph so that they appear to be drawn on it. One feature of this instrument which renders the square system very practical, consists of the division and sub-division of the squares by dotted lines and dash lines. The eye naturally divides a line or space into halves and quarters, and for this reason the dash lines have been designated for quartering the main lines, and the dotted lines for quartering the squares thus formed. This gives sixteen times as many squares for use as are drawn upon the photograph.

A method based on the same principle as the metroscope, but not requiring the use of that instrument, may be pursued, as follows: Fasten the photograph to a board, mark the space at the top, bottom and sides into one-quarter

inch divisions, and drive sharp pointed pins in each of the division marks. Taking a spool of white thread run it across vertically and horizontally from each pin to the one opposite, and you will then have the photograph divided into one-quarter inch squares ; then, if your enlargement is to be six times the size of the photograph, take the mounted crayon paper and divide the sides and top and bottom in  $1\frac{1}{2}$  inch squares, run thread across the same as for the photograph, and then proceed to draw the outline, first in charcoal, and afterwards with the crayon. The spaces marked on the crayon paper should in each case, of course, be as many times greater than those marked on the photograph as the intended enlargement is greater than the photograph.

## THE PANTOGRAPH.

This instrument for enlarging or reducing a picture was invented about the year 1603. It consists of four metallic or wooden bars or rules, which are perforated by a series of holes (numbered from 1 to 20), and connected together by means of an adjustable thumb screw. The instrument is provided with a tracing and a marking point, and a screw or point which is forced into the drawing board to hold the instrument in position. A good pantograph will cost about two dollars; those of a cheaper grade are entirely worthless for practical use, while a good one will last a life time. A little experience will enable any one to learn the use of the numbers.

To employ the instrument select the number on the bars corresponding to the number of times the subject is to be enlarged, and connect the adjustable ends of the bars so that they intersect at this number; secure the pantograph to the drawing board at the left hand side; place a piece of manilla paper at the other end of the board and secure it with thumb tacks, taking care to smooth all the wrinkles out. Next adjust the marking point in the centre of the paper; and secure the photograph to the board so that its

centre shall be directly under the tracing point, which should always touch it. If it does not do so at first, place a little weight on the instrument over this point heavy enough to bring it in contact with the photograph. Now guide the instrument, by taking hold of the tracing point while at the same time you watch the marking point. In this manner go over the entire photograph, putting in all the details necessary, after which you can transfer this outline to the crayon paper by means of the tracing paper according to the former method given for transferring an outline.

These are all the best methods of producing an outline. In each of them you fasten the charcoal lines with the No. 2 crayon points, and then, having brushed off the charcoal, proceed to put in the background for your portrait. This you do by any one of the methods given in the following pages.

## FOUR METHODS OF MAKING THE BACKGROUND.

The background can be made first, with the crayon sauce and the use of the large gray stump and rubber eraser; second, with the cotton and rubber, by using the cotton in applying the crayon sauce to put in the dark places in the background, and then finishing with the rubber; third, by the use of the line effect; and fourth, by the stipple effect, produced by the use of pumice stone. This last I consider far superior to any of the others, as it changes the appearance of the surface of the paper entirely, and produces an effect altogether different from that ordinarily shown in a background. It is also free from the mussy, dirty appearance which is produced by the use of the cotton and crayon sauce alone. I have been repeatedly asked by both amateurs and professionals what kind of paper I use in free hand crayons. The inquiry arose from the fact that treating the paper by the fourth method changes the appearance of the surface of the paper and also its color. I have never before, however, given to the public, nor even to my pupils, the secret of this process. When the pupil has mastered it so as to once produce the satisfactory effect of



which it is capable, he will find that it has all the advantages I claim for it and is a secret well worth knowing, in fact, what would be termed one of the tricks of the profession, and a very valuable one. I must confess, however, that I discovered it by an accident. I had been experimenting for years in making backgrounds in order to produce an effect that was entirely satisfactory to me, and had failed to reach just what I wanted. One day, however, I was at work on a portrait that I was very particular with, but the background of which proved quite unsatisfactory to me. In despair I threw on a handful of pumice stone, intending to entirely remove the background by its aid, when, to my surprise and delight, I found I was producing the very effect that I had been seeking for years, namely, one rendering the background of a different color from the face and giving it a clear, transparent appearance, so that the eye seemed to penetrate it, quite different from the opaque, almost dirty backgrounds, resulting from the use of other methods.

I will treat each of these methods in separate chapters further on.



## FREE-HAND CRAYONS AND THOSE MADE FROM PHOTOGRAPHIC ENLARGEMENTS.

The principal difference between the appearance of free hand crayons and those that are made over a photographic enlargement, is that in the former the shadows are lighter and more transparent. In the matter of feeling, however, the free-hand crayon is much more satisfactory to the artist for he knows it is all his own work, and that he has not depended on the photographic enlargement to help him make the portrait.

After the outline has been drawn, in making a free-hand crayon, the portrait is still not yet in the same state of advancement as a silver, platinum or bromide enlargement; for the reason that the latter not only has the outline, but also the faint impression in light and shade of the rest of the portrait. I will, therefore, in the next chapter, give instructions for filling in the free-hand crayon up to such a degree of light and shade as shall put it in the same condition as the enlargement. From that point on the same directions (to be subsequently given) for finishing the portrait will apply equally to both the free-hand crayons and the enlargements, except that the bromide is understood to require special treatment.

The frontispiece was made from a free-hand crayon which was executed on Steinbach crayon paper with a magic lantern outline. This shows the stipple effect in the face and drapery, and a broken line effect in the background. The student will notice the difference between this illustration and that facing page 81, which was made from a bromide crayon. In the bromide crayon the shadows are dark and strong, while in this they are lighter and more transparent.

## FILLING IN THE FREE-HAND CRAYON.

Having your crayon outline already made on the mounted strainer, lay the latter down on the table face up, and proceed to put in a pumice stone background with the crayon sauce according to instructions hereafter given on page 70 for producing that kind of background, making sure that you go entirely over the outline. Then place the strainer on the easel, and after putting in the cloud effect take the chamois block in your left hand, and, with a tortillon stump in your right, put in the shadows in a strong, clear and decided manner. Commencing on the hair, put in the broader shadows first, working the stump in the same direction that the lines of the hair go, and endeavor to give the soft flow that the hair should have, avoiding making lines or any attempt to make individual hairs. The eyebrows should then be put in in the same way as the hair, care being taken to preserve the form; then the eyes, beginning with the upper lids, putting in the lines between the eye and the lid, and also the second line forming the lid. Do not line in the lower lid between the eye and the lid, but put in the under line of the lower lid. Next form the pupil, placing it in the centre of the iris, making it

very dark ; then the iris, noticing in particular that the upper lid throws a shadow on the top of the iris ; then the shading of the nose and nostrils and shadows under the nose. The mouth is the next important feature, and, as there are no decided lines in it, you must put in none, but have the degrees of light and shade form the mouth. Begin with the corners, and notice carefully that here lies nearly the whole expression of the lower part of the face ; next treat the central point of the lips and complete the mouth ; then make the shadows around the mouth and chin, after which, put in the ears, and then model up the face, making all the shadows broad and decided, leaving the details for the finishing touches, but being careful in the modeling to retain all of the values. Next put in the clothes with the large stump, sweeping it gently across the lights in different directions, allowing the lines to cross each other occasionally. Carefully preserve the form in this, giving the proper shape to the lapels of the coat or folds in the dress, and to the arms. Avoid detail and do not carry the clothes as far down as you want them to show in the finished picture. Lace work should not have too much detail, but be made somewhat indistinct ; only show a few of the forms out sharp and defined, giving the pattern.

## LINE EFFECT.

This can be produced in crayon portraits made over a photographic enlargement, or in free-hand crayons after the filling in just described has been done. The lines are drawn to cross one another so as to leave diamond shaped spaces. One of the important things in this style of finishing is the line of direction, by which is meant the lines or grains that represent the object to be drawn. We say that wood is cross-grained, meaning that the grains or fibers of the wood run crosswise. If we were to represent a straight board in crayon drawing, we would draw straight lines running lengthwise of the board, unless it should have some cross-grained places in it, as that is the way the grain of the board would be. If we should take the same board and bend it in the form of a circle, we would in order to represent the board in that position, draw lines running in a circle to correspond with the grain and position of the board. The idea to be impressed is, that when we want to represent an object with crayon and that object is flat, we draw straight lines to represent its surface; and when the object is round or partly so, we draw curved lines, conforming them to the surface of the ob-



ject. Light and shade in nature have each their different qualities. Light expresses form while shade obscures it ; consequently, in the light places of an object we will see its grain or texture, and that grain or texture will gradually become obscured as it enters the shadow until it is entirely lost in the deepest shadows. This grain will not show in nature as decided where the strongest lights are as it will in the half shadows ; and, therefore, in the crayon representation the grain effect should show more decided in the half shadows. If your crayon is not true in this respect, it will appear coarse and fail to please as a work of art on account of its falsity to nature. The line effect is produced throughout the whole picture, in the background, face and dress.

## STIPPLE EFFECT

*On a photographic enlargement or a free-hand crayon after the outline and masses of light and shade have been made with the tortillon stump, as explained on page 55.*

When putting in a background with the pumice stone as described in the fourth method on page 70, treat the whole surface of the paper with pumice stone in order to raise the grain of the paper, but go over the face lightly. Then place the strainer on which the portrait is mounted on the easel, and put in the shadows with the tortillon stump, producing the lights with the eraser; finish with the No. 0 crayon. But instead of producing a diamond effect, as you did with the lines, you now want to have a stipple effect, which is that of small black and white spots; the paper producing the white spots, and the crayon the black ones. To produce this make the lines in the shadows and half-shadows, but not in the light places, in the manner shown in the illustration on the following page; instead of crossing them to form diamonds, using short lines and varying their direction and intersection with reference to the ultimate effect; then rub them with the end of the finger. In finishing, gradually divide up all the small light



LINES TO PRODUCE THE STIPPLE EFFECT.

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parts with the pencil and the dark with the eraser : if it is necessary at any time to rub the crayon, use the end of the finger instead of the cotton. Be careful not to get too much crayon on the paper, that is, you must not "force up" or be compelled to make the shadows too dark by the use of the crayon ; they should be made as dark as necessary with the stump before finishing. Should you find in finishing that they are not dark enough, use the stump to make them darker, as the pencil is only intended to give the stipple effect, and should be used in a very light and delicate way. Continue the process of finishing according to the directions hereafter given for bromide enlargements. The foregoing illustration is the first or ground work for the stipple effect

produced by the aid of the fingers. To obtain this effect without rubbing with the fingers, make small black dots, instead of the lines shown above, until the desired effect is produced. The latter method results in a coarser stipple effect, but it requires a much longer time and is more difficult than the former.

## BACKGROUNDS—GENERAL PRINCIPLES.

Always commence the portrait by putting in the background. Among the four different methods which I have given, the student can make his own selection. For myself, I prefer the last two mentioned.

There can be no definite rule given for the lights and shadows in the backgrounds, as every portrait will need a characteristic background adapted to the subject. There should always be a nice disposition of light and shade, the light coming against the dark side of the face and the dark against the light side, and generally a cast shadow. What this is may be learned by setting a cast (or any other object) near the wall, letting the light strike it at an angle of 90 degrees, and noticing the size and position of the shadow thrown on the wall. The cast shadow in your background must not be too near the head, as simplicity should be one of the principles of the background, and this can only be attained by breadth of light and shade. The background is of secondary importance, and should not intrude itself on the portrait in its effect of lines or light and shade. Backgrounds for half or full length figures need especial study in their effect of lines, and one who intends to succeed in making them properly should study linear composition in



Burnet's essay on Composition,\* especially the following passages. "Composition is the art of arranging figures or objects so as to adapt them to any particular subject. In composition four requisites are necessary—that the story be well told, that it possess a good general form, that it be so arranged as to be capable of receiving a proper effect of light and shade, and that it be susceptible of an agreeable disposition of color. The form of a composition is best suggested by the subject or design, as the fitness of the adaptation ought to appear to emanate from the circumstances themselves; hence the variety of compositions.

"To secure a good general form in composition, it is necessary that it should be as simple as possible. Whether this is to be produced by a breadth of light and shade, which is often the case with Rembrandt, even on a most complicated outline, or by the simple arrangement of color, as we often find in Titian, or by the construction of the group, evident in many of Raphael's works, must depend upon the taste of the artist. It is sufficient to direct the younger students to this particular, their minds being generally carried away by notions of variety and contrasts.

"In giving a few examples of composition, I have confined myself to the four simple and principal forms, not only from their being most palpable, but also from their possessing a decided character, which is at all times desir-

\* *Essays on Art*, by John Burnet, New York, E. L. Wilson.

able. To those who imagine that such rules tend to fetter genius, I shall merely quote Sir Joshua Reynolds, whose works, if properly understood, render all other writings on the subject of painting superfluous : ‘ It must of necessity be that even works of genius, like every other effect, as they must have their causes, must likewise have their rules. It cannot be by chance that excellencies are produced with any constancy or any certainty, for this is not the nature of chance ; but the rules by which men of extraordinary points, and such as are called men of genius, work, are either such as they discover by their own peculiar observations, or are of such nice texture as not easily to admit being expressed in words ; especially as artists are not very frequently skillful in that mode of communicating ideas. Unsubstantial, however, as these rules may seem, and difficult as it may be to convey them in writing, they are still seen and felt in the mind of the artist, and he works from them with as much certainty as if they were embodied, as I may say, upon paper. It is true these refined principles cannot be always palpable, like the more gross rules of art, yet it does not follow but that the mind may be put in such a train that it shall perceive, by a kind of scientific sense, that propriety which words, particularly words of unpractised writers such as we are, can but very feebly suggest.’ (Sixth Discourse).”

## FIRST METHOD OF MAKING THE BACKGROUND—STUMP EFFECT.

To produce the stump effect, rub the chamois block in the box of crayon sauce, and then with the large grey paper stump commence by putting in the darkest parts and the cast shadow. Use the broad end of the stump, moving it over the surface of the paper with an even and uniform pressure, so that you will not make any dark spots. Make broad lines and have them cross each other so as to form diamond shaped spaces, using considerable care and a very light touch in the lighter places. Finish with the large rubber eraser, cutting it so that it will make white lines about the same width as the black lines made with the stump. Have these light lines run into the dark ones in some places, and use the rubber so as to produce a dashing effect.

## SECOND METHOD OF MAKING THE BACKGROUND.

Take a handful of cotton batting, rub it in the box of crayon sauce, and then on a piece of paper before applying it to the crayon paper to make the background, being careful to avoid rubbing harder in some places than others, as dark spots are likely to be caused in that way. Commence by rubbing in close to the face and work out towards the edge of the paper. Let the darkest part be closest to the face, shading out in the form of a circle about six or eight inches from the face, according to the subject, the upper line of the arc coming a little above the head. Then make the cast shadow and finish with the large rubber eraser, putting the lights, or cloud effect, as it is called, in the background. When doing this, place the strainer high enough on the easel to bring the centre of the picture on a level with your eyes, then standing in front of it and about six feet off, decide upon your plan of light and shade. After you have put in the first of the lights, step back to the former position, and see if it gives the proper effect. Continue this method of working until the background is entirely completed.

THIRD METHOD OF MAKING THE BACK-  
GROUND—LINE EFFECT.

With the cotton and crayon sauce as in the preceding method, put in the dark places and cast shadow, but not as dark as you want them when finished ; then with the crayon point No. 2 put in three sets of lines thus :—



BACK-GROUND. LINE EFFECT.

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Do not carry out the lines as far as the background will ex-



tend when finished. The lines should be one-quarter of an inch apart in life-size portraits, and a little closer in smaller sizes. As a rule the lines are a little further apart in the background than in the face. These lines need not be horizontal, crossed by oblique ones at obtuse angles, but they can be curved lines, if desired, provided they cross each other so as to leave diamond shaped spaces. After the lines are in rub a piece of clean cotton over them all, using pressure enough to subdue them to the degree of indistinctness desired; then finish with the large eraser and crayon point No. 2, putting in the cloud effect. Such lines as show too prominently you subdue with the nigrivorine eraser. If there are any light places, make them dark with the crayon.

The background should be very indistinct on the edges, and be vignettted in the shape of an oblong, having some very light clouds above and on either side of the head. Let there be a nice contrast between the face and the background, having light come against dark and dark against light; that is, when one side of the face is dark and one side light, have the background light against the dark side, and dark against the light side; when light and shade are about equal on both sides of the face, have the background about the same shade on both sides, without too decided a cast shadow. If you have a subject

that has gray hair, have the background darker than it would be otherwise. The background should never be darker at any place than the shadows in the face, and close to the face it must be a shade between the light and half shadows. Never resort to the practice of leaving the background white, as this will only give a hard, stiff appearance. Clean off the outside edges of the background with a clean piece of cotton and the pumice stone.

#### FOURTH METHOD OF MAKING THE BACKGROUND—STIPPLE EFFECT.

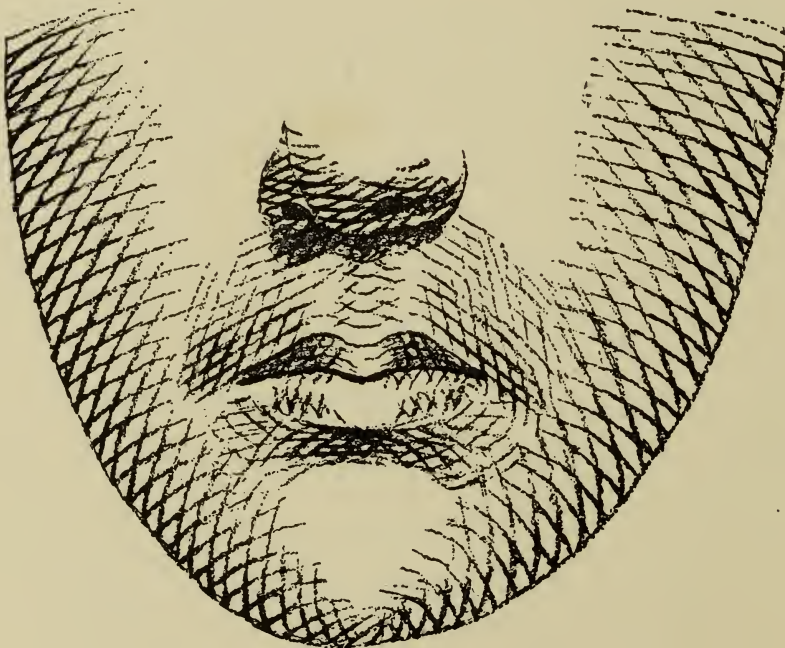
Lay a piece of manilla paper on the table about twelve inches larger on each edge than your strainer, placing the strainer on it face up; rub a handful of cotton batting first in the crayon sauce and then on the manilla paper to remove any foreign substance. Then apply the cotton with a circular motion to the crayon paper to make the background desired. Next sprinkle the pulverized pumice stone over the entire background, and go over this with the fingers in a circular movement, using them flat from the second joint to the ends; then lift the strainer up, and, resting it on the edge, jar off all the pumice stone, and when this is done, lay it down again and rub it off with a clean piece of cotton. Now rub the fingers in the crayon sauce, keeping them flat so that it will adhere evenly to them, and go over the background lightly as when rubbing in the pumice stone and you will produce a nice stipple effect. Finally, place the strainer on the easel, and finish according to the directions given for finishing crayons made on bromide enlargements.

Of course it will need considerable experience before you

can succeed in doing this perfectly, but patience and perseverance will ultimately accomplish the desired end. There are two matters of importance to be borne in mind in making these backgrounds—first, do not have any small, hard pieces of crayon on the cotton when you rub it on the paper, and second, use the fingers in as flat a position as possible, for if you do not have them flat down on the paper you are likely to make dark spots in the background.

## FACE—LINE EFFECT.

Commence on the hair with the crayon point No. 2, and put in all the shadows and half-shadows, carefully preserving the lines of direction, but avoid working over the lights more than necessary; then with the crayon point No. 1 strengthen all the shadows about the eye brows, the eyes, the mouth, the chin and the ears. Next put the lines in the face. The following illustration shows the lines



LINE EFFECT FOR FACE.

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before they are rubbed. It will be well to remember that only two sets of lines are used in the face, as shown in the illustration, and the same number in the dress, while there are three sets required in the background. The lines in the face should be a little closer than those in the background, while those in the dress are about the same as those in the background.

In the effect of the lines in the face lie the chief merit and beauty of this method of crayon work. When properly drawn, the lines represent and give the grain of the flesh in a very beautiful broken effect. They are drawn so as to leave spaces shaped like diamonds, but in the finishing should be so treated as to lose their regularity, and to have the effect of "broken diamonds." If you will examine the back of the wrist joint when your hand is bent slightly backward, you will see more clearly what is meant by the term "broken diamonds" in the slight ridges which show the grain of the flesh. Begin with the forehead, using the crayon point No. 1, and put in one set of lines straight across, but curving downwards as the forehead commences to round off towards the hair at the sides; then one more set of lines in the direction that will produce the diamond spaces, continuing these two sets of lines throughout the face. These lines intersecting at the proper angles will indicate the grain of the flesh, if the line of direction

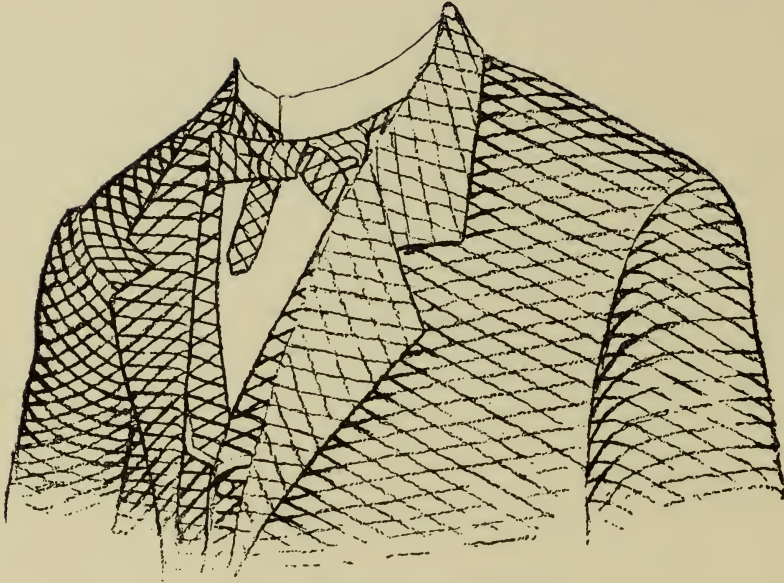
be carefully followed. Remembering that the face is not a flat surface, make the lines darker in the shadows and lighter as they approach the lights. The high lights on the forehead, the nose, the highest point of the chin, and around the mouth, should, however, have no lines over them.

Having put in these lines take a small handful of cotton, and rub the hair and face over both the high lights and shadows, the motion following the line of direction ; that is, being straight across the forehead, curving towards the hair at the sides, and circular on the cheeks. Care should be exercised not to rub too hard, it being a common fault of the beginner to rub the paper too much, and produce a dirty effect. The lines should be merely rubbed until they are somewhat blurred and indistinct. Remember that the crayon portrait is made on the surface of the paper, and not rubbed into it. After it has thus been treated with the cotton, go over the shadows with the crayon point No. 1, and rub again with the cotton.

The face of the crayon will now be about three shades darker in the lights than it should be when finished, and not quite dark enough in the shadows. Finish it with the No. 0 crayon and nigrivorine eraser, using the latter wherever a lighter effect is required ; also break up the regularity of the diamond spaces, and whenever a line shows too prominently subdue it with the eraser.

If you would succeed in making good crayon portraits, it will be necessary for you to cultivate a light touch with the crayon in finishing.

The eraser is one of the principal instruments employed in making crayon portraits, and is used the same as if it were a crayon pencil, that is, on that principle, the difference being that you make white lines with it instead of black ones. Keep the eraser to a sharp point in the following manner : take a piece of emery paper about three inches square, and place it in the left hand between the index and second fingers, holding the fingers about half an inch apart, and bending the paper to fit between them ; then rub the eraser in the crease thus formed, holding it at an acute angle. Sometimes it is necessary to sharpen the eraser with a knife or a pair of scissors before rubbing it on the emery paper. In working with the eraser on the crayon paper do not rub hard enough to remove all the crayon from the surface of the paper, except in producing the high lights and the white of drapery. Notice in particular in finishing the hair that where it touches the forehead there are no lines, as the light and shade should blend together so nicely as to leave no decided line between them.



LINE EFFECT FOR DRESS.

*From the Annual Encyclopedia. Copyrighted, 1891, by D. Appleton & Co.*

## DRESS—LINE EFFECT.

The above illustration represents the effect of the lines in the dress. In putting them in let every fold, sleeve and lapel have lines of its own, that is, lines differing in direction so as to discriminate it from the other parts of the clothing. These distinctive lines will lose themselves in the wrinkles, in shadows, and in the next fold, where the lines will have a different direction. The illustration



is very crude, as it shows the lines before they are rubbed with cotton; after that process they have quite a different appearance. In men's clothing the lines may be drawn a little farther apart than in the treatment of the finer texture of ladies' garments. After you have put in the lines with the crayon point No. 2, go over them with a piece of cotton previously rubbed in the crayon sauce, and then complete this part of the work by the use of a dull eraser for the smaller lights, and the chamois for the broad lights.

The crayon is now in good condition for finishing, which you will proceed to do by the use of No. 0 Conte crayon and the nigrivorine eraser, softening the lights with the former and the shadows with the latter, until you have the whole portrait subdued, and no decided lines of light and shade. Of course throughout these processes you must pay close attention to all the characteristic points in the likeness, so that the crayon will be a true and life-like reproduction. Do not sit too close to the crayon in finishing; if you do, you will be disappointed when you come to look at it from a slight distance, and will not find at all that enchantment which distance is said to lend to the view, as the crayon will disclose a spotty effect, and too great a contrast between the lights and shadows.



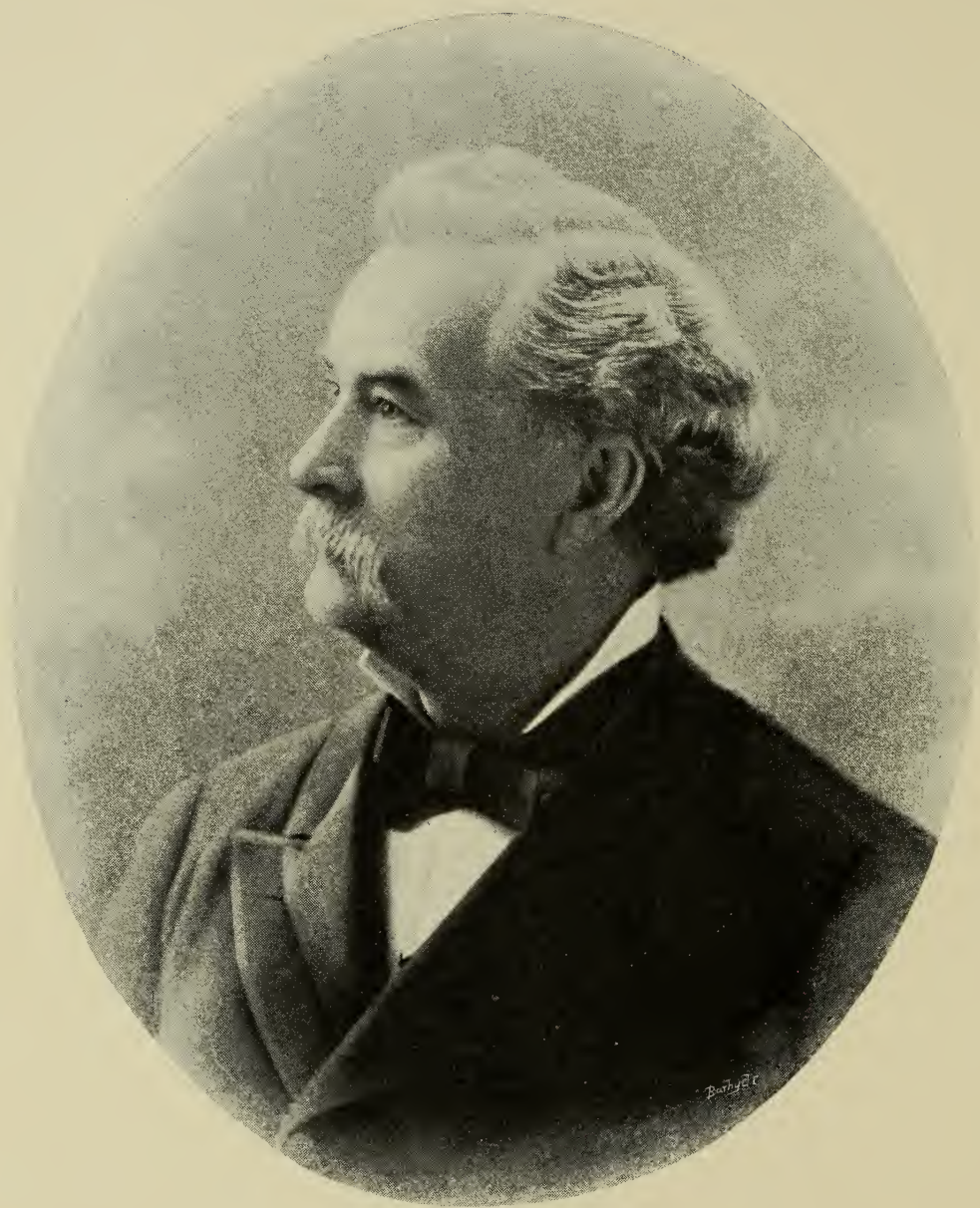
## BROMIDE CRAYONS.

In the bromide enlargement, while the paper has to undergo all the different manipulations of development, fixing and washing, that the platinum and silver enlargements do, yet the gelatin is not removed, and, when dry, remains as a strong sizing to the surface of the paper—in fact, so strong, that in some of the different kinds of bromide paper the surface is very nearly as hard as glass, and, therefore, the crayon cannot be used upon it with good results until it has received a special treatment, as the crayon would only make a black scratchy mark.

It has been said that the bromide paper and enlargement were entirely different from the platinum or silver enlargement and the crayon paper. While there is not as much difference between the bromide and other enlargements as there is between the former and the crayon paper, there should be this difference: the silver or platinum enlargement should only be printed strong enough to give the form and the larger details in the negative, while the bromide enlargement must be as nearly a perfect photograph as can be produced from the negative.

From the fact that, on account of the difference in the





FROM CRAYON EXECUTED OVER A BROMIDE ENLARGEMENT MADE  
FROM THE ORIGINAL NEGATIVE—STIPPLE EFFECT  
THROUGHOUT. BY J. A. BARIHYDT.

surface of the paper, there cannot be as much crayon put on the bromide enlargement as on the other kinds of paper, and that, therefore, it cannot be strengthened to the same degree in the shadows without spoiling the nice transparent effect that a bromide should have there, it follows that the best bromide crayons are those on which the least crayon is used to produce the desired effect. The bromide paper, on account of the gelatin surface, will not take the crayon from the stump as readily as the other kinds of paper ; but after the surface has been treated with the pumice stone this objection is removed, and the paper can be worked on with the stump readily. I can say from my own experience, that for producing a crayon over a photographic enlargement with the stipple effect, it has no equal in the beauty of finish and rapidity of execution.

The illustration facing this page was made from a crayon executed over a bromide enlargement from the original negative. Better results can always be reached in a bromide enlargement when it is thus made from the original negative. The student will notice in particular the stipple effect in the reproduction.



## FINISHING BROMIDE ENLARGEMENTS.

Examine the enlargement mounted on the strainer, looking at it from the side, to learn if there is any starch on the surface of the paper before commencing work on it. If there is any, carefully wash it off with a sponge and some clean water, and then set the enlargement aside until it has thoroughly dried. Then lay it down on the table with a piece of manilla paper under the strainer about 12 inches longer on each edge than the latter; take a handful of cotton, first rubbing it thoroughly in the crayon sauce, then on the manilla paper, and finally going over the surface of the enlargement with it in a circular motion. Then sprinkle pumice stone over the portrait, and using the ends of the fingers flat, rub it over the entire surface of the paper. This treatment cuts through the gelatin surface and prepares it for the stipple effect. Now stand the strainer on its edge and jar the pumice stone off, after which lay it down on the table, and with a piece of clean cotton lightly brush off the surface; then, having rubbed the finger ends in the crayon sauce, go over the entire surface of the enlargement, holding them flat, and you will produce a fine stipple effect.

If the shadows need to be darker, use a little more



crayon on the fingers; also put the cast shadow in the background, applying the crayon with the fingers.

Before proceeding further it will be well to note that the crayon is entirely on the gelatin surface, and that the photographic image is on this surface also, and not on the paper itself; therefore, under the image and the gelatin you have the pure white paper. I call attention to this in order that you may work with a better comprehension of the materials you are using.

You now have four surfaces. First, the muslin cloth of the strainer; second, the starch; third, the white paper; fourth, the gelatin.

Knowing that the gelatin has a hard surface, you are prepared to learn that the crayon will come off from the bromide much more easily than from the other kinds of paper. These had but three surfaces, while the bromide has a fourth—a very hard one—between the crayon and the paper, and on account of its hardness it will need different treatment in its manipulation. Therefore you use the fingers in applying the crayon sauce, and, when it is necessary to make a place light, you do so with the cotton, chamois or eraser. Should you find it necessary to make a place white where it is dark, you can remove the photograph entirely, as this is on the gelatin, scraping it off down to the white paper with a sharp knife.

Resuming the process of finishing, place the enlargement on the easel and put in the cloud effect with the large eraser, then lay it on the table again, and clean it off about four inches from the edge all around with pumice stone and a fresh piece of cotton where you have rubbed with the eraser, and blend the background into this four inch space. Return the enlargement to the easel again, and with the broad eraser clean up the lights throughout, and with the cotton and pumice stone blend them into the shadows; then with the peerless stump, crayon sauce and fingers strengthen the larger shadows, using the nigrivorine eraser when necessary to clean up the lights, and the tortillon stump for the work in the smaller shadows, if it is required to make them darker. Now with the No. 0 crayon finish the face by completing the stipple effect in the patches of light and shade. You will have a good guide in the background for finishing and giving the stipple effect, as there you will have this stipple effect quite perfect, especially in the light places. This finishing with the No. 0 crayon is the nicest part of the work, and when doing it you must keep in mind that you are putting in the stipple effect, and that alone; that is, the portrait at this stage is supposed to be very nearly right in light and shade and expression, and it should not be necessary to strengthen it in the shadows by using the No. 0 crayon. You are to cut up or

divide the portrait into small black and white spots, but do not take out white spots with the No. 0 crayon that are larger than the white spots desired in the stipple effect ; these light places must be cut into smaller light spots. If you should take out these white spots (and this is an error you must be very careful to avoid), you would produce an effect of large dark and white spots that would be entirely wrong, the real process being to divide large white and dark spots into smaller ones of the same color.

This stipple effect should be worked all over the face with the exception of the highest lights, and even these will very often need to be worked over except at the single points of the very highest lights. In this work you now have an opportunity to demonstrate the theory of contrast. Sometimes the enlargement is too dark in the shadows, and although you require to have them lighter you have already removed all the crayon from the surface, and it still remains too dark. The crayon pencil is many shades darker and blacker than the shadows, yet you can by its use make them lighter by putting in the stipple effect, as the dark touches of the pencil in their contrast with the shadow color under them cause them to appear lighter. This is a very essential principle to remember in crayon portrait work : that the effect of dark against light is to make the light appear lighter, and the dark darker. After the face

and hair are completed as above, then finish the clothes with the peerless stump, eraser and fingers. If there are any very dark strong shadows—for instance, under the collar or around the neck—put them in with the velours crayon and subdue them with the fingers. When at work on the clothes at the bottom of the portrait do not finish straight across, but in a circular way. Next taking up the background you will discover that there are some large patches of light and shade that must be changed and made the required color to correspond with the adjoining surface; lean back as far as possible in your chair, and join these places together with the pencil and eraser; then in the same position finish the face by removing any light or dark places, strengthening the eyes, nose, mouth, and any point of the likeness requiring a final touch. Remove with the point of your knife any small black spots such as sometimes show in the photograph, and then with a fresh piece of cotton and pumice stone clean off the edges of the crayon all around.

Before regarding the picture as quite complete, examine it by holding it at right angles to the light, to see if there are not some marks of the crayon pencil that show too prominently. These can be subdued with the ends of the fingers. Sometimes in finishing with the No. 0 crayon the paper will seem to be gritty so that you can hardly work

on it. The difficulty is that some of the pumice stone has adhered to the surface of the paper. This can be disposed of by rubbing it with the fingers. It should be remembered that the pumice stone must be entirely removed from the whole surface of the paper, as otherwise it will settle in the crayon, and give a dirty gray effect. When, as sometimes happens in commencing the portrait, dark or white spots or streaks show themselves, do not pay any attention to them until you have entirely finished the crayon, then if they are dark, make them the proper shade with the eraser, and if light, with the crayon.



## MONOCHROMES.\*

These are portraits in one color on porcelain, glass or any hard material that has first been coated with gelatin and then photographed on. First treat the whole surface with pumice stone as directed for the bromide paper, afterwards go over it with the crayon and cotton. Then put in the cloud effect in the background, and clean off the lights in the face, hair, and clothes with the eraser; next put in the half-shadows with the peerless stump; then with a solution of India ink darken the stronger shadows throughout the portrait—in the eyes, nose, mouth and eyebrows, and finally in the hair. Finish the face with the No. 0 crayon and the 4 H. Faber's lead pencil according to directions given for finishing bromide enlargements. The Faber pencil is used almost exclusively throughout the face. Very nice effects of strong light can be made on porcelain by scraping through the gelatin surface with the knife. This process is specially adapted to making pictures of smaller size, say 10x12, or 11x14 inches, as it produces a very soft and delicate effect.

\* For photographic process, see the American Annual of Photography and Photographic Times Almanac, 1888.

## VALUES.

The matter of *values* enters into the essential quality of every work of art, and especially of a portrait. It is the truth of their rendering that will give a faithful likeness. By the term *values* is meant the relations of light and shade to each other. This subject has been so admirably treated by John Burnet in his essay entitled "Practical Hints on Light and Shade," \* that I give his observations on this point.

"Before proceeding to investigate light and shade in their various intricate relations, it may be proper to notice a few of the more palpable and self-evident combinations; and for the better comprehending of which I shall divide them into five parts, viz. : Light, half-light, middle tint, half-dark and dark. When a picture is chiefly composed of light and half-light, the darks will have more force and point, but without the help of strong color to give it solidity it will be apt to look feeble, and when a picture is composed mainly of dark and half-dark the lights will be more brilliant; but they will be apt to look spotty for want of half-light to spread and connect them, and the piece be in

\* *Essays on Art* by John Burnet, New York, Edward L. Wilson.

danger of becoming black and heavy. And when a picture is composed chiefly of middle tint, the dark and light portions have a more equal chance of coming into notice, but the general effect is in danger of becoming common and insipid. Light and shade are capable of producing many results, but the three principal are relief, harmony and breadth. By the first the artist is enabled to give his work the distinctness and solidity of nature ; the second is the result of a union and cement of one part with another ; and the third, a general breadth, is the necessary attendant on extent and magnitude. A judicious management of these three properties is to be found in the best pictures of the Italian, Venetian and Flemish Schools, and ought to employ the most attentive examination of the student, for by giving too much relief he will produce a dry hard effect, by too much softness and blending of the parts, wooliness and insipidity, and in a desire to produce breadth of effect he may produce flatness."

The student should make a careful study of the values, as upon these will depend the entire effect of the portrait and its fidelity as a likeness ; and the absence of these qualities of rendering light and shade are one of the marked features of the work of amateurs, as they are apt to make their shadows too dark and their lights too light. You should compare the portrait with the photograph you are

working from, and preserve the same contrasts between the lights and shadows in order to produce satisfactory results. The best way of examining your work is by the use of a mirror. To the student the mirror is his best critic. It is before this silent observer that he submits his work with the certainty of receiving an honest criticism. At every step of your progress look at your work in a good mirror, as here it is changed about, the left side being the right side, and no error will escape detection. Sometimes you will see that what appeared true was in reality false, what seemed graceful in contour was distorted ; here an eye which you thought was looking at you quite straight now mocks you from the glass in manifest obliquity ; the mouth, which you thought had a pleasant expression, now looks as disdainful as can be. And so all through your work you will be startled ; you will doubt the mirror. Doubt it not ; your work is false. If you will be convinced show it to some competent artist, and he will confirm the judgment of the impartial mirror. Experience will soon teach you to put such reliance on its never capricious council that you will follow its suggestions implicitly, and, when your work is altered, the result will satisfy you invariably, that, as the proverb says of two heads, so two images are better than one. When you have come to this conclusion there is not a beauty of eighteen

who will consult her glass (though it is true for a somewhat lighter purpose,) more eagerly, more devoutly, more frequently, or finally, we hope, with more triumphant satisfaction than will you.



## STUDIO.

The amateur is not to consider the selection of his studio or work-room of minor importance ; the perspective, coloring, and the effect of the portrait will all depend, in a great measure, upon the situation and dimensions of the studio. It may be said in a general way that the larger the apartment the better. To secure the effect which it is essential to produce, there should be space enough left behind the artist to permit him to step back from six to ten or twelve feet to accurately view and see the effect of the portrait. I cannot urge too strongly upon the amateur the usefulness of frequently viewing his work from a distance. I would gladly save him the disappointment and chagrin which I have myself experienced, when having neglected this precaution, I have quite finished a portrait only to find it thoroughly unsatisfactory when looked at from a greater distance than that at which I had worked.

You should choose a room with a north light if possible ; if that is not available then one with a south light, and the room should be as near the top of the house as possible. Let the light be arranged so as to strike the easel at an angle of 90 degrees, and if it is a side light darken the

lower half of the window. Do not have the side walls white, they should be a neutral shade ; reddish is the best. For work with water colors or India ink you need a stand, and be sure and set it so that the light will be at your left when you work. Keep the studio as free from dust as possible, and when you have finished working for the day wash your brushes and place the corks in the water color bottles, so as to exclude the dust from them. For crayon work also set the easel so that the light is at the left hand.

A word in regard to selecting materials. I have already spoken in regard to the selection of photographs for coloring. As to brushes—camel's hair will cost only about a third as much as sable, and will answer every purpose for beginners ; the fine sable should be procured after the pupil has advanced sufficiently. In choosing a brush for water colors, dip it in a cup of water and draw it over the edge of the cup ; if it has a little spring to it, and comes to a point readily without any of the hair straggling, it is all right ; if not, reject it. Winsor and Newton's Chinese White is the best white paint. For mixing the colors you can get a slant with eight divisions, or a nest of saucers. In selecting glass for mounting pictures choose that which is free from blisters

## FRAMING.

The following directions in regard to framing will, I hope, be found advantageous. When framing with a passepartout mat, always use

For a 16x20 portrait an 18x22 frame,

*	“	18x22	“	“	20x24	“
	“	20x24	“	“	22x26	“
	“	24x29	“	“	25x30	“

I make a life-size portrait 25x30 on a 24x29 strainer. The reason for using a larger frame than strainer is this : that it invariably happens that the head of the portrait will not come in exactly the proper place in the opening of the passepartout, and by having the frame two inches larger each way you will be able to bring the head wherever desired in this opening. When placing the picture in the frame, lay the latter face down on a table and put in the glass, which should have been perfectly cleaned ; lay in the passepartout and fasten it with small brads. Then lay the crayon down on the table face up and turn the frame over on it, and after you have it in the proper place, draw the picture and frame partially over the edge of the table, and from underneath mark the back of the

passepout where the edges of the picture come ; then turn the frame and picture over so that it shall be face down. Now cut eight strips of old tin-type metal one-quarter of an inch wide and three inches long, making holes at each end of them for the tacks, and with these strips fasten the picture in its place by tacking one end of each to the strainer and the other end to the frame. Also cut a piece of heavy manilla paper the size of the frame, lay it on a board, dampen it with a sponge, apply starch paste around each side and the ends for a space of six inches, and lay it over the back of the picture and frame, pressing it down on the latter ; then set it away to dry. This will make a neat smooth back which will exclude moth and dust from the portrait.

## PASSEPARTOUT MOUNTING.

The following method will be found useful, especially if you want to exhibit a crayon without the expense of framing it. Lay on the mounting board a piece of heavy manilla paper somewhat larger than the picture, then put the crayon on this face up, next the passepartout, and last the clean glass. Mark the size of this on the paper, and then, having removed the glass, crayon and passepartout, cut the paper enough larger than the marks to allow it to come up one inch all around over the edges of the glass; next dampen the paper, and apply the starch paste to its edges about six inches all around, then lay the crayon, passepartout and glass back where they were on the paper, and bring the latter up, lapping it over the face of the glass; cut the corners out so as to bring them over properly; rub the edges down thoroughly on the glass, and with a ruler and knife trim off the paper, allowing one-quarter of an inch margin; then set away to dry. This will put the crayon in good condition to be exhibited, and will thoroughly protect it.





Transparent Liquid Water Colors  
for Coloring Photographs.





# TRANSPARENT LIQUID WATER COLORS FOR COLORING PHOTOGRAPHS

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## *Materials Required in Their Use.*

A good photograph, an engraving or photogravure  
mounted on card-board,

Camel's hair brushes, Nos. 3 and 5,

Sheet of blotting-paper,

Small sponge,

Clean white cloth,

Cake of Chinese white, Winsor and Newton's water  
color,

A divided slant or nest of small dishes for holding the  
color when mixed,

Box transparent liquid water colors,

Stick of India ink,

Box pulverized pumice stone,  
Two tumblers for water.

It has passed into a proverb that he is a bad workman who complains of his tools. It is certain that good ones simplify work and give better results. One of the most important things for successful art-work is to have at hand the proper materials and good instruments. In their selection do not follow a penny wise and pound foolish policy, but get the best you can ; and these you will often find not too good.



## THEORY OF COLOR.

The principles connected with coloring should be understood if one desires to produce the most pleasing and harmonious effects in painting. The three colors, red, yellow, and blue, with the white of the paper, are equal in theory to all the requirements of art in its true relation to color. Red, yellow and blue are called primary colors; that is, we cannot produce these colors from the combination of any others. Orange, purple and green are called secondary colors, and are produced by the combination of the primary colors. By the mixture of red and yellow we obtain orange, from red and blue, purple, from yellow and blue, green. The tertiary colors—broken green, gray and brown—are produced by the mixture of the secondary colors. From orange and purple we obtain brown, from orange and green, broken green, and from purple and green, gray. The three primary colors must always be present in a picture to produce harmony. Colors are divided into what are called warm and cold colors, the yellow and red being termed warm, and the blue cold. Yellow and red produce light and warmth, and it is impossible to produce coolness without the use of blue. In painting we

use the three terms, light, shade and color, because they best express the qualities of color. Light is expressed by yellow, shade by blue, and color by red. While red is particularly designated as color, we must not forget the claims of yellow and blue, as they, together with red, complete the primary scale of colors. It is by placing these different colors in juxtaposition that we produce the proper qualities existing in each of the other colors. It is impossible to produce the effect of warmth by red and yellow unless we use the blue in connection with them. It is this filling up, or completing the primary scale of colors, that gives the term complementary, so often employed in speaking of colors. Thus red is said to be complementary to green, as green contains the other two colors of the primary scale—blue and yellow. Blue is complementary to orange, as orange contains red and yellow. Yellow is complementary to purple, as purple contains blue and red. The principle of using the complementary color is of the utmost importance in painting, or the use of color by any method, and it is on this principle that the harmony of color is based. When a painting is produced that has the colors red, yellow and blue properly balanced, a pleasing and harmonious effect is attained ; but if these colors are not used in their proper relations, there is a discord, and the work is not satisfactory. These rules must be borne in mind by

every student in coloring, whether he uses oil or water-colors. One of the most common errors of amateurs is to overlook the red in landscape. Thus trees are too green, and the grass is insufferably green: the complementary color, red, has been left out.

By the following experiment you may prove that when you see one color the eye is in a perfect condition to see its complementary color. On a piece of white paper, three inches wide and five inches long, draw with a lead pencil an oblong, half an inch from the top, one inch wide, and two and one-half inches long from right to left, and a similar oblong one-half an inch below the one already drawn. Then draw a six pointed star (or any other not too large figure you desire) in the centre of the upper oblong, and paint it with vermilion water color. Now look intently at the painted star for thirty seconds, and then look at the plain oblong below, and you will observe that the latter will gradually assume a very beautiful shade of green, the exact complementary color of the vermilion, with the figure in white upon it—unless you should happen to be color blind. If that is the case, the experiment will demonstrate that fact.

## COLORS.

Transparent water colors are put up in boxes containing nine colors, and as you reduce them in the proportion of one part of color to eight of water, a single box will last a long time. They can be bought of almost any dealer in artist's materials, and are designated as Florentine, Egyptian, Grecian, and by other names. Care should be used in procuring those which are pure and fresh. The colors are yellow, blue, rose, violet, magenta, flesh, brown, gold and black. The labels on the bottles give directions for mixing.

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## YELLOW.

Yellow is one of the primary colors and one of the most useful, as it enters into the coloring of almost every picture. Transparent yellow is very brilliant, and can be used with any other color. Yellow and red make orange, yellow and blue make bright green, yellow and black a dull green. In landscapes, yellow is used in the middle distance with

blue and rose and magenta. In the foreground it is used with blue and black for green, and is especially adapted for brilliant touches of foliage, grasses, and light places in the ground. In portraits a very little can be used in the reflected lights on the faces, and, when mixed with brown, for light shades of hair and eye-brows; for light dresses, used weak, it makes a very nice cream color. It can also be used very weak for laces, the strong lights being afterwards touched up with Chinese white, but not when the picture is to be mounted on glass. This color will ordinarily work nicely and give good results wherever its use seems appropriate, but care must always be exercised not to use it too strong.

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## BLUE.

This is another of the primary colors and a very essential one, it being the nearest allied to shade, and although not shade itself, no shadows can be produced without it. We will find it, therefore, mingling with all the shades of nature between the lights and shadows. It would be in vain for us to introduce all our warm colors, if the cool tints that are produced by blue are wanting; for, without



that, the work will appear heavy, as it is the contrast between blue and the warm colors that produces a balance of color. Blue mixed with yellow makes a very brilliant green, with gold a duller green, with magenta a purple. In landscapes it is used in skies and the middle distances, but not in the foreground, unless mixed with yellow. Blue can be mixed with rose or magenta for sunset skies. When the horizon is represented a streak of blue or rose, or of blue and magenta, will give a very pleasing effect. In portraits if you have a light background, a thin wash of blue can be used over it. The same can also be used for blue eyes and for dresses when they are light in the picture, also in all the half-shadows of the dresses or draperies without regard to what their other color may be.

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### ROSE.

This is the nearest approach to red that we have in these colors, and as it fills out the scale it is an essential one. It is, in fact, a very delicate shade of rose. For landscape it is used only in the skies, and then only a

little near the horizon for sunset effects. For portraits it is used in the drapery for making a very light shade of pink, and it can be used generally when you want to make a very delicate effect. The photographic print on which it is used should not be too dark.

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### VIOLET.

This is a very strong and brilliant color, and therefore needs more than usual care in handling. In landscapes it is only used in certain skies near the horizon, and but very seldom even then. It is more especially designed for portraits, and there particularly in drapery to make very decided effects of strong color ; but it can only be used when the dress or draperies are dark in the photograph.

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### MAGENTA.

This also is a powerful color and must be used carefully. It is not adapted to landscapes, but in portraits is used for dresses and accessories. If the photograph requires a dark dress this color will make it a beautiful shade.

### FLESH.

This color can be used a very little in the skies of landscapes when there is a sunset effect to be represented. In portraits it is used to color the faces and hands. After it is dry, retouch the cheeks and lips with the same color.

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### BROWN.

This color is used in all the shadows. In landscapes, in some instances, it serves for use in the middle distance and foreground ; the light places should be retouched with yellow or gold. It is also used for tree trunks, fences, and the like. In portraits it serves to color the hair and eyes, and appears in the dark shadows of the drapery and furniture. If the background is dark, a nice effect is produced by tinting it a little with this color.

\*

## BLACK.

In transparent color this has more the effect of a dark gray than a brilliant black, such as is produced with body colors. When you want a very dark black, it is better to use a little India ink with it. It is used in the skies of landscapes when you wish a gray effect, or to subdue a too strong blue color or red, and in foregrounds for rocks. In connection with yellow it will make a sombre green for trees, mountains, etc. In portraits it is used for the hair and eyes, in the shadows around the mouth, and in drapery in connection with the other colors.

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## GOLD.

This is a combination of yellow and red, and in general can be used wherever either of these colors would answer. In landscapes a little can be used in the skies, the middle distances, and lights on the ground in the foreground. In portraits it is used to color the drapery and jewelry.

## INSTRUCTIONS FOR USING LIQUID WATER COLORS.

Fill the two tumblers with water, and have all the other materials ready and convenient to work with. If you have selected a burnished and mounted photograph wet its surface with saliva; unburnished photographs, photogravures and engravings do not require this treatment, but in coloring them it will be necessary to mix a weak solution of gum arabic with the colors to prevent their penetrating the paper. If printed on too thin a paper the photogravure or engraving should be mounted. If it is found that the colors "crawl" or spread on the photograph, mix a little acetic acid with the colors you are using, and should this fail to remove the difficulty, rub a pinch of pumice stone over the photograph with the fingers.

If the photograph is a portrait commence with the background, washing it all over with a brushful of diluted color, being careful not to get any on the face. If the background is light, use a weak solution of blue, if dark, a brown solution. The majority of backgrounds only need a very little tinting—just sufficient to change the color. For the face use flesh color, diluting it to the proper shade,



washing it entirely over the face, and with a stronger solution of the same color tint the cheeks and lips, giving them a little brighter effect than the flesh color. Touch up the shadows in the face with the brown, and if there are any reflected lights use a very weak solution of the yellow color for them ; then with some very weak black make the shadows around the mouth a little darker ; next with a solution of blue, also very weak, strengthen the shadows in the forehead and around the temples ; then color the eyes, using a small brush. If they are blue, use a weak solution of blue, if gray, use a little black, and if brown, then that color. Next color the hair ; if brown, use brown mixed with a little black to take away the reddish color ; if auburn, use brown and yellow, with a little gray between the lights and shadows. In working on the hair, move your brush in the direction of the lines of the hair ; if wavy, then cause your brush to follow its lines. After you have thus gone over it, darken the shadows with a stronger solution of the same color. After the hair, paint the eyebrows and beard, if there is any, with the same color.

## DRAPERY.

You must remember in using these liquid colors that they are transparent, and, therefore, whenever the print is light you cannot make it dark, unless you strengthen the shadows by applying opaque colors. For dresses, if they are light, use the delicate colors to suit your fancy, either the rose, blue, yellow, or gold; when they are dark, use the magenta or violet, being careful to spread the colors evenly. After you have once colored the dresses, then with a stronger solution of the same color darken the shadows; if you then touch up the half-shadows with blue the effect will be still finer. For neckties or ribbons use the complementary color to that of the dress. For laces use a weak solution of yellow, and after it is dry touch up the strong lights with Chinese white. If there is a curtain in the picture use the complementary color to the dress. For chairs use brown. If sky, trees and grass are to be painted, color them according to the directions given for landscapes under the different colors; only be sure to modify them, and keep them low in tone and color.

In laying on flat washes of color, the brush must be held nearly upright and should be passed boldly over the sur-

face ; the color should then gradually be brought down and spread equally over the whole surface as rapidly as possible, in order to avoid letting any part dry before the whole has been covered ; then whatever surplus there may be should be carefully sponged off. When you apply the wash of color to the picture the latter should not be held flat, but at a slight angle, so that the color will settle down towards the bottom of the picture.

These colors are more suitable for figures and landscapes combined than they are for landscapes alone, yet very pretty effects in landscapes can be produced with them. If any white spots should be found in the photograph, as very often happens, after the picture is quite complete, touch them out with India ink, using a small brush. .

## LANDSCAPE.

If the sky is to be blue, wash it all over with a weak solution of blue; if there are white clouds, you can touch up the highest lights with Chinese white; if there is a sunset or rosy effect, use a weak solution of rose or a little magenta. But it is best not to try to make too much of the sky, as the gray that is generally in it will give a very pretty effect and leave more contrast between the figures and the sky. For the middle distance mix blue, rose, and a little yellow or gold if you want it greenish, or you can use a very little brown. The nearer the trees come in the foreground the stronger in color they should be; that is, they should tend more to the green and brown and less to the bluish color. If they are to be bright green use blue and yellow, and retouch the light places with yellow. You can make the green duller by mixing a little black with the yellow, or you can make a richer green by using blue, gold and brown, and then touching up the lights with gold, and the shadows with brown. For the grass use blue and yellow, and retouch the lights with yellow; for the ground use brown, and retouch the lights with gold; for tree trunks, fences, and the like, use brown; for rocks, use black and a little brown.

## THE PRINCIPLE.

The study of painting as an art is based on three considerations, form, light and shade, and color. I will now treat of color—the form, and light and shade being furnished for us in the photograph. Photography as a means of art education in its influence on the public is salutary. In spite of all its falsity it is the best teacher of the first elements of criticism and knowledge of the facts of form and light and shade. Photography does not produce color, so that we will add the one link to the chain that is wanting. As we are dealing with pictures finished in light and shade, it is well that we should have rules to aid in choosing good ones to work on.

In selecting a photograph to color we want as perfect a print as it is possible to procure. A light one is preferable. Notice in particular if it is well defined, that the shadows and middle shades are clear, the lights pure, and that it is free from defects and spots. Many think that they can take a poor photograph, and, by coloring it, cover up the defects, but they are wrong in this, for the transparent colors will not conceal defects. The best rule is



that the better the photograph the better will be the picture when finished. The Soule Photograph Company, No. 338 Washington Street, Boston, Mass., furnish photographic reproductions, mounted and unmounted, of all the best paintings in the world, in both public and private art galleries, and their photographs are the best to color. Therefore, to begin with, have a perfect picture to color. Scholars in commencing to use the brush will not be able to produce bold effects of color, and will only acquire that power by use and practice. By bold effects I do not mean that one part is to be more prominently rendered than any other portion of the work, but merely the brilliancy of coloring which distinguishes professional from amateur work. In any kind of painting it must be borne in mind, that there are no decided lines forming the edges of any object. The point insisted on is that the boundaries of objects must be of that color that will harmonize and subdue the picture, producing a soft, delicate effect.

I would advise all who begin to paint to commence with water colors, as they are the easiest to manipulate, the liquid water colors being easier than the body colors, and their use the simplest of all kinds of painting. The photograph being a fac-simile of a subject as it appears to the eye in form and light and shade, furnishes a picture

perfect except in color, while the liquids supply the color in the form best adapted to teaching the first steps in its use. It is hoped, though, that after the student has thoroughly mastered this course of study, he will attempt something higher and more difficult in the study of art.



French Crystals.







## FRENCH CRYSTALS.

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These are photographs colored with liquid water colors and mounted on glass. For several years a process has been taught by which a photograph is rendered transparent by the use of paraffine oil, etc., then mounted on glass, and colored from the back with oil paints. While by this method a picture pleasing at the time could be produced, yet unless the process was perfectly executed the oils would decompose and the picture become yellow and spotted. The use of water colors entirely overcomes these objections, as it is so simple that any one can employ them perfectly, and as there are no oils used in their production they cannot change or turn yellow.

## MATERIALS.

Convex glasses on which to mount photographs,  
Bottle of Florentine, Egyptian, Grecian or other com-  
pound for mounting on glass,  
Best French picture glass,  
Some gummed paper,  
A dish in which to soak photographs,  
Some dark, thin, fancy paper,  
Sheet of blotting paper.

## THE METHOD.

Having secured a good photograph, rub a little pumice stone over it with the finger, and then, if it is mounted, remove it from the card by placing it in warm water and allowing it to soak for an hour or two, or over night if necessary. After it is thus freed from the card lay it face down on a piece of glass, and sponge off all the starch from the back. Cut a piece of blotting paper the size of the picture and lay it on a glass, wetting it with water applied with a sponge; then lay the photograph, still wet, on the blotting paper, and, with a sponge, remove all the surplus water from its surface. Now proceed to color it according to the directions given in the preceding pages for coloring photographs with transparent liquid water colors. In case you should put on too much color, let the photograph soak a few moments in warm water, when the surplus color will gradually come out, and you may then recolor it. After it has been finished to your satisfaction, proceed to mount it according to the directions next given.

## MOUNTING FRENCH CRYSTALS.

The glass for mounting, whether flat or convex, should be the same size as the picture. It should be dipped in water and permitted to drain off, but do not dry it; pour a little of the compound on the side against which the photograph is to be placed—the hollow side, if the glass is convex—let it drain off and lay the picture face down upon it. With the thumb and finger commence at the centre of the photograph, smoothing it down close to the glass, forcing all the air bubbles out to the edges, thus continuing until the picture is entirely smoothed out, and at every point in actual contact with the glass. During this process hold the glass at an angle, so that you can see if there are any air bubbles or glistening places in it by examining its face occasionally; and always let a little of the compound get on the back of the photograph, as it allows the fingers to glide over it more easily and lessens the chance of tearing it. Now take a second glass the same size as the first, and having thoroughly cleaned it, fasten it to the back of the other by small strips of gummed paper. Then place a piece of card-board of the same size on the back of the two glasses and fasten the three together also with small strips

of gummed paper; finally securing the whole firmly together by binding it with some large strips, and your picture is ready to frame. In case you do not care to frame it, cut out a piece of some dark fancy paper, a quarter of an inch on each edge larger than the picture, and fasten it, dark side out, on the back, allowing the quarter of an inch to lap over and be pasted on the face, after which straighten the edges with a ruler and sharp knife.



## FINISHING PHOTOGRAPHS IN INDIA INK.

The principles that have been given in regard to finishing photographs with lines, apply also to finishing with India ink—with the exception that in the manipulation of the ink it must be remembered that it cannot be taken out; therefore, you must commence to finish the photograph gradually, and produce the proper strength by repeatedly working over it. The old method of making India ink portraits was to have a print on “plain” paper—a kind without albumen on its surface. The great disadvantage of “plain” paper is that the lights and shadows on it are not strong, and therefore it takes too much work to finish the picture.

The following method (which is very simple and can be used in work on albumen paper, provided you have treated it by rubbing pumice stone over its surface with your fingers), adapts it to India ink. Of course the pumice stone treatment destroys the albumen on the surface, causing it to have a dull appearance, but after the picture has been finished its lustre can be restored by the use of a not too warm burnisher.

In finishing the photograph commence on the hair by

washing it all over (with the exception of the highest light) with a weak solution of the ink, using the brush in the same direction that the hair goes ; after this has dried, indicate the half-shadow with a little stronger wash, and after drying it again put in the deeper shadows, then the eyebrows, eyes and beard, if the subject has one.

Faces are finished in India ink on the line principle,\* which shows the grain of the flesh. Commence on the forehead with a very weak solution, and then continue it all over the face, repeatedly working and cross hatching with lines until the face is dark enough ; then strengthen the shadows under the eyes, nose, mouth and chin. After the face is completed put in the clothes. This you do by washing them over with two or three solutions of the ink, and then producing the line effect as in work on crayon portraits, explained on page 76, the difference in the nature of the material used being always borne in mind. After the picture is otherwise completed, you can brighten up the eyes and some of the strongest shadows with a solution of gum arabic and water.

\* See pages 57 and 72.

## CONCLUSION.

While it is thought that all essential instructions on the topics treated of have been given in the foregoing pages, and that if faithfully followed they will lead the pupil to attain satisfactory results, it is hoped that my readers who have accompanied me thus far will not be content to continue to use a photograph as the basis of their work, but will advance to the pursuit of art in a broader and more scientific manner. As a step in this direction the study of form, and light and shade, by drawing from the cast should be taken up ; and to this work the directions as to light and shade given in the foregoing pages fully apply, that requiring the object to be placed in such a position that the light will strike it at an angle of ninety degrees being always borne in mind.

The student will do well to gain all he can from the published works of the leaders in the profession, whose writings, both theoretical and practical, are invaluable. Three essays by John Burnet I can very heartily recommend. They are "Practical Hints on Light and Shade," "Practical Hints on Composition," and "The Education of the Eye." These are published in a single volume,

which is illustrated with examples from the great masters of the Italian, Flemish and Dutch schools, and should be in the hands of every amateur. They will all repay perusal and study until their principles are mastered. An English edition of these books is published by James Carpenter, London, and in this country they have been reproduced by Edward L. Wilson, editor of the *Philadelphia Photographer*. Another book which abounds in valuable and practical information for the amateur and can be highly commended, is "Art Recreations, a Guide to Decorative Art," by Marion Kemble, published by S. W. Tilton & Co., Boston; also J. Bacon's "Theory of Coloring," issued by Geo. Rowney & Co., England.

Those who are disposed to treat disdainfully the work of finishing photographs in crayon and color as not demanding truly artistic qualities, should not forget that success here has still a real value in awakening in many who undertake it a feeling for art of a higher kind, and in developing a natural talent which otherwise might have been undiscovered. Many an artist now looks back with pleasure and gratitude to this sort of work, in which he received the first impetus toward higher effort.

In answer to the assertion which is sometimes made that transparent water colors are not permanent, I claim that in the sense in which the word is ordinarily used in connec-

tion with photography they may properly be called so. In this sense the lasting qualities which characterize the materials used by the old masters are not looked for, but where photographs have been thus colored, finished in the form of French crystals, and properly sealed from the atmosphere, they are practically permanent. I have some in my possession that were made years ago, and they are as bright and fresh to-day as when first colored. It can be truly said that photographs colored in this way make very beautiful and pleasing pictures, obtainable with but little work and expense, and having practical permanency of color.

As a final word to those who intend to follow art as a profession, I urge the earnest study and mastery of drawing at the outset as the foundation of all art; then take up work in body water colors, and when the theory of coloring is fully understood, do not neglect the careful reading of books of acknowledged merit bearing on your work. The more notes you take in the course of your reading the more fully you will assimilate the author's thought, while, at the same time, you furnish the easiest means of rapid review. After all, your soundest basis for work will be your deep and continuing love for it, and your willingness to labor long and conscientiously to attain excellence. Do not imagine that the profession of an artist is that of an



idler. On the contrary, of all occupations it is perhaps the most active, for one is constantly engaged, if not with art itself, at least with its materials.

Every artist will confess that were it not for the charm with which it rewards the votaries who follow it from love, the pursuit would be a painful one, such vigilant precaution does it require, such constant foresight, such calculation and preparation against possible difficulty on every hand; but the true artist, happy in the daily gain of knowledge which his experience brings him, and delighted with the gradual mastery of his work, as a rule lives along enjoyably, retaining more than most men the freshness of youth while he gains in power as he advances in years. So pleasant a fate as this for each of his readers is the closing wish of the author.



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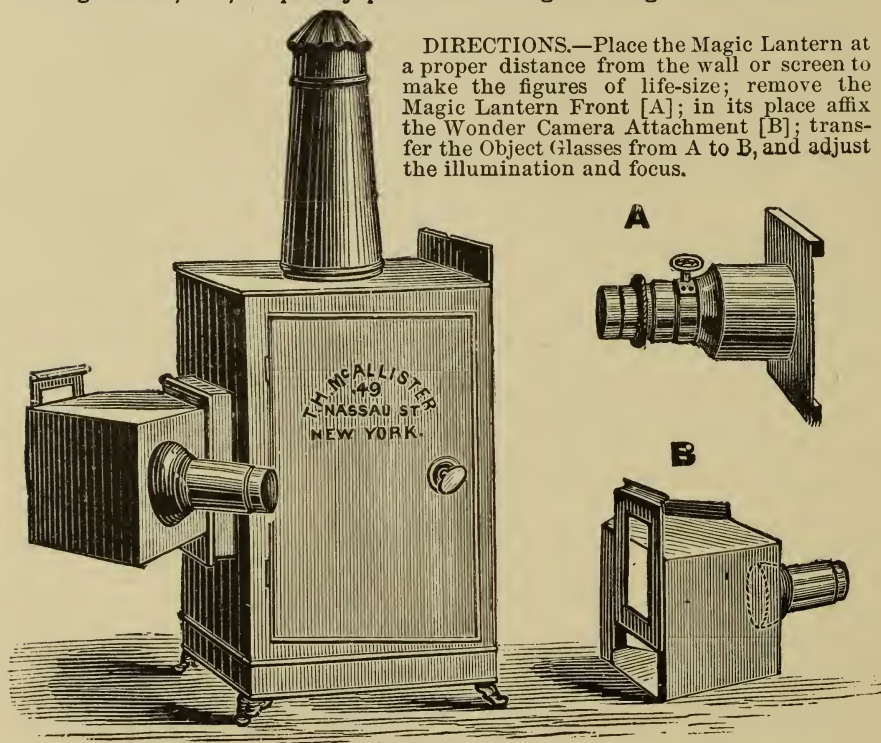
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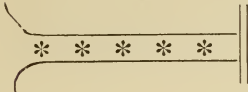
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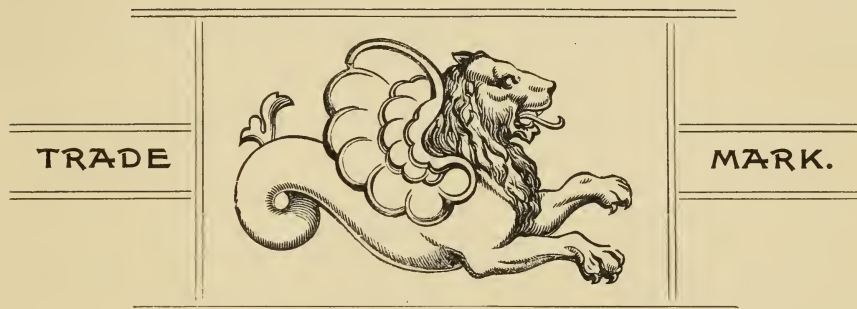
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